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04-06 September, 2024

International Conferences on Medical Sciences

(ICONMS 2024)

Durres, Albania

Medical Sciences

ABSTRACTS & PROCEEDINGS BOOK

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ICONST MST 2024 (ICONMS 2024)

International Conferences on Science and Technology

Medical Science and Technology

September 4-6, 2024 in Durres, ALBANIA

ABSTRACTS & PROCEEDINGS BOOK

ICONST MST 2024

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Dear Readers;

The seventh of ICONST organizations was held in Durres/Albania between September 4-6, 2024 with the theme of '***science for sustainable technology***' again. The conference successfully drove progress in medical practice, education, and management, serving as a unique platform for building connections among medical colleagues, scholars, researchers, and clinical practitioners. It featured data-driven discoveries aimed at improving the quality and safety of patient care and enhancing the effectiveness of healthcare delivery on a global scale. The event provided an invaluable opportunity for medical professionals to gain insights into the latest global trends in medical practice.

The three-day program included keynote presentations, oral sessions, poster displays, workshops, and networking events. Additionally, it addressed gaps in global academic and scientific endeavors in response to worldwide challenges. Participants explored a diverse range of clinical sessions, workshops, live demonstrations, scientific lectures, and exhibitions. The conference offered invaluable resources, fostering growth and inspiration for attendees, leaving a lasting impact on the medical community.

ICONST organizations organize congresses on sustainability issues of four main fields of study at the same time in order to present different perspectives to scientists. This year, 194 papers from 21 different countries presented by scientists in **ICONST Organizations**.

74 papers from 7 countries (Albania, Bosnia and Herzegovina, Germany, Kosovo, Montenegro, Serbia, and Türkiye) presented in our **International Conference on Medical Science and Technology** organized under ICONST organizations. Albania is the country with the highest participation with 80%, followed by Türkiye with 12%, Outside of Türkiye participant rate is totally 88%.

As ICONST organizations, we will continue to organize organizations with the value you deserve in order to exchange ideas against the greatest threat facing humanity, to inspire each other and to contribute to science. See you at your future events.

ICONST Organizing Committee

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LABORATORY APPROACH TO THE MOOD DISORDERS

Admir Nake*[1], Anita Pilika[2]

Abstract: The use of diagnostic enzymes due to cost-effectiveness and diagnostic power(one of the best laboratory choice) has found irreplaceable application in cardiovascular,hepatic,pancreatic diseases, etc. Finding a quantitative indicator in the preventive evaluation of individuals in risk or screened is an effective tool to increase the effectiveness of treatment to the diseases of the spectrum "mood disorders". Furthermore a laboratory panel for follow up of these patients in the light of latest researches and studies is best way to see laboratory offer as an useful tool to the best clinical decision making of these patients. We've emphasize necessity of improvement of laboratory offer in patients of mood disorders or depressive spectrum, for diagnosis, monitoring of treatment and prognosis in addition to Diagnostic and Statistical Manual of Mental Disorders as pure clinical criteria. Recent literature is investigated in Pub Med, Frontier Medicine, Clinica Chimica Acta. Laboratory panel is necessary for improvement of decision-making for diagnosis and follow up of these patients.TPH1(tryptophan hydroxilase 1) and TPH2(tryptophanhydroxilase2), sex hormones, inflammatory biomarkers, lipid profile can be some of the examinations as an important part of laboratory panel of these patients. Genomics are the best choice of personalized medicine and an important tool of psychiatrist for early diagnosis and treatment of these diseases as a part of the multidisciplinary teams

Keywords: laboratory biomarkers, mood disorders

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THE EFFECTIVENESS OF GYROTONIC EXPANSION SYSTEM EXERCISE ON OVERHEAD ATHLETES SHOULDER JOINT. A PROCEEDING PROJECT

Jonida Drizaj[1]

Abstract: Kinetic chains are the mechanical connections between body segments that enable the sequential transfer of forces and motions during dynamic actions like throwing or hitting. The core muscle are located in the middle of kinetic chain system as a box . To produce powerful movements of the extremities, the core must perform at its best, which will lead to the kinetic chain system better function. Overhead athletes are at risk of both traumatic and overuse shoulder injuries. The evidence on the effect of chinetic chain on shoulder overhead athletes is lacking. The aim of this project is to evaluate the effectiveness of Gyrotonic expansion system exercise on shoulder injuries. The Gyrotonic expansion system comprises three-dimensional (3D) spinal motion which improves spinal motion, muscular strength and flexibility of the spine and other segments located around it. Gyrotonic exercises 3x/week, about one hour a day will be part of training protocol, with the aim of improving mobility and stabitity of shoulder by activating trunk and shoulder region muscles. The subjects included in the study will be students of the University of Sports of Tirana engaged a in range of motion (ROM) on the shoulder joint and the muscle strength of the rotator cuff and trunk. There is a lack of scientific study about the effect of Gyrotonic expansion exercise on sports rehabilitation. Based on the results of current studies and the project's expected results, the Gyrotonic exercise protocol improves mobility and stability of the shoulder joint.

Keywords: overhead,volleyball, shoulder, Gyrotonic expansion exercise, core

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ACID-BASE BALANCE DISORDERS IN PEDIATRIC AGE

Brandi Fahriu[1], Elona Hasalla[2], Ilda Taka[2], Elira Mata Tashi[2]

Abstract: Acid-base balance is the process of maintaining the pH level at certain, appropriate rates for the normal functioning of biological processes in the human body. The study of acid-base balance and its disorders in pediatric ages is a complex challenge for medicine. It as children face rapid physical and metabolic changes during their development. Their acid-base balance is among the critical elements to ensure health and normal development. The objective of this study is for us to better understand the importance of acid-base balance, factors that negatively affect him, the types of anomalies he suffers, etc. The study is descriptive. As a sample, 30 patients were taken, who performed the test astrupogram near the Regional Hospital of the city of Elbasan during the period January-June 2023. For the collection of the necessary information, the answers to the laboratory examinations were used, in our astrupogram test case for each patient. The results of this study showed that among the most frequent abnormalities of the acid-base balance, respiratory acidosis ranked first, followed by other abnormalities related to acid-base balance.

Keywords: acid-base balance, acidosis, alkalosis, astrupogram

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INSANITY AND METHODS OF ITS ESTABLISHING

Mijomir Perovic*[1], Ivana Rabrenovic[2]

Abstract: The paper will deal with the topic of establishing sanity and insanity and the methods used for that purpose in the criminal theory and practice of judicial authorities in Montenegro. The paper deals with the problem of determining significantly reduced sanity and the institute of Actiones Liberae in causa, the guilt of the perpetrator who, under the effect of alcohol and psychotropic substances, brought himself to such a state. The subject topic in the paper will also be the application of the institute of significantly reduced sanity for those perpetrators of the criminal act and their guilt. It will point out the shortcomings encountered in judicial practice in Montenegro with proposals for possible changes to provisions in the Criminal Code that treats the concept of sanity and insanity, and the Criminal Procedure Code that defines the issues and problems of psychiatric expertise. The Criminal Code does not regulate the psychiatric examination of other participants in the criminal trial, where it would be mandatory and necessary to do so. Only fter a complete analysis and assessment of all presented evidence as well as the opinion of the expert psychiatrist, will the court be able to assess whether the testimony of the person who has been diagnosed with a certain degree of mental disorder is reliable.

Keywords: sanity, guilt, insanity, psychiatric expertise

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VITAMIN D DEFICIENCY IN ASYMPTOMATIC, HEALTHY, YOUNG NURSERY STUDENTS AT UAMD

Jorida Zoga[1], Majlinda Kallco[2], Daniela Haxhihyseni[2], Rezarta Kalaja[2], Marsida Krasniqi[2]

Abstract: The study aimed to determine vitamin D status and the frequency of its determinants related to diet, clothing, lifestyle, and exposure to sunlight among young healthy nursery students studying at ''Aleksander Moisiu" University, Durres, Albania. This cross-sectional study included responses gathered on the questionnaire from nursery students from the 9th of April 2023 till the 30th of April 2024. All the participants were healthy young adults who gave written informed consent to participate in the study. Questions regarding demographics, sun exposure, diet, and living patterns were recorded. Serum 25 (OH) vitamin D3, calcium, and phosphorus levels were measured through laboratory examination. For serum 25(OH)vitamin D, the cutoff values ≤ 20ng /ml, ≥ 21-29ng /ml, and ≥ 30ng/ml were defined as deficiency, insufficiency, and sufficiency respectively. The total number of nursery students enrolled in the study was 382. Among the participants, 350 (91.6%) were females and 32 (8.4%) were males. Mean ± SD age was almost similar (19.32 ± 2.56 vs. 20.03 ± 2.05). The majority of the females 320(91.4%) had BMI within normal range. Vitamin D deficiency was found in 267 (70%), insufficiency in 92 (24%), and only 23 (6%) had sufficient levels. Determinant factors reported by the deficient group (n=267); milk up to 250 cc was consumed by 50%, one egg per day in diet was taken by 37.8% and intake of cod liver oil was less common in only 10.4%. Vitamin D deficiency is common among healthy young adults, particularly females who need to take vitamin D in their diet.

Keywords: Vitamin D, nursery students, diet

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SPINAL TRAUMA

MSc Besim Dervishi*[1], PhD.c. Daniela Bimi[2]

Abstract: Trauma is one of the leading causes of death and disability worldwide in the first four decades of life. Damage to the trunk (vertebral column, ribs, sternum) present serious problems, not only from damage to their skeleton but also to the organs and structures in which they are located. Their accompanying injuries, such as paralysis or inferior paralysis, are still a major misfortune for the individuals who suffer and their families too. A spinal cord injury is often referred to as an injury to the spine, the rigid supporting structure that consists of the vertebral column. For the possibility of damage to the vertebral column, any individual who complains of pain in the relevant regions should be suspected, for unconscious patients, for those injured by moving vehicles with significant speed, radiation from heights. This is a life changing, catastrophic event, resulting in partial or complete paralytic/neurological loss affecting the limbs and autonomic nervous system. The complexity and gravity of the treatment of cervical spine injuries is closely related to the spinal cord, nerve roots, and subsequent stability of bone structures from ligament injuries.

Keywords: damage, spinal trauma, vertebral column, organs, people

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MALNUTRITION AS A GLOBAL CHALLENGE, EFFECTS ON CIİLDREN HEALTH

Emirjeta Kunıqı, Enis Urucı, Majlinda Kallco, Jorida Zoga, Irida Ikonomı

Abstract: Malnutrition refers to deficiencies or excesses in nutrient intake, imbalances of essential nutrients, or impaired utilization of nutrients. The double burden of malnutrition consists of undernutrition and overweight and obesity, as well as diet-related non-communicable diseases. Malnutrition manifests itself in four broad forms: wasting, stunting, underweight, and micronutrient deficiencies. Care delays prevent children from reaching their physical and cognitive potential. Underweight is defined as low weight for age. A child who is underweight may be stunted, wasted, or both. Micronutrient deficiency is the lack of vitamins and minerals that are essential for body functions such as the production of enzymes, hormones and other substances necessary for growth and development. Every country in the world is affected by one or more forms of malnutrition. Combating malnutrition in all its forms is one of the greatest global health challenges. The Global Nutrition Report 2022 (GNR) provides the world's most comprehensive picture of the state of global nutrition and assesses the scale of the challenges facing the fight to tackle poor diets and malnutrition in all its forms. Creating one of the biggest current societal challenges in the world. The need for bolder, sustained and more coordinated action on food that reaches beyond the nutrition community has never been greater. When the enormous and interrelated health, economic and environmental burdens are calculated, this global nutrition crisis is a reality we can no longer ignore. To evaluate/diagnose the level/state of nutrition in the age group 6-20 years and especially to evaluate the complications of malnutrition. Let's promote a healthy lifestyle and nutrition!

To promote the involvement of students in physical activities/sports which prevent malnutrition and a number of diseases related to it. To address the issues in policy-making institutions for the implementation of preventive policies for a healthy diet and promotion of sports activities in schools as community centers. To identify/evaluate the level of malnutrition, under-nutrition, under-nutrition, anemia in school children of Durrës district. Malnutrition is one of the main challenges, treatment, prevention, WHO, health promotion in the implementation of a healthy diet and lifestyle. Malnutrition is a global problem, mainly in developing countries, of which our country is also a part. It also remains among the main focuses of WHO and international organizations. Physical examination, measurement of weight/height indicators for age and gender, measurement of BMI and Hb values. hemoglobin to identify possible complications related to malnutrition such as undernutrition and overnutrition. The target is 9-year school students and students at the Durrës district university. This study will be carried out according to the retrospective cross-sectional model 2020-2022 in combination with the data that will be measured prospectively in 2023-2025 in the age group 1 - 21 years. The data will be obtained from the reports/surveillance of malnutrition levels by PIH, INSTAT, MOH, WHO as well as the register of laboratory analyzes to evaluate the complications of malnutrition such as anemia, micronutrient deficits year D. Anthropometric measurements of weight and height will be carried out in certain periods during the prospective study. The tools that will be used are a stadiometer fix (in 0.1 cm) and a precision electronic scale (in 0.1 kg). Data analysis: The variables will be analyzed. Demographic variables such as: age, gender, place of residence. Socio-economic variables, the state of poverty, the level of education and employment of the parents will be analyzed. The forms of malnutrition will be analyzed, as well as complications such as anemia, micronutrient deficits. The collected data will be entered into Microsoft Office Excel and will be processed by SPPS software. The results together with recommendations will be reflected in the final paper.

Keywords: Nutrition, children, factors, malnutrition, anemia, weight, height

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PULMONARY REHABILITATION FOR CHRONIC LUNG DISEASES

Ledi Neçaj

Abstract: Chronic Obstructive Pulmonary Disease (COPD) is now the main cause of disability in the developed world. The advance of COPD is related to increasing breathlessness, disability and periodic hospitalizations. An ageing population in the developed world and increasing cigarette consumption in developing countries expand the global impact of this condition. The disorder associated with COPD leads to a decrease in physical activity and failure of functional independence. The aim of this study was to evaluate the effects of PR in patients with normal exercise capacity on health-related quality of life and exercise capacity. The mean FEV1/FVC was 59.4± 14.1%, and the mean FEV1 was 64.8± 23.0% of expected. Most topics had mild to moderate COPD. The PImax and PEmax were normal. These subjects had no previous participation in home-based or hospital-based PR. All the subjects had normal maximal V˙O2 and work rate before PR. After PR there were still considerable improvements in maximal V˙O2 (mean increase of 101.3 mL/min, p <0.001) and work rate (mean increase of 8.2 watts, p<0.001). Ventilation, heart rate, and mean blood pressure were constant following PR. The maximum oxygen pulse at maximum exercise was significantly increased with PR (p<0.02). The SpO2 and end tidal PCO2 at peak exercise did not significantly improve after PR. Although dyspnea scores at rest were low and did not improve significantly with PR, dyspnea at end-exercise was significantly improved after PR (p=0.01). PR should be the responsibility of the clinical management of patients with COPD, even for those with normal exercise capacity. However, benefits on disease progression, hospitalization, and survival for these patients remain unknown. The main role in the management of any chronic disease, including lung diseases, is to improve the quality of life (QL) in patients. Although strongly recommended by scientific societies pulmonary rehabilitation programs still need to be more widely implemented. PR programs have shown a high level of evidence of benefits in chronic respiratory patients, particularly those with COPD.

Keywords: pulmonary rehabilitation; COPD; exercise capacity, lung diseases

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WOUND MANAGEMENT USING INNOVATIVE METHODS: VAC THERAPY

Lutfi Lami

Abstract: Delayed healing of wounds specialized in the wounds of the rules and healthy persons with their health is another big one. It leads to pain, morbidity, prolonged treatment and requires huge expenses that impose a huge social and financial burden. Vacuum closure (VAC) is an alternative wound management option that uses negative pressure for people with wounds for spontaneous healing or minor reconstructive options. The VAC application method requires thorough compression, adequate hemostasis, and application of sterile foam dressings. A sheath tube is inserted into the foam and the wound is sealed with adhesive tape to make it ventilated. The coupling tube is connected to a vacuum pump with a fluid reservoir. The machine delivers alternate or intermittent suctions, ranging from 50 to 125 mmHg. VAC dressings are changed on the third day. Negative pressure therapy stabilizes the wound environment, reduces wound edema/bacterial load, improves tissue perfusion, and stimulates granulation tissue and angiogenesis.. in terms of reducing wound volume, depth, duration, and cost. To assess the effects of NPWT on surgical wounds (primary closure, skin graft or flap closure) expected to heal by primary intent. Familiarity with the vac system, management and use of this innovative therapy, advantages and disadvantages of vac therapy. The clinical benefits of V.A.C. ATS treats all possible wound sizes, T.R.A.C. technology. and smart alarms help ensure patient safety, Large touchscreen vac display with on-screen user guide, T.R.A.C. makes dressing changes easy, Large container capacity of 500 to 1000ml minimizes the number of container changes. hours of battery life make portability easier. Greater patient comfort Special filter system minimizes wound odor Choice of compression intensity level Stimulates localized blood flow and reduces bacterial colonization by providing moist wound healing environment. Reduces localized edema.and improves epithelial migration.Exerts negative pressure to uniformly pull the wound closed (wound contraction).Provides more effective therapy because target subatmospheric pressure is monitored and maintained for the accuracy and effectiveness of V.A.C therapy..Intervention with few in relation to standard treatments. Reduced number of bacterial cells. The closed and humid environment perfectly controls the aroma and the exudate. Reduction of surgical interventions.

Keywords: (NPWT); (VAC); Difficult wounds; Negative pressure wound therapy; Sub-atmospheric pressure coating; Vacuum sealing.

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THE VALUE OF BONE MARROW ASPIRATION CYTOLOGY IN THE PREDICTION OF MARROW BIOPSY DIAGNOSIS. AN OBSERVATIONAL STUDY IN A TERTIARY HOSPITAL CENTER IN ALBANIA

E. Çeliku[1]; M. Kokiçi[2]; M. Ikonomi[1]; V. Semanaj[2]

Abstract: Comparing bone marrow aspiration cytology with bone marrow trephine biopsy histopathology involves evaluating their diagnostic utility, advantages, and limitations in various clinical contexts. Hematological disorders are complex and require additional techniques such as hemogram and immunophenotyping. Hemogram provides an overall picture of blood health, immunophenotyping offers detailed information on cell populations and malignancies. As we know, bone marrow trephine biopsy offers a comprehensive view of the bone marrow architecture and although conventional morphology remains the gold standard for paraffin-embedded BM trephines, with the addition of immunohistochemical (IHC) staining we can have a firm diagnosis. On the other hand, bone marrow aspiration cytology provides detailed cellular information and in clinical practice, the choice between the two or the decision to use both depends on the specific diagnostic needs and the clinical scenario. We screened 60 BMB, 70% of them were done for suspected MPN and 30% for other hematological conditions. A comparative evaluation was performed to see the complementary role of both the procedures, BMA and BMB. We excluded 9 cases as inadequate BMB samples due to crushing artefact, fragmentation or scarce core length biopsy. Immunohistochemistry (IHC) was employed whenever required. In our study, 90% of cases were confirmed on bone marrow biopsy and the remaining cases final diagnosis was achieved with the help of other ancillary investigations. The concordance rate between BMA and BMB was 85%. Both bone marrow trephine biopsy (BMB) histopathology and bone marrow aspiration (BMA) cytology have unique roles in the diagnosis of bone marrow-related disorders but especially in the management of hematological diseases. BMB is the major diagnostic tool for myeloproliferative neoplasms (MPO) and important in cases where the bone marrow cytology fails, "dry-tap", such as in Hairy cell leukemia and aplastic anemia. Furthermore, BMA has low sensitivity in detecting solid tumor metastasis and lymphoma involvement. The application of ancillary techniques such as IHC and flow cytometry give an additional advantage in the diagnosis of other various diseases.

Keywords:

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TEENAGER 'KNOWLEDGE ABOUT STDs AND THEIR INCIDENCE IN THIS AGE GROUP

Migena Prifti, Brizida Refatllari

Abstract: Sexually transmitted diseases (STDs) are the most frequent gynecological pathologies that affect a large group of the population, mainly females. Taking into account the lowering of the starting age for sexual activity, it was observed that adolescence has the greatest chance of infection, than the rest of the sexually active population (excluding risk groups). This is due to many reasons which will be mentioned in the study. From the medical point of view, STDs are part of a series of pathological strains such as: bacteria, viruses, protozoa, etc., which have in common the sexual transmission from one individual to another, as well as mainly genital lesions. The risk of their consequences on the health of the woman, as well as the partner, make STDs one of the acute preventive problems in world medicine. Many studies have demonstrated strong correlations between existing lesions and reinfection.

- The information that teenagers (males and females) of 15-20 years of age have about STDs.
- Which infection is more frequent in this age group.
- The incidence of the presence of two or more strains simultaneously.
- Sensitization of the female population towards prognostics and not diagnostics in this aspect.

In the first part of the study, a random group of 1000 teenagers (750 females and 250 males) high school and UAMD students in the district of Durres was included, who completed a questionnaire structured in 19 closed questions and alternatives choice. In the second part, the people (women) who had gynecological complaints such as: recent abdominal pain, increased secretions, itching and burning were submitted to a vaginal visit with a speculum and taking a vaginal swab for 12 types of vaginal infections. The conclusions were compared with data from European countries. From the first part of the study it was found that teenagers have more information about HIV/AIDS (82.5%) and very little or none about the other part of SST. Receiving information is more electronic (internet) 56%, from health + school institutions (40%). 90% of them felt the presence of a medical consultancy (specialized medical personnel) during this age for these problems was necessary. In the second part, 96 people who complained about gynecological problems were consulted, but only 39 of them agreed to a gynecological visit and laboratory examination. From the results obtained, we had: 7 negative cases, 4 cases with more than 1 positive strain, 6 HPV cases positive, 2 cases of Gardnerella. The rest was dominated by candida.

Keywords: SST, prevention, prophylaxis, teenager, sexual contact

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EVALUATING NURSING KNOWLEDGE AND MANAGEMENT IN PEDIATRIC HEMODIALYSIS: A STUDY OF QSUNT PEDIATRIC NEPHROLOGY DEPARTMENT

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Abstract: Introduction: Kidney pathologies are one of several problems in health care and society in general. In this topic, an important place is occupied by nursing care and nursing management. The kidney, the anatomy of the kidney, the scientific concept of hemodialysis, the process of hemodialysis, the history of development, nursing management, statistical analysis of the nurses included in the study were treated. Material and Methods: The methodology of the study includes the use of a questionnaire to collect information from 30 nurses at QSUNT Pediatric Nephrology Hemodialysis department. The first part of the questionnaire is related to age, work experience. The second part is related to the knowledge of nurses during practice in the hemodialysis ward. The purpose of this study is to investigate and identify the problems that arise during the care of children on hemodialysis, and to evaluate the procedures and the implementation of nursing protocols in the management of children undergoing the hemodialysis procedure. Results: From the questionnaire and our observations during hospital practices, we concluded that the nurses of the hemodialysis ward should strengthen their knowledge through continuous nursing educational programs. Conclusions: The a need to involve more specialized nurses, although the current staff has a stable base of experience to improve training and protocols to guarantee safe care for patients in the future.

Keywords: Nurse, kidney, hemodialysis, nursing management, pediatric patient.

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CHALLENGES AND PROBLEMS OF NURSES IN UCCK DURING THEIR WORK IN THE NIGHT SHIFTS

Bekim Sejdiu[1], Hasan Gashi[2], Shpresa Ademi[3], Halit Bajraktari[4], Elma Sejdiu[5]

Abstract: Working time is an old phenomenon that requires fair and correct management, working time is calculated to be as old as mankind, in the world people working in days shift static shift and in afternoon shift and night shift-moving shift. Working in night shift is very hard. Biggest challenge for the management staff in the entire work system is night shifts management.The research carried out aims to identify the challenges and problems that accompany the nurses during the night shift after the end and the problems that they see in the institutional aspect of their workplace. According to the analysis of the data collected from the respondents, we see that the quality of their life is weaker due to the night shifts, social life is more isolated, nutrition is not well managed, and there is a marked inequality from the management side but also from the institutional side in relation to their payments and overtime hours. A shift nurse works on average about 170 to 190 working hours per month. Nurses with shifts work more hours than nurses who work in static shifts, the hours completed more are not paid nor compensated, the night hours of nurses have a big difference in pay compared to doctors 1/10, and the quality of their life is obviously lower than that of nurses who work in static shifts.

Keywords: Management. Nurses, Night shifts, Night hours

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EDUCATION AND TRAINING OF EMERGENCY MEDICAL CARE PROFESSIONALS AND COMMUNITIES IN THE MANAGEMENT OF CARDIAC ARREST

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Abstract: Cardiac arrest is the sudden loss of heart function, occurring within minutes, which is accompanied by signs and symptoms such as a lack of heart work, breathing. Loss of consciousness usually results from electrical disturbances in the heart and losing the heart's function as a pump and causing severe hypoxic-systemic ischemia.. The primary goal of Early Heart Attack Care is to promote public awareness that heart attacks have "beginnings" that can occur weeks before the actual attack. People with lower levels of education generally have worse cardiovascular health, more comorbidities, and a higher overall risk for developing cardiovascular diseasAccording to 2023 American Heart Association data, nearly 45 percent of out-of-hospital cardiac arrest victims survived when bystander CPR was administered. When a person collapses suddenly and isn't breathing or has no pulse, bystanders are often reluctant to help with CPR for fear of doing it wrong or making the situation worse. If not treated within minutes, One alternative consists of educational interventions for thepopulation as a means of enabling the individual to make the necessary changes in their lifestyle, as well as professional education measures to disseminate the management of cardiovascular emergencies with considerable impact on the survival of individuals with these problems.SCA results in death. The normal rhythm of the heart can only berestored with defibrillation, an electrical shock that is safely delivered to the chest by anautomated external defibrillator (AED). Emergency medical management and care. Monitoring vital signs. BLS -AED, ACLS. Resuscitation by public witnesses improved the short-term outcomes (returnof spontaneous circulation, survival admission) but did not increase the survival todischarge rate.. Educating the community and family members so that they understand the status and importance of seeking immediate care in case to sudden cardiac arrest and also need to know how to carry out CRR measures

Keywords: Management, Education ,trainig, Sudden Death Syndrome, CPR - BLS, AED, ACLS.

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MANAGEMENT INITIAL OF MAXILLOFACIAL TRAUMA

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Abstract: Maxillofacial injuries are frequent cause of presentations in an emergency department. Maxillofacial trauma is any injury to the face or jaws. Facial trauma may present with skin lacerations, burns, obstruction to the nasal cavity or sinuses, damage to the orbital (eye) sockets, fracture to the jawbone, and missing or broken teeth. Strictly speaking, irrespective of the injury, maxillofacial trauma patients should be given adequate oxygenation with uninterrupted saturation monitoring. The spinal collars should be applied with extreme caution to prevent any inadvertent posterior displacement of mandible thus complicating airway. Immobilize jaw by wrapping a bandage under the chin and tying it securely over the head. Apply ice to control swelling and bleeding. Seek emergency care. Consult an oral and maxillofacial surgeon immediatel. The need of the hour is a multipronged approach requiring a partnership between several departments. All the same, each case is unique; thus, the management is exacting even for the most experienced of professionals. In any given scenario no treatment approach can be described as being sure and flawless. The need of the hour is a multipronged approach requiring a partnership between several departments. While new technology and material developments have helped ease the situation, it is the timely intervention, sheer skill, and presence of mind of emergency personnel, and surgeons that count. The gravity of all maxillofacial injuries lies in the fact that they pose an immediate threat to life as a consequence of its proximity to both the airway and brain. Immediate management of maxillofacial trauma is DRSABC. The gravity of all maxillofacial injuries lies in the fact that they pose an immediate threat to life as a consequence of its proximity to both the airway and brain. AO-ASIF guidelines of rigid fixation follow four basic principles to ensure adequate treatment of fractures: bony segment reduction, stable fixation and immobilization of fragments, maintaining blood supply, and early function. The need of the hour is a multipronged approach requiring a partnership between several departments. While new technology and material developments have helped ease the situation, it is the timely intervention, sheer skill, and presence of mind of emergency personnel, and surgeons that counts

Keywords: Airway management, bleeding, emergency care, facial injury, experienced, professionals.

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CARDIAC ARREST IN SPECIAL CIRCUMSTANCES: A CASE REPORT OF DROWNING PATIENT

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Abstract: Drowning is a leading preventable cause of unintentional morbidity and mortality and is the cause of over 500,000 deaths annually across the globe. According to the World Health Organization, drowning claims the lives of > 40 people every hour of every day. Early BLS and ACLS significantly improve the chances of survival. Data also shows the greater power that the duration of submersion exerts over the outcome. Victims rescued from the water within 5 minutes of submersion have a 70% chance of survival with late BLS and ACLS care and a 90% chance with immediate care. The dominant pathophysiological mechanism of drowning includes the development of acute hypoxiaThe most common dysrhythmias are asystole and pulseless electrical activity (PEA). The objective of this case report is to show that fast and immediate ALS in special circumstances improves the survival of drowning patients. The material used to present the case was collected from the medical protocol of the patients in the Emergency Medical Centre of Canton Sarajevo, on May 21st, 2024. Presentation of the case of a young male drowning patient with out of hospital cardiac arrest. The initial rhythm was asystole and the cardiopulmonary resuscitation was provided due to Advance life support guidelines for unshockable rhythms. The patient was treated byEmergency Medical Service Team and transported to the Emergency Clinical Centar University of Sarajevo with HR 69/min, RR 130/80mmHg, SpO2 84%, on oxygen support of 10L/min, and consequently hospitalized in the Intensive Cardiac Care Unit. Early use of BLS and ACLS by a rescuer on site is crucial for the survival of victims of drowning with minimal neurological sequelae in the postarrest period. When a person drowns in cold water, particularly children, the "arrest time" may be extended due to the protective effect of hypothermia. This slows metabolism and thus reduces the oxygen needs of brain cells.

Keywords: Drowning,BLS, ALS, CPR, Resuscitation, Cardiac arrest, Out of hospital cardiac arrest

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ASSESSMENT OF ARTERIOSCLEROTIC RISK IN ROUTINE LIPIDOGRAMS IN AMBULATORY PATIENTS

Sibora Hasanaj[1] Xhesika Agaj[1] Admir Nake[2]

Abstract: Atherosclerosis has a multifactorial etiology. The most common risk factors include dyslipidemia, hypertension, diabetes mellitus, smoking, age, male gender, and family history. A sedentary lifestyle, obesity, diets high in saturated and trans fatty acids, and certain genetic mutations contribute to the risk. While a low level of high-density lipoprotein HDL-cholesterol is considered a risk factor, pharmacological therapy that increases HDL-cholesterol has yielded negative results raising concerns about the role of HDL in atherosclerosis. To determine arteriosclerotic risk in age and gender variations in a simple routine lipidogram examination. Material and method: Analytical retrospective study, during the year 2022-2024 in an outpatient clinic. From the 300 lipidograms examined, it was observed that hypercholesterolemia predominated in 165 cases (55%), hypertriglyceridemia in 104 cases (34.6%), high LDL-cholesterol values in 28 cases (9.33%) and high values of HDL-cholesterol in 3 cases (1%). Predisposition for high values of lipidogram parameters was the male gender. In women (117) the very low arteriosclerotic risk was 18 (15.38%), average 90 (30%), moderate 9 (7.69%). While in men (183) very low arteriosclerotic risk 16 (8.74%)), average 88 (48.08%), moderate 60 (32.7%) and high 19 (10.38%). Regarding the arteriosclerotic risk, the risk for cardiovascular events was identified.

Keywords: arteriosclerosis. arteriosclerotic risk

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HOME NURSING: AN "INDISPUTABLE NEED"

Blerim Maloku[1]

Abstract: This study analyzes the indisputable need for home nursing service and its impact on improving health care and quality of life for patients. Home nursing represents an important intersection between health care and the residential environment, bringing significant benefits to patients and their families. The study is based on the analysis of scientific literature and studies carried out in the field of home nursing service, cases from the Medical Care Lami clinic, which has been active in residential care for almost 10 years, in the city of Durres. Also, nurses and patients involved in this service were interviewed to provide an internal perspective. Home nursing service has shown a consistent improvement in chronic disease management, health monitoring and improved quality of life for patients. Home nurses provide personalized care and emotional support, reduce the need for hospitalization, and promote independent autonomy. In the context of Durrës, the home nursing service has been positively evaluated by patients and nurses. The advantages of this service include personalized assistance, reducing the need for hospitalization and promoting patient integrity. Discussion: Despite the known advantages, there are logistical and organizational disadvantages that may present challenges in providing this service efficiently. Good coordination between the nursing team and local health structures is key to the success of the service. Home nursing service is a need to improve health care and quality of life for patients. Improvements in coordination and organization can bring an increase in the efficiency and quality of this service, contributing to the improvement of health in the community. This study concludes that the need for home nursing service in Durrës is indisputable, and combining the specific benefits and challenges of this city can bring concrete improvements in the provision of health care and quality of life for its residents. The elaboration of these local dynamics can be used to achieve a more effective and suitable service model for the city of Durrës.

Keywords: Home nursing, Quality of life, Health care, Chronic disease management,

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NURSING SERVICE AND PATIENT CARE STANDARDS

Ermioni Dabaj[1]

Abstract: Standards are defined as achievement benchmarks based on a desired level of excellence.
The role of nursing care in patient safety and care is strengthened and increased even more when good cooperation between the medical staff and the quality improvement coordinator is ensured, in the framework of the hospital efforts to provide safe, effective, efficient and qualitative services for the patient.
Their role is crucial in virtually all aspects of patient assessment and care. In their working process and practice, the nursing staff should be characterized by the efforts to meet the professional nursing standards, which are reflected in the care and safety of the patient. Goals:
- To offer patients and their relatives reception and assistance based on respect and humaneness.
- To ensure equal access to hospital services for everyone.
- To restore trust for a quality and dignifying service to citizens.
- To protect the figure of the patient through a universal healthcare system.

Methods:
- This material has been prepared based on nursing care standards, referring to previous experience when Durrës Hospital acquired the status of an accredited hospital. Furthermore, a preliminary self-assessment has been made to meet these standards.

Results:
- Designation of an appropriate nursing diagnosis
- Additional care for a more qualitative than quantitative service to the patient
- Exertion of time, materials and energy in human resources
- Identification of interventions and managerial needs, enhancement of the professional image, increase of teamwork, encouragement of coordination between services and clinics, clarification of budget needs.

Conclusions:
- This whole process is in continuous progress and our future goals aim to permanently enhance and improve the quality of the patient service.

Keywords: Standart, sukses, pacient, planifikim i sigurt, respekt.

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"FROZEN SHOULDER" TREATING WITH LASER NEEDLE ACUPUNCTURE

Rabit Sadiku

Abstract: Frozen shoulder or Periarthritis humero scapularis (PHS). The clinical overview includes all degenerative changes and inflammation of all anatomical structures that are involved in the construction of the shoulder. Due to the changes in the clinical overview, the organic and functional consequences, both local and distal should better be treated as a syndrome. The appearance and clinical picture of PHS is both the same and different from case to case. During the study we observed two symptoms: amplitude of movement and pain in the patient's shoulder. Other symptoms were not of interest to the study. The group of patients with PHS was treated at Aku Center-Gjilan; Kosovo. A total of 20 patients were treated. The treatment lasted 5-10 days of sessions. 6-8 acupuncture points were stimulated with Laser needle acupuncture. The abduction and external rotations of the frozen shoulder and the degree of pain were monitored. The amplitude of the movement was basic for the functioning of the shoulder, as long as the pain is a present objective symptom. Only 5 sessions were necessary for the success of the treatment, but the majority continued up to 10 sessions. All patients have responded to Laser needle acupuncture; and this has affected the increase in the range of motion in the frozen shoulder. Patients who had increased the range of motion in 80-90% after the application of 5 sessions were not treated further. From this we have learned that if we manage to increase the abduction at the same time we have managed to improve the external rotation of the shoulder. were assessed as: strong pain, pain with average intensity, mild pain and no pain. Treatment with Laser needle acupuncture is achieved by placing laser beams without needles and piercing through acupuncture points. The combination of infrared, green, blue rays differ in penetration and the stimulation is mainly biological and without side effects. In Aku Center Lasern Acupuncture has been applied since the year 1993. The results are very good.

Keywords: Laserneedleacupunture, PHS

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IMPORTANCE OF IMPLEMENTATION OF TELEMEDICINE IN ONCOLOGY CARE DURING THE PANDEMICS OF COVID 19 BASED ON META ANALYSIS

Katarina Kuzmanovic

Abstract: Implementation of telemedicine was crucial need during the pandemic caused by the severe acute respiratory coronaviruse 2 (SARS-Cov-2). In march 2020 after the worl wide spread , the World Health Organization declared the corona virus disease (COVID -19) outbrake. COVID 19 started to spread from Vuchan in 2019 in China very fast with a large numbers of people geting sick in the short time of period. During this time cancer patients were heavily impacted and had problems with further medical treatmet. There was need to ensure their follow -up and menagement from distance. As well this patients needed psychological support in the insecure time . Distant method that was provided was telemedicine for oncology patients.Telemedicine was the most suitable method in order to prevent spreding of the disease in the medical care institutions. This provided method was highly effective even after the restrictions. Considering the fact that the breast cancer is the second most diagnosed cancer this group of oncology patients was group of interest. Results of implementation of telemedicine are remacable and will be more in the future. At first grading the implementation of telemedicine was from the“ lession learned“position but today we have opportunity to advance this method and to develope for future generation. This Meta analysis the social and medical aspect of the implementation as well as good and bad sides of telemedicine that we should pay attention in the future.

Keywords: Implementation, telemedicine, COVID -19, the severe acute respiratory, cancer patients

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NURSİNG CARE OF PATİENTS WİTH ANGİNA PECTORİS

Mexhit Mustafa[1], Agim Krasnqi [2]*, Qëndersa Gashi [3], Aldrin Mustafa[4]

Abstract: Angina Pectoris (chest pain) is a temporary imbalance between the ability of the coronary arteries to support the myocardial muscle with oxygen (O2) and its O2 needs. It is caused by poor myocardial supply and O2 needs. The most common risk factors are: arterial hypertension, smoking, dyslipidemia (high concentration of cholesterol and triglycerides in the plasma), diabetes mellitus, obesity, heredity, gender.To identify the gender and region of patients with angina pain, To identify the nursing staff based on work experience. To identify the nursing assessment of patients with angina pain. To identify the opinions of patients in relation to nursing care in the Cardiology Clinic at the University Clinical Center of Kosovo during 2019. The quantitative approach was used in the study as it is a logical and continuous process for data collection through a questionnaire with a total of 19 questions, grouped into three groups. In total there were 100 respondents, 50 nurses and 50 patients.The most optimal and safe way of nursing care for patients with anginal pain constantly remains a challenge for nursing professionals. In our study, an increase in the implementation of nursing care for these patients was observed, especially in the Cardiology Clini,. Regarding nursing care and the attitudes of patients towards nurses, the results of our study agree with the results of the author "Faye L. Hagerling 2015" University of Colorado, where as a result there is a positive evaluation in the behavior of nurses and nursing care towards patients. In general, the results obtained from the conducted study present a positive assessment of the work of nurses and the majority of patients are satisfied with the knowledge and professionalism of the nursing staff. The professional preparation of nurses 88% of nurses have expressed that they try to be as accurate as possible in the administration of therapy, from the total number of patients surveyed, 68% of them have expressed that they receive appropriate nursing care when they do not feel well and have need for help and nursing intervention.

Keywords: Angina pectoris, atherosclerosis, pain, nursing care. patients,

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VARICELLA IN CHILDHOOD-VACCINATION ROLE AND LESSONS OF CARING FROM A CASE STUDY

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Abstract: Varicella (chickenpox or varicella-zoster virus) has long been regarded as an unimportant and predictable disease of children. The varicella-zoster virus exposes people to the chickenpox rash 10 to 21 days later. The rash often lasts about 5 to 10 days. Other symptoms that may emerge 1 to 2 days before the rash include fever, lack of appetite, headache, fatigue, and a general sensation of illness. Complications are generally mild and rarely severe, in particular if the person has been vaccinated against chickenpox. The case study presented in this paper is of a female child nine years old, vaccinated and affected with varicella, who has been hospitalized with a higher fever and generalized papules and vesicles in the skin, oropharyngeal hyperemia with pustules in the pharynx with no other symptoms associated. The treatment and monitoring consisted of performing laboratory tests, continuous temperature measurement, and administering antipyretics and antihistamine powder to calm itching. After 5 days of hospitalization, the child was discharged. The National Vaccination Program in Albania recommends two doses of the varicella vaccine. The first dose is administered to children aged 12–15 months, and the second dose to children aged 4-6 years. Varicella vaccination is cost-beneficial when considered from a societal perspective, since it has potential benefits on health and severity of symptoms as well as in the cost of caring, which is mostly related to the cost of caring for a child at home. Finally, the education of children and relatives for the prevention of widespread infection with hand hygiene and isolation is of outstanding importance.

Keywords: Varicella, vaccination role, caring, prevention, case study.

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HIP AVASCULAR NECROSIS MANAGEMENT. OUR EXPERIENCE OF MANAGEMENT OF PATIENTS WITH AVN AFTER COVID19 INFECTION

Neritan Myderrizi, Erenato Bushaj

Abstract: Avascular necrosis is a complication caused by damage to the blood circulation of the bone and results in cell death and bone collapse. All the factors that damage the blood circulation in the bone can cause vascular necrosis. Glucocorticoid use is one of the most important causes of avascular bone necrosis (AVN). Although corticosteroids are frequently used to treat acute COVID 19 infections, patients are prone to its side effects, particularly AVN. Coagulopathy is a pathogenic part of COVID 19, which causes venous thrombosis and block blood vessels of the bone. Even the studies for corticosteroid use are not conclusive, patients being treated with corticosteroids for COVID-19 are at risk for AVN possibly due to the combination of COVID 19 infection and corticosteroid use, or the use of high-dose steroids alone. The purpose of this study is to clarify AVN as a long-term sequalae of COVID-19 and to describe our management of AVN in COVID19 patients, and discuss the current literature regarding AVN and COVID-19. 19 patients with AVN of femoral head having been treated with corticosteroids during COVID 19 infection were studied. All cases with previous hip pain and injuries as well as the patients treated previously with corticosteroids were not included in the study. Period of corticosteroid administration, MRI and radiographic images and severity of disease are studied. 19 patients (16 male and 3 female) are treated in our clinic. Mean age 52.4 (33-67years old). The course of infection was mild in 3 patients and moderate in 9 and severe in 7 patients. Steroid therapy (dexamethasone) was taken 8mg daily for more than three weeks. The onset of symptoms was about 60 days (2-8 months) after the infection. Hip pain was the main complain and 78% had bilateral involvement. Limping was seen in 53% of the patients. Only 8 patients underwent surgical treatment after one year. AVN of femoral head can be a late complication of COVID 19 and can be related with long term use of Corticosteroids.

Keywords: AVN, corticosteroids, COVID 19

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DIAGNOSING HELICOBACTER PYLORI IN EARLY STAGE THROUGH THE UREA BREATH TEST AMONG THE YOUTH

Erisa Grabocka[1], Gentian Stroni[2]

Abstract: The study focuses on H. Pylori as the main pathogen causing progressive damage in the gastro-duodenal system. Numerous studies have shown that 50% of the population is carriers of H. Pylori, and in developing countries, including Albania, the prevalence is higher. For this reason, this study highlights the advancements in detecting the presence of the microorganism in the human body through UBT. This test is conducted for the first time in the city of Korça and brings innovation, surpassing other methods as it is a fast, simple diagnostic test with high sensitivity and specificity rates. The aim of this study is the early assessment of H. Pylori in the student population at the University of Korça, identifying carrier cases to prevent the complications caused by this microorganism, consequently impacting the health of the population by interrupting its transmission chain. The popularization of this test is beneficial not only to the individual but also to Public Health. The use of this diagnostic method will be an innovation for evaluating Helicobacter Pylori in the city of Korça, unlike the widespread use in developed countries. Methodology: The study is conducted at the University of Korça. Detailed questions presenting factors of high risk for the presence of H. Pylori are included in a survey with students, followed by the UBT test. After the analysis, processing, and interpretation of the gathered data, as well as communication of the results, counseling according to need will be provided. Conclusion: Early diagnosis through UBT, early medical treatment, prevention of complications, assessment of therapy effectiveness by conducting the UBT test again on students with positive results at the beginning of the study..

Keywords: H. Pylori; UBT; student

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TELEMEDICINE AS A SUSTAINABLE SOLUTION FOR HEALTH CARE IN RURAL ALBANIAN AREAS

Alketa Dervishi[1], Blerina Duka[2], Indrit Bimi[3], Elsa Zekolli[4]

Abstract: Rural areas of Albania present difficulties in accessing quality health care services due to limited infrastructure and lack of specialized health personnel. Telemedicine is seen as a promising solution to address these challenges. To promote the implementation of telemedicine as a sustainable solution to improve access to health care in rural Albanian areas. This study begins with an assessment of health care needs in rural areas, in order to identify the main challenges and the most common medical conditions. Next, the most appropriate telemedicine platforms and technologies will be identified, taking into account Internet availability and access to technology. A pilot project will be implemented in several rural communities, providing telemedicine equipment and training local health care staff and residents in the use of these technologies. The effectiveness of the pilot project will be monitored through questionnaires and interviews, assessing patient satisfaction, the quality of care provided and the impact on community health. Finally, an economic analysis will be performed to assess the financial viability of telemedicine as a long-term solution, comparing the costs of implementation and management with the benefits derived from improved health and reduced emergency transfers. Telemedicine is expected to improve access to health services in rural areas, reduce waiting time for medical diagnoses and consultations, and provide a sustainable model and opportunity to be used in other rural regions. The implementation of telemedicine can be presented as an innovative and sustainable solution to effectively manage health care in rural areas of Albania, improving the quality of life and health of this community. This study will provide an empirical basis for future health care policies and the expansion of telemedicine in the country.

Keywords: Telemedicine, Rural Areas, Health Care, Sustainability, Access to Health

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ASSOCIATION OF FRUIT CONSUMPTION WITH SOCIODEMOGRAPHIC FACTORS AMONG SCHOOLCHILDREN IN ALBANIA

Iris Mone[1], Rudina Çumashi[2], Genc Burazeri[1], Qamil Dika[1], Marsida Duli[1], Gentiana Qirjako[1,2]

Abstract: Fruit consumption is vital for children's health providing essential vitamins, minerals and antioxidants that support growth and promote overall well-being. We aimed at assessing the association of fruit consumption and sociodemographic factors among schoolchildren in Albania. A cross-sectional study was conducted in Albania in 2022 including 5,454 schoolchildren aged 11, 13 and 15 years (2,844, or 52% girls). Information on fresh fruit consumption was collected, in addition to data on sociodemographic factors of schoolchildren. Fisher's exact test assessed the association of fruit consumption with sociodemographic factors. The overall prevalence of daily consumption of fresh fruit was ≈59%. It was higher in girls than in boys (62%% vs. 56%, respectively; P<0.001). There was a graded relationship with age: daily fruit consumption was the highest among 15-year-old children (55%) and the lowest among 11-year-old children (65%) [P<0.001]. Furthermore, daily fruit consumption was higher among children whose fathers were employed compared with their counterparts whose fathers were unemployed (59% vs. 52%, respectively, P=0.003). Additionally, daily fruit consumption was higher among schoolchildren pertinent to more affluent families than in those belonging to less wealthy families (62% vs. 56%, respectively; P<0.001). Conversely, there were no significant associations with place of residence or maternal employment status. Our study evidenced a significant lower fruit intake among boys and children pertaining to a lower socioeconomic background. There is need to implement effective programs in Albania which encourage daily intake of fresh fruit in order to improve physical and mental health outcomes among children.

Keywords: Albania, fruit consumption, Health Behaviour in School-aged Children (HBSC) Survey, schoolchildren, sociodemographic factors.

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BREAKFAST CONSUMPTION AND SOCIODEMOGRAPHIC CHARACTERISTICS AMONG ALBANIAN SCHOOLCHILDREN

Iris Mone[1], Rudina Çumashi[2], Genc Burazeri[1], Qamil Dika[1], Marsida Duli[1], Gentiana Qirjako[1,2]

Abstract: Breakfast is crucial for children's health as it fuels their bodies and brains, enhancing concentration, energy levels, and overall academic and physical performance throughout the day. Our aim was to assess the prevalence and sociodemographic distribution of breakfast consumption during weekdays among Albanian schoolchildren. This was a cross-sectional study carried out in 2022. Participants involved 5,454 schoolchildren aged 11, 13 and 15 years (2,610, or 48% boys). Data on breakfast consumption and sociodemographic characteristics was collected. The relationship of breakfast consumption with sociodemographic characteristics was assessed by use of Fisher's exact test. Overall, the prevalence of breakfast consumption during all five weekdays was ≈48%. It was higher in boys compared to girls (52%% vs. 45%, respectively; P<0.001). There was an inverse linear association with age: the prevalence of breakfast consumption during all 5 weekdays was the highest among 11-year-old children (62%) and the lowest among 15-year-old children (38%) [P<0.001]. Also, consistent breakfast consumption was higher among children with employed fathers and/or mothers (49%) than in those with unemployed fathers (42%) and/or mothers (46%) [both P<0.05]. In addition, breakfast consumption was higher among schoolchildren from more affluent families than in those from less affluent families (50% vs. 46%, respectively; P=0.001). However, there was no significant association with place of residence. Our study has documented a significantly lower prevalence of breakfast consumption among girls and schoolchildren from lower socioeconomic families in Albania. These findings highlight the need for targeted interventions to address the disparities in breakfast consumption.

Keywords: Albania, breakfast consumption, Health Behaviour in School-aged Children (HBSC) Survey, schoolchildren, sociodemographic factors

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PREVENTION OF ORAL TRAUMA IN SPORTS FIELD

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Abstract: Oral traumas are possible when practicing sports activity and unlike other body trauma that are inevitable, these types of trauma can be avoided or decreased by the application of appropriate pre -existent measures. Physical activity brings numerous benefits to each age group of populations such as improving psychosocial health and functional parameters and preventing various diseases in the body that are a good ratio of the cost-effectiveness of public health in the population. On the other hand, participation in sports activities increases the risk of damage including dental and facial traumas that can be prevented by implementing appropriate educational and preventive measures. Traumatic tooth injuries are listed as the fifth most common health problem worldwide, with no significant change in prevalence and incidence in different parts of the world. While the oral region accounts for 1% of the body, oro-facials injuries make up 5% of all bodily damage in all age groups (1) It is known that the most common cause of dental trauma are declines, sports activity, cycling accidents, road accidents and violence physical. The trauma method during sporting activity is inevitable and make up 30% - 45% of adolescence incidents. Oro-maxilo-facials traumas during sporting activity differ from other oro-facials trauma as they can be easily prevented. There is a possibility of lowering the incidence significantly through the use of protectors for teeth and periodontal structures.. We searched academic databases such as Web of Science, PubMed, Google Scholar. We have used the keywords of dental trauma, oral trauma, sports mouthguards. 70 articles published after 2017 were examined, which was selected 35 articles which were in English and contained abstract and full text. The results of this study showed that oral traumas are frequent in the amateur sports field, and still frequent and more traumatic in professional sports terrain. Prevention of oral trauma in sports field is possible by implementing specific rules on the use of oral mouthguards . Through the use of preventive measures not only decreases the incidence of oral trauma but also increases the performance of athletes.

Keywords: Oral trauma, Sports, Mouthguards, Sport performance.

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OBSTRUCTIVE UROPATHY AND THE ROLE OF IMAGING

Marsida Duli, Qamil Dika, Indrit Bimi, Iris Mone, Genc Burazeri, Daniela Dervishi

Abstract: Obstructive uropathy consists of functional and structural changes at every level of the urinary tract, which are accompanied by the interruption of the normal flow of urine. The obstruction can be partial or complete, so it can be localized and include one or several calyces, up to the entire pyelo-calyceal system, with or without the involvement of the ureter. The technique chosen in cases of obstruction is ultrasound, described in the literature as the gold standard of diagnosis, through which hydronephrosis, dilatation of the renal pelvis is detected. Ultrasound evidences not only the presence but also the degree of hydronephrosis, depending on its extent in the parenchyma of the kidney. Depending on the duration of the obstruction, it can be acute or chronic. In daily practice, we deal with kidney failure, and the differential diagnosis between acute and chronic constitutes the challenge of the nephrologist. The descriptive work in question comes to the aid of both nephrologists, imaging physician and family doctors through valuable information for the successful management through sonography of the most frequent emergencies that the nephrologist approaches in his daily work practice.

Keywords: Obstructive uropathy, ultrasound, renal insufficiency

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URINARY INCONTINENCE

Marsida Duli, Qamil Dika, Indrit Bimi, Iris Mone, Genc Burazeri, Daniela Dervishi

Abstract: Urinary incontinence, involuntary loss of urine is a frequent health condition in medical practice that affects the quality of life. About 17% of men, 30% of women, and 70% of the elderly have urinary incontinence, but only a small part, about 25%, seek or receive treatment. Assessment: The assessment begins with the anamnesis, the patient's clinical signs, the results of previous treatments and the following with the necessary examinations assessing the presence of accompanying conditions such as advanced prolapse of the pelvic organs, urinary and genital infections, hematuria, prostate pathologies, pathologies benign and malignant, which must be excluded. The following treatment consists of the application of conservative therapies, medication, physiotherapeutic and mini-invasive interventions according to the underlying cause and type of urinary incontinence. Conclusions: Urinary incontinence is more common in women, even though a small part are referred to the doctor for treatment, regardless of the many effective treatment options. The nephrologist specialist should prioritize the detection of urinary incontinence, treat and modify modifiable factors.

Keywords: Urinary disorder, Urinary incontinence, Nephrologist.

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FEATURES OF ANAPHYLACTIC SHOCK AS THE MOST SEVERE FORM OF ANAPHYLAXIS

Pirro Prifti

Abstract: Shock is Anaphylaxis and Anaphylaxis is the most severe clinical manifestation of acute systemic allergic reactions. The rationale of this updated position document is the need to keep guidance aligned with the current state of the art of knowledge in anaphylaxis management. Special focus has been placed on regions in which national guidelines are lacking. All aspects have been assessed based on scientific evidence supporting statements. This guidance adopts the major indications from the previous anaphylaxis guidelines of the World Allergy Organization (WAO) and incorporates some slight changes in specific aspects such as the diagnostic criteria. Anaphylaxis is a severe, systemic hypersensitivity reaction that is rapid in onset and characterized by life-threatening airway, breathing, and/or circulatory problems, and that is usually associated with skin and mucosal changes. Because it can be triggered in some people by minute amounts of antigen (e.g. certain foods or single insect stings), anaphylaxis can be considered the most aberrant example of an imbalance between the cost and benefit of an immune response. This review will describe current understanding of the immunopathogenesis and pathophysiology of anaphylaxis, focusing on the roles of Ig E and IgG antibodies, immune effector cells, and mediators thought to contribute to examples of the disorder. Evidence from studies of anaphylaxis in humans will be discussed, as well as insights gained from analyses of animal models, including mice genetically deficient in the antibodies, antibody receptors, effector cells, or mediators implicated in anaphylaxis, and mice which have been "humanized" for some of these elements. We also will review possible host factors which may influence the occurrence or severity of anaphylaxis. Finally, we will speculate about anaphylaxis from an evolutionary perspective, and argue that, in the context of severe envenomation by arthropods or reptiles, anaphylaxis may even provide a survival advantage.

Keywords: Anaphylactic Shock, Anaphylaxis, Histamine, IgG, Ig E, basophils, cysteinyl leukotrienes, epinephrine, food allergy, histamine, Ig E, mast cells, platelet activating factor, urticaria.

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INTEGRATING HEALTH IN URBAN AND TERRITORIAL PLANNING

Qamil Dika, Marsida Duli, , Indrit Bimi, Iris Mone, Genc Burazeri, Daniela Dervishi

Abstract: Environmental healthcare is an essential factor in urban planning. As a practice, healthy urban planning is a continuous process requiring coordination efforts from policymakers, planners, healthcare professionals, and the government. The background of this review introduces the concept of healthy urban planning, naming the elemental foundation of this concept. The methodology details the literature and findings of two studies on the subject, which helps build the discussion and conclusion sections. Overall, this systematic review of existing research on the history and current developments in healthy urban planning reveals existing challenges, mitigation strategies, and potential solutions to enhance the integration of the two concepts.

Keywords: Urban and territorial planning, Health policy, Local authorities

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HOSPITAL AUTONOMY, AN INSTRUMENT OF THE MODERNIZATION OF PUBLIC HOSPITALS IN ALBANIA

Qamil Dika, Marsida Duli, , Indrit Bimi, Iris Mone, Genc Burazeri, Daniela Dervishi

Abstract: Hospital autonomy refers to reforms in the health sector that aim to decentralize decision-making at different scales and levels, both financial and managerial. Recently, the governing structures have adopted health policies on the autonomy of hospitals aiming to reform the medical care sector and therefore the health system. The purpose of the paper is related to the identification of the current decision-making situation in public hospital institutions in Albania, as well as the possibility of effective application of hospital autonomy. The work is carried out by examining the current legal framework as well as the models implemented in other countries. Hospital autonomy applied in developed health systems has proven positive effects in the sustainable management of hospital institutions, in terms of increasing access to health services for the population, reducing costs for the health system, and increasing the financial motivation of the staff who work in these institutions, as well as increasing satisfaction in the workplace. The implementation of this policy in Albania has risks in terms of increasing the costs of hospital health services, the lack of the appropriate legislative infrastructure to implement this reform in the public sector, as well as the proper qualification of the management team that will properly implement the reform.

Keywords: Hospital Autonomy, Albania, Financial Autonomy

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THE ROLE AND INFLUENCE OF TEACHING IN HEALTH AWARENESS IN THE EDUCATIONAL SYSTEM

Tiziana Ceka

Abstract: The rapid changes that have affected society in recent decades have also included the teaching staff in service and the future teachers who are required, already within the training of initial skills, more and more. The pedagogical staff has had a lot to change the way of teaching to adapt to the transition from a school of knowledge to a school of competence. So no more simple transmission of notions from the teacher to the student, but a training that stimulates through discovery, teamwork, the help of new technology, the acquisition of skills. This new role of the teacher requires specific training aimed at the acquisition of teaching techniques and strategies suitable for connecting with increasingly heterogeneous students, who, especially in primary school, present significant cultural differences, abilities, interests and values. .Health education, especially in primary schools, seems to be a neglected area. This articleexploresthe health education needs of primary school students. The purpose of this study is to evaluate health education and the needs of primary school students. The study has a mixed research approach (qualitative and quantitative) for data collection. Quantitative data were collected through the administration of a piloted questionnaire in primary schools. The same participants were also interviewed in student groups. The data collected through the questionnaire were analyzed quantitatively; while, the interviews were analyzed thematically. Primary school students were very aware of the main constructs of health education and needed awareness, especially in nutrition, hygiene, seasonal and tropical diseases, infectious diseases and psychological problems. The appropriate school health education program can be effectively developed for primary school students.

Keywords: Teaching, medical terms, medical awareness.

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THE ROLE OF THE PHARMACIST IN THE ELIMINATION OF ERRORS REGARDING THE PRESCRIPTION AND USE OF DRUGS

[1]Zehadin Gashi

Abstract: The analysis of drug intake in pharmacies, in many cases, shows the mistakes that are made regarding the drugs prescribed and used without a doctor's prescription. The patients who encounter such errors are mainly chronically ill who take many drugs both from the doctor, especially when they change doctors, and during self-medication with additional drugs. The purpose of this paper is to identify the risk factors related to the use of incorrect drugs and to influence the reduction of these errors as much as possible. The working method is based on the analysis of the use of drugs in patients who use two or more drugs at the same time. Classification of groups according to age and diseases was also done in order to highlight all possible factors. The results show that the patients in whom medication errors are most often encountered are mainly chronic patients and those with co-morbidities, who were mainly over 55 years of age, then patients who take more than two drugs at the same time. There are also patients who visit two or more doctors, who combine the treatment. Based on the analysis of the obtained results, it is highlighted that chronic patients, due to taking multiple drugs, risk the incompatibilities of the drugs taken, the change of drugs due to visits to different doctors that change the previous medication, as well as taking of over-the-counter drugs. The role of the pharmacist in these cases is very important in identifying and reducing these errors, providing the necessary information and advice regarding the elimination of possible errors. We recommend that patients who take two or more drugs, consult the pharmacist regarding their use and, in cooperation with the doctor, intervene to eliminate taking the wrong drugs.

Keywords: Patient, risk, factors, related, drugs, chronic patients, non-prescription drugs.

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THE ROLE OF VITAMIN D SUPPLEMENTATION IN SPORTS HEALTH AND PERFORMANCE IN ATHLETES

Irida IKONOMI HOXHA [1], Silvi BOZO [2], Dhurata BOZO [3]

Abstract: Vitamin D deficiency is a major problem not only in the general population but also in athletes. According to the WHO, about 1 billion people in the world suffer from this deficiency, even an alert high prevalence is observed in the population of athletes. Vitamin D is a prehormone that is synthesized in the skin after exposure to the sun and plays key functions in the body. It participates in calcium absorption, playing a role in bone health, the immune system, inflammatory processes and wound healing, muscle and nerve functions, cardio-respiratory functions, and sports performance. These functions are related to the presence of VDR receptors in the skeletal and extraskeletal tissues of our body. Adequate levels of vitamin D in athletes to maintain optimal bone health and athletic performance are still not well defined. Several studies show that maintaining a serum level of 25(OH)D around 40 ng/ml brings satisfactory results not only in health but also in sports performance. Numerous studies have shown that insufficient levels of vitamin D cause increased risk for fractures and falls, decreased muscle strength and endurance, decreased aerobic capacity during exercise, inflammatory diseases including arthritis, hypertension, metabolic diseases, and several types cancers, which affect not only the population but also athletes. Insufficient sun exposure, poor vitamin D diet, indoor exercise, geographic location, dark skin are contributing factors to vitamin D deficiency. To maintain optimal bone health, prevent injury, and perform optimal sports, it is recommended to take supplements with vitamin D. Studies show that the recommended doses for athletes with vitamin D are 2000-6000 IU per day. Supplementation plays a key role in covering the needs of vitamin D during the winter months when there is an insufficient synthesis of it.The aim of this study is to investigate the role of vitamin D supplementation on sports performance and health.

Methodology. Academic databases such as Pub Med, Web of Science and organizations such as WHO and WADA were used in this review. Keywords such as vitamin D deficiency, athletes, supplementation, sports performance were used. 100 articles in English and published after 2016 were reviewed, from which 30 articles were selected, which contained the abstract and the full article.

The results of the study show that optimal levels of 25(OH)D after supplementation with vitamin D indicate improved muscle function, increased aerobic capacity, reduced risk of fractures and falls, and therefore improved sports performance.

Conclusions. Currently, supplementation with vitamin D in athletes remains a challenge as it must be adapted according to the individual needs of the athlete, the type of sport, the duration and intensity of training and the ability of the body to use and store vitamin D. Also, continued and specific studies are needed for improve supplementation strategies in athletes.

Keywords: Vitamin D deficiency, athletes, supplementation, sport performance

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WAR INJURIES IN PAEDIATRIC PATIENTS

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Abstract: Injuries and traumas caused by today's advanced weapons and war conditions differ from the traumas in our civilian life. War injuries are usually dirty and the risk of infection is quite high. War surgery is a field where emergency interventions are prioritised, limited technical conditions are difficult to deal with and logistical difficulties are also encountered. War surgery is also about saving lives under difficult conditions. In these injuries, health professionals should make urgent medical decisions and rapid and effective intervention should be performed. Emergency intervention to patients should be in the form of triage according to the condition of the injury. Emergency interventions for the survival of the patient should be prioritised over basic surgeries. Firstly, effective medical intervention should be performed to save the patient's life, and then life-saving surgeries should be performed according to the trauma. More importantly than performing the best intervention for each patient, treatment and surgical interventions to keep the most patients alive should be performed as soon as possible. Necessary medical intervention should be provided by prioritising the patients in order to provide the highest possible benefit in the field where difficult conditions prevail, by intervening in the most patients without wasting time with non-urgent elective surgeries. Injuries to children are different from adults. Because the thickness of the abdominal wall or chest wall of paediatric patients is weaker than adults. Due to this anatomical difference, intervention under general anaesthesia is required in abdominal and chest trauma of children.

Keywords: war surgery, paediatric surgery, emergency intervention.

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Introduction

Wars are major events that affect human life in every aspect and cause great tragedies. Wars bring with them great social deaths and great injuries. One of the most important consequences is the destruction of families, societies and cultures. Ultimately, children, who are the most vulnerable, are the most affected (1). The brutal acts of war show the cruel face of war to children, regardless of their innocence. In these horrific events, children are raped, their lives are ended or they are left orphaned or orphaned. (2) . The consequences of war can have a major impact on children's health for many years and affect future societies (3) . Armed conflict has both direct and indirect effects on children, affecting their physical, psychological and developmental well-being (4) War has direct and indirect effects. Although indirect and direct effects are part of the same process, indirect effects may cause more harm to children (5). Direct effects include physical or psychological trauma, death and displacement. Indirect effects include educational and economic difficulties, insecure living conditions, separation from family, inadequate and insecure living conditions.

Direct physical effects of armed conflict include disfigurement from burns and blast injuries, orthopaedic injuries resulting in loss of function, traumatic brain injury and death (4). Burns and serious head and neck injuries, especially penetrating head trauma, are the most common and most fatal. This differs from blast injuries in adults, who are more likely to suffer injuries to the extremities (7).

Weapons such as mines, unexploded explosives or bombs pose a major threat to children even after the end of the war. Children often play with explosive remnants, mistaking them for toys, and explosions occur during play. Landmines and explosive remnants of war remain a constant risk, killing children in Myanmar, Lebanon, South Sudan and Sudan (5). In Ukraine, Syria and Gaza, where war is currently raging, there are many children with limb loss or disabilities. Many children do not have access to the necessary physical rehabilitation or health care. International organisations or aid agencies try to provide these services. However, security problems and various difficulties prevent these services from being provided.

Almost one fifth of all children worldwide, 420 million children, live in conflict zones. The number of children living in conflict zones has doubled since the end of the Cold War (5). In Syria and Yemen, airstrikes affected at least 7,900 children between 2013 and 2018, accounting for 61 per cent and 47 per cent of all child deaths, respectively (6).

According to the Global mortality From Firearms, 1990-2016 report, 7220 people died in 2016 in patients aged 0-14 years in the world, and it was reported that mortality in males was 2.4 times higher than females (8).

Approach to the Paediatric Patient in War

In the challenge areas of combat surgery, especially in combat environments and tactical operations, the implementation of medical protocols for catastrophic injuries is critical. This approach encompasses initial medical first aid followed by damage control surgery adhering to damage control resuscitation principles (10). This is an important multifaceted situation designed to manage patients with serious traumatic injuries, prioritising the prevention of further harm and stabilisation of the patient's condition. Evacuation and transport must be meticulously planned to ensure that casualties are moved from the battlefield to safer areas safely, quickly and with immediate attention. This process requires the establishment of specific job descriptions for personnel involved in the various stages of care. Personnel working at the site of injury should be equipped with medical equipment. Haemostatic materials (IVs, tourniquets, IV access, bone access if necessary, etc.), which are known for wound healing applications, should be available for rapid bleeding control in field operations and to keep the patient's haemodynamics stable.

Establishing the medical plan in the field is an important situation that requires meticulous work and disciplined coordination. Medical interventions should be clearly explained to the staff, detailing how they will be performed and by whom. Advanced surgical teams, usually deployed near the front lines, play a crucial role in providing emergency care. Their working principles are based on efficiency, rapid response and adaptation to the changing nature of field conditions. Caring for a large number of patients in adverse conditions, in different centres, treated by different surgeons, requires simple intervention, safety and rapid surgical intervention. In mass casualties where there are insufficient numbers of staff, speed is what is needed and staff should not cause confusion and disruption.

War injuries are difficult cases compared to civilian injuries. In civilians, blunt injuries such as beatings, falls from height, traffic accidents and penetrating injuries such as piercing and cutting injuries are more common, while in war environments, there are mechanisms that cause fragmentation injuries such as guns, pistols, rifles, rockets, improvised explosive devices with high kinetic energy and blast effects. (9). Large and extensive tissue damage is present. Most wounds are usually infected. High-energy trauma associated with combat injuries often results in more complex, contaminated wounds that require specialised surgical expertise. Rapid and sometimes unconventional medical interventions may be necessary to save lives. In order to prevent the development of infection, wounds should be treated before 2 hours and urgent life-saving operation should be performed and referred to a more equipped health centre for further treatment.

Penetrating thoracic and abdominal injuries due to firearms have the highest mortality rate after head and neck injuries. In his study, Larson stated that the rate of complications and mortality increases with the increase in the number of organs injured in penetrating traumas. (10). The Penetrating Abdominal Trauma Index (PATI) is a critical scoring system used to assess the severity of abdominal injuries and predict patient outcomes. Studies have shown that a high PATI score is associated with increased morbidity and mortality rates in patients with multiple organ injuries. This is particularly important when three or more organs are involved, as the complexity of the trauma and in patients with multiple organ injuries can lead to longer surgeries, the need for more transfusions and a higher risk of intra-abdominal contamination, all of which contribute to a worse prognosis (11).

In the studies conducted in combat injuries, hollow organ injuries were reported to be the most common and the small intestine was found to be the most frequently injured organ. However, Kaymak Ş. et al. found that the most common injury was to the colon and the small intestine was the second most frequently affected organ (11).

The study by Taçyıldız et al. emphasizes the critical impact of operative time on patient outcomes. Patients with an operative time of less than 3 hours were found to have a significantly lower risk of death compared to patients with a longer operative time. This highlights the importance of efficient surgical procedures and provides a valuable benchmark for healthcare professionals to improve patient care and survival rates (12).

Children are injured differently from adults. The thickness of the abdominal wall or chest wall of pediatric patients is weaker than in adults. Because of this anatomical difference, pediatric injuries require intervention under general anesthesia for abdominal and chest trauma. Another difference from adult patients is that the amount of blood in the body of pediatric patients is relatively less than in adults, and in case of any injury, shock may occur due to very rapid blood loss. The duration of the shock that develops after the injury and the duration of the patient's stay in shock directly affect morbidity and mortality. In our own study, it was observed that the longer the duration of shock, the higher the mortality in pediatric patients. (13). Pediatric trauma score (PTS) was defined by Tepas et al. to determine the severity of injury (13). Mortality and morbidity are high in patients with a PTS score less than 8. Patients with a PTS score higher than 8 have a high survival rate (13).

In civilian injuries, the majority of thoracic injuries are followed conservatively or with tube torchostomy. In war injuries, if thoracic injuries are accompanied by large vessel injuries in pediatric patients, rapid deterioration of hemodynamic balance and also impairs respiratory function and aggravates the clinical picture. (13).

Conclusion

Nowadays, war injuries are known to be a very important problem for pediatric patients. Especially in conflict zones, the management of war injuries is a complex and critical issue. The Penetrating Abdominal Trauma Index (PATI) and PTS are important protocols for clinicians and surgeons that guide us to assess injury severity and predict outcomes such as mortality and morbidity. Rapid and effective treatment procedures at the scene, including age-appropriate blood replacement and expedited transport and iv fluid replacement, are essential to improve survival rates. The number of injured organs, the extent of the injury site, the number of shrapnel or bullets, the evacuation time of the patient to the nearest health unit and the quality of the first aid administered by health workers are the most important factors affecting mortality rates. Moreover, advances in technology and surgical techniques have made significant progress in improving patient outcomes. Equally important is the availability of experienced medical personnel equipped with the necessary tools and skills, especially in border hospitals that frequently encounter combat injuries. Studies such as PATI and PTS are important as surgeons aim to improve surgical management and treatment protocols in pediatric populations. It serves as a benchmark for future studies and interventions. As everyone knows, children are the biggest losers in war.

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EMERGENCY MANAGEMENT AND TREATMENT OF SUDDEN CARDIAC ARREST (SCA)

Basri Lenjani[1], Dardan Lenjani[2]

Abstract: Sudden cardiac arrest (SCA) is a life-threatening emergency condition in which the heart suddenly stops beating. If this happens, blood stops flowing to the brain and other vital organs. SCA usually causes death if left untreated within minutes. Cardiomyopathies make up almost half of SCA / D cases in professional athletes, while coronary artery abnormalities play a more prominent role than expected in high school athletes. SCA accounts for 15-20% of all natural deaths in adults in the US and Western Europe, and up to 50% of all cardiovascular deaths The incidence of sudden cardiac death occurs most frequently in adults in their mid-30s to among the 40s and affects men twice as often as women. If not treated immediately, sudden cardiac arrest can lead to death. If not treated immediately, sudden cardiac arrest can lead to death. Survival is possible with prompt and proper medical care. Cardiopulmonary resuscitation and the use of defibrillator, AED, medication can improve the chances of survival.

Keywords: Sudden cardiac arrest (SCA), coronary artery, heart attack, CPR, AED, EMS 112

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INTRUDUCTION

Cardiac arrest is the abrupt loss of heart function in a person who may or may not have been diagnosed with heart disease. It can come on suddenly or in the wake of other symptoms. Cardiac arrest is often fatal if appropriate steps aren't taken immediately.The leading cause of death in the United States is heart disease. This should not come as a surprise. The heart beats approximately 2 billion times over an average lifetime and pumps around 100,000 gallons of blood. No other machine works tirelessly and endures as long. Sudden cardiac arrest occurs when the heart suddenly and unexpectedly stops beating. If the heart is not restarted, the person will die.

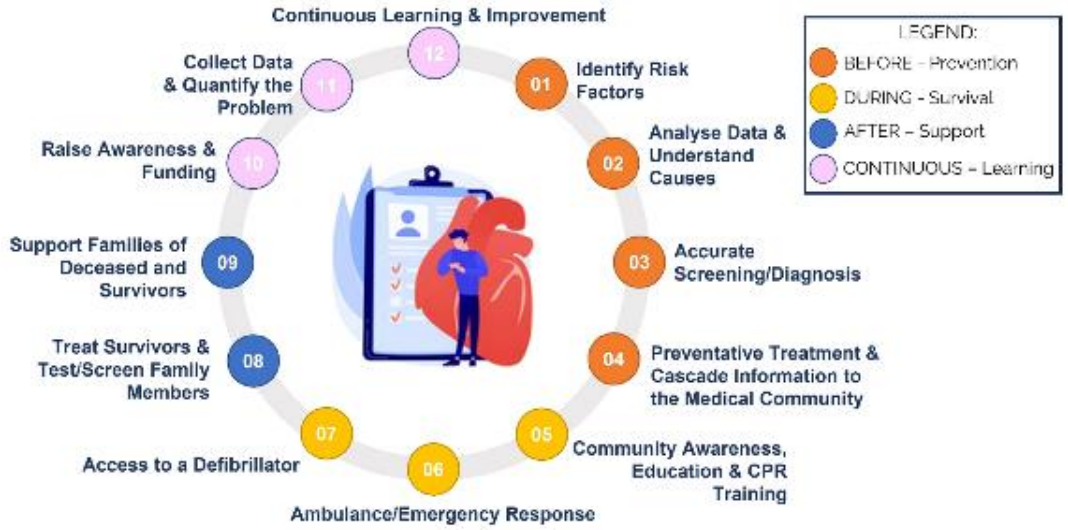

Figure 1 The 'Circle of Hope' encapsulating goals in research, discovery, awareness, advocacy, and implementation. Andre La Gerche A Call to Action to Improve Cardiac Arrest Outcomes: A Report From the National Summit for Cardiac Arrest [4].

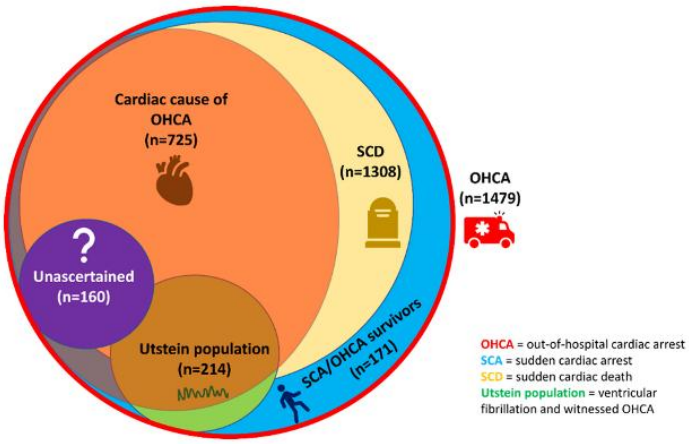

Figure 2. Impact of cardiac arrest definitions on the number of subjects that would meet criteria.

Data obtained from 2 years of cardiac arrest cases aged 1–50 years in Victoria, Australia**.** Andre La Gerche A Call to Action to Improve Cardiac Arrest Outcomes: A Report From the National Summit for Cardiac Arrest. [4].

Without warning, the heart ceases to pump blood, causing the person to collapse. It's similar to a total power outage – it happens quickly and without warning.

Sudden cardiac arrest (SCA) is a condition in which the heart suddenly stops beating. When that happens, blood stops flowing to the brain and other vital organs. If it is not treated, SCA usually causes death within minutes. But quick treatment with a defibrillator may be lifesaving. Risk for SCA its. Coronary artery disease (CAD) is the most common risk factor for SCA and occurs when the blood vessels supplying blood to the heart become narrow or blocked. This reduces blood flow to the heart, increasing the risk of SCA. [1].

Foto 1. Cardiac arrest: A step-by-step guide to DRSABCD, CPR and using defibrillators. [4].

Primary Prevention. Prevention of SCD in patients who are considered high risk for it often involves institution of medications to target the sympathetic nervous system (β-adrenergic receptor blockers and angiotensin converting enzyme inhibitors) as well as implantation of ICDs.

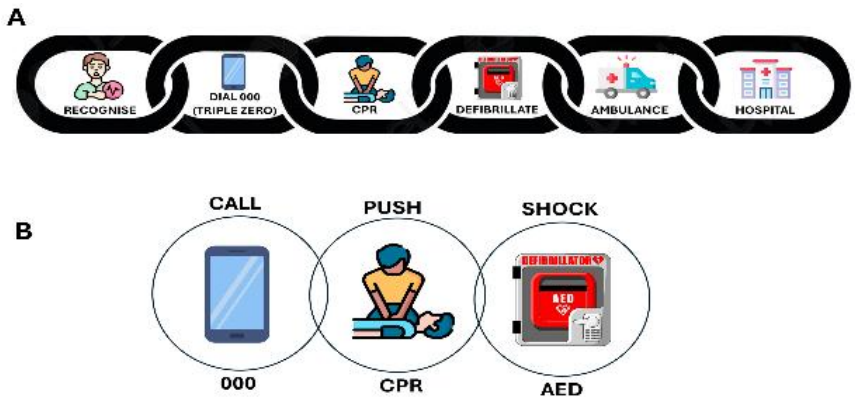

Figure 3. The Resuscitation Chain of Survival graphics display the series of actions or interventions in response to someone experiencing a sudden cardiac arrest. The graphics in A) begin with the bystander response and end with rehabilitation, and the graphics in B) provide simple messaging to the community to emphasise the important response by first bystanders. Abbreviations: AED, automated external defibrillators; CPR, cardiopulmonary resuscitation. Andre La Gerche A Call to Action to Improve Cardiac Arrest Outcomes: A Report From the National Summit for Cardiac Arrest [4].

The time it takes to initiate CPR has the greatest impact on survival. It therefore falls to the community to start CPR and maintain viability while emergency services arrive. Successful outcomes rely on the coordination of the "chain of survival"—a complex relationship between public bystanders, emergency services, and hospital providers.

Secondary Prevention. Secondary prevention of SCA in subjects is implantation of an ICD. The overwhelming majority of patients in secondary prevention ICD clinical trials had underlying SHD, primarily due to CAD with reduced LVEF (< 35%). [3].

Diagnosis. Sudden cardiac arrest happens suddenly and requires emergency medical care at a hospital. If the heart is quickly restored, survival is possible. When you are stable, health care providers at the hospital run tests to determine the cause. Tests are done to help determine how well the heart pumps blood and to look for diseases that affect the heart. [7].

Without immediate treatment, sudden cardiac arrest can lead to death. What is a sca blood test?

- **Electrocardiogram (ECG or EKG).** This quick and painless test checks the electrical activity of the heart.
- **Echocardiogram.** Sound waves create images of the heart in motion. This test can show how blood flows through the heart and heart valves. It can show heart valve problems and heart muscle damage.
- **Ejection fraction.** This test is done during an echocardiogram. A typical ejection fraction is 50% to 70%. An ejection fraction of less than 40% increases the risk of sudden cardiac arrest.
- **Chest X-ray.** This test shows the size and shape of the heart and lungs.
- **Nuclear scan.** This test is usually done with a stress test. It helps see blood flow problems to the heart. Tiny amounts of radioactive material, called a tracer, are given by IV.

Cardiac catheterization. This test helps health care providers see blockages in the heart arteries.

A treatment called balloon angioplasty can be done during this test to treat a blockage. If a blockage is found, the health care provider may treat place a tube called a stent to hold the artery open.

The AHA developed the concept to highlight the importance of timely, coordinated care for people experiencing sudden cardiac arrest. The chain of survival consists of four key steps: early recognition and activation of the emergency response system, early CPR, rapid defibrillation, and advanced life support. If the person isn't breathing or is barely gasping, you need to begin CPR. Push down on the chest at least two inches and let it return to its normal position. Repeat this motion quickly – about 100 to 120 pumps per minute. As soon as you find an AED, turn it on and follow the prompts.There is no definitive treatment to cure SCAs or slow their progression, but some symptoms can be treated in the following ways: Coordination and balance can be assisted by using physical aids such as canes, walkers, crutches, and wheelchairs to help with everyday activities and maintain independence. [8].

Emergency treatment for sudden cardiac arrest includes cardiopulmonary resuscitation (CPR) and shocks to the heart with a device called an automated external defibrillator (AED). Survival is possible with fast, appropriate medical care.

The SCA Procedures provide risk professionals with a set of resources (solutions, templates, checklists, guidelines) that can be used to plan, scope, and perform third-party risk assessments. [1].

EPIDEMIOLOGY

Incidence of SCA and its etiology appears to be a function of age, but this association is not linear. In children and young adults (< 34 years of age), annual risk of SCA is estimated as 1 per 100,000. This is followed by a steep increase in the risk of SCA beginning at age 35, when the incidence increases to 1/1000 per year. [2].

PATHOPHYSIOLOGY

The majority of SCA cases are due to malignant ventricular tachyarrhythmias (VT), often related to CAD. Mechanisms by which CAD results in arrhythmogenesis include acute ischemia leading to VT, myocardial scars that serve as the substrate for reentrant monomorphic VTs, and in rare cases, disease in the cardiac electrical conduction leading to bundle branch reentry VT (BBRVT). Bradyarrhythmias, usually due to third degree atrioventricular block without sufficient escape, account for a small proportion (10–15%) of all SCDs

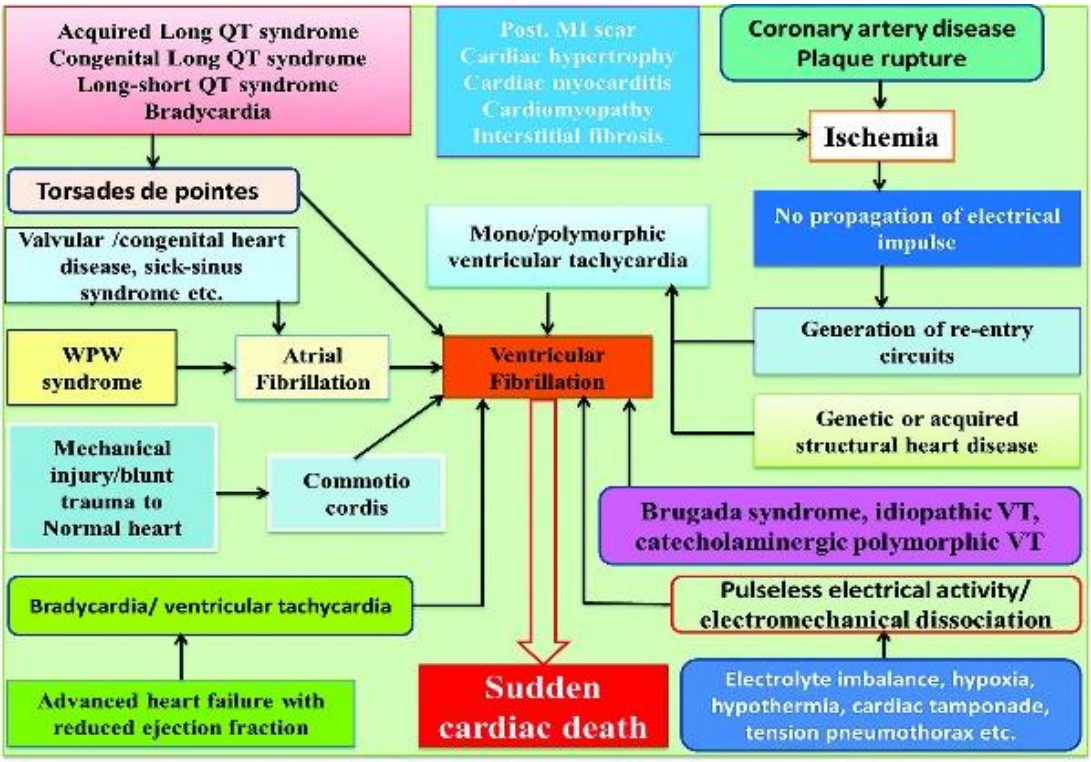

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Figure 4. Vikrant Rai Role of risk stratification and genetics in sudden cardiac death. Canadian Journal of Physiology and PharmacologyVolume 95, Number 3, March 2017

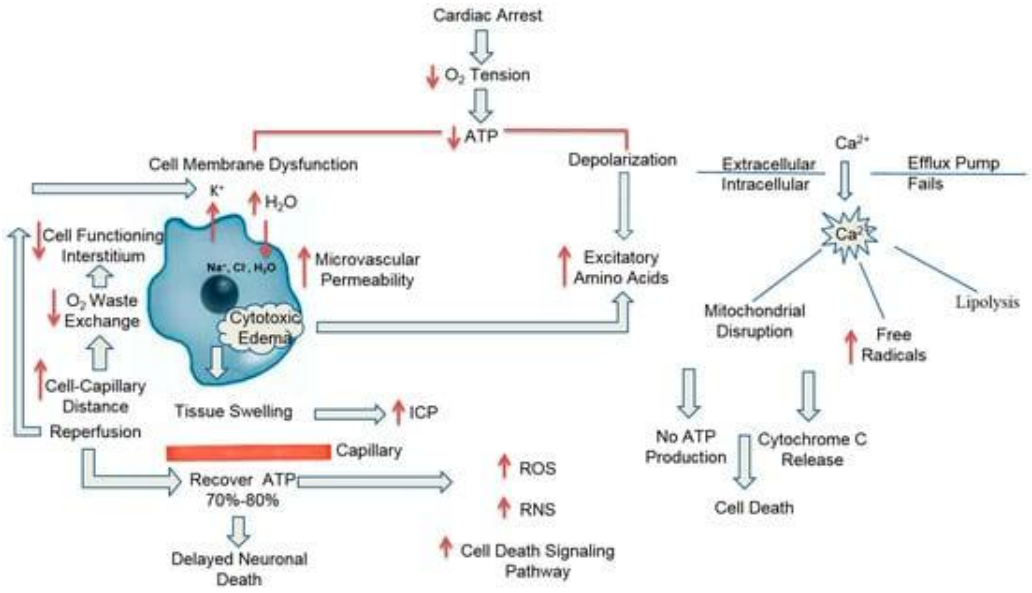

Figure 5. Demonstrates the cascade of effects after cardiac arrest and decreased oxygen tension has on the brain cellular function due to decreased ATP (Adenosine triphosphate), increased excitatory amino acids, and the failure of Calcium efflux pump to work. ICP (intracerebral Pressure), ROS (reactive oxygen species), RNS (reactive nitrogen species). The thin arrows indicate the increase or decrease of either a substance or diagrams the consequences of cardiac arres. *Cesar Reis Pathophysiology and the Monitoring Methods for Cardiac Arrest Associated Brain Injury. Int. J. Mol. Sci. 2017, 18(1), 129;*

AIM

To investigate the long-term survival of adult patients after surviving the initial hospital stay for an OHCA. By means of this paper, the data from various scientific articles were analyzed with the aim of early identification of the causes of cardiac arrest and methods of emergency treatment in pre-hospital and hospital environments.To quantify time dependent probabilities of outcomes in patients after in-hospital cardiac arrest as a function of duration of cardiopulmonary resuscitation, defined as the interval between start of chest compression and the first return of spontaneous circulation or termination of resuscitation.

MATERIALS AND METHODS

The literature was evaluated through a preliminary search of two databases (PubMed, Scopus). We used the web-based Covidence system to manage our narrative review. Data collection and reporting for this systematic review and meta-analysis followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) reporting guideline and the Meta-analysis of Observational Studies in Epidemiology (MOOSE) reporting guideline. This research belongs to the group of researches: Review of the literature. The content of this research presents a meta-analysis of the latest world literature and publications in the databases: Google Scholar, PubMed, Scopus, Copernicus, etc.

DISSCUSSION AND CONCLUSSION

SCA is the leading cause of death worldwide. Frequent presentation as the first manifestation of cardiac disease and poor survival rates after SCA emphasize importance of primary prevention. Secondary prevention and treatment of SCA focus primarily on VT/VF management. Catheter ablation of VT and PVC triggers of VF has been shown to reduce recurrent arrhythmia episodes and may improve survival, if successful. Further mechanistic and clinical studies are needed in this area to elucidate the best methods of neuromodulation, impact of these therapies, and their mechanisms of benefit.

BLS techniques include recognizing and responding to emergency situations, calling for help, performing cardiopulmonary resuscitation (CPR), using automated external defibrillators (AEDs), and providing basic airway management and breathing assistance. [11].

What are the steps in ACLS **Adult cardiac arrest** ? Start high-quality cardiopulmonary resuscitation (CPR). Administer oxygen if hypoxemic. Attach monitor/defibrillator. Monitor blood pressure and oximetry; do not delay defibrillation.

Based on the work of Niek Johannes... VianenPrehospital traumatic cardiac arrest: a systematic review and meta-analysis Circulatory arrest after trauma is a severe and life-threatening situation that mandates urgent action. Over the past years increased interest in this topic has led to broad recognition of this condition, with aggressive prehospital and emergency department resuscitation algorithms aimed at early treatment of reversible causes being introduced in prehospital and

emergency department guidelines. This systematic review and meta-analysis provides a comprehensive overview of reported mortality rates after prehospital resuscitation of patients with cardiac arrest after trauma. In the current review on TCA in adult patients, the pooled mortality rate for traumatic cardiac arrest was 96.2% and a favorable neurological outcome was reported in 43.5% of surviving patients. A shockable first monitored ECG rhythm was the only patient related factor associated with a decreased risk of dying. In conclusion, prehospital TCA is associated with a high mortality rate, with approximately one in twenty patients surviving to discharge. When interpreting results from studies on this subject, factors such as the in- or exclusion of patients that have deceased on-scene and the type of prehospital EMS system (physician-based) should be considered. Apart from first monitored ECG rhythm, this study found no other prognostic factors available to differentiate between survivors and non-survivors. [3].

Cardiac arrest is the abrupt loss of heart function in a person who may or may not have been diagnosed with heart disease. It can come on suddenly or in the wake of other symptoms. Cardiac arrest is often fatal if appropriate steps aren't taken immediately. Learn more about cardiac arrest. Causes of Cardiac Arrest.

The ACLS Acute Coronary Syndrome Algorithm covers the systematic response to a patient who is having an acute coronary syndrome area acute coronary syndrome is a spectrum of conditions from unstable angina to non-ST segment elevation myocardial infarction to ST segment elevation myocardial infarction.

Based on the work of Simon A. Amacher…**Long-term Survival After Out-of-Hospital Cardiac Arrest**A Systematic Review and Meta-analysis. *JAMA Cardiol.* 2022;7(6):633-643. In this comprehensive systematic review and meta-analysis, long-term survival after 10 years in patients surviving the initial hospital stay after OHCA was between 62% and 64%. Additional research is needed to understand and improve the long-term survival in this vulnerable patient population.

Based on the work of *Masashi Okubo***Duration of cardiopulmonary resuscitation and outcomes for adults with in-hospital cardiac arrest: retrospective cohort study.***BMJ* 2024; 384 doi: https://doi.org/10.1136/bmj-2023-076019. In this analysis of a large multicenter prospective registry of in-hospital cardiac arrest in the United States between 2000 and 2021, we quantified the time dependent probabilities of survival to hospital discharge and favorable functional outcome at hospital discharge as a function of duration of cardiopulmonary resuscitation.

The time dependent probabilities of survival and favorable functional outcome among patients pending the first return of spontaneous circulation at each minute's duration of cardiopulmonary resuscitation using the denominator that included patients who had termination of resuscitation before or at each time point decreased and plateaued at less than 1% as duration of cardiopulmonary resuscitation increased beyond 39 minutes and 32 minutes, respectively. [4].

This analysis of a large multicenter registry of in-hospital cardiac arrest quantified the time dependent probabilities of patients' outcomes in each minute of duration of cardiopulmonary resuscitation. The findings provide resuscitation teams, patients, and their surrogates with insights into the likelihood of favorable outcomes if patients pending the first return of spontaneous circulation continue to receive further cardiopulmonary resuscitation. SCA is a major cause of death in the world Prevention of SCD is possible.

Gains can be made in risk identification, investigation of SCA, resuscitation, post-arrest care and assessment of family members. The prevention of SCD should be a national health priority. [7,10].

RECOMMENDATIONS

1. To institutionally support the advancement and strengthening of the health system at the primary, secondary and tertiary level, SCD as an important component in the management of accidental situations

2. To design clinical guidelines, algorithms and triage protocols at the three levels of health care.

3. All health care professionals should be educated, trained with continuing courses in triage, communication, Basic Life Support -AED, ACLS, PHTLS. BTLS. ATLS.

DISCLOSURE

The authors declared no conflict of interest. No funding was received for this study.

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THE IMPACT OF DENTO-ALVEOLAR ABNORMALITIES ON THE TEMPORO-MANDIBULAR JOINT

Elona Hasalla, Ilda Taka, Irena Xhaferri, Blerta Hasalla, Sulejman Baha, Elda Ruçi, Brandi Fahriu, Elira Mata Tashi

Abstract: The study of orthodontic treatment of dento-alveolar anomalies is essential to understand the changes in the health and functioning of the stomatognathic system. The purpose of this meta-analysis is to analyze and compile an overview of 121 articles obtained in the study, aiming to identify the main trends and discoveries in the field of dentistry and orthodontics. The meta-analysis was based on an in-depth review of 121 articles, including randomized controlled studies, various clinical and experimental studies, and various scientific research reports. The use of a structured methodology for analysis and synthesis of results was key to ensure an accurate and overall assessment of the effectiveness and impact of orthodontic treatment. The results of the meta-analysis showed that orthodontic treatment has a positive impact on improving the health and function of the stomatognathic apparatus. The identification of the duration of treatment, the effectiveness of different methods and the impact on the psychological health of patients were key aspects that were highlighted through this analysis. In conclusion, the meta-analysis confirmed the essential role of orthodontic treatment in improving the health and functioning of the stomatognathic system. The results suggest the need for continued research in this area to improve knowledge and clinical practice in the treatment of patients with dento-alveolar anomalies.

Keywords: orthodontics, treatment, meta-analysis, stomatognathic apparatus, effectiveness.

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INTRODUCTION

Dento-alveolar anomalies are changes or deformations in the structure and position of the teeth in relation to the dental arch and the alveolar bone that supports them. These abnormalities may include missing teeth (anodontia), crooked or elongated teeth (malocclusion), as well as disorders of the vertical, sagittal and transverse position of the teeth. These abnormalities are common in the general population and affect the dental health and well-being of patients. About 20-25% of the general population report at least one type of dento-alveolar anomaly, making this an important issue for dental care and orthodontics. Dento-alveolar abnormalities have a direct impact on the functioning of the temporomandibular joint (TMJ), as the position and movements of the teeth affect the stability and functioning of this joint. Dislocation of teeth, severe malocclusions, and lack of joint harmony can lead to numerous discomforts, including TMJ pain, dysphagia (difficulty swallowing), and other problems of the facial musculoskeletal system. The treatment of dento-alveolar anomalies is important to improve the function of the stomatognathic apparatus and to prevent the development of possible complications. Orthodontic treatment can include the use of fixed or removable appliances to correct the position of the teeth and restore the harmony of the dental arch. Surgical interventions are also an option in severe cases of dento-alveolar anomalies, where correction of the bone structure is necessary to improve the position of the teeth and the functioning of the TMJ. The importance of treating these anomalies is in protecting the patient's health of the musculoskeletal system of the face.

PURPOSE OF THE STUDY AND RESEARCH QUESTIONS:

The purpose of our study is to see if dento-alveolar abnormalities affect the morphology and function of the temporo-mandibular joint. To prove this hypothesis, a systematic review of the literature was made on how the treatment or not of dento-alveolar anomalies has influenced or not the improvement of the function of the temporo-mandibular joint and the patient's well-being. Seeing the problem from this point of view, the following objectives and questions were raised:

1. Do dento-alveolar abnormalities have an impact on the normal functioning of the temporo-mandibular joint?
2. What are the dento-alveolar abnormalities that have the most impact on the function of the temporo-mandibular joint?
3. Which aspect of the temporo-mandibular joint do dento-alveolar abnormalities affect: morphology, function, or both?

4. What are the temporo-mandibular joint problems resulting from dento-alveolar anomalies?
5. Do diseases or problems appear in the tempo-mandibular joint, as a result of not treating dento-alveolar abnormalities?

STUDY MATERIAL AND METHOD:

Our study is a systematic review of how dento-alveolar abnormalities affect the function of the temporo-mandibular joint. For the realization of this study, we researched the database of scientific publications PubMed, Google Scholar, Scopus, Sciens Direct, Wiley and relevant scientific journals such as American Journal of Orthodontic (AJO), European Journal of Orthodontic (EJO), Research Gate, JCO, etc.

We chose these sources of information because:
- They are easily accessible and easy to use.
- Recognized worldwide and used by researchers and publishers worldwide.
- The title and abstract of each article are available and are in English, regardless of the country of origin where the study was made.
- They present a high level of scientific evidence.
- They do not publish advertisements or studies that have conflicts of interest at their origin.

From the beginning of the study, inclusion criteria and exclusion criteria were defined.
Inclusion criteria:
- Studies with people with dento-alveolar anomalies, of any age, gender and race.
- Studies where the treatment of dento-alveolar anomalies was done by means of orthodontic therapy.
- Meta Analysis (MA) and Systematic Review (SR).

Exclusion criteria:
- Animal studies.
- Studies where patients suffer from temporo-mandibular joint pathology from the beginning.
- Patients who have been treated through surgery.

Unsupported expert opinions, retrospective and prospective studies, clinical studies without a control group, cross-sectional studies, editor's picks\author's response\editor's interviews.
In the beginning, we focused on the study of scientific evidence on the impact of dento-alveolar anomalies on the function of the temporo-mandibular joint. Then we expanded our research on the different types of orthodontic treatments in patients suffering from dento-alveolar anomalies and how this treatment had an effect on improving the function of the temporomandibular joint. We did not exclude in this study, neither the year of publication, nor the origin (country) where the study was done. We selected scientific articles that entered MESH (Medical Subject Headings), that is, that had indexing, and we selected them using keywords contained in our study.

RESULTS OF THE STUDY:

1. Connection confirmation:
Analysis of data from studies included in the meta-analysis showed a statistically significant association between dento-alveolar abnormalities and ATM dysfunctions. The results confirmed the initial hypothesis and suggest that dento-alveolar abnormalities have an impact on the occurrence of ATM problems.
2. Variations in the level of impact:
Through the analysis of the results of the studies, a wide range of variations in the level of impact of dento-alveolar anomalies on ATM was revealed. Some anomalies have had a stronger and more significant impact than others, while there have also been cases where the impact has been lower or unusual.
3. Identification of specific anomalies:
Through meta-analysis, several specific dento-alveolar abnormalities that tend to cause ATM problems were identified. This improves our understanding of the relationship between dental structures and ATM and may help identify and treat at-risk patients.
4. Clinical implications:
The results of the meta-analysis provide important implications for clinical practice. Identifying the relationship between dento-alveolar abnormalities and TMJ problems may help to develop treatment and prevention strategies in dental and orthodontic practice.
5. The need for further research:
Although the meta-analysis has confirmed a strong association between dento-alveolar abnormalities and ATM problems, further research is needed to deepen our understanding and address other issues that may be related to this phenomenon.

DISCUSSIONS:

Contribution of the Meta-Analysis: The meta-analysis of these studies provides a comprehensive review of the results and their implications. By combining data from a large number of independent studies, this meta-analysis provides a clearer and more reliable picture of the association between dento-alveolar abnormalities and ATM.

Main Results: The meta-analysis revealed a strong association between several types of dento-alveolar abnormalities and ATM problems. For example, a clear connection was found between morphological abnormalities of the teeth and ATM dysfunctions.

Variations of some results: Through the meta-analysis, a degree of consistency was evidenced in some results, but also variations in some aspects of the impact of dento-alveolar anomalies on ATM. These variations may be the result of differences in methodology, patient sample included in the study, and other contextual factors.

Clinical Implications: The results of this meta-analysis have important implications for clinical practice. Based on the findings, practitioners can more easily identify patients who are at higher risk of developing ATM problems, and steps can be taken to prevent or treat these problems effectively.

Limitations of the Meta-Analysis: It is important to include the limitations of this meta-analysis. These may include methodological limitations of the included studies, as well as any missing data for some subgroups of patients.

Needs for Further Research: Finally, based on the results of this meta-analysis, tasks for further research in this field can be derived. These further investigations may address unclear issues, add to the consistency of results, and expand our understanding of the relationship between dento-alveolar abnormalities and ATM.

Through this meta-analysis, an important contribution is provided to better understand the relationship between dento-alveolar abnormalities and ATM problems, reinforcing the knowledge base in the field of dentistry and orthodontics.

CONCLUSIONS:

There is a positive correlation:

The meta-analysis confirms a positive correlation between several types of dento-alveolar anomalies and ATM dysfunctions. This suggests that patients with dento-alveolar abnormalities have a higher risk of developing ATM problems.

The impact of morphological and functional abnormalities:

The findings show that the morphological and functional abnormalities of the teeth have a significant impact on the development of TMJ problems. This expresses the importance of evaluating dento-alveolar structure and function in the diagnosis and management of patients with these abnormalities.

Variations in results:

Although there is a clear association between some features of dento-alveolar abnormalities and ATM problems, the meta-analysis also shows a degree of variation in results. This may be the result of differences in methodology, patient sample included in the study, and other contextual factors.

Clinical implications:

The conclusions of the meta-analysis provide a solid foundation for dental and orthodontic practice. Practitioners can use these findings to identify patients at higher risk of developing ATM problems and to take preventive or therapeutic measures as effectively as possible.

Need for further research:

To improve our understanding of the relationship between dento-alveolar abnormalities and ATM, further research is needed. These investigations should address unclear issues and identify possible patho-physiological mechanisms influencing this relationship.

RECOMMENDATIONS

1. Need for careful monitoring:

The results of the meta-analysis show that there is a clear correlation between dento-alveolar abnormalities and ATM problems. Therefore, regular care and monitoring of patients with dento-alveolar abnormalities should be included in dental and orthodontic practice.

2. Prevention and treatment of ATM problems:

Considering the stable connection between dento-alveolar anomalies and ATM, it is important to develop a preventive and therapeutic approach for the treatment of ATM problems in patients with the mentioned anomalies.

3. Morphological and functional interaction:

Since the correlation between dento-alveolar abnormalities and TMJ problems is related not only to the shape of the teeth and the alveolus, but also to the general function of the stomatognathic apparatus, it is important that the treatment focuses on both these aspects .
4. Need for further research:
In the absence of some details or clear reflections in some of the studies included in the meta-analysis, it is necessary to conduct further research to confirm and extend the findings of this analysis. Further research should focus on the relationship between the specificity of dento-alveolar abnormalities and the occurrence of ATM problems.

5. Considerations for clinical practice:
Based on the findings of the meta-analysis, dental and orthodontic practitioners and specialists should consider the association between dento-alveolar abnormalities and ATM in the evaluation and treatment of their patients. This aspect should be included in the planning, treatment and monitoring of patients.

6. Sensitization of patients:
Patients should be informed of the possible association between dento-alveolar abnormalities and ATM. Thus they will have a better understanding of the potential risk and can take preventive or therapeutic measures in cooperation between the doctor and the patient.

In conclusion, the recommendations derived from the meta-analysis of the analyzed articles provide a solid basis for clinical practice and for further research in this important field of dentistry and orthodontics.

Other recommendations that can be used in dental practice include aspects such as patient assessment, clinical management, and the need for further research to expand our knowledge in this area. Let's examine each of these recommendations in detail:
1. Assessment of patients:
The results of the meta-analysis suggest that the evaluation of dento-alveolar abnormalities and ATM should be a regular part of the dental examination. Dentists and orthodontists should take a multidisciplinary approach to evaluate the structure and function of the stomatognathic system, including analysis of dento-alveolar patterns, TMJ scans, and evaluation of oral muscle function.
2. Clinical management:
Based on the findings of the meta-analysis, it is important that patients with dento-alveolar abnormalities are regularly monitored for signs and symptoms of ATM. Management of these patients should include an individualized approach, using conservative therapy to treat ATM symptoms and prevent their progression. A close collaboration between the dentist, orthodontist and ATM specialists is required to ensure a coordinated and effective treatment for patients.
3. Need for further research:
Although the meta-analysis gives us a broad picture of the relationship between dento-alveolar abnormalities and ATM problems, further research is needed to clarify some unclear aspects and to reveal possible patho-physiological mechanisms. Future research should address methodological challenges, including using clear standards for assessing abnormalities and ATM, and including larger numbers of patients to improve statistical power and generalizability of results.
4. Sensitization and education of patients:
It is important to inform patients about the relationship between dento-alveolar abnormalities and ATM and the potential risk for developing ATM problems. Sensitizing and educating patients about the importance of monitoring ATM and taking preventive measures at the individual level can help prevent the development of further complications.
5. Use of advanced technology:
The development and use of advanced technology, such as 3D scans and tooth detachment models, can help better identify and monitor dento-alveolar abnormalities and ATM. These technologies provide a precise and detailed approach to the structure and function of the stomatognathic system and can help plan individualized treatment for patients.

In conclusion, the recommendations derived from the meta-analysis of studies from article number 1 to article number 121 provide an important guideline for clinical practice and for further research in the study of the relationship between dento-alveolar abnormalities and ATM. These recommendations include the use of a multidisciplinary approach, careful clinical management of patients, use of advanced technology, and the need for further research to expand knowledge and improve the treatment of patients with these complications.

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SYSTEMIC THERAPY FOR OVARIAN CANCER

Hekuran Sejdiu

1. **Neoadjuvant chemotherapy** should be considered before planned major surgery or in case of inoperable condition .

Surgery: Optimal debulking with the target in R0 condition (adnexectomy bds HE omentectomy, peritoneum partial removal). The further extent of the surgery depends on the extent of the tumor and the type of tumor (e.g. Appendectomy, hemicolodectomy, pelvinae or para-aortic lymph removal etc.).

2.Adjuvante Chemotherapie:

The first chemotherapy should take place within 4-6 weeks from the day of surgery.

Adjuvant chemotherapy in early stages:

a) In patients with stage IA grade 1 ovarian cancer after complete surgical staging, no adjuvant chemotherapy should be adjuvanted.

b) Patients with stage IC or IA/B ovarian cancer and grade 3 should receive platinum-containing chemotherapy :

6 x Carboplatin AUC 5 max.800mg + Paclitaxel 175 mg/m2 i.v. uber 3 h q21

During this chemotherapy, weekly laboratory checks are carried out> diff. BB, liver values, creatinine. E-Lyte.

Another scheme is :

Carboplatin Mono AUC5 i.v. q21 can be used as primary or relapse therapy in case of contraindication to combination therapy.

Adjuvant chemotherapy in advanced stages:

c)Patients with advanced ovarian cancer IIB-IV should receive platinum-containing chemotherapeutic agents:

6 x Carboplatin AUC 5 max.800mg + Paclitaxel 175 mg/m2 i.v. uber 3 h q21

d)From FIGO IIIB-IV onwards, the following regimen is administered:

1. 6 x Carboplatin AUC 5+ Paclitaxel 175mg/m2 q21 + Bevacizumab 15mg / kg ab Zyklus 2 für 15 Monate

2. 6 x Carboplatin AUC 5+ Paclitaxel 175mg/m2 q21 + Bevacizumab 15mg / kg gefolgt von Olaparib 300 mg 1-0-1

3. 6 x carboplatin AUC 5+ paclitaxel 175mg/m2 q21 followed by olaparib 300mg 1-0-1 to 2 years

4. 6 x carboplatin AUC 5+ paclitaxel 175mg/m2 q21 followed by niraparib 300mg 1 x 1 to 2 years.

Antibody bevacizumab (Avastin) causes by suppressing the formation of new blood vessels. As a result, the cancer, which needs a lot of blood to grow, is not sufficiently supplied with oxygen and nutrients.

Usually from the 2nd chemo cycle with chemotherapy is administered. After chemotherapy, the Antibody therapy should be continued every 3 weeks for a total of 15 months.

A BRCA mutation is found in 20% of patients with advanced, low-differentiated serous ovarian cancer. In almost 50% of patients, a deficiency in homologous recombination (HRD) is detected in the tumor as a defect in gene repair.

Therapy in patients with FIGO IIIB-IV, BRCA Mut. or HRD positive:

6 x Carboplatin AUC 5+ paclitaxel 175mg/m2 q21 + bevacizumab 15mg/kg from cycle 2 onwards with neoadjuvant therapy and as maintenance therapy with PARPi (poly (ADP-ribose) polymerase inhibitor) olaparib 300mg 1-0-1, starting after chemotherapy and then for 2 years Or 6 x carboplatin AUC 5+ paclitaxel 175mg/m2 q21 + bevacizumab 15mg/kg from cycle 2 + niraparib1 x 1 300 mg PARPi regardless of whether BRCA is mut.

Negative for HRD:

a. 6 x Carboplatin AUC 5+ Paclitaxel 175mg/m2 q21 + Bevacizumab 15mg / kg fur 15 Monaten oder

b. 6 x Carboplatin AUC 5+ paclitaxel 175mg/m2 q21 followed with niraparib 300mg or 200mg 1 x 1

Maintenance therapy with PARPi for ovarian cancer:

PARPi inhibit the DNA repair mechanisms of tumors and thus selectively lead to the death of tumor cells. These are particularly important if there is a high probability that the tumor will develop despite standard therapy .

returns.

Studies show that PARPi extend the period until the tumor recurs by an average of 1-4 years.

What are the additional side effects of olaparib?

Headache

Verminderter Appetite

Vertigo

Increase in creatinine concentration

Rezidivierende Ovarialkarzinomen:

If the recurrence occurs earlier than 1 year after the operation and the completion of the first chemotherapy, then it appears that the chemotherapy has not responded sufficiently and must be treated with platinum-free chemotherapeutic agents, preferably with platinum-free chemotherapy drugs.

: Pegylated liposomal doxorubicin, topotecan, gemcitabine, or paclitaxel+ may be combined with Avastin if it was not administered earlier.

If the recurrence occurs later, it can be assumed that the first therapy was effective, and these combinations can be considered:

1) Carboplatin AUC4 (max 600mg) Day 1 + Gemcitabine 1000mg IV Day 1 and 8, q21

2)Carboplatin AUC5(max.800mg)+ peg.liposomales Doxorubicin (Caelyx) 30mg/ m2 i.v. q28

Gemcitabine works by inhibiting DNA synthesis, thus slowing growth of tumor tissue.

Side effects of gemcitabine:

-Nausea with or without vomiting

-increased transaminases (AST, ALT) and alkaline phosphatase

-Proteinuria and hematuria

Edema

- Nephrotoxicity, hepatotoxicity

-Dry oral mucosa

- Taste change

-Haarausing

-Allergic reaction

-Thrombosis

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PREPARATION AND CHARACTERIZATION OF CHITOSAN/HYALARONIC ACID-BASED COSMETIC MASKS ENRICHED WITH *Lagerstroemia indica* L. LEAF EXTRACT LOADED LIPOSOMES

Ümit ERDOĞAN*[1], Şule SULTAN UĞUR

Abstract: Cosmetotextiles are emerging as a highly promising part of contemporary consumer lifestyle. This study aims to prepare and characterize new generation cosmetic textile face masks from herbal extracts with cosmetic raw material potential using innovative modern technologies. *Lagerstroemia indica* L. leaf extract-loaded liposome formulations were prepared by double solvent displacement (DSD)-based technique (Sala et al., 2017). Non-woven cotton fabrics were coated with the previously developed liposomal nanoparticles containing *L. indica* leaf extract by the LbL method. The existence of the deposited nanolayers was examined using attenuated total reflectance-fourier transform infrared spectroscopy (ATR-FTIR). The CUPRAC assay was used to measure the antioxidant effectiveness of coated fabrics containing liposomal *L. indica* leaf extract. We successfully incorporated *L. indica* leaf extracts exhibiting strong antioxidant properties into liposome form. The characterization analyses performed supported our results. Moreover, antioxidant properties have been gained through innovative methods applied to the developed masks. Based on the in vitro application of the CUPPRAC assay, we determined the antioxidant capacity of the masks as 25.42 ɥmol TE/g-fabric at the end of the 240th min. The present investigation demonstrated that the techniques we employed yielded compelling outcomes, indicating their suitability for manufacturing masks intended for cosmetic use.

Keywords: Cosmetotextiles, CUPRAC assay, liposome, LbL, non woven cotton fabric, comsetic facial mask

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1. INTRODUCTION

Cosmetic textiles, a category of technical textiles, has experienced substantial growth in recent years due to the introduction of innovative textile materials. A textile material that retains the active ingredient has specific properties such as cleansing, absorbability, comfort, aesthetic feeling, flexibility, protection and skin cell proliferation (Islam et al., 2022). Cosmetic textile products are commercially available in the form of refreshing wipes, face masks, eye pads, hair towels, styling products, etc. Cosmetotextiles are emerging as a highly promising part of contemporary consumer lifestyle. Cosmetotextiles are textiles that incorporate a chemical or mixture with the ability to release active molecules upon contact with the human body, particularly the skin and hair. These materials are specifically developed to clean, perfume, protect, and aid in the maintenance or correction of body odors. Cosmetotextiles are textiles that contain cosmetic preparations, fibers, and connecting agents that possess similar attributes to cosmetic items (Cravotto et al., 2011).

Different carrier systems are employed to safeguard the active component from external elements, prolong the duration of its action, and achieve controlled release systems that deliver the desired outcome in cosmetic textile products. These carrier systems are liposome, microencapsulation and molecular encapsulation technologies. Liposomes are spherical vesicles formed by one or more lipid bilayers with an aqueous phase between them and a structure similar to biological membranes. They consist of biodegradable and biocompatible lipids similar to biological membranes. They are usually obtained from eggs or soybeans and consist of lecithin, the main component of which is phosphotidylcholine. In recent years, liposomes have been used as dyeing aids in the textile industry, especially in wool dyeing (Barani and Montazer, 2008). Liposomes are not toxic and immunogenic. They can carry water and oil soluble active ingredients, release active ingredients in a controlled manner, transport them to the target area and are biodegradable (Bozkır and Duman, 1996).

Chitosan (CH) is a cationic polysaccharide found in nature, biocompatible and low toxicity; therefore, it is widely used as a biomaterial, especially in drug delivery systems (Hamman, 2010; Shukla et al., 2013). Chitosan is a hydrophilic, biocompatible, biodegradable and positively charged polysaccharide polymer. Previously, it was employed as a coating substance to facilitate the transportation of hydrophilic active components over the epidermal barrier, hence improving the delivery of active compound (Guo et al., 2003). Hyaluronate is a negatively charged polysaccharide and the main component of the extracellular matrix (ECM) (Jeon et al., 2015). Although it is an anionic macromolecule, it has versatile properties such as viscoelasticity, biocompatibility, water absorption and water retention, which prove that it can be used in transdermal application (Brown and Jones, 2005; Kong et al., 2011; Yang et al., 2012). Recently, chitosan/hyaluronic acid (CH/HA) polyelectrolyte complex nanoparticles have been investigated as carriers for gene delivery. (Duceppe and Tabrizian, 2009; Lu et al., 2011). The CH-HA plasmid-DNA nanoparticles were synthesized via complex coacervation of cationic polymer with genes (Lu et al., 2011). The average viability of cells transfected with CS-HA/plasmid nanoparticles was over 90%, indicating that the nanoparticles could be an effective non-viral vector (Polexe and Delair, 2013). In another study, the results obtained indicate that multilamellar liposomes uniformly coated with HA and CH polyelectrolytes via electrostatic interaction improve stability and may also serve as potential drug delivery systems for transdermal delivery of the hydrophobic antioxidant quercetin (Jeon and Park, 2015). In light of all this information, it may be possible that the use of Chitosan-hyaluronate complex in cosmetic textile face masks will make a positive contribution. Because hyaluronic acid is already frequently used in commercially available masks and its positive effects have been reported.

Over the last two decades, there has been an exponential growth in the use of herbal treatments in both developing and developed countries due to their natural origin (highly appreciated by patients), low cost, and fewer side and adverse effects. One of these plants, *Lagerstroemia indica* L., is a tall shrub that sheds its leaves in winter or one of the most widely used ornamental plants in coastal areas with a round crown that can grow up to 6-7 m (Al-Snafi, 2019). It is known that the Lagerstroemia indica is good for dysentery, eczema, boils, carbuncles, scabies, liver cirrhosis ascites, mastitis, and urinary tract in eastern medicine and folk medicine, and all of them are used as medicine (Lee et al., 2014). Research results suggest that *L.indica* has great potential as a cosmeceutical raw material as well as antioxidant, anti-inflammatory, and collagenase inhibition activity (Lee et al., 2014).

This study aims to prepare and characterize new generation cosmetic textile face masks from herbal extracts with cosmetic raw material potential using innovative modern technologies. *Lagerstroemia indica* L. leaf extract loaded liposome formulations were prepared by double solvent displacement (DSD) based technique (Sala et al., 2017). Non-woven cotton fabrics were coated with the previously developed liposomal nanoparticles containing *L. indica* leaf extract by LbL method. The existence of the deposited nanolayers was examined using Attenuated total reflectance -Fourier transform infrared spectroscopy (ATR-FTIR). The CUPRAC assay was used to measure the antioxidant effectiveness of coated fabrics containing liposomal *L. indica* leaf extract.

2. MATERIAL AND METHOD

2.1. Chemicals

PEG400, Neocuproine (2,9-dimethyl-1,10-phenanthroline) were supplied by Sigma Chemical Co., Steinheim, Germany. Ammonium acetate, iron(II) chloride tetrahydrate, copper(II) chloride, 96% ethanol, dihydrate and the rest of the chemicals were purchased from E. Merck, Darmstadt, Germany.

2.2. Material

L. Indica leaf samples were collected from the campus area of Agriculture Faculty, Isparta University of Applied Sciences. We washed them in water to remove any foreign matter, then left them to dry in the shade, away from direct sunlight. In this study, 70 g/m^2, 100% cotton spun-bond nonwoven fabrics were used.

2.3. Preparation of solutions, substrate, and *L. indica* leaf extract

Copper(II) chloride stock solution (10^{-2} M) was prepared by dissolving 0.4262 g dihydrate salt in distilled water, and diluting to a final volume of 250 ml. Ammonium acetate (NH_4Ac) buffer at pH 7 was prepared by dissolving 19.27 g NH_4Ac in water and diluting to 250 ml. Neocuproine solution (7.5 x 10^{-3} M) was prepared by dissolving 0.039 g neocuproine in 96% ethanol, and diluting to 25 ml with the same solvent (should be freshly prepared). Hyaluronic acid solutions, at 1% concentration, were dissolved in water medium under magnetic stirring.
L. indica leaf extract was prepared as reported in previously (Erdoğan and Karaboyacı, 2022). Briefly, *L. indica* leaves were prepared prior to extraction by then grinding with a coffee grinder (SinboSCM 2934-Turkey). 25 g of ground *L. indica* leaves was immersed in 250 mL of 96% ethanolin a sealed bottle. Ultrasonic bath system (Power sonic 180, 40 kHz frequency and maximum150 W, internal size: 300 mm × 150 mm × 100 mm) was used for extraction. Ultrasoundextraction was performed under the following experimental conditions: temperature; 50 °C,time; 45 min,

solid/solvent ratio; 1:10 (w/v), and maximum ultrasound power (40 kHz and 150W power). The collected supernatants were filtered from the residue and dried by evaporating the solvents with a rotary evaporator at 50 ˚C under vacuum.

To put cationic sites onto the substrate's surface, we employed a chemical modification technique known as cationization. Polyethyleneimine (PEI) was used to produce cationic nonwoven cotton textiles. A solution of Polyethyleneimine (PEI) with a concentration of 0.5% and a pH of 10.0 was made by dissolving PEI in distilled water. Non- woven fabrics were soaked in a solution of polyethyleneimine (PEI) in water at 25 °C, for a duration of 10 min. Next, the positively charged nonwoven cotton fabrics were subjected to a fixation process at 105 ºC for a duration of 5 min. To facilitate future usage, non-woven cotton materials with cationic characteristics were maintained in ziplock bags under ambient conditions in a dry, obscure location, shielded from light.

2.4. Manufacturing of *L. indica* leaf extract loaded liposomes

Liposome formulations were manufactured using a process called double solvent displacement (DSD), as described by Sala et al. (2017). Briefly, PEG400 (20 ml), Lipoid S 100 ((3 g),and *L. indica* leaf extract (1.2 g) were dispersed in 45 ml of ethanol (96%) solution. This is the primary solvent displacement. The second step is to introduce the previous mixture into a liquid phase consisting of 40 ml of glycerin. Table 1 presents the running parameters used in the double solvent displacement approach for pproducing liposomes loaded with *L. indica* leaf extract.

Table 1. Running parameters used by the DSD method for the production of L. indica leaf extract-loaded liposomes

Ingredients	DSD method
Lipoid S100®) (g)	3
L. indica leaf extract (g)	1.2
Ethanol (mL)	45
PEG 400 (mL)	20
Glycerin (mL)	40
Distilled water (mL)	135
Agitation rate during first solvent displacement (rpm)	6500
Stirring time after first solvent displacement (min)	2
Agitation rate during second solvent displacement (rpm)	6500
Stirring time after second solvent displacement (min)	5
Total volume (mL)	240

2.5. Preparation of chitosan-coated liposome formulations

Chitosan (0.1 g) was dissolved in 1% v/v solution of acetic acid in water. The *L. indica* leaf extract loaded liposome suspension was then added dropwise to an equal volume of the chitosan solution with stirring. The mixture was incubated for 1 h with continuous stirring and then left overnight at 4 °C. Thus, chitosan-coated liposome suspension containing L. indica extract was prepared.

2.6. Preparation of cosmetic masks

We adopted the application of LbL technique to form films of chitosan-coated *L. indica* extract-loaded liposome suspensions on nonwoven cotton fabrics (Uğur et al., 2010). Prior to usage, the fabric samples underwent testing under controlled laboratory settings at a temperature of 25 ± 2 ºC and a relative humidity of 60 ± 5% for a period of 24 hours. The multilayer deposition technique was made use of polypropylene transport trays with dimensions of 20 cm × 30 cm. Before coating, we individually diluted the chitosan-coated liposome suspension (480 mL) and the HA solution (1%) to a volume of 1 L with distilled water. During the deposition process, the nonwoven cotton fabrics with a positive charge were submerged alternately in the following solutions for 5-min intervals :(a) anionic HA solution (160 ml), (b) the distilled water (160 mL), (c) the cationic chitosan-coated liposome suspension (160 mL), d) distilled water (160 mL). The application solutions utilized in each cycle were replaced with fresh ones. This deposition cycle was repeated until 12-layer chitosan-coated liposome /HA films were deposited on cotton fibers. Multilayer film coated nonwoven cotton fabrics were dried at 60 ºC and then cured at 130 ºC for 5 min.

2.7. Characterization of liposome suspension and fabrics

2.7.1. Dynamic light scattering (DLS) of liposome suspensions

Particle size, polydispersity index (PDI), and zeta potential (ZP) of liposome suspensions were determined using an SZ-100z dynamic light scattering instrument (Horiba Jobin Jyovin, Japan). The nanoparticles (1:100) were diluted using distilled water as the dispersion medium. For the particle size analysis, the scattering angle was maintained at 90 ºC, while

the holder temperature was set at 25 °C. The measurements were conducted in triplicate, and the samples were allowed to reach equilibrium for 60 s per run using 12 μL quartz cuvettes before each measurement. A zeta potential measurement was conducted using a disposable cell equipped with carbon-coated electrodes.

2.7.2. Fourier transform infrared attenuated total reflectance (FTIR-ATR) measurements

A attenuated total reflection fourier transform infrared spectroscopy spectrometer (ATR-FTIR, Jasco Co., Tokyo, Japan) was used to obtain the infrared spectra of liposomes, untreated, pre-treated, and treated fabrics using an ATR sampler. The spectra of FTIR were performed in the range of 400 and 4000 cm^{-1} with a resolution of 2 cm^{-1} at 25 °C.

2.7.3. *Antioxidant capacity of fabrics*

To measure the antioxidant capacity of fabrics, fabrics with an average weight of 20 mg were immersed in 20 mL of PBS (10 mM, pH 7.4). Then, in order to avoid calculation errors caused by dilutions, the incubation process was carried out as separate experiments for 5 different periods (1, 30, 60, 120, and 240 min) at 37 °C and 300 rpm shaking speed. At the end of each experiment, samples were taken and total antioxidant capacity of fabrics was determined according to the following methods.

The total antioxidant capacity (TAC) of the treated nonwoven fabrics was determined by following the CUPRAC (cupric-reducing antioxidant capacity) assay (Bener et al., 2022).
Briefly, the application of the CUPRAC method was as follows: 1 mL Cu (II) (10 mM), 1 mL Nc (7.5 mM) solutions, and 1 mL buffer (1 M NH4Ac) solution were mixed in a tube, and then (1) mL of sample solution and (0.1) mL of distilled water were added to the final mixture. After 30 min of incubation at 25 °C, absorbance was recorded at 450 nm against a reagent blank. The TAC was expressed as trolox equivalent (mmol TE/g fabric) based on the standard curve of trolox. TAC was calculated from the following equation 1:

$$\text{TAC (}\mu\text{mol TE g}^{-1}\text{ fabric)} = \frac{A}{\varepsilon_{TE}} \text{ x } \frac{V_m}{V_s} \text{ x } D_f \text{ x } \frac{V}{m} \times 1000$$

Where: A: absorbance measured at 450 nm, ε_{TE}: Molar absorption coefficient of trolox compound in the CUPRAC method (1.67 x 10^4 L mol^{-1} cm^{-1}) (Önder et al., 2023), Vm: Total volume of CUPRAC method measuring solution (4.1 mL), Vs: Sample volume (1 mL), Df: Dilution factor (if no dilution was made, this factor is taken as "1"), V: total volume of fabrics in PBS (20 mL), m: The mass of fabric weighed in the release process (average 0.02 g)). The blank reagent solution contained PBS instead of the sample solution, and the other steps were the same (Blank reagent solution: 1 mL Cu (II) + 1 mL Nc + 1 mL NH4Ac + 1.1 mL H_2O).

3. RESULTS AND DISCUSSION

3.1. Particle size, polydispersity index (PDI), and zeta potential (ZP) of liposome suspensions

To prepare the liposome formulation, double solvent displacement (DSD), was used. The z-average mean (Z-size), Zeta potential (ZP), polydispersity index (PDI), of the liposome formulation was measured. Additionally, zeta potentials were measured to determine the cationic and anionic character of the prepared chitosan and hyaluronic acid solutions. Zeta potential, particle size and size distribution data of chitosan-coated liposome suspensions are shown in Table 2 and Figure 1. The results of particle size, PDI, and zeta potential demonstrated that the application of a cationic polymer as a coating on vesicles led to an increase in particle size from the nanometer to micrometer range. This increase can be attributed to the meidum molecular weight of Chitosan. Liposome suspensions had significant zeta potential value (43.99). Research findings revealed that the zeta potential was positive when liposome suspensions were coated with chitosan. Zeta potential shows physical stability of colloidal systems. Zeta potential of *L. indica* extract loaded liposomes was increased by chitosan coating to produce more stable formulations. Due to the negative functional groups present in phospholipids utilized for liposome synthesis, the zeta potential typically has negative values that are close to neutral (Salvati et al., (2017). The negative zeta values were reversed to positive, as anticipated, due to the cationic coating of liposomes (Smith et al., 2017). The zeta potentials of chitosan and hyalaronic acid solutions were found to be +68 and -27, respectively. In addition to liposome suspensions, the other two solutions also have large absolute zeta potentials, which may contribute to the advantage of the fabric coating process. Because, Zeta potential shows the physical stability of colloidal systems.

Table 2. Particle size, polydispersity index (PDI), and zeta potential (ZP) of liposome suspensions, chitosan and hyaluronic acid solutions

Sample	ZP	Z-size (nm)	PDI
Liposome suspension	+43.99± 1.187	7531± 614.1	0.221 ± 0.099
Chitosan solution	+68.07 ±2.902	-	-
Hyaluronic acid soluiton	-27.09± 2.803	-	-

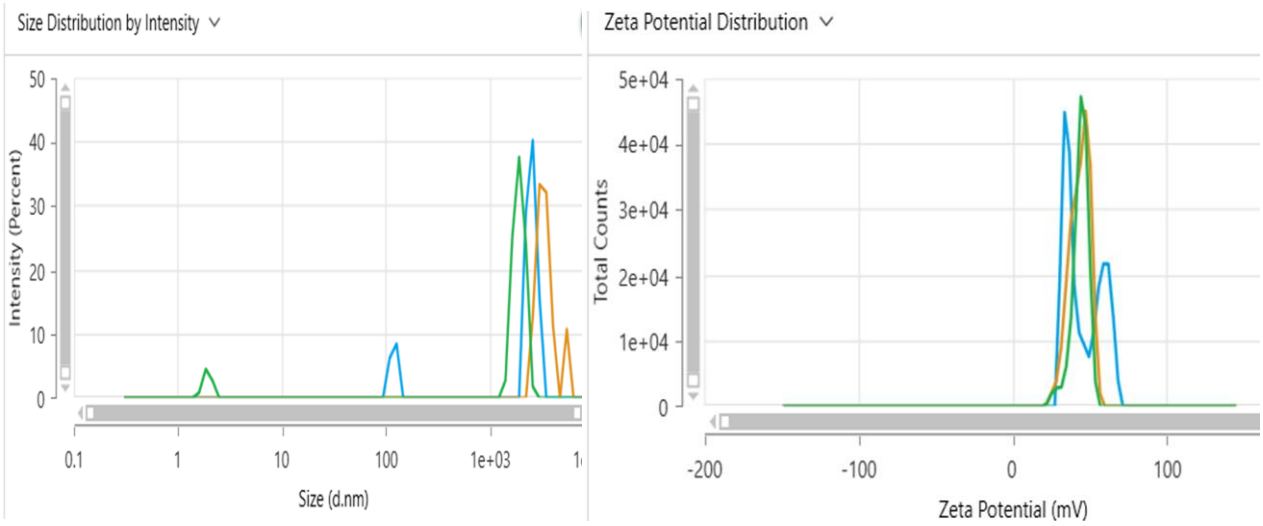

Figure 1. The z-average mean (Z-size) and Zeta potential (ZP) of the liposome suspensions

3.2. FTIR-ATR measurements

The FTIR spectra of the fabric samples (untreated nonwoven fabric (NW1), PEI-treated nonwoven fabric (NW2) and nonwoven fabric coated with *L. Indica* extract-loaded liposomes (NW3)), and the solutions included in the coating process (chitosan and hyaluronic acid) are presented in Figure 2. The FTIR spectra revealed characteristic peaks of fabric samples, chitosan and hyaluronic acid, depending on their functional groups. When the FTIR analyses of the fabrics were examined, it was determined that the liposome suspensions did not cause any structural changes in the structure of the fabrics. The bands observed around at 3300 cm^{-1} in the IR spectrum of the fabrics and the solutions are defined as O-H stretching vibrations. The patterns around at 2900 cm^{-1} correspond to C—H stretching vibrations. The patterns visible at 1028-1041 cm^{-1} in the samples are attributed to C-O stretching and C-O-H bending vibrations.

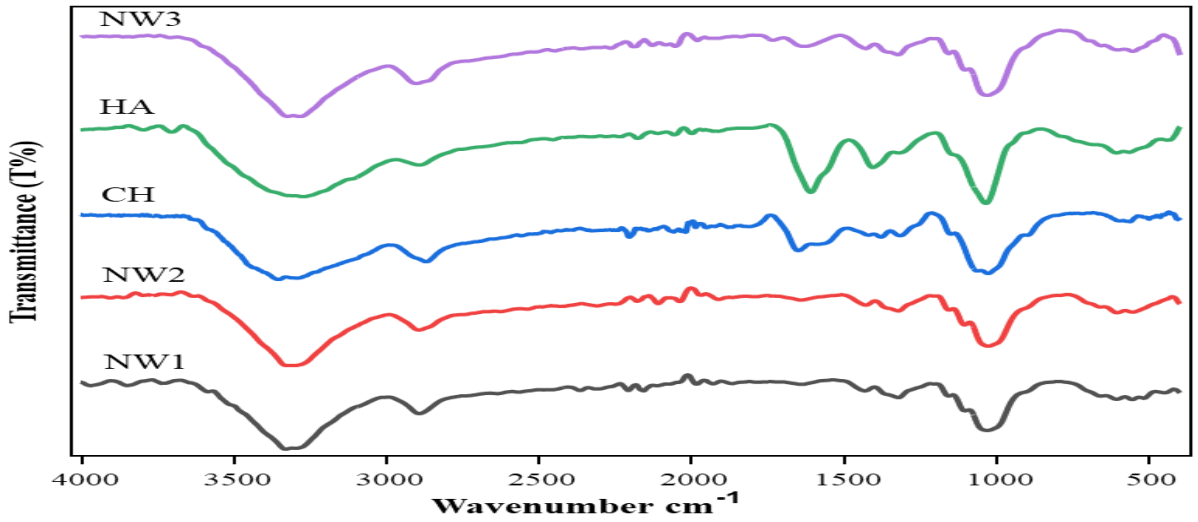

Figure 2. The FTIR spectra of the fabric samples, chitosan and hyaluronic acid (NW1;untreated nonwoven fabric, NW2; PEI-treated nonwoven fabric, and NW3; nonwoven fabric coated with *L. Indica* extract-loaded liposomes, HA; hyaluronic acid, CH; chitosan)

Due to their similar structures, the spectra of HA and chitosan are very similar. The broad band between at 2960-3660 cm-1 belongs to OH stretching vibrations and partly to N-H stretching (in N-acetyl part) vibrations. The C-H stretching at 2885 cm^{-1}, the strong absorption band at 1606 cm^{-1} are due to HA's carboxyl groups (C=O stretching) (amide I), and the band at 1550 cm-1 is due to (N-H) (amide II) bending vibrations. The band between 1344-1455 cm-1 is due to C-O-H bending vibrations. ~1023 cm^{-1} is due to the stretching vibrations of the C-O bond in the carbohydrate ring. Characteristic peaks of chitosan; 3644–2987 cm^{-1} are the stretching vibration of OH groups (primary and secondary OH), and N-H stretching vibration (N-acetyl chain), C-H stretching (C=O) at 2865 cm^{-1}, amide I and II bands at 1606 and 1594 cm^{-1}, respectively. 1024-10765 cm^{-1} are the stretching vibrations of the C-O bond in the carbohydrate ring. The band between at 1594-1606 cm^{-1} is the bending vibration of the free NH_2 group bound to glucosamine.

3.2. Antioxidant activity

We evaluated the antioxidant activity of the cosmetic masks by considering the users' duration of use. Total antioxidant capacity of fabric samples coated with *L. indica* extract-loaded liposome suspension was determined according to the CUPRAC method. The Cu(II)-neocuproin (Nc) reagent, which acts as a chromogenic oxidant, is employed in the CUPRAC test to conveniently quantify the overall antioxidant capacity of plasma antioxidants, flavonoids, and dietary polyphenols (Apak et al., 2004). Several previous studies have reported that *L. indica* leaf extracts exhibit potent antioxidant activity (Al-Snafi, 2019; Chang et al., 2023; Labib et al., 2019). In the present study, the total antioxidant capacity of fabric samples coated with *L. indica* extract-loaded liposomes taken at different time (0., 30., 60., 120., and 240. min) intervals was presented in Figure 3. The antioxidant capacity of the masks was found to vary at different times depending on the amount of active compounds in the plant extract released from the masks. It was determined that the masks exhibited the highest antioxidant activity (25.42 ɥmol TE / g-fabric) at the end of the 240. min.

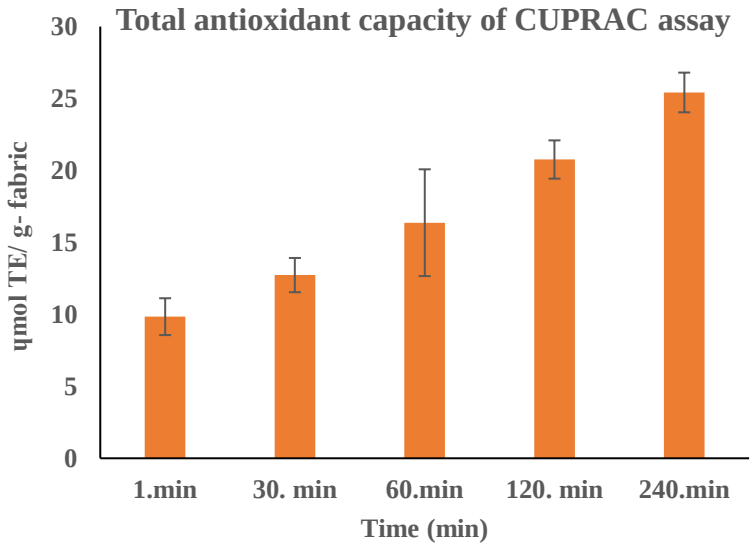

Figure 3. Total antioxidant capacity of cosmetic mask enriched with *L. Indica*. leaf extract loaded liposomes

4. CONCLUSIONS

This work aims to prepare and characterize new generation cosmetic textile face masks from herbal extracts with cosmetic raw material potential using innovative modern technologies. *Lagerstroemia indica* L. leaf extract loaded liposome formulations were prepared by double solvent displacement (DSD) based technique. The current study showed that the methods we applied have convincing results that they are suitable for the production of masks for cosmetic purposes.
As a result, the use of methods applied to produce textiles with cosmetic textile properties will be increased in the textile industry and valuable data will be collected on the discovery of antioxidant-rich extracts and the creation of safe cosmetic products and cosmetic raw materials with appropriate antioxidant properties.

Author Contributions
Conceptualization: Ü.E.; Investigation: Ü.E., Ş.S.U.; Material and Methodology: Ü.E., Ş.S.U..; Supervision: Ü.E., Ş.S.U..; Visualization: Ü.E.; Writing-Original Draft: Ş.S.U., Ü.E..; Writing-review & Editing: Ş.S.U., Ü.E..; Other: All authors have read and agreed to the published version of manuscript.

Conflict of Interest
The authors have no conflicts of interest to declare.

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PARKINSON'S DISEASE, ADVANCED-INTENSIVE PHYSIOTHERAPEUTIC REHABILITATION IN THE PHYSIOTHERAPY LABORATORY AT UAMD IN THE YEAR 2023

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Abstract: The importance of early physiotherapeutic rehabilitation in Parkinson's disease. The objective of this topic is to slow down Parkinson's disease, preventing the physical problems it brings, using advanced physiotherapeutic rehabilitation in combination with drug therapy. The study was conducted during the period January-December 2023 and these data were extracted from the clinical records of patients at the Central Polyclinic in the city of Durres. There are a total of 21 patients in the age group of 50-90 years, who suffer from Parkinson's disease. From January-July 2023 there were 8 patients who underwent simple physiotherapeutic rehabilitation and from August-December there were 9 patients who underwent intensive physiotherapeutic rehabilitation. Out of 21 patients with Parkinson's disease included in the study, we found that the most affected age group is 71-80 years old for both genders. There is a predominance of this age with 64% for gender M compared to the 71-80 age group with 60% for gender F. Regarding the stages of the disease, which 13 of them have undergone intensive rehabilitation and they have very good results compared to 8 pacients who have done simple rehabilitation which have good results. For the pacients who have done advanced rehabilitation, we found that the age group of 50-60 years has the easiest stage 2-phase and occupies 15% of cases, the age group of 61-70 and 71-80 years has a slightly more severe phases 3-phase and occupies 23% and 62% of cases. Our country urgently needs to establish a standardized rehabilitation protocol, and assessment scales for Parkinson's disease. In this paper, we proved that with advanced-intensive e physiotherapeutic rehabilitation, we had very good results for 1- 4 phases of the disease.

Keywords: Parkinson's disease (PD), intensive physical-therapy, physiotherapeutic management.

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INTRODUCTION

Parkinson's disease (PD) is the second most common neurodegenerative disorder after Alzheimer's disease (Marco YC Pang., 2021). Parkinson's disease is defined as a progressive neurological disorder characterized by symptoms such as bradykinesia, tremors, rigidity, and postural instability (James Parkinson in 1817).The distribution ratio of the disease Male/Female is 3:2 (Capriotti Teri., 2023 & Dickson DW., 2018). The frequency of Parkinson's disease in America reaches values of approximately 60,000 people diagnosed with SP each year and more than one million people are currently living with this disease in the United States of America (Capriotti Teri., 2023). Parkinson's disease (PD) is characterized by dopaminergic loss of neurons in the midbrain due to neuronal degeneration, and this results in a decrease in dopamine levels, particularly in the post-commissural putamen and other regions of the basal ganglia (Isha Shrimanker., 2023). The most common treatment of Parkinson's disease is the pharmacological one, which is based on the use of drugs that replace dopamine (Brichta Lars., 2013). However, we can say that physiotherapy and Physiotherapists play a very important role in the rehabilitation of people with (PD), especially in relation to the management of motor symptoms, promotion of regular physical exercises, and prevention of injuries and secondary complications (Marco YC Pang., 2021). Studies have been conducted to evaluate the efficiency and comparison of visual, motor, and sensory stimuli in preventing the risk of falls in severe forms of physiotherapy. Placing greater emphasis and significance on auditory stimuli in preventing the risk of falls (Ayena JC., 2017). Other improved variables were found in the study of Ayán Carlos et al, where hydrotherapy or exercise in water significantly improved muscle strength and cardiovascular frequency. Other studies have evaluated the impact of rhythmic exercises, and ball exercises in improving the pace of walking in patients with PD (Bueno, M. E. B., 2017), we can say that based on the rhythm, specifically in rhythmic dances such as tango, it has been efficient in the rehabilitation of patients with PD (Koh Y,.2020). These elements directly influenced the increase

of autonomy and functionality of patients suffering from PD, which would enable patients to perform daily tasks more easily, with a higher level of self-efficacy (Carroll LM., 2020). Therefore, many rehabilitative strategies such as advanced-intensive rehabilitative, exercise, aerobic exercise, strength/resistance exercise, treadmill training, dance and music, speech-language therapy, occupational therapy, hydrotherapy, and martial arts have been found to improve motor and non-motor symptoms of PD. (Studer, M., 2021)

PURPOSE OF THE STUDY

Evaluation of protocols for advanced-intensive e rehabilitation in patients with Parkinson's disease in the city of Durres

MATERIAL AND METHODS

The study was conducted during the period January-December 2023 and the data was extracted from the data of the clinical records of the patients at the Central Polyclinic, Durrës, and the physiotherapy laboratory at "Aleksander Moisiu University" of Durres. A total of 21 patients, 50-90 group ages resulted in Parkinson's disease. From January-July 2023 there were 8 patients who underwent simple physiotherapeutic rehabilitation and from August-December there were 13 patients who underwent intensive physiotherapeutic rehabilitation at the physiotherapy laboratory at "Aleksander Moisiu University".

RESULTS

In the Regional Hospital of Durrës, in the Department of Neurology, are rehabilitated patients with Parkinson's disease. Our study has made us understand a lot about this pathology in our country and try to implement advanced-intensive e rehabilitation as we proved that the patients had very good results. In the last year, January-December 2023, 21 patients with Parkinson's disease were diagnosed and rehabilitated, with different durations. There is a predominance of the 71-80 age group, with 7 cases (64%) for gender M compared to the 71-80 age group with 6 cases (60%) for gender F. Regarding the stages of the disease, which have undergone intensive rehabilitation, they have result 4=very good rehabilitation compared to result 3=good rehabilitation for those who have done simple rehabilitation. For the pacients who have done advanced-intensive rehabilitation, we found that the age group of 50-60 years has the easiest stage 2-phase and occupies 15% of cases, the age group of 61-70 and 71-80 years has a slightly more severe phases 3-phase and occupies 23% and 62% of cases.

Table 1: Distribution of Phases by age group and relevant cases

Age groups	Cases	Phases
51-60 years old	2	2
61-70 years old	3	3
71-80 years old	13	3
81-90 years old	3	4
Total	**21**	Easier=1 to severe=5

Chart 1: Cases divided by age group 50-90 years based on genders.

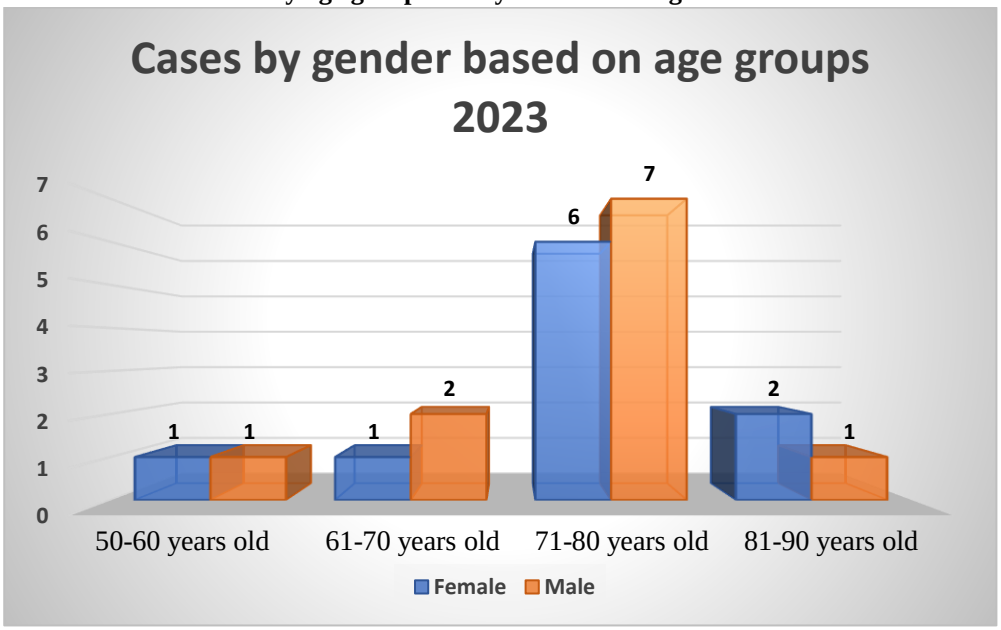


Chart 1- shows that the age group of 71-80 years has the most cases (for both gender) with 7 cases for gender M and 6 cases for gender F. And the less cases have the age group of 50-60 years old (same for both gender with 1 case).

Chart 2:% of cases divided by age group 50-90 years based on gender F

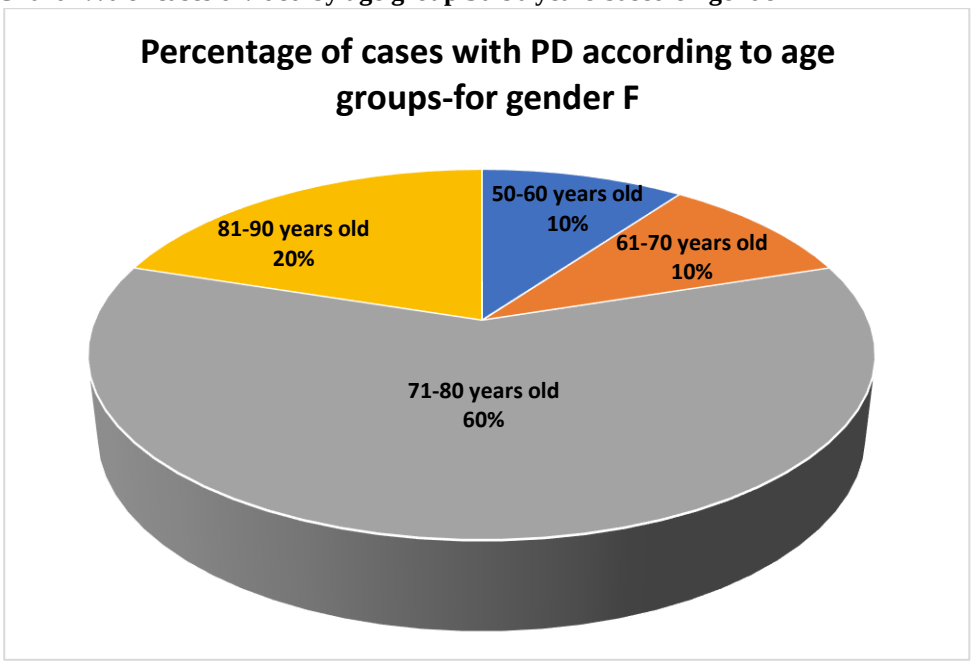


Chart 2- shows that the age group of 71-80 years has the most cases and accounts for 60% of all cases of PD, followed by the age group of 81-90 years old with 20% of cases and the age with the fewest cases is the age of 51-60 and 61-70 years old and accounts for 10% of all cases.

Chart 3: % of cases divided by age group 50-90 years based on gender M

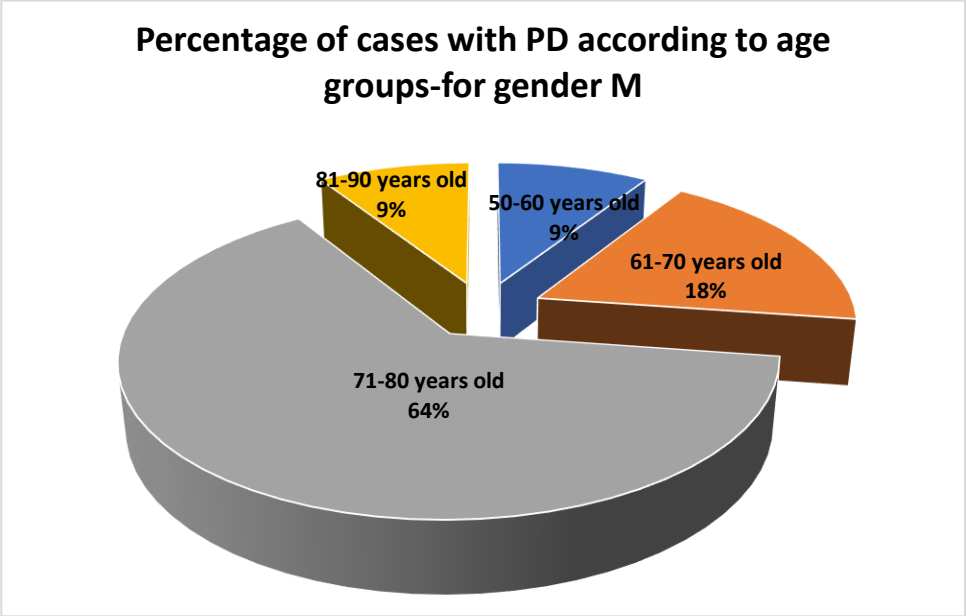


Chart 3- shows that the age group of 71-80 years has the most cases and accounts for 64% of all cases of PD, and otherwise gender F, is followed by the age group of 61-70 years old with 18% of cases and the age with the fewest cases is the age of 51-60 and 81-90 years old and accounts for 9% of all cases.

Table 2: Shows how many cases we have for each age group and which of the 5 phases these age groups belong to and the result of advanced Physiotherapy Rehabilitation compared to the traditional one based on the phases

Age group	Cases of traditional rehabilitation	Cases of intensive rehabilitation	Phases	Results after traditional rehabilitation	Results after intensive rehabilitation
51-60 years old	0	2	2	**3-good result**	**4-very good result**
61-70 years old	1	3	3	**3-good result**	**4-very good result**
71-80 years old	5	8	3	**3-good result**	**4-very good result**
81-90 years old	2	0	4	**3-good result**	**4-very good result**
Total for all cases	**8**	**13**	**1- 5**	**3-good result**	**4-very good result**

Chart 4: Cases divided by age group 50-90 years based on genders

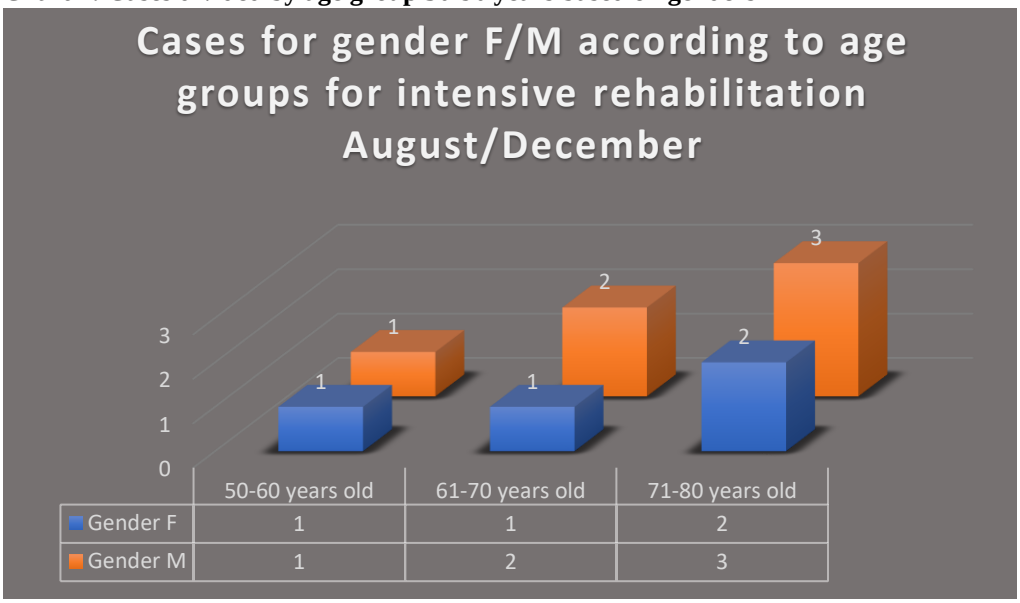


Chart 4- shows that the age group of 71-80 years has the most cases (for both gender) with 3 cases for gender M and 2 cases for gender F. And the less cases have the age group of 50-60 years old (same for both gender with 1 case).

Chart 5: BERG rating scale for patients before/after advanced-intensive e rehabilitation

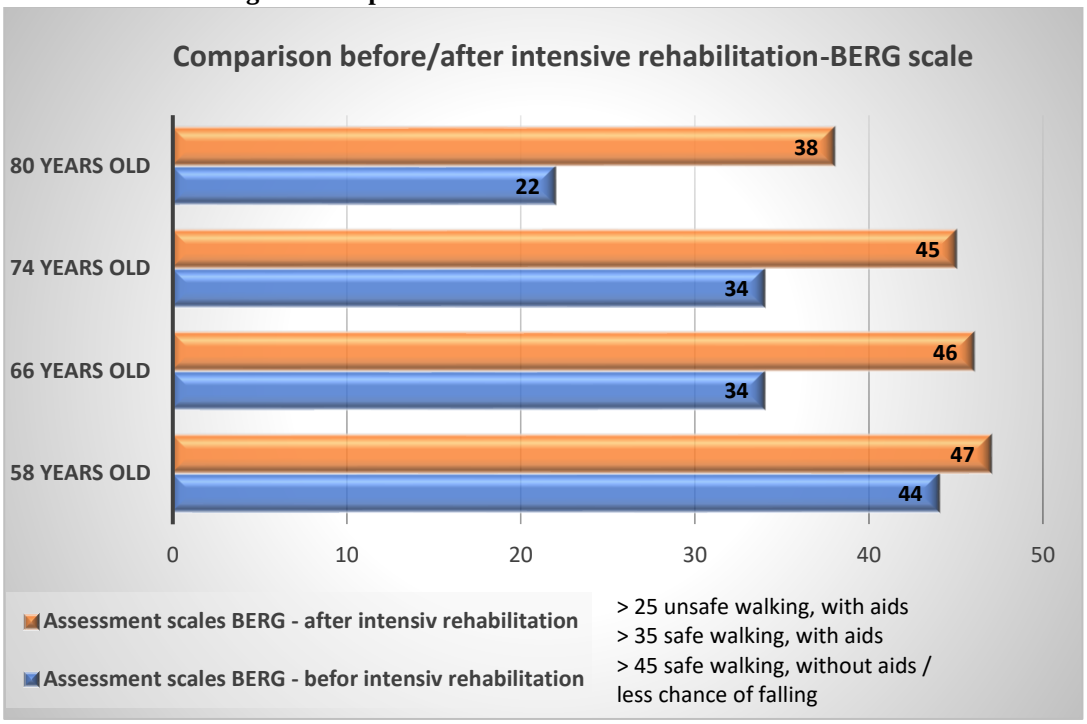


Chart 5-We clearly see a significant improvement in the results, which we have collected according to age in relation to the BERG assessment scale after advanced-intensive e rehabilitation.

Chart 6: H&Y rating scale for patients before/after advanced therapy

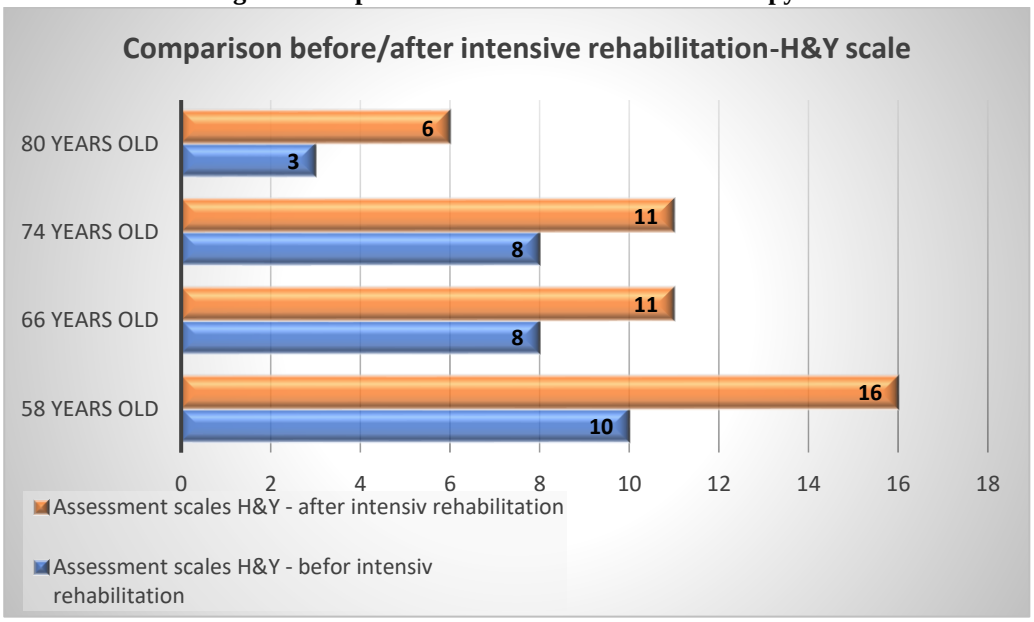
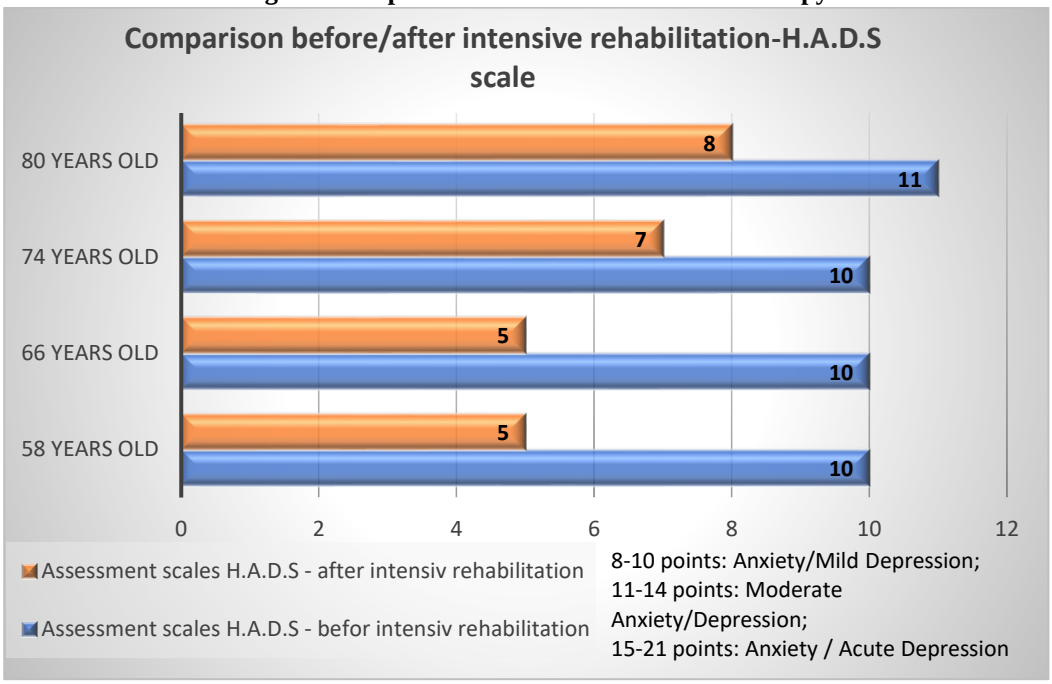


Chart 6-We clearly see also in this evaluation scale, a significant improvement of the results, which we collected according to age in relation to the H&Y evaluation scale after advanced-intensive e rehabilitation

Chart 7: H.A.D.S rating scale for patients before/after advanced therapy



Graph 7-We clearly see a significant improvement in the results, which we collected according to age, in relation to the H.A.D.S rating scale after advanced-intensive e rehabilitation.

Chart 8: Rehabilitation results in % of cases after traditional therapy based on age groups

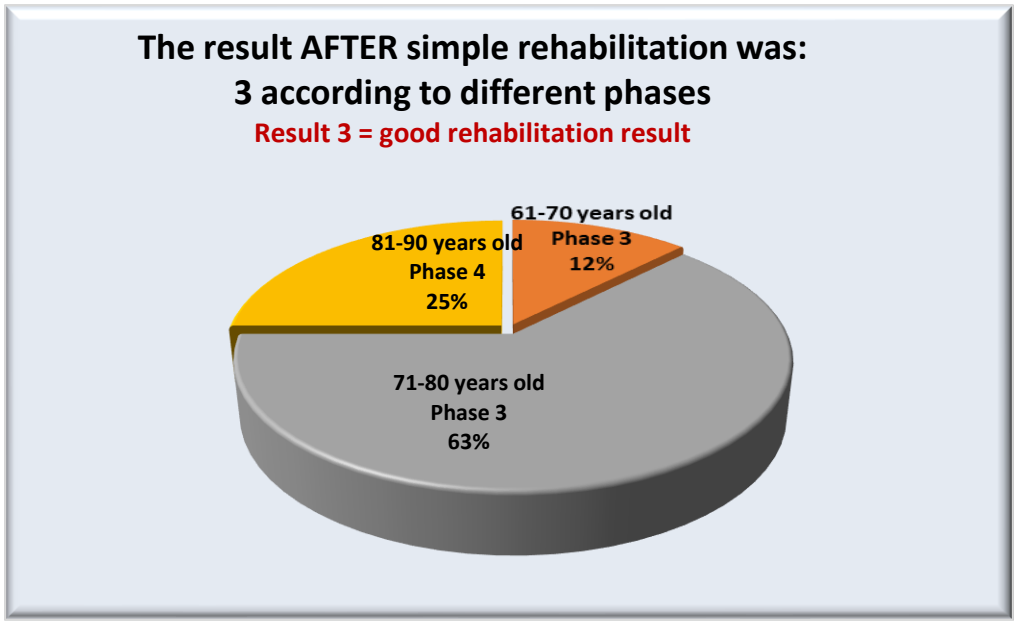


Chart 8- We see that the results of rehabilitation in % phase 3 and 4, after traditional therapy based on the age groups and the phases in which the patients are, is equal to the result 3 (good result for all stages)

Chart 9: Results of rehabilitation in % of cases after intensive therapy based on age groups

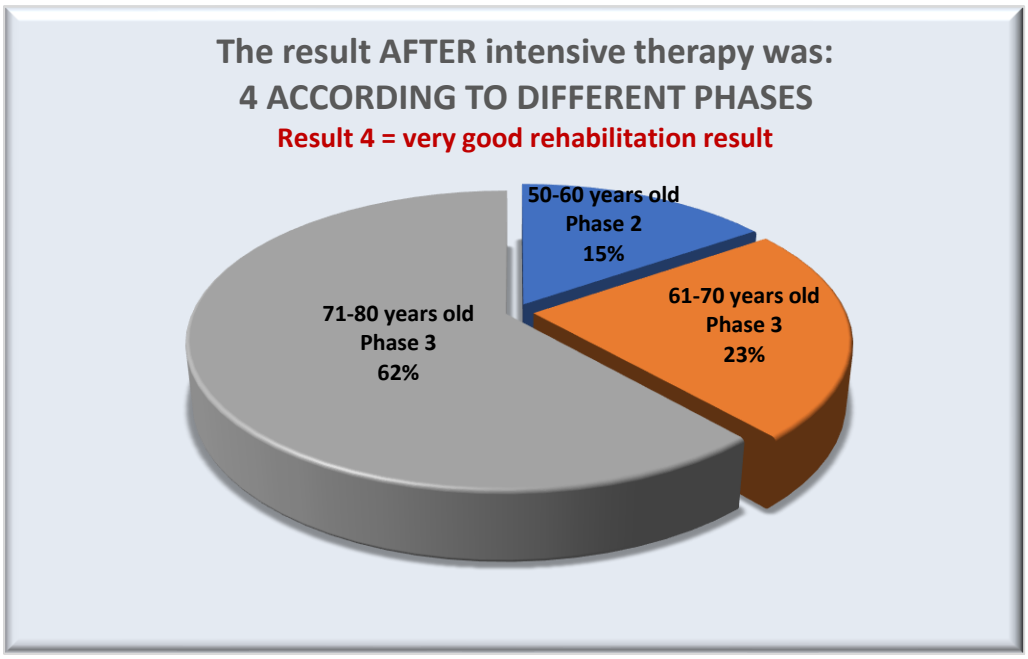


Chart 9- We see that the results of rehabilitation in % for phase 2 and 3, after intensive therapy based on the age groups and the stages in which the patients are, unlike the chart 8, are equal to the result 4 (very good result for all phases)

DISCUSSION

Parkinson's disease (PD) represents the second cause after Alzheimer's, as the disease with high disability worldwide (WHO).

- **A total** of 21 patients in the age group of 50-90 years were included in our study with Parkinson's disease. **(Chart 1)**
- **For gender F-** the age group of 71-80 years has the most cases and accounts for 60% of all cases of PD, followed by the age group of 81-90 years old with 20% of cases and the age with the fewest cases is the age of 51-60 and 61-70 years old and accounts for 10% of all cases. *(Chart 2)*
- **For gender M-** the age group of 71-80 years has the most cases and accounts for 64% of all cases of PD, and otherwise gender F, is followed by the age group of 61-70 years old with 18% of cases and the age with the fewest cases is the age of 51-60 and 81-90 years old and accounts for 9% of all cases. *(Chart 3)*
- **For BERG rating scale-** for patients before/after advanced-intensive e rehabilitation, we saw a significant improvement in the results, **after** advanced-intensive e rehabilitation. We collected data by age on the BERG rating scale. *(Chart 5)*
- **For H&Y rating scale-** for patients before/after advanced-intensive e rehabilitation, we also saw in this evaluation scale, a significant improvement of the results, **after** advanced-intensive e rehabilitation.

(Chart 6)

- **For H.A.D.S rating scale-** for patients before/after advanced-intensive e rehabilitation, we also saw in this evaluation scale, a significant improvement of the results, **after** advanced-intensive e rehabilitation. *(Chart 7)*
- **Regarding rehabilitation** results in % of cases **after traditional** therapy based on age groups- we saw that the results of rehabilitation in % phase 3 and 4, after traditional therapy based on the age groups and the stages in which the patients are, is equal to the result 3 (good result for all stages) *(Chart 8)*
- **Regarding the rehabilitation** results in % of cases **after intensive** therapy based on age groups- we saw that the results of rehabilitation in % for phase 2 and 3, after intensive therapy based on the age groups and the stages in which the patients are, unlike the chart 8, are equal to the result 4 (very good result for all phases). *(Chart 9)*
- **Regarding the Phases-** We found that the age group of 51-60 years has the easiest stage 2-phase and occupies 22% of cases, the age group of 61-70 and 71-80 years has a slightly more severe phases 3-phase and occupies 56% and 22% of cases more severe 4-phase for 81-90 years old. *(Chart 8, 9)*
- *Clarification:* We proved that early physiotherapeutic rehabilitation and advanced- intensive rehabilitation would be better, is extremely important for patients suffering from Parkinson's disease, in slowing it down, so the patient reaches the transition more slowly from 1st-phase to 2nd-phase and so on.

- Also, according to the many types of research that we have conducted for this study, it turned out that if we set the physiotherapy rehabilitation protocols and rating scales, these results would increase even more in % and would be from - good results - up - very good results.

CONCLUSIONS

One of the reasons why we chose this topic is the fact that PD has a very important socio-economic impact, especially in relation to the disability it causes in patients based on the stages they are in. Foreign countries use assessment scales and advanced rehabilitation methods such as those presented in this thesis. Unlike our country that uses simple physiotherapeutic rehabilitation, this finding is reflected in the high percentage of improvement of patients with a **very good result**=4 rehabilitated with advanced-intensive e therapy, compared to patients who did simple therapy and received as a **good result**=3 from rehabilitation and not very good. Hence our country has an urgent need for the establishment of a standardized rehabilitation protocol and assessment scale and their application. The use of physiotherapeutic treatments has resulted in the reduction of physical and motor disability and in the improvement of the life of patients suffering from Parkinson's disease, always accompanied by drug therapy. In this way, this therapy not only helps in reducing disability, but also in reducing patients' depression as they manage to become more autonomous and we will also have socio-economic benefits for our country because Parkinson's disease brings a major disability for these patients. Now is the time to apply advanced-intensive physiotherapeutic rehabilitation in our country as well. However, it must be said that the management of Parkinson's disease has significantly improved in recent years in our country as well.

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NURSING CARE AND TREATMENT FOR PATIENTS WITH HYPERTENSION

Dr. VioletaZanaj*[1]

Abstract: High blood pressure (arterial hypertension) is one of the preventable causes of morbidity and premature mortality. Arterial hypertension (HT) is a global health problem and a serious problem with significant impacts on individuals, families, communities and health services. To analyze statistical data on the number of patients with hypertension treated at the Kardio 360 clinic, Tirana for the years 2022, 2023 and from January to May for the year 2024. Quantitative method. The data were taken from the archives of the "Kardio 360" Clinic in Tirana. According to the statistical data collected from three years, we note that in 2022 a total of 163 cases of HTA were treated. In 2023, a total of 167 cases of hypertension were treated, and in the period January-May 2024, a total of 80 patients were treated. The most prevalent gender in all three years is male with 56% for the year 2022. The female gender with 57% for the year 2023 and the male gender with 54% for the year 2024. If we talk about the greatest spread of months, we notice that the month with more patients in 2022 was the month of March with 14%. For the year 2023 again the month of March with 17% and for the year 2024 the month of February with 35% of patients.

Keywords: arterial hypertension, age, self-care, month.

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INTRODUCTION

Hypertension is systolic and diastolic pressure higher than the normal value

Hypertension means high blood pressure, which is often called a "hidden disease" due to the fact that the disease is present, but the patient is not aware of its presence. HTA can appear with headache, dizziness, difficulty breathing, loss of balance, tightness in the chest, feeling of suffocation, vomiting, blurred vision, etc. This disease must be evaluated and treated in time because of the damage it brings to all systems. Therefore, it is important to measure arterial pressure regularly, especially in patients who have a family history or exhibit risk factors for hypertension. Arterial hypertension is a risk factor for cardiac and vascular diseases (coronary arteries, aorta and peripheral arteries), retinal damage, brain and kidney diseases.

Hipertensioni nënkupton presion të lartë të gjakut dhe është një sëmundje shumë e përhapur në popullatën e rritur. Shpesh hipertensioni është quajtur “sëmundje e fshehtë” për faktin se sëmundja është e pranishme, por pacienti nuk është në dijeni të pranisë së saj. E rëndësishme është të theksohet fakti se me ose pa shenja klinike tensioni e dëmton njësoj trupin e njeriut dhe prania e tij është një shkak i pavarur për sëmundje të zemrës, enëve të gjakut, veshkave, syve, trurit si dhe rrit vdekshmërinë, prandaj kjo sëmundje duhet vlerësuar dhe trajtuar me seriozitet.

Types of hypertension

The types of hypertension are: systolic type, convergent type and divergent type.
• The systolic type which is characterized by the maximum increase in systolic pressure and diastolic pressure does not change (eg in changes or in arteriosclerotic processes).
• Convergent type which is characterized by the increase of both pressures, systolic and diastolic, and the differences between them are small (renal).
• The divergent type, which appears with an increase in systolic pressure and a decrease in diastolic pressure, and the differences between these pressures are large (Hyperthyroidism, aortic insufficiency).
Hypertension is associated with two forms of small blood vessel disease:
a. hyaline arteriosclerosis.
Hyaline arteriosclerosis- When the lumen narrows as a result of hyalinization of the vascular wall.
b. hyperplastic arteriosclerosis.
Hyperplastic arteriosclerosis - It is characterized by "onion-like" skin, thickening of the arteriole wall and narrowing of the lumen.

Symptoms
People with very high blood pressure (usually 180/120 or higher) may experience symptoms including:
• Headache with characteristic in the occipital region
• Nosebleeds (epistaxis)
• Angina pectoris
• Cerebrovascular stroke
• Nausea, vomiting
• Disorientation
• Ringing in the ears (tinnitus)
• Dizziness
• Nervousness
• Flushing of the face and hot flashes on the head and face

What are the causes of Hypertension?
• Smoking
• Overweight or obesity
• Sedentary life
• Too much salt in food
• Excessive alcohol consumption
• Stress
• Age
• Inheritance
• Diet poor in magnesium, potassium, calcium
• Chronic kidney diseases
• Irregularities of thyroid and adrenal gland function
• Sleep apnea

What is the category of people at risk of being affected by hypertension?
• Individuals who have hereditary HTA
• Smokers
• Pregnant women
• Women taking oral contraceptives
• Individuals over 35 years old
• Obese or overweight individuals
• Individuals who lead sedentary lives
• Individuals who consume alcohol excessively
• Individuals who consume foods that are high in salt and fat
• Individuals suffering from sleep apnea

Nursing diagnoses
• Lack of knowledge related to the relationship between the therapeutic regimen and the disease process
• Disagreement with the therapeutic regimen due to side effects of medications and/or lack of a resource system for economic support (money, transportation).
• Changes in tissue perfusion (renal, cerebral, cardiopulmonary and peripheral) associated with reduced blood flow.
• Changes in nutrition: High risk of taking more food than the body needs related to the way of eating, cultural values, an imbalance between the level of activities and the intake of calories.
• Fatigue related to changes in the body's metabolism.
• Changes in sexual activity related to the effects of drug treatment.
• Individual inability to adapt to the effects of chronic disease and major lifestyle changes.

Nursing interventions for hypertension care plan
Nursing interventions are an essential part of the hypertension nursing care plan. These interventions aim to manage and treat hypertension while promoting optimal health outcomes for the patient.

Planning interventions
• Knowledge and understanding of hypertension management.
• Acceptance of the therapeutic regime.
Increasing knowledge about disease management.
For patients with essential hypertension, the nurse initially recommends the following lifestyle modifications:
• Salt restriction
• Weight loss
• Changes in alcohol intake
• Exercises

• Relaxation techniques.
• Avoiding smoking.
These modifications are considered fundamental in controlling hypertension. If the modifications are unsuccessful, the doctor suggests the use of antihypertensive medications. There is no surgical treatment for essential hypertension.

Final assessment

The final assessment during nursing care in patients with arterial hypertension is essential to ensure an efficient and safe treatment for the patient. Nursing care for patients with arterial hypertension includes:
1. Blood pressure monitoring: Regular control of blood pressure is essential to evaluate the efficiency of the treatment and to identify any sudden changes that may affect the patient's condition.
2. Evaluation of symptoms: The nurse must be careful to evaluate any symptom that may be related to arterial hypertension, such as headache, tenderness in the arms or legs, etc.
3. Medication monitoring: The nurse must ensure that the patient takes the prescribed medications according to the instructions and monitor for any possible side effects

1. Promoting lifestyle changes: By encouraging positive lifestyle changes, such as regular exercise, healthy diet and stress minimization, the nurse can help manage hypertension.
2. Patient education: It is important for patients to understand the risks of arterial hypertension and to be informed about ways to manage and control their condition. The nurse has a key role in providing patient education.
3. Regular monitoring of other health parameters: In addition to monitoring blood pressure, the nurse must also monitor other health parameters such as cholesterol level, blood sugar level, and the functioning of various organs, so that to identify possible complications.

Screening
Hypertension is a mostly asymptomatic disease, which is best identified by programs of structured population screening and appropriate measurements of TA's. Up to the age of 45, compared to women, men suffer more from hypertension; while from the age of 45 to 64 years, this percentage is almost equal for both sexes. After the age of 64, women suffer more than men from hypertension (15).
To prevent and diagnose hypertension in time, measurements are made of TA in adults > 18 years old, as follows:
• every 5 years if BP is < 120/80mmHg
• every 3 years if BP is 120–129/80–84mmHg
• annually if BP is 130–139/85–89 mmHg
The family doctor may recommend more frequent blood pressure measurements if the patient has major hypertension risk factors:
• High-normal blood pressure
• Increased blood pressure during clinical visits
• Overweight and obesity
• Use of alcohol
• Exposure to insulin (exogenous or endogenous) – Insulin resistance

Tips and home interventions
• Describe the nature of the disease and the purpose of the procedure and treatment hypertension.
• We explain the importance of a calm and therapeutic environment.
• We show the importance of maintaining a stable weight.
• We show the need for a low-calorie diet.
• We show the importance of avoidance and fatigue in activities.
• We explain the need to avoid constipation in bowel movements.
• We explain how to consume the right liquids, the allowed amount, restrictions such as coffee, tea, alcohol, etc.
• We explain the symptoms of complications reported by the doctor, eg headache, dizziness, vomiting, poor vision, etc.
• We talk about the medications he should use: the name, the dose, the time of use, the purposes.
• Side effects and toxic effects.

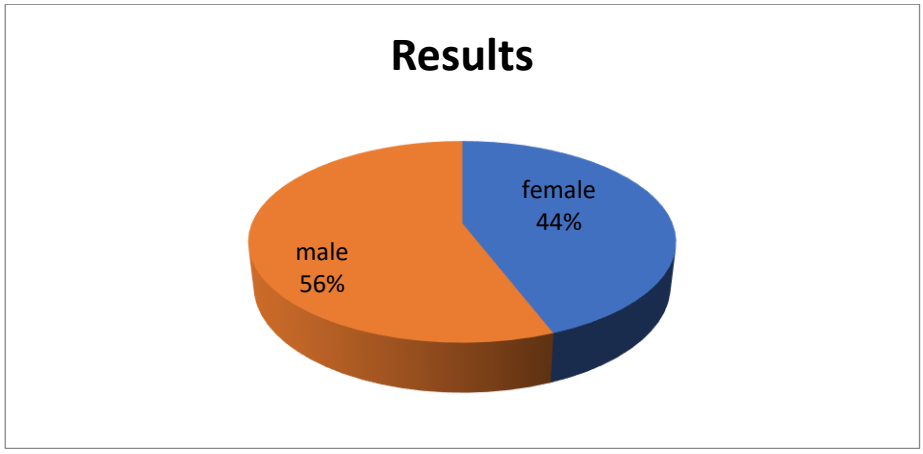
Methodology
Method:
Quantitative method. The data were taken from the archives of the "Kardio 360" Clinic in Tirana. The data belong to the period
• January 2022- December 2022

• January 2023- December 2023
• January 2024- May 2024.
• Participants;
• In order to carry out this survey, three years of data were obtained. From January 2022 to May 20234. Their ages ranged from 30 to 88 years old in all three years.
• The data are confidential and their purpose is to be used only for research purposes, their identity and the data obtained remain confidential.

Results 1

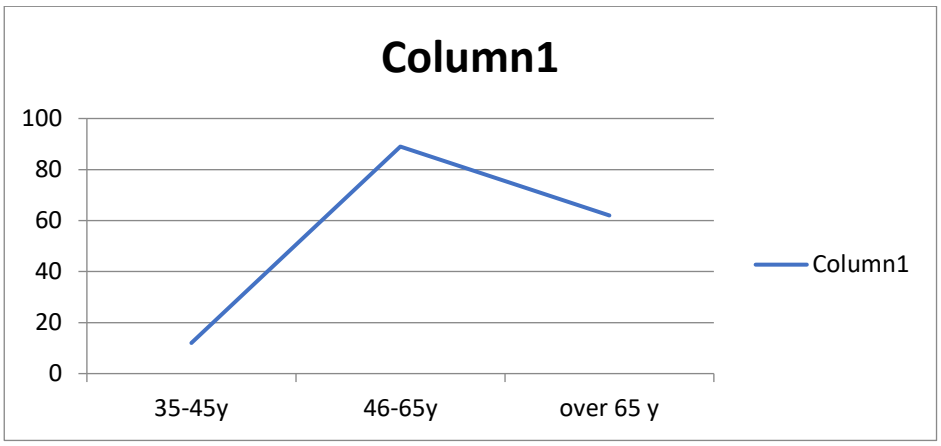
• For the preparation of this paper, all patients who were in the "Kardio 360" clinic in Tirana with arterial hypertension, during the period January-December 2022, were analyzed.
• From the data obtained from 163 patients, we note that the majority of patients with arterial hypertension during the period January-December 2022 were female with 72 cases or 44%, while the rest belonged to the male gender with 91 cases or 56% .

SEX	NUMBER	%
FEMALE	72	44%
MALE	91	56%
TOTAL	163	100%



The age group most affected by HTA is that of 46-65 years, counting a total of 89 cases or 56%, leaving behind the age group 'over 65 years old' with 62 cases or 39%, while the smallest number of cases belongs to the age group 30-45 years old with 12 cases or 5%

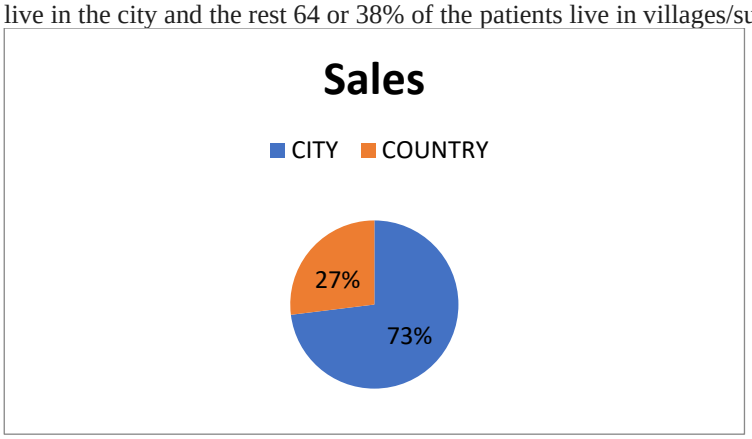
AGE	NUMBER	%
35-45 Y	12	5%
46-65 Y	89	56%
OVER 65 Y	62	39%



In the table below, we will look at the place of residence of the patients, located in the city or in the village.

PLACE	NUMBER	%
CITY	103	62%
COUNTRY	64	38%

From 167 patients who came to the clinic during the months of January-December, we note that 103 or 62% of them live in the city and the rest 64 or 38% of the patients live in villages/suburbs (urban)



Conclusions and recommendations

At the end of this paper, we draw the following conclusions:
a. The most affected age group with HTA is that of 46-65 years, while the smallest number of cases belongs to the 30-45 age group.
b. The month attended with the highest number of cases with hypertension was the month of March for the years 2022 and 2023 and the month of February for the year 2024.
c. The gender most affected was male for the years 2022 and 2024, while female for 2023.

Recommendations from the nurse:
Some of the nursing recommendations for patients with hypertension:
• Regular visits to the doctor
• Weight loss
• Avoiding smoking
• Having an active life
• Diet with less fat
• Patient education about home blood pressure monitoring techniques
• Notify the doctor in case of deterioration of the health condition

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MUSCULOSKELETAL TRAUMA AND NURSING CARE

Dr. Violeta Zanaj*[1]

Abstract: In this article we will talk about the links with musculoskeletal traumas, traumas that are very common and can be encountered every day. In the article, we have tried to select the information in such a way that it is as understandable as possible for everyone.Trauma is a serious problem, especially musculoskeletal trauma, but with the right help we can manage to succeed as we have seen that most of these patients succeed.
• To identify the causes and risk factors in musculoskeletal traumas
• To clearly point out the fundamental role of the nurse in the care of the patient with musculoskeletal traumas
• Determination of nursing diagnoses related to this trauma
• Treatment and education about this trauma
It has been studied based on the data of the registers of Durres Hospital. For this, the patient registers for the years studied have been used. This study is retrospective. The purpose of studying these statistics is to accurately assess the problems of musculoskeletal traumas. As we will see in the statistics obtained from the Durrës Regional Hospital, we will understand that almost 1⁄3 of those affected is the geriatric age group, but the pediatric age groups are not left behind even though they occupy a small percentage, but again they are to be discussed since some of them leave physical consequences and we can have post-traumatic stress. Children are vulnerable to these traumas as they are delicate and want to explore and can get overwhelmed. Also, the geriatric age as they are sensitive and a small amount of radiation can create a large fracture as their bones are more delicate after they have been worn. It can also affect osteoporosis.

Keywords: trauma, nursing care, fractures, injuries, wounds, treatment, pain

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Musculoskeletal traumas

The musculoskeletal system consists of cartilage, bones, tendons, ligaments and connective tissues. They support the weight of the human body and maintain posture. The possible role of the musculoskeletal system in humans is to facilitate movement and maintain posture. The adult human body contains around 600 muscles and 206 bones, connected by tendons, ligaments and soft tissues.

Musculoskeletal trauma or injuries involving ligaments and tendons can result in long-term effects on the individual and reduce the ability to maintain normal physical activities. These injuries are usually very common and result in a significant burden on the medical care system. Musculoskeletal injuries are managed by a medical specialty team, including emergency medicine, orthopedic surgeons, rheumatologists and sports medicine. Musculoskeletal injuries affect many parts of the body such as muscles, bones, ligaments, joints, tendons, cartilage and soft tissues. These injuries are associated with mild to moderate symptoms, including body aches, weakness, back pain, atrophy, tingling, and numbness. The constant motion of a musculoskeletal trauma can cause chronic inflammation and permanent disability.

Nursing care for patients with musculoskeletal trauma

First, data collection is done, focusing on what we see in the patient.
The first sense that helps us for this is the first. So we see the patient if he has hematomas, visible fractures, hemorrhages, etc.
We must always consider ABCDE. We look for visible and invisible fractures by palpation. We first look at the airways to see if they are free or not, we see if he is breathing and if there is blood circulation.
We assess the patient's consciousness, perform the necessary intervention. By freeing the airways if they are blocked, by giving mouth-to-mouth breathing or with ambu if we have it nearby, always if they are necessary.

We assess if we have hemorrhage and what kind of hemorrhage we have because when we have arterial hemorrhage we are in a fight against time.
If the patient is conscious or has companions, we get more information about the event to have a clearer idea of the injuries we may have.
If we are at the scene, we put the collar on as we may have neck injuries. And we start at the nearest hospital.
After we have received the data, we make an assessment of them and make some diagnoses that are or are expected to occur.

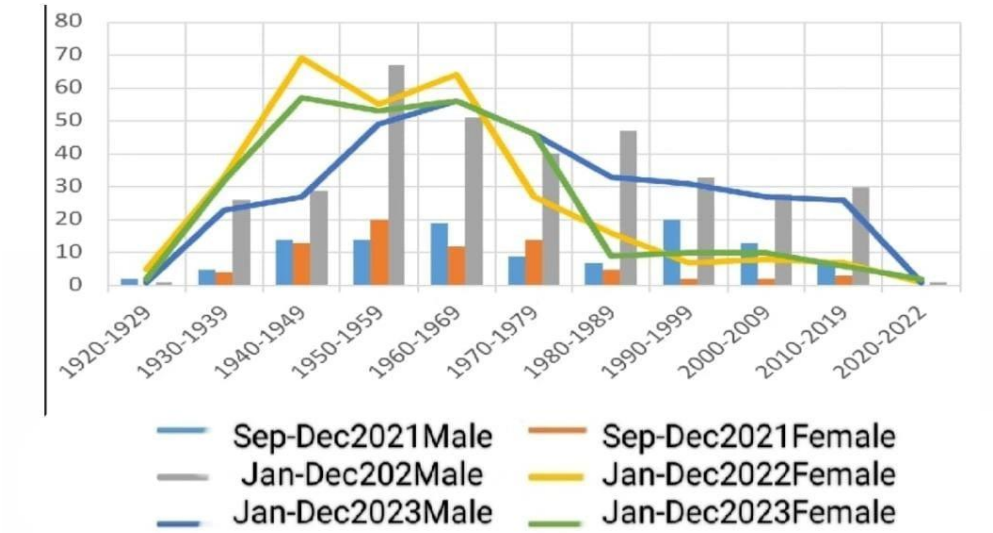
Among the nursing diagnoses we can mention:
- Immobilization.
- Pain.
- Risk of hemorrhage and shock.
- Risk of infection.
- Risk of damage to other areas from fracture.
- Difficulty in breathing.
- Dehydration.
- Disturbance of the hydroelectrolytic balance.
- Failure to accept the situation and oneself.
- Anxiety and stress related to the situation they are in.

After we decide what the nursing diagnoses are for our case, we make a plan of what we want to achieve or, more precisely, should achieve.
-And some nursing interventions may include:
- Mobilization of the patient, the patient moves with limited movements.
We teach the patient exercises to mobilize the body and the fractured part.
We help with the practice of these exercises.
We educate the patient on the importance of movement.
- Pain relief.
We help the patient to relieve the pain by means of analgesics.
Analgesics are also applied before movement, as movement is painful for them.
- Prevention of shock condition.
Most of these patients have an indication for intervention. But the fractures themselves tend to lose a lot of blood, which can lead to shock.
Therefore, blood transfusions are performed in such cases.
They are given IV fluids as we know that fluid loss can lead to shock.
Always if they are needed.
- Prevention of infection.
Wound treatment.
Use of aseptic methods during manipulation with the patient.
Use of gloves and sterile dressings during wound manipulation.
Keeping the environment clean, ventilated environment.
Keeping the wound clean.
Changing the patient's position to avoid forming decubitus wounds.
- Fracture mobilization.
Many fractures can damage the surrounding tissues, which would cause more suffering for the patient and one more problem for us, since it is more difficult to treat many traumas at once in the same patient, emphasizing that it will be more painful for the patient and not knowing where the injury may have occurred, can lead to fatality from not properly treating the fracture.
- Moderate breathing.
We can help with oxygen therapy or intubation can be done if indicated.
- The patient makes peace with himself, accepts the situation.
Not only the patients with trauma, but a good part of the patients experience very badly emotionally and mentally what happens to them. Some cannot accept the situation and condition they are in, and this makes them show signs of anxiety, depression, but also close in on themselves.
With these patients, like everyone else, but they want greater care. We must stand by them and create trust so that they can express what they feel. Because there are patients who do not accept the treatment that much.

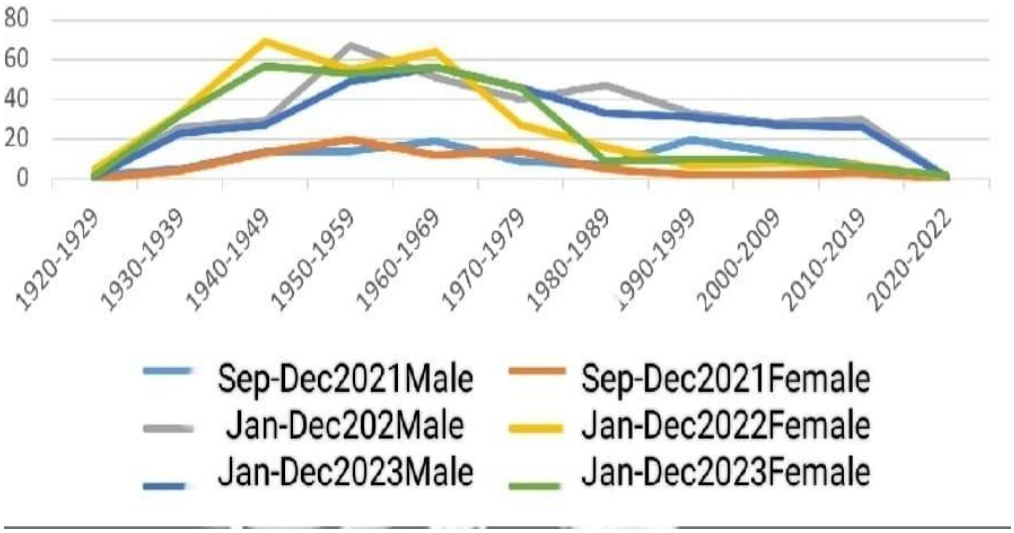
A good way for them to accept the situation is to see that there are others like them. And an appointment with a psychologist would also be a good way.

STATISTICS

Statistics of the Orthopedics Pavilion for the period September 2021-December 2023



Statistics of the Orthopedics Pavilion for the period September 2021-December 2023



Statistics of the Orthopedics Pavilion for the period September 2021-December 2023

In the graphs presented above, we have the cases presented in the Orthopedics ward at SRD (Durres Regional Hospital). It should be noted that all of them had an indication for intervention.

As we have presented, we have the period September 2021-December 2023.

There is a big difference between men and women and it is noticeable that the geriatric age occupies a significant part, almost 1/3.

But we also have cases of patients under 18 years old.

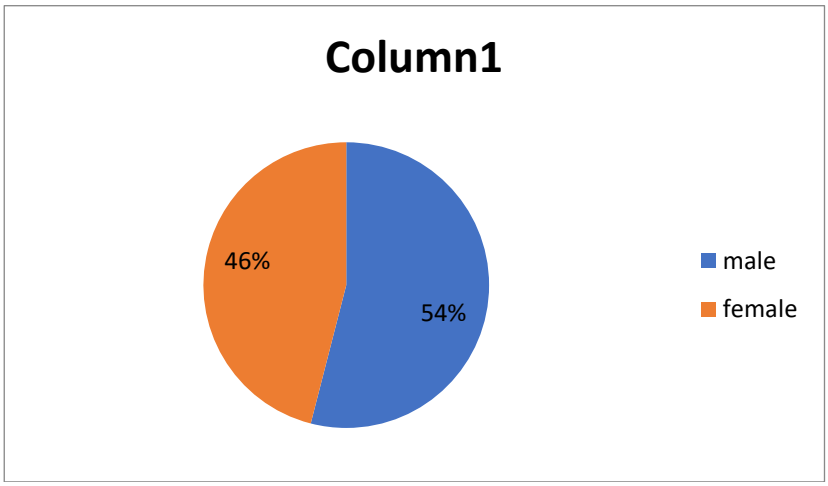
In pediatric ages, the majority of dislocations and fractures from falls, such as those of the femur, humerus, dislocations also do not remain.

And in the geriatric age, many fractures are from falls, and here as well, and in general, femur fractures are predominant.

But it is worth noting that in the geriatric age group, age is also an important factor.

As shown in the graph, the corresponding percentages for each year and for each gender and age group.

It is worth noting that the most affected are the ages 18-64, who are able to work. Because various accidents can also happen in the workplace.



The percentage of men and women in the orthopedic ward.

In the graph above, we have presented the percentage of men and women presented in the orthopedics pavilion during the period September 2021- December 2023. Where we see that men dominate.

GOLDEN HOUR

It is the decisive hour in trauma patients, a challenge for the emergency medical team. The golden hour is the time when, if we don't do the right thing, the patient dies. There are times when this is difficult and we cannot deny it.

The golden hour starts at the moment of the event.

As you said, it is a challenge for the emergency medical team that are on the ground because as we know the conditions may not be suitable to manipulate, the patient may be on fire, in the mud in the middle of the snow, inside an accident car which I don't leave you room to manipulate.
I don't know which one to list first since each one has the same importance. But first of all, we look at how damaged they are and who is in the worst condition but who can be saved and who is the easiest and which of them will die regardless of any manipulation.
We think we have only one patient. We remove it from the source, e.g. from fire, mud, etc. We remove dirty clothes or free him from tight things.
We appreciate ABC. The airways are checked to see if they are free, if there is circulation, if he is breathing.
Then we see what injuries there are and evaluate which one endangers the patient's life the most and we deal with that first.
We assess the patient's consciousness (as I said above regarding the classification of patients, if the patient results with a number below 8, his chances are very few.)
It should always be considered to place a neck brace, as until it is assessed that there is no neck injury in severe trauma, we always suspect neck injury.
If indicated, a tracheotomy can be performed if necessary.
In case of hemorrhage, it is compressed and, if necessary, the blood vessels are sutured.
Anytime a patient has head trauma, we should suspect a cerebral hemorrhage.
If we have a fracture, we will always suspect others.
As you said above, we make an assessment of the environment and the place of the event in order to have a clearer idea about the damages that may be present.
We immobilize the fractures.
Once the patient is in adequate condition, with stable vital signs, he is transported to the nearest hospital where radiological examinations are required to confirm or not diagnoses.

It is best to transport with an air bed so that there is no damage during transport and if we have fractures, no greater damage is caused. In the absence of an air mattress, something strong is recommended so as not to cause damage.
During transportation, if the patient is breathing moderately, he should be held with an ambu and connected to the apparatus as soon as he arrives at the hospital. Care should be taken with vital signs as they can change from second to second.
After arriving at the nearest hospital, data and information on each action are given. X-ray, scan can be done depending on the damage.
A venous line is opened, tests are taken, a catheter is placed and IV fluids are started if the patient's condition is serious.
If there has been a hemorrhage, vials of blood are given, and if the blood group is not known, the blood group is given, which is a universal 0 negative donor.
We are waiting for the results of the analysis and imaging, and based on them, the therapy will begin.
If there is an indication for intervention, prepare for the hall.

CONCLUSIONS

At the end of this paper, I believe that you have understood the essence and have been informed about the subject to which I have referred.
Trauma, as I mentioned at the beginning, is a problem that affects quite a few of us and we are all affected by them.
Preventing a trauma is often difficult and we can say most of the time, except for cases where we have suicide attempts. They happen randomly and as I said they are unpredictable. They are problems that can happen in any place and any environment.
It is good to be informed about quick help and one of the biggest things we can learn is that trauma patients should not be moved without the arrival of the medical personnel as they are at risk of creating other traumas and may lead to fatality.
Trauma is a serious problem, especially musculoskeletal trauma, but with the right help we can manage to succeed as we have seen that most of these patients succeed.
Sometimes they are easy to treat or sometimes it is very difficult, among the things we have to do is to drive the car with care and orderly since automobile traumas take a large number.
Let's put anger aside and not carry guns with us and control our children because teenagers cause trouble, which leads to the use of firearms or cold weapons, which increases the number of traumas and increases the number of deaths among young people.

To stay close to our close people, since the number of falls from height (suicide) has increased significantly.
Degenerative diseases are a problem caused by musculoskeletal trauma, so they are often difficult to treat.
Stay safe, enjoy life, life is too beautiful to be stressed, speed is not the answer. Violence is not a solution, your frustration has no reason to harm you or anyone else. For everyone, life is sacred and we all want to live peacefully, happily and without fear, without threats.
None of us will be different from others, but even if fate makes us like that, there is nothing to be sad or feel bad, think positively, you have another chance to live even though you will be different from them the others.

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NUTRITIONAL CHALLENGES AND IMPACT ON HEALTH AND WELL-BEING

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Abstract: Globalisation and urbanisation have influenced eating habits and forced many people to consume fast-food that is tasty but also high in calories. The risks that obesity and overweight pose to human health are becoming more well-known and understood in international studies and publications. About 5 million deaths from non-communicable diseases (NCDs) such as cancer, diabetes, cardiovascular disease, neurological disorders, chronical respiratory diseases and diggestive disorders occurred in 2019 as a result of having a higher than optimal BMI .[5,6] Obesity in children and adolescents immediately affects their health and is associated with an increased risk of developing many non-communicable diseases (NCDs), including type 2 diabetes and cardiovascular diseases, as well as an earlier onset of pathologies to others. Fast-food is a popular nutritional offer, as it is ready and easy to consume. [2] Food eaten outside the house is now becoming an important and regular component of life, and these rapid changes in the levels and composition of dietary patterns and activity/inactivity in transition societies are related to a series of socio-economic and demographic changes. Numerous studies have concluded that the poor nutritional value, excessive salt content and degree of saturated fat and trans fatty acids associated with fast-food products are likely to perpetuate the prevalence of hypercholesterolemia, hypertension, diabetes mellitus type II, obesity and cardiovascular diseases in Western societies. The economic impacts of the obesity epidemic are also significant. If nothing is done, the global costs of overweight and obesity are projected to reach $3 trillion annually by 2030 and more than $18 trillion by 2060.[13]. This paper aims to highlight the relationship between the consumption of processed foods and health outcomes in the population in terms of BMI and obesity through a review of the published literature on this issue as well as a comparison of data based on studies of different ages in Albania.

Keywords: Fast food, obesity, BMI, chronic diseas

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1. INTRODUCTION

Overweight and obesity are defined as abnormal or excessive accumulation of adipose tissue which can impair health and quality of life. One of the primary causes of obesity is diet. Excessive consumption of carbohydrates (sugars) and saturated fats are some of the main causes of overweight and obesity along with a sedentary lifestyle. In 2022, 1 in 8 people in the world will be obese. Adult obesity worldwide has doubled since 1990, and adolescent obesity has quadroupled. In 2022, 2.5 billion adults (18 years and older) were overweight. Of these, 890 million resulted in obesity. In 2022, 43% of adults aged 18 and over were overweight and 16% were living with obesity.[13,2].

For adults, WHO defines overweight and obesity as follows:

- overweight is a BMI greater than or equal to 25; and
- obesity is a BMI greater than or equal to 30.

For children, age should be considered when determining overweight and obesity.
About 16% of adults aged 18 and over worldwide were obese in 2022. The worldwide prevalence of obesity more than doubled between 1990 and 2022.

Over 390 million children and adolescents aged 5–19 years were overweight in 2022. The prevalence of overweight (including obesity) among children and adolescents aged 5–19 years has increased dramatically from just 8% in 1990 to 20% in 2022. The increase occurred similarly in both boys and girls: in 2022, 19% of girls and 21% of boys were overweight.•

While only 2% of children and adolescents aged 5-19 were obese in 1990 (31 million youth), by 2022, 8% of children and adolescents were living with obesity (160 million youth).[13,15,16]

2. MATERIAL AND METHOD

This paper presents an overview based on the literature using the following electronic databases: Medline, ScienceDirect and Web of Science. Keywords used for literature search: fast food, consumed food, nutrient content, lifestyle, health, obesity, cardiovascular disease, blood lipids, fats, saturated fatty acids, trans fatty acids, density energy, food consumption patterns, diet quality. A manual search of the references cited in the selected articles, generated from the literature search of the last 10 years, was also carried out.

2.1. Takeway food and fastfood

The current review examines the nutritional characteristics of takeaway and fast food items, including their energy density, total fat, and saturated and trans-fatty acid content. Associations between consumption of such foods and health outcomes are reported. Available evidence suggests that the nutrient profiles of convenience and fast foods may contribute to a range of negative health outcomes, findings on the specific health effects of their consumption are currently limited and, in recent years, changes are occurring that are designed. to improve them. It is therefore suggested that more studies should be directed towards gaining a stronger understanding of the nutritional and health consequences of eating ready and fast-foods and determining the best strategy to reduce any negative impacts that their consumption may have. in public health.[6]

The term 'Fast-food' was introduced by Merriam-Webster in 1951. According to Merriam-Webster, "Fast food" is the term given to food that can be prepared and served very quickly. It typically means any food that is sold in a restaurant with little preparation time and can be given to the customer to take away. So, it is mainly designed for its quick availability. These are products such as hamburgers, pizza, fried chicken, or sandwiches. The consumption of convenience foods and fast foods continues to increase in Western societies and is particularly widespread among teenagers. Since it is known that food plays an important role in both the development and prevention of many diseases, there is no doubt that changes in observed in dietary patterns affect diet quality as well as public health. [6,10]

Numerous studies have shown that the increased frequency of fast food and fast food consumption is worldwide, especially in Europe, the United States, and Australia, and the health risks caused by being overweight and obese are increasingly documented and understood..Fast food companies are targeting young children with great promotional strategies, delicious recipes, and attractive advertising. Important factors for giving preference to fast food include good taste, easy accessibility, added convenience, and financial value. [13]

Usually, students prefer this type of food to save time and money. Socio-economic trends, such as longer working hours, more women employed outside the home, and a large number of single-parent families have changed the way families get their food. The reason for choosing to eat out includes insufficient time to cook at home, opportunities to socialize or conduct business, convenience or need for a quick meal, entertainment, and going out or family celebrations (birthdays, anniversaries, and other special occasions). Changing lifestyles and losing the family tradition of eating may be the reason for the increasing popularity of fast food among young people. [11,14]

In 2019, higher-than-optimal BMI caused about 5 million deaths from non-communicable diseases (NCDs) such as cardiovascular diseases, diabetes, cancers, neurological disorders, chronic respiratory diseases and digestive disorders. Obesity in childhood and adolescence affects their immediate health and is associated with greater risk and earlier onset of various diseases such as type 2 diabetes and cardiovascular disease. Obesity in children and adolescents has adverse psycho-social consequences., affect school performance and quality of life, accompanied by stigma, discrimination and bullying. Obese children are more likely to be obese adults and are also at a higher risk of developing NCDs in adulthood. The economic impacts of the obesity epidemic are also significant. If nothing is done, the global costs of overweight and obesity are projected to reach $3 trillion annually by 2030 and more than $18 trillion by 2060.[4,6, 13,14]

2.2. Obesity, overweight and fast food:

Dietary habits and lifestyle practices are important determinants of obesity. Dietary factors associated with obesity are related to the frequency of eating, fast food and consumption of sweet tea or coffee. The shift from healthy, home-cooked food to more convenient and sustainable fast foods, combined with a sedentary lifestyle, has resulted in obesity and related health complications.[10]

Many epidemiological studies have reported the relationship between fast food consumption and increased body mass index (BMI) and obesity.

The mild degree of calorie restriction becomes comfortable and achievable when the diet is high in micronutrients and fiber. When there are enough micronutrients and fiber in people, they don't feel compelled to overeat. But, when micronutrients and fiber are insufficient, there is a tendency to seek and consume more food.[15]

Even worse is when eating foods fried in oil as these products can create carcinogenic and mutagenic aldehydes. Fried food, such as in a fast food restaurant, it is usually cooked in oil that has been heated and used many times, and a serving of French fries or fried chicken cooked in this way has 100 times the level of aldehydes defined as safe by the Organization World Health. Even the fumes are so toxic that they increase the risk of cancer. People who work in restaurants that fry food, or those who work in a movie theater making popcorn, have a high risk of lung cancer and other cancers, even if they don't eat any of the fried foods.[4,11,6,7]

Finally, rising obesity rates in low- and middle-income countries, including the lowest socio-economical groups, are rapidly globalizing a problem that was once associated only with high-income countries.

3. RESULTS

An increasing amount of research indicates that, despite efforts to improve the nutritional profiles of convenience and fast foods, some of these items—which are now commonplace—may be linked to several harmful health outcomes, such as obesity, type 2 diabetes, insulin resistance, and cardiovascular disorders.[7]

Simultaneously, eating food cooked outside the home is becoming more and more common in our nation as a trend in the Western diet. Data on the nutritional makeup of fast foods promoted by small businesses is still lacking, as the majority of research to date has solely looked at the nutritional value of food from fast food restaurant chains. The contents of many meal varieties—such as pizza, kebab, Chinese, Indian, and English—vary significantly. The frequency of consuming particular meal types (such as pizza, fried chicken, fried fish, Chinese, and Mexican food) outside of the home has only been linked to the incidence of type 2 diabetes in one study to date, and it was restricted to restaurant food. [7,8] Moreover, the majority of research has only looked at how frequently people eat out; it has not examined how much food is eaten, how well it is eaten overall, or any other aspect of lifestyle. A study published on the ResearchGate platform by Jahan I. et al on the impact of fast food consumption, held in East Asia, results that In Singapore, 70.8% of adults aged 18–21 years consume fast food at least once a week compared to 3.0% of adults aged 60 and over. In this study, it was also observed that female students have a healthier lifestyle compared to male students. An increasing trend in fast food consumption has been observed due to effective marketing strategies by fast-food companies. Children and students prefer fast food because of its taste, high accessibility, low price, and speed of preparation. This article provides additional evidence that the use of fast food is increasing the waist circumference of school-age individuals, with the percentage of overweight individuals rising from 9.7% to 13.9%. For both men and women, eating fast-food more than twice a week increased the prevalence of intermediate abdominal obesity by 31% and 25%, respectively. According to an article published by the International Food Policy Institute in January 2020, some of the most effective interventions for managing obesity and overweight are:[3,11]

1. Informed choice through nutritional education
2. Changing the market environment through food reformulation, increasing access to healthy foods starting at school age – Mazzochi et al. 2017

According to this paper, other strategies implemented by the US, Scandinavian countries and Western Europe include:

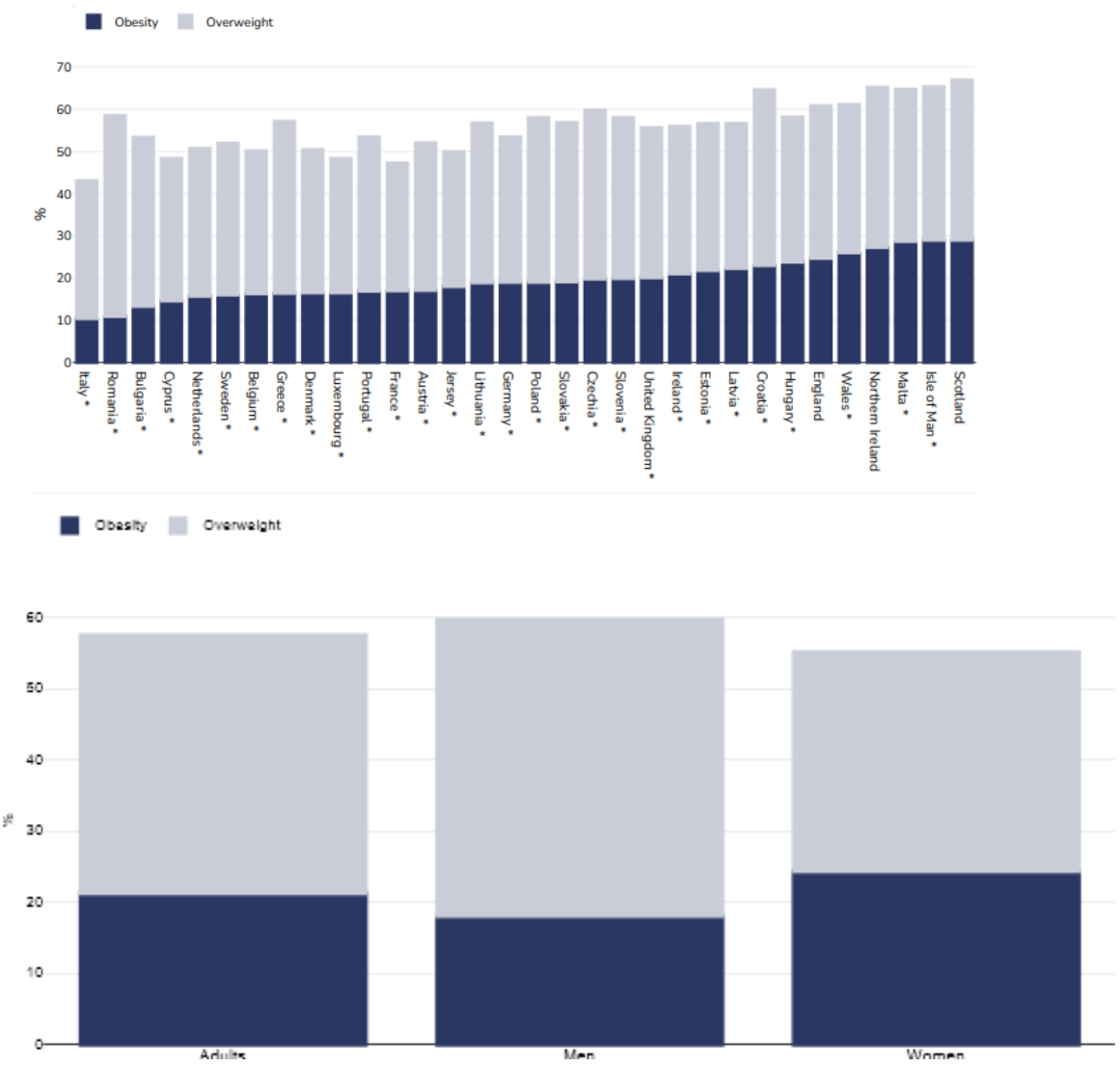
1. Government control of food prices, increasing access to healthy foods such as fruits, vegetables, fresh meat, unprocessed dairy products
2. Reimbursement of 10% of the price of vegetables
3. Imposition of excise duty on foods with high sodium or sugar content.
4. According to the International Cancer Research Fund, the Nourishing Framework includes:
   N: Labels on the nutritional value of a product

O: Providing healthy meals in schools or other public institutions
U: Economic means to ensure affordability of food costs
R: Banning the promotion of unhealthy foods
I: Improving the nutritional quality of food
S: Placement of initiatives and regulations to create a suitable environment for the marketing of healthy food products.
H: Food web
ING: Improving eating behavior and communication.[2]

Effective interventions targeted at populations of all ages, WHO, 2018 [16]

Following dietary protocols	Portion control
Setting nutritional labels	Media campaigns
Monitoring of food products	Dietary counseling
Reformulation of food products	Training of school staff
Ban on trans fats	Hygiene in cooking
Fiscal policies	Nutritional education
Regulation of food marketing	

For instance, in Finland, laws about food labeling, such as the requirement for a "high salt product" warning on goods if the salt content surpasses specific thresholds, have shown to be an effective means of lowering the population's salt consumption. [12,16] Regarding overweight and obesity data in "The findings of the 2017-18 Albania Demographic and Health Survey (2017-18 ADHS)", held by the Institute of Public Health (ISHP) and the Institute of Statistics (INSTAT), the following data were found for Albania: The average body mass index (BMI) is 25.4 for women aged 15-49 and 29.8 for women aged 50-59. Half of women aged 15-49 have a normal BMI, 4% are underweight and 45% are overweight or obese. The proportion of women aged 15-49 who are underweight rose slightly from 3% in 2008-09 to 4% in 2017-18. In the same period, the percentage of overweight or obese women increased from 39% to 45%. The average BMI is 25.6 for men aged 15-49 and 28.3 for men aged 50-59. Among men aged 15-59, 39% have a normal BMI, 2% are underweight and almost 60% are overweight or obese. [1, 9] The proportion of men aged 15-49 who are underweight increased slightly from 1% to 2%. between 2008-09 and 2017-18. The proportion of overweight or obese men remained unchanged at 53% during this period.[1]



[1] The findings of the 2017-18 Albania Demographic and Health Survey (2017-18 ADHS

Prevalence of obesity and overweight in the European Union and the United Kingdom[2] vs Prevalence of obesity in Albania[3]

Based on the graph presented, it can be seen that Albania has one of the highest rates of obesity prevalence in Europe. This underscores the need for further research to better understand the phenomena and mitigate the harmful impacts of obesity and overweight on the populace.Further research should be done to better understand the nutrition and health effects of eating fast food, as well as to develop better ways to lessen any potential harm that eating it may have to the general public's health.
Such tactics might necessitate widespread public collaboration and government regulation.

DISCUSSION AND CONCLUSIONS

Overweight and obesity are major health issues that are rapidly expanding around the globe. These illnesses have become far more common in recent decades, impacting both wealthy and developing nations. These nutritional challenges have major implications for the health and well-being of the population. Obesity and overweight are major nutritional challenges that require an integrated and multidisciplinary approach to address. Improving food habits, promoting physical activity, and supporting public policies are some of the key strategies to combat this global problem.[13,15]

There is a lack of good-quality data on the consumption of different food intake options. To our knowledge, no study published to date has differentiated between the consumption of fast food and other types of ready meals. To increase the nutritional value of the prepared meals at fast food restaurants, food technologists, nutritionists, and other experts must work together to alter the way food is produced. This could not be simple to accomplish, though, as other decision-makers might be hesitant to alter recipes—especially if they worry about how it will affect flavor and thus revenues.[12,16]

Moreover, government rules can be a more effective vehicle for bringing about change than volunteer suggestions as they often do not produce sufficient changes in the nutritional quality of completed goods. Government action is one of the most effective ways to prevent overweight and obesity. marketing of unhealthy goods is prohibited, and goods with high fat, sugar, or other harmful elements are subject to excise taxes. Expanding the availability of nutrient-dense, healthful foods, beginning with public spaces like yours. imposing rigid guidelines on nutrition labels. items that have been strengthened and enriched with fiber, minerals, or other essential nutrients. The most important governmental intervention is nutritional education and proactive intervention to provide information to the population. Only through nutritional education can the spread of the fast food phenomenon be prevented.[8,16]

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All autors contributed to conceptualization, writing-original draft, and writing- review and editing.
All authors have read and agreed to the published version of the manuscript.

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The authors have no conflicts of interest to declare.

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HEALTHCARE SYSTEMS AND TEACHING

Tiziana Ceka[1]

Abstract: In terms of health, there is still much to be done, even though there has been progress in recent years. According to WHO (2018), there was an improvement in the health status of populations between 2012 and 2015. However, there are inequalities because the longest healthy life span is recorded in countries whose economies are in better shape. Also, WHO emphasizes that although it has recorded improvements, Africa is starting from a very low base, and current levels remain lower than those of the rest of the world. The 2030 Agenda for Sustainable Development, adopted by the United Nations General Assembly in September 2015, highlights the issues of education, health and well-being. Among the seventeen sustainable development goals defined in this program (UN, 2015), we note goal 3 "Ensure healthy lives and promote well-being for all at all ages" and goal 4 "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all." These two, which place particular emphasis on education, health and well-being, will undoubtedly help achieve the other sustainable development goals. And it is in this vision, evoking the essential role of education in society, UNESCO (2017) indicates that it will help achieve the sustainable development goals and is, therefore, a means of improving the health and well-being of populations. There is therefore an important link between education, health and well-being. Indeed, if health conditions the educational process (WHO, 1997), it must be indicated that quality education is one of the keys to better health and therefore well-being. The issues of education, health and well-being are extremely important and linked issues. Taking the case of education, we note with UNESCO (2018) that among all regions, it has the highest rates of exclusion from education. More than a fifth of children aged approximately 6 to 11 are not in school, followed by a third of children aged approximately 12 to 14.

Keywords: education, health, population, well-being, society

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1. INTRODUCTION

The health of students is a major component of their well-being. As such, it is necessary to develop knowledge and behaviors that are favorable to their health among young people. However, school is the most favorable place for this: on the one hand, students spend more than a third of their waking hours there; on the other hand, it is the most appropriate place for the egalitarian acquisition of knowledge and behaviors that are favorable to health, by addressing students from different family and socio-economic backgrounds.

French public health policy states that health education is an essential factor in student well-being, academic success and equity. The objective of this report is therefore to understand what is addressed to students at school in terms of health, how and by whom, and what they retain from it in relation to quality of life.

First, this report attempts to understand which health indicators are addressed at school. Indeed, some are often addressed (such as sex education, healthy living, prevention of dangerous games, etc.), while others are rarely addressed, although they are cited as important (by health professionals or official documents). These include, for example, gambling, oral health or prevention of antisocial behavior. On the educational level, however, action is more often directed towards a set of key factors that influence young people's choices rather than on a health problem per se. Thus, most actions aim to raise awareness of the development of personal and social skills that help structure identity, cope with difficulties and build a unique vision of the world, in order to adopt healthy behaviors that protect against risky behaviors.

Secondly, this report presents the different actors promoting health within the school, as well as their roles: school nurses, school psychologists, and teachers. The difficulties of dialogue that can sometimes arise between these different actors are highlighted, and the major role that teachers must play in the health education process (particularly SVT and PE teachers), but also the lack of resources and means that teachers sometimes face. Other actors intervene in health education: families must be involved in this learning, thanks to an in-depth dialogue with teaching staff. Finally, INPES and other organizations organize prevention campaigns through extremely varied means adapted to young people

(YouTube channel, websites, Facebook page, etc.). This report also presents students' perceptions of health promotion at school and its impact on their quality of life. It shows that, on the one hand, students tend to forget the one-off interventions carried out for them, in favor of longer-term interventions that seem more effective. On the other hand, young people demonstrate good knowledge of behaviors that promote well-being and health, and yet hardly comply with them. This report also provides recommendations drawn from these lessons, in particular, on the need to include parents in the health education circle and for greater collaboration between the different actors working for prevention within the school.

2. MATERIAL AND METHOD

We used databases listing English and French psychology and educational science articles: Cairn (health & school: 19,898 articles), Science direct, Psycinfo (school & health education: 2,045 articles in pdf) and Researchgate (researchers' portal) with the following keywords: in French: éducation à la santé, qualité de vie et santé, and in English: health education, health literacy, health promoting school, school health. We also searched for French and international reports dealing with health education and school interventions. In the end, the studies came mainly from France and Canada, but also from Germany, Australia, Scotland, Finland, Italy, Ireland, Kuwait, Malaysia, Morocco, Norway, New Zealand, the Netherlands, Portugal, the United Kingdom and Switzerland. Some are international. Given the very large number of publications, we focused our research on studies dealing more specifically with the link between health and quality of life of students, health education interventions on the one hand, and on the other hand, on the results of the HBSC 2010 survey. The HBSC (Health Behaviour in School-aged Children) survey is the only international database on health promotion among 11-15 year-olds (Boyce et al., 2008). It is conducted in collaboration with the WHO Regional Office for Europe, in which 41 countries and regions of Europe-WHO and North America now participate. It provides a snapshot of the health, school experiences, life contexts (family, schools, friends) and behaviours (health-promoting or unhealthy) of school-aged young people aged 11, 13 and 15 (Godeau et al., 2012).

2.1. Simulation

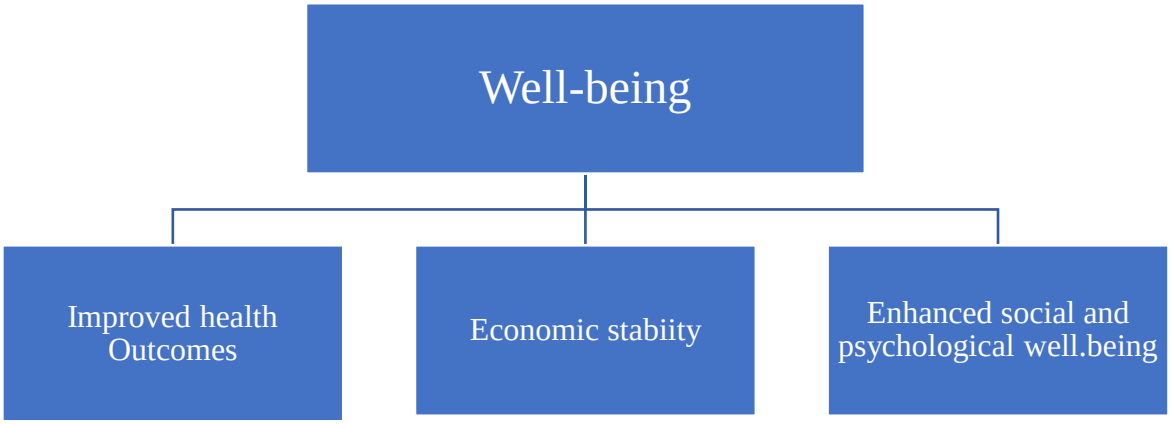

Figure 1. Three consequences that education brings to well-being

Table 1. (Times New Roman,10pt, iki yana yaslı/two sided)

Activities	Explanation
Improving the time of reading and writing medical documents	In this way, medical professionals better understand the branch and field to which they belong from people with more years of work and study who share their experience, from which important decisions are made
Engagement in seminars and trainings for health and well-being	This is very important for ordinary individuals, but of course also for student or employed medical staff, who can receive as much information as possible but also give and create a discussion.

3. RESULTS

It should be noted that nutrition and injury prevention are very often addressed in primary school (eating habits can indeed date back to early childhood), while drugs, AIDS and sexuality are given priority in secondary education, since risky behaviours in these areas are most often adopted in adolescence. On the other hand, pupils benefit from medical monitoring at school, with a very comprehensive initial assessment between the child's fifth and sixth year.

However, in terms of education, rather than focusing on health problems per se, it is currently more often proposed to act on a set of key factors that influence young people's choices and the issues that affect them. Some of these factors concern the development of personal and social skills that allow them to structure their identity, face the challenges of daily life, build their vision of the world and develop their power of action and thus "think for themselves and resist the forms of influence exerted on them by stereotypes, peer pressure, the power of the media but also immediate emotional reactions". They allow them to adopt healthy behaviors and protect themselves against risky behaviors. The necessary skills are, according to the World Health Organization: "the ability to make decisions and solve problems, creative reasoning and critical thinking, self-awareness and empathy, communication and interpersonal skills, the ability to cope with emotions and control stress".

The field of health promotion in schools encompasses the school environment, the implementation of health education programs, medical examinations and health checks at key ages in schooling and, for the schooling of students with special needs, the early detection of health problems or deficiencies in care that could hinder schooling, as well as the reception, listening, support and individualized monitoring of students. We will focus here more particularly on health education programs directly aimed at students, asking ourselves, on the one hand, what are the health indicators on which these interventions focus, who are the promotion actors and what resources are available to them. On the other hand, we think it would be interesting to look at the importance of the contexts in which young people evolve for their health and how students perceive the link between the promotion of their health and their quality of life.

It is difficult to cite an exhaustive list of "forgotten" or neglected health indicators. However, here are a few examples. In Canada, note the recent appearance of the theme of "Contacts with nature" whose necessity for well-being and health was also recently identified in Europe. In Australia, the focus is also on the prevention of antisocial behavior. The prevention of school dropout is proposed by Quebecers. Oral health, gambling and games of chance are cited in the summary of recommendations of the National Institute of Public Health in Quebec, but rarely found in scientific studies. This can be explained by the fact that they can be the subject of one-off interventions, chosen by the school on the basis of needs identified in the children welcomed.

Beyond health indicators, the teaching of psychology, interrupted since 2003, while it is present in many foreign countries, aims in particular, as in Switzerland for example, to "bring the student to reflect and work on himself and with others, by becoming aware of himself as an individual and a social person". The reintroduction of this teaching was also recently proposed to the Higher Council of French Programs, with as potential content: "experimental psychology, psychoanalysis, health, developmental psychology, methods of psychology, perception, memory, intelligence, the group, attention, learning, social manipulation, all depending on the series at a rate of 2 or 3 hours per week"

4. DISCUSSION AND CONCLUSIONS

The health education policy provides for the accountability of all stakeholders in the education system (inspection, management, teaching, education, guidance, social, health, technician, worker and service/TOS staff) as well as openness to new partners to implement actions or gather a certain number of resources, if necessary.

For public middle and high schools, the Health and Citizenship Education Committee (CESC) is set up, responsible for implementing health education in the establishment. This is a body for reflection, observation and monitoring in which parents are represented. This notion of citizenship refers to critical thinking, autonomy and accountability for health acts that it aims to develop in young people.

However, while health education is not absent from schools, a recent study conducted among 207 people working in 5 French colleges showed that 89% of professionals felt involved in health education, it is not a central object in the school's activity, nor a component of health promotion actions that aim to help people build a positive image of themselves and their health. A DEGESCO note indicates, in 2011, that 78% of the actors who lead health education actions are health and social service personnel and highlights the lack of motivation of the teaching team, time constraints and lack of time among the obstacles to the implementation of health education actions. In the scientific literature, there is more research on nurses (and/or school psychologists) and teachers, with the question of their representations of health (e.g.: biomedical approach vs. global education of the child), their training in health matters and their areas of expertise compared to other actors.

According to article 2 of decree no. 2012-762 of May 9, 2012, members of the nursing corps who are assigned to educational establishments participate in health prevention and education actions for pupils and students. They provide personalized support and monitoring of students throughout their schooling. Under the authority of the head of the establishment, they are responsible for promoting and implementing health policy for all students: general health actions, mandatory assessments, prevention.
In their study conducted in the Lyon and Clermont-Ferrand academies, Berger et al. (2009) report that 94% of school nurses who returned the questionnaire said they carried out health education activities: 30% alone and 70% with a partner (internal or external to the establishment). They addressed one or more themes in 557 sessions that are divided thematically: sexuality (80%), addictive behavior (60%), nutrition (54%), smoking (52%) and alcohol (44%). This work was mainly carried out for 54% in middle school, 12% in high school and 15% in primary school. These sessions are offered in the form of educational sequences that are not very integrated into a project (34%). The most used system is the half-class sequence with educational tools, which may be simply information brought to their attention (prescriptive approach), allowing for debate in order to solicit group reflection. The objective, as formulated by the nurses in this study, is "to provide information to enable responsible choices". Berger et al. (2009), (p. 651) speak here of "illusion", because it is established that being informed is not enough to change behavior. This system also reinforces social inequalities by sending a verbal message, in the form of teaching, to the students who are having the most difficulty at this level and often the most at risk in terms of health behavior. We should also note here the risk of missing out on the socialization of their parents, whose health education is likely to be carried out by these children.

The motivations for health education interventions are very diverse. While 40 nurses out of the 188 interviewed (23%) explain that it is the ministerial texts (definition of the role and missions) that form the basis of their health education actions, others, a little more numerous (30%), say they respond to specific needs and requests (23), to the projects implemented (19; CESC, establishment or school projects), to particular situations determined by triggering events (15 drunken students, suicide cases, accidents).

Collective reflection for ES projects is directly linked to the work carried out or not in CESC (Health and Citizenship Education Committee).

It is also interesting to note that while 30% work alone, without external partnership, 62% express a feeling of professional isolation. Among the external partnerships mentioned, we find:
1. State services (police, gendarmerie, firefighters);
2. Health education associations;
3. Thematic associations, such as Family Planning Centers and the National Association for the Prevention of Alcoholism and Addictions).

The main obstacles to the implementation of health education activities are: lack of time
(23) and in particular the difficulty of having more time with students (12), negative or unenthusiastic reaction/lack of support from colleagues and management (17), being newly assigned to the position (15), lack of training (12), insufficient equipment (10).

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PSYCHOLOGICAL COMMUNICATIONS EFFECTS WITH CHRONIC UREMIC PATIENTS

Gerta Kupi[1]*, Arjana Muçaj[2], Elsjona Qallija[3]

Abstract: Considering the importance of this process without which it could be impossible to function in any field of our lives, this feature presents the importance of communication as a process and it's direct effects on psychological wellness in chronic uremic patients. The survey of this process on relationship nurse and chronic uremic patients is of special importance, because in the field of hemodialysis the psychological aspect has been deemed unnecessary compared to the importance of keeping the patient alive and guaranteeing a good survival with blood purification machines. One basic task that must be made by a hemodialysis nurse is to take care of the overall well-being of the patient where in addition to meeting to physical needs the psychological aspect of both chronic and acute nephropathy should also be considered. The aim of this study is to identify how the way of communication between nurses and chronic uremic patient in a hemodialysis ward, affects building an interactive therapeutic relationship with patients.
Materials and methods: For this article, we obtained data from the SRSH hemodialysis ward. The data was gathered from a focus group of 56 people, 45 patients of Shkodra Regional Hospital and 11 nurses serving in the hemodialysis ward. The study reveals this context through the literature used to complete this paperwork and by means of a questionnaire from 1 - 20 February 2020. The interview of patients and nurses was conducted with a customized questionnaire. All data were collected from the literature in SRSH belong to a period of 8 months, October 2019 - May 2020. While in terms of interviews conducted they were realized during the period 01 - 20 February 2020. The data collection regarding the evaluation of communication between nurses and patients was carried out and evaluated using the EUROPEP questionnaire, which is one of the most used questionnaires in many European countries.
Results: The communicative relationship between nurses and the patients within the hemodialysis service is essential. About 70% of patients answered that true professionals manage to understand what the patient will say before he finishes his speech, 60% of patients answered that they were not interrupted by nurses while they were talking. It is noted that the operators are well behaved and well educated as admitted by 45% of patients. 36% of nurses admitted that they feel annoyed by the behavior of patients, but they try to manage their feelings of anger, according to what refer 12% of patients. Conclusion: The result showed a correlation between communication and it's impact on patient-nurse relationships and psychological and physical problems.

Keywords: Communication, Hemodyalisis, Nurses, Uremic Patients, Psychological Condition, Stress.

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INTRODUCTION

Communication is any process in which people share a information, ideas, feelings. It includes not only words spoken or written, but also body language. Considering the importance of this process without which, it could be impossible to function any field of our lives, in this feature it is presented the importance of communication as a process and it's direct effects on psychological wellness of patients actually of them with terminal diseases.

Aim of study:

The goal of realizing this study is to identify how the way of communication between nurses and cronic uremic patient in a hemodialysis ward, affects in building an interactive therapeutic relationship by patients.

The objectives of this study are:

General Objective 1: To identify the perception that nurses have about the communication with patients.

- Specific Objectives: Does communication affects the work of nurses?

- Does communication affects relationships with patients?

General Objective 2: To identify the perception that patients have about the communication they have with nurses.

- How communication with nurses relief of physical problems in patients?
- How communication with nurses affects the relief of emotional problems in patients?

MATERIALS AND METHODS

For this article, we obtained data from the SRSH hemodialysis ward. The data was gathered from a focus group of 56 people, 45 patients of Shkodra Regional Hospital and 11 nurses serving in the hemodialysis ward. The study reveals this context through the literature used to complete this paperwork and by means of a questionnaire from 1 - 20 February 2020. The interview of patients and nurses was conducted with a customized questionnaire. All data were collected from the literature in SRSH belong to a period of 8 months, October 2019 - May 2020. While in terms of interviews conducted they were realized during the period 01 - 20 February 2020. The data collection regarding the evaluation of communication between nurses and patients was carried out and evaluated using the EUROPEP questionnaire, which is one of the most used questionnaires in many European countries.

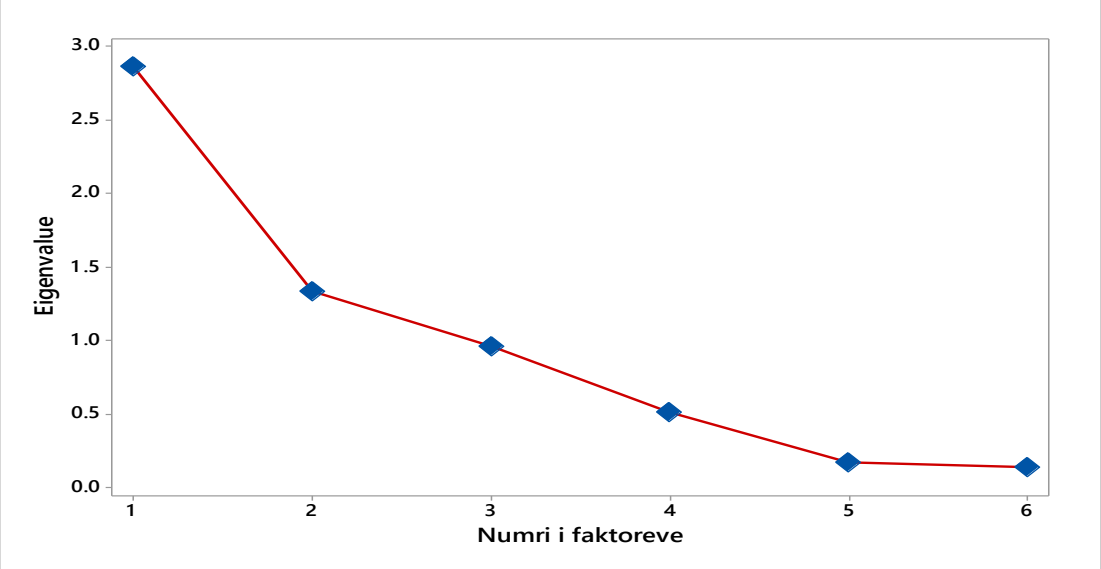
Sampling: To realize this study we managed to secure a sample 56 subjects, 45 patients of of Shkodra Regional Hospital and 11 nurses serving in the hemodialysis ward.

Instrument: In the realization of this study are used several methods, among which the main was the exploration of theoretical findings and various materials from the internet, such studies carried out in relation to the importance of communication in the nurse- cronic uremic patients relationship.

The interview of patients and nurses was conducted with a customized questionnaire. While in terms of interviews conducted they were realized during the period 01 - 20 February 2020. The data collection regarding the evaluation of communication between nurses and patients was carried out and evaluated using the EUROPEP questionnaire, which is one of the most used questionnaires in many European countries.

The most important ethical issues were: All respondents who were interviewed were aware of the purpose of the interview. The names of the interviews were not used in the study. To any person was clarified the nature of the study, it's aim and responsibility of each party. To all those who cooperated were asked sincerity in answering and that the study would preserve anonymity. All collaborators were explained to the confidentialityof the study.

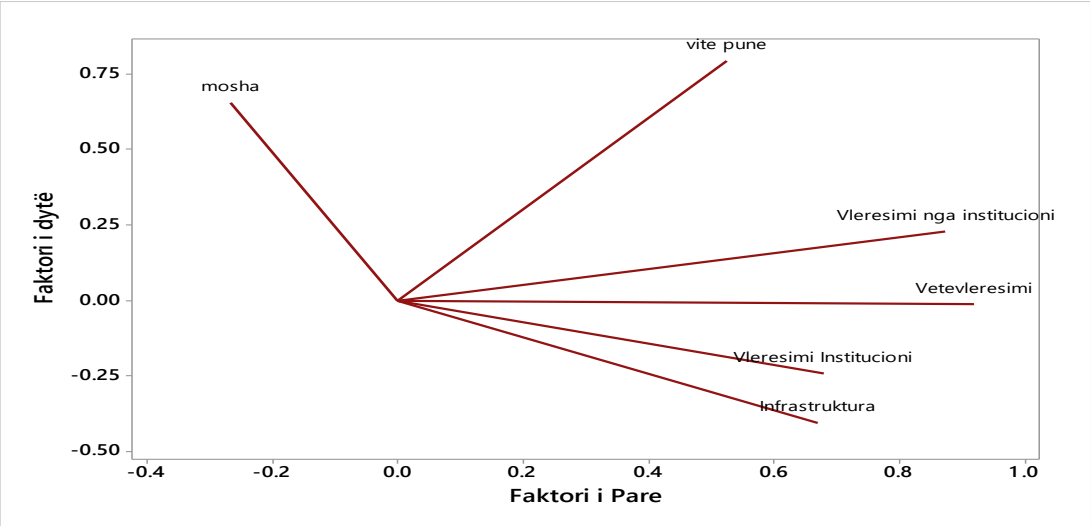
RESULTS



Graph No.1. Impact of working conditions on the performance of nurses.

With the data obtained from the processing of questionnaires for factor analysis, graph 1, we notice that 2 factors have a significant impact on the work of nurses in the dialysis ward. The first factor that has the greatest impact, has to do with the working conditions in the health institution where the nurse works, while the second factor has to do with the work experience of the nurses themselves. Both of these factors explain 70% of nurses' behavior at work. The first two factors

have the most significant impact on the behavior of nurses at work, while the other factors can be called secondary and their impact on the behavior of nurses at work has less impact.



Graph. No.2. Comparison of how working conditions and work experience affect nurses performance.

Graph. No2. shows that the first factor (working conditions in the health institution) has a great positive impact on the evaluation of nurses by the institution and the self-evaluation they make of their work. In the second factor (nurses' experience at work) the years of work of the nurses in the dialysis ward and age have a positive impact, while the infrastructure conditions have a negative effect. In the second factor the evaluation and self-evaluation of nurses does not play an important role, they have almost zero impact on this factor.

CONCLUSION:

With the data obtained from the processing of questionnaires for factor analysis, we note that the work of nurses in the dialysis ward has a significant impact on two factors:
1. Working conditions in the health institution where the nurse works
2. Work experience of nurses.
Both of these factors explain 70% of nurses' behavior at work.
From the analysis of the first factor, we notice that it has a great positive impact:

- Evaluation of nurses by the institution and
- The self-esteem they make of their work.

Both of these factors have a significant positive effect on the behavior of nurses at work. On the other hand, it is noticed that for the given conditions of the health institutions, their infrastructure has a less positive effect. The age of the nurses has a small negative impact on the work behavior of the nurses.
From the analysis of both factors, we notice that it has a great positive impact:
◊ years of work of the nurse in the dialysis ward and age.
◊ while infrastructure conditions have a negative effect.

Correlation between the evaluation of the work by the institution and the self-evaluation of the work of the nurse, Pearson coefficient is r = 0.802 (P = 0.002), from this correlation it is noticed that with the increase of the evaluation of the work of the nurse by the institution increases the self-evaluation by tire.

About 90% of all factors that determine patient care, it is observed that the two factors that
1. The first factor is defined as the psychological impact of the disease on patients
2. The second factor is defined as the institutional service to these patients.

In the first factor, the psychological condition of patients and the assessment they make of the nursing service has a great positive impact, while in the second factor, the institutional service to patients has a great impact compared to the nursing service. Patient responses confirm the superficiality of communication relationships between nurses and patients, in 60% of cases to operators, the communication ratio has not changed.

This means that 60% of the interviewed patients, who are under dialysis for more than 3 years, the communication report has been banned in the opening stage, so we can say that patients and nurses share a common environment but not entered

into empathic relationships. Nurses in 73% of cases are aware of this communication deficit and many of them feel the need for seminars to get more knowledge on the dynamics of communication with ward patients.

RECOMMENDATIONS

Looking at the results achieved above some of the recommendations would be:

- Training nurses in effective communication with patients.
- Facilitate procedures for family members and approaching patients closer to staff
- health.
- Creating suitable conditions for nurses at work and ensuring safety in the work environment.

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INVESTIGATION OF PAEDIATRIC SURGICAL INTERVENTION IN EARTHQUAKE

İsmail Özmen*[1]

Abstract: The aim of this study was to investigate the epidemiological characteristics of patients who presented to the pediatric surgery clinic of our hospital following the 7.7-magnitude earthquake that occurred in the Hatay region on February 6, 2023. A total of 202 pediatric patients (157 Turkish citizens and 45 Syrian nationals) brought to the Emergency Department of Kilis State Hospital after the earthquake were included in the study. The study was designed retrospectively. Inclusion criteria were being a pediatric patient, being an earthquake victim, and having crush syndrome or systemic injuries. Exclusion criteria included patients with no injuries or those who were deceased upon arrival at the emergency department. Of the children, 98 (48.5%) were male and 104 (51.5%) were female. The mean age of male children was 10.43 ± 4.68 years, while the mean age of female children was 10.34 ± 5.42 years. Closed fractures mostly involved lower extremity fractures (n=19, 9.4%), soft tissue injuries were predominantly closed Tscherne-1 (n=22, 10.9%), liver injuries (n=4, 2%), pneumothorax (n=5, 2.5%), spinal trauma (n=8, 4%), skeletal system injuries (n=55, 27.2%), compartment syndrome (n=6, 3%), crush syndrome (n=24, 11.9%), pediatric surgical procedures (n=5, 2.5%), and dialysis (n=6, 3%). Closed fractures were found to be statistically significant between the 5–9 and 10–14 age groups (p=0.044) and were more common in the 5–9 age group. Surgical interventions were statistically significant between the 1–4 and 5–9 age groups (p=0.019) and were higher in the 5–9 age group. The PTS (Pediatric Trauma Score) was the same in the 0–1 and 1–4 age groups, decreased in the 5–9 and 10–14 age groups, and increased in the 14–18 age group; however, no statistically significant difference was found between the groups. Based on the data obtained from this catastrophic earthquake, which affected 11 provinces including Kilis and is considered one of the largest in history, it is evident that treatment according to first aid principles should be initiated immediately and patients should be transferred to the nearest qualified hospital. This study demonstrated that abdominal and thoracic injuries have a greater impact on the survival of pediatric trauma patients according to the Pediatric Trauma Score.

Keywords: earthquake, paediatric patient, paediatric surgery, crush syndrome.

DEPREMDE ÇOCUK CERRAHİ MÜDAHALELERİNİN ARAŞTIRILMASI

Özet: Hatay bölgesinde 6 Şubat 2023 tarihinde meydana gelen 7,7 şiddetindeki depremde hastanemiz çocuk cerrahisi kliniğine başvuran hastaların epidemiyolojik olarak araştırılması amaçlandı. Hastanemize 6 Şubat depremi sonrasında Kilis Devlet Hastanesi Acil Servisine getirilen toplam 202 (157 TC uyruklu, 45 SR uyruklu) çocuk hasta dâhil edildi. Çalışma dizaynı retrospektif olarak tasarlandı. Çalışmaya dâhil edilme kriterleri; çocuk hasta olma, depremzede olma, crush sendromu ve sistem yaralanması olan hastalar dahil edildi. Çıkarılma kıriterleri olarak; hiçbir yaralanması olmamış veya acilde eksitus olmuş hastalar dâhil edilmedi. Çocukların 98'i (%48,5) erkek, 104'ü (% 51,5) kız cinsiyetti. Erkek çocukların yaş ortalaması 10,43±4,68, kız çocukların yaş ortalaması 10,34±5,42 olarak saptandı. Kapalı kırık çoğunlukla alt ekstremite kırığı (N:19, %9,4), yumuşak doku travması çoğunlukla kapalı tscerne-1 (N:22, %10,9), karaciğer yaralanması (N:4, %2), pnömotoraks (N:5, %2,5), spinal travma yaralanması (N:8, %4), iskelet sistemi travmaları (N:55, %27,2), kompartman sendromu (N:6, %3), crush sendromu (N:24, %11,9), çocuk cerrahisi işlemi (N:5, %2,5), diyalize alınma (N:6, %3) olarak bulundu. Kapalı kırık 5-9 yaş ile 10-14 yaş grubu arasında istatistiksel olarak anlamlı bulundu (p:0.044) ve 5-9 yaş grubunda daha yüksek orandaydı. Cerrahi işlemler 1-4 yaş ile 5-9 yaş grubu arasında istatistiksel olarak anlamlı bulundu (p:0.019) ve 5-9 yaş grubunda daha yüksek oranda saptandı. PTS skoru 0-1 ve 1-4 yaş grubunda aynı, 5-9 ve 10-14 yaş grubunda azaldığı, 14-18 yaş üstünde arttığı, fakat gruplar arasında istatiksel olarak anlamlı fark bulunmadı. Kilis dâhil 11 ili kapsayan ve tarihin en büyük depremlerinden biri olan yıkımda elde ettiğimiz verilerden

herhangi bir felaket anında hastanın ilk yardım kuralları gereği tedavisine hemen başlanmalı ve en yakın nitelikli hastaneye sevkinin yapılmasıdır. Pediatrik travma hastalarının batın ve toraks yaralanmasının pediatrik travma skoruna göre hastanın yaşamını daha çok etkilediği bu çalışmada saptandı.

Anahtar Kelimeler: deprem, çocuk hasta, çocuk cerrahisi, ezilme sendromu.

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GİRİŞ

Dünyada son zamanlarda yaşanan afetler, kitlesel afet durumlarından elde edilen veriler triyaj ve tedavinin kritik süreçlerini düzenleyen kapsamlı bir literatürün oluşmasına neden olmuştur (1). Bunların sonucunda acil durumlarda triyajın temel ilkelerini hayat kurtarmak için hız, doğruluk ve uygun değer kaynak kullanımına olan ihtiyacı vurgulamıştır. Bu bilimsel çalışmalar, afet müdahale stratejilerinin geliştirilmesinde ve bu tür felaket olaylarında daha fazla hayat kurtarılmasında çok önemlidir.

Savaş alanlarında sahra hastaneleri vardır ve pediatrik hasta varlığı minumum düzeydedir. Depremler ve kasırgalar gibi doğal afetler, çocuklar için özellikle travmatik olabilir ve pediatrik kitlesel kayıplara yol açabilir. Afet sonrası çocuk bakımı, mevcut hastane kaynaklarını kullanarak gerçekleştirilse de, bu durumlar için özel olarak tasarlanmış pediatrik acil müdahale programları ve eğitimlerinin önemlidir.

Hindistan'da 2001 yılında meydana gelen depremin ardından, Uluslararası Kızıl Haç Örgütü tarafından depremin merkez üssüne yakın Bhuj'da pediatrik cerrahi acil durumlara müdahale etmek üzere bir sahra hastanesi kurulmuştur. Mevcut yaralanmaların gelişimi not edilmiş, gerekli ameliyat türleri sınıflandırılmış ve etkili bir afet yardım ekibi bileşimi ve stratejisi önerilmiştir. Bu girişim, bu tür felaketler sırasında hassas bir grup olan çocuklara acil tıbbi müdahale sağlanması açısından çok önemlidir (2).

Depremler sonrasında, özellikle hijyenin bozulduğu durumlarda suyla bulaşan hastalıklar, deri enfeksiyonları ve tetanoz gibi ciddi sağlık sorunları ortaya çıkabilmektedir. Bu tür durumlarda, sahra hastaneleri hızlı ve etkili bir müdahale için hayati önem taşırken, kalıcı hastane yapılarının eksikliği, özellikle travma geçirmemiş çocuklar gibi hassas gruplar için yeterli tedavi ve izlem olanaklarını sınırlayabilmektedir (3). Bu nedenle, deprem sonrası sağlık hizmetlerinin iyileştirilmesi ve kalıcı sağlık tesislerinin kurulması, toplum sağlığının korunması açısından büyük önem arz etmektedir.

Türkiye'de 6 Şubat 2023 saat 04:17 de sabaha karşı yüzyılın en büyük ve yıkıcı depremi yaşandı. Richter ölçeğine göre 7.7 olan Kilis dâhil 11 ili kapsayan 120 000 km karelik alanda yaklaşık 8 milyonun yaşadığı alanı etkiledi. Resmi verilere göre 53 bin 537 insanımızı kaybettik, 107 bin 213 vatandaşımız yaralandı. Hatay, Kahramanmaraş, Adıyaman ve Malatya en çok etkilenen illerimizdi. Depremden dolayı bütün altyapının çökmesi yolların bozulması da yardımı zorlaştırmaktaydı. Bu kadar büyük bir alanı kapsaması da müdahalede büyük zorluk olmasına sebebiyet vermişti. Deprem bölgesinde işlevini yitirmemiş hastaneden biri de Kilis devlet hastanesi idi. Hatay'ın Kilis ile sınır komşusu olması ve ilçelerine en yakın işlev gören sağlık merkezi Kilis olması sebebiyle deprem sonrası en çok Hatay ve Kilis'den gelen yaralılara hizmet verdi.

MATERYAL VE METOT

Kahramanmaraş ve Hatay depremi 6 Şubat 2023 saat 04:17 sularında Richter ölçeğine göre 7.7 şiddetinde meydana geldi. Depreme, Afet ve Acil Durum Yönetimi Başkanlığı (AFAD) ekipleri, askeri birlikler ve tüm sağlık çalışanları bölgede yardıma koştu.

Kilis devlet hastanesi deprem bölgesinde deprem sonrası işlevini yitirmeden çalışmaya devam eden hastanelerden biridir. Hatay ve ilçelerine en yakın uzaklıkta olan en büyük sağlık merkezidir. Kilis ve ilçelerindeki yaralılara hizmet verdiği gibi Hatay'ın ilçelerine de hizmet vermiştir ve halen vermeye devam etmektedir. Kilis devlet hastanesi 2. Basamak hastane olmasına rağmen Suriye iç savaşında üstlendiği rolü deprem sonrası da üstlenmiş olup her türlü acil müdahalenin yapıldığı travma yönünden deneyimli sağlık çalışanlarının sahip olduğu sağlık merkezidir.

Çalışmaya dâhil edilen pediatrik hastalarda; veri toplama öncesinde çocuğun demografik bilgilere ilişkin klinik veriler hastanın vaka kayıtlarından elde edildi. Bu kayıtlarda; cinsiyet, yaş, uyruk, göçük altında kaldığı süre, yapılan ilk yardım müdahalesi, kapalı ve açık kırık, doku travması, santral sinir sistemi hasarı, kompartman sendromu, crush sendromu, pediatrik travma skoru (PTS), geliş hemoglobin değeri ve diyalize alınıp alınmaması gibi veriler değerlendirildi.

Hastanemize 6 Şubat depremi sonrasında Kilis Devlet Hastanesi Acil Servisine getirilen toplam 202 (157 TC uyruklu, 45 SR uyruklu) çocuk hasta dâhil edildi. Çalışma plan retrospektif olarak tasarlandı. Çalışmaya dâhil edilen pediatrik hastaların verileri dosyalarından incelenerek kaydedildi. Çalışmaya dâhil edilme ve çıkarılma kriterlerine göre uygun pediatrik hastalar çalışmaya dâhil edildi. Çalışmaya dâhil edilme kriterleri; çocuk hasta olma, depremzede olma, crush sendromu ve organ, doku ve kemik yaralanması olan hastalar dâhil edildi. Çıkarılma kriterleri olarak; hiçbir yaralanması olmamış veya acilde eksitus olmuş hastalar dâhil edilmedi(4).

SONUÇLAR

Hastanemize deprem nedeniyle travmayla başvuran pediatrik hastadan 202 kişi çalışmaya dahil edildi. Pediatrik hastaların 98'i (%48,5) erkek, 104'ü (% 51,5) kız cinsiyetti. Erkek çocukların yaş ortalaması 10,43±4,68, kız çocukların yaş ortalaması 10,34±5,42 olarak saptandı. Kapalı kırık çoğunlukla alt ekstremite kırığı (N:19, %9,4), yumuşak doku travması çoğunlukla kapalı tscerne-1 (N:22, %10,9), karaciğer yaralanması (N:4, %2), pnömotoraks (N:5, %2,5), spinal travma yaralanması (N:8, %4), iskelet sistemi travmaları (N:55, %27,2), kompartman sendromu (N:6, %3), crush sendromu (N:24, %11,9), çocuk cerrahisi işlemi (N:5, %2,5), diyalize alınma (N:6, %3) olarak bulundu (Tablo 1).

Kapalı kırık 5-9 yaş ile 10-14 yaş grubu arasında istatistiksel olarak anlamlı bulundu (p:0.044) ve 5-9 yaş grubunda daha yüksek orandaydı. Cerrahi işlemler 1-4 yaş ile 5-9 yaş grubu arasında istatistiksel olarak anlamlı bulundu (p:0.019) ve 5-9 yaş grubunda daha yüksek oranda saptandı. PTS skoru 0-1 ve 1-4 yaş grubunda aynı, 5-9 ve 10-14 yaş grubunda azaldığı, 14-18 yaş grubunda ise arttığı saptandı. Fakat gruplar arasında istatiksel olarak anlamlı fark bulunmadı (p>0.05).

Table 1: Demographic Data

		N	Mean	Std. Deviation
Göçük altında_kalınan süre	0-1 yaş	4	2,2500	4,50000
	1-4 yaş	35	2,4000	4,56135
	5-9 yaş	44	3,5568	6,57799
	10-14 yaş	64	3,0469	5,76712
	14-18 yaş	41	2,0732	3,96005
Yaş	0-1 yaş	4	,4500	,23805
	1-4 yaş	38	3,1158	1,49802
	5-9 yaş	47	7,7638	1,28290
	10-14 yaş	70	12,8529	1,45649
	14-18 yaş	43	16,5977	,96966
PTS	0-1 yaş	4	11,5000	1,00000
	1-4 yaş	38	11,5000	,95153
	5-9 yaş	47	11,3617	,89505
	10-14 yaş	70	11,3857	,95239
	14-18 yaş	43	11,5116	,90953
Geliş_Hemoglobin Değeri	0-1 yaş	4	12,9750	,74106
	1-4 yaş	38	13,8895	2,34034
	5-9 yaş	47	13,1149	1,99259
	10-14 yaş	70	13,1043	1,58136
	14-18 yaş	43	12,9558	1,20125
Kapalı_kırık	0-1 yaş	4	,0000	,00000
	1-4 yaş	35	,8000	1,76235
	5-9 yaş	46	1,0000	1,77639
	10-14 yaş	64	,4375	1,02159
	14-18 yaş	42	,5238	1,29234
Açık_kırk	0-1 yaş	4	2,0000	,00000
	1-4 yaş	38	2,0000	,00000
	5-9 yaş	47	1,9787	,14586
	10-14 yaş	70	1,9714	,16780
	14-18 yaş	43	1,9767	,15250
Çıkık	0-1 yaş	4	2,0000	,00000
	1-4 yaş	38	2,0000	,00000
	5-9 yaş	47	2,0000	,00000
	10-14 yaş	70	1,9857	,11952
	14-18 yaş	43	1,9767	,15250

Yumuşak doku travması	0-1 yaş	4	,2500	,50000
	1-4 yaş	35	,4000	,77460
	5-9 yaş	46	,6304	1,23574
	10-14 yaş	64	,6563	1,47162
	14-18 yaş	42	,6190	1,34259
Karaciğer dalak yaralanması	0-1 yaş	1	1,0000	.
	1-4 yaş	1	2,0000	.
	5-9 yaş	1	1,0000	.
	10-14 yaş	1	1,0000	.
	14-18 yaş	1	1,0000	.
Pnomotoraks	0-1 yaş	0	.	.
	1-4 yaş	0	.	.
	5-9 yaş	1	1,0000	.
	10-14 yaş	3	1,0000	,00000
	14-18 yaş	1	1,0000	.
Spinal kafa travması	0-1 yaş	1	1,0000	.
	1-4 yaş	2	1,5000	,70711
	5-9 yaş	2	1,0000	,00000
	10-14 yaş	4	1,0000	,00000
	14-18 yaş	1	2,0000	.
Sistem travmaları	0-1 yaş	2	2,5000	2,12132
	1-4 yaş	12	2,0000	1,85864
	5-9 yaş	19	1,3684	,95513
	10-14 yaş	27	2,2963	1,97708
	14-18 yaş	16	1,4375	1,09354
Kompartman sendromu	0-1 yaş	4	,0000	,00000
	1-4 yaş	35	,0286	,16903
	5-9 yaş	46	,0652	,24964
	10-14 yaş	64	,0313	,17537
	14-18 yaş	41	,0976	,43617
Crush sendromu	0-1 yaş	4	,0000	,00000
	1-4 yaş	35	,1429	,35504
	5-9 yaş	46	,1522	,36316
	10-14 yaş	64	,1250	,33333
	14-18 yaş	41	,0976	,30041
Ortopedik cerrahi işlem	0-1 yaş	4	,7500	,50000
	1-4 yaş	35	,3429	,59125
	5-9 yaş	46	,6739	,76170
	10-14 yaş	63	,3968	,55474
	14-18 yaş	41	,3902	,58643
Çocuk cerrahi işlem	0-1 yaş	0	.	.
	1-4 yaş	2	1,5000	,70711
	5-9 yaş	1	2,0000	.
	10-14 yaş	4	1,5000	,57735
	14-18 yaş	2	1,5000	,70711
Beyin_cerrahi_işlem	0-1 yaş	1	2,0000	.
	1-4 yaş	3	1,3333	,57735
	5-9 yaş	2	1,0000	,00000
	10-14 yaş	6	1,0000	,00000
	14-18 yaş	2	1,0000	,00000

TARTIŞMA

Türkiye, tarih boyunca büyük depremlerin meydana geldiği Anadolu üzerinde bulunur. Sadece bu yüzyılda 20 deprem 7'nin üzerinde meydana gelmiştir. Bundan dolayı Türkiye depremlerden zarar gören ülkeler arasında en üstlerdedir. Yaşanan bu depremlerde can kaybı ve ağır hasar bakımından en büyük depremler sırasıyla 2023 Kahramanmaraş, 1939 Erzincan ve 1999 Gölcük merkezli Marmara Depremleridir. 6 Şubat 2023 tarihinde Kahramanmaraş (Pazarcık 7,7 ve Elbistan 7,6 şiddetinde) ve sonrasında Hatay (4, 6) olan bu depremler şiddet ve kapsadığı alan açısından bakıldığında yakın tarihte eşi benzeri olmayan felaketlerdir (5).

Depremler sonrasında acil servislerde İlk 24 saatte hasta sayında önemli bir artış beklenmekte, bu durum acil müdahale kaynaklarının yönetilmesi için zamanı ve acil servisin işleyiş yönetimi kritik bir dönemdir. Biz hastane olarak ortopedistler ve cerrahi hekimleri 1 hafta boyunca hastaneden çıkmadan dönüşümlü dinlenerek çalışıldı. Diğer bölümler acil serviste gün aşırı çalışarak triajı ve ilk yardımı sağladılar. Depremin ilk günü altyapı hasarı ve ulaşım sorunları, yaralıların hastanelere ulaşımını geciktirdi ve bu da tedaviye erişimde gecikmelere neden oldu.

Bu çalışma, pediatrik hastaların travma ve yaralanma profillerini detaylı bir şekilde incelemektedir. Çalışmaya alınan 202 pediatrik hastanın cinsiyet dağılımı neredeyse eşit olup, erkek hastaların oranı %48,5 iken, kız hastaların oranı %51,5'tir. Yaş ortalamaları erkeklerde 10,43±4,68, kızlarda ise 10,34±5,42 olarak belirlenmiştir. En sık rastlanan yaralanma türleri arasında alt ekstremite kırıkları, yumuşak doku travmaları ve çeşitli organ yaralanmaları yer almaktadır. İstatistiksel analizler, kapalı kırıkların 5-9 yaş arası çocuklarda 10-14 yaş arasına göre daha yaygın olduğunu göstermektedir. Aynı şekilde, cerrahi müdahale gerektiren vakaların da 5-9 yaş arası grupta daha sık olduğu saptandı. 5-9 yaş grubundaki çocukların bilişsel fonksiyonların 10-14 yaş grubuna göre tam gelişmediğinden veya panik durumunu tam yönetemediklerinden travmaya daha çok maruz kalındığı kanatindeyiz.

Xiang ve diğerleri, 2008 Wenchuan depreminde, çocukların travmalarının çoğunlukla osteoartiküler yaralanmalar olarak ortaya çıktığını ve bunun travmalı çocuklarda toplam yaralanma sayısının %81'ini oluşturduğunu bildirdi. Bu depremden kaynaklanan travmalar çoğunlukla uzuvlarda, pelviste ve omurgada oluşan kırıkları içeriyordu, buna karşın kraniyoserebral travma, torasik travma ve karın travması nispeten nadirdi (6).

Akbaba ve arkadaşları çalışmasında deprem sonrası çeşitli sağlık sorunları nedeniyle tedavi gören çocukların durumlarını incelemiş. Enkaz altından kurtarılan çocukların büyük bir kısmında ezilme yaralanmaları ve sendromları gözlemlenmiş, bu durumun ciddiyeti nedeniyle birçoğunun diyaliz tedavisine ihtiyaç duyduğu belirtilmiştir. Toplam 252 hasta 3 gruba ayrılmış. Grup 1 crush sendromu olan 52 hastadan 25 çocukta (%46,3) crush sendromu gelişmiş ve bunların 14'ünün (14/25; %56,0) diyalize ihtiyacı olmuş (7). Bizim çalışmamızda crush sendromu (N:24, %11,9) , diyalize alınan 6 hasta (%3) olarak bulundu.

Uluöz ve ark. Çalışmasında en az amputasyona yaparak uzuv kurtarmak için fasyotomi daha çok hastada uygulanmış. Fakat daha sonra enfeksiyon oranı yükselmiş ve hastalarda yüzde 50 ye yakını tekrar amputasyon yapılmış (8). Bar-On ve ark. tarafından yapılan çalışmada gösterildiği gibi, az sayıda ampütasyon enfeksiyon ve ardından gelen nekroz nedeniyle gerçekleşmiştir (9). Radyal ve peroneal sinir yaralanması olan hastalarda hiperbarik O2 tedavisi ile B12 ile 10 gün içinde iyileştiği gözlenmiş (8).

Pediatrik Travma Skoru ve pediatrik yaşa belirlenmiş şok indexi (SIPA) travma yaşayan çocuklarda hastaneye yatış ve ezilme sendromunun önemli öngörücüleri olduğunu göstermiş. PTS ile enkaz altında geçirilen zaman arasındaki negatif korelasyon, daha uzun sıkışma sürelerinin daha ciddi travma sonuçlarına yol açabileceğini saptanmış (10). Jeong S ve ark. tarafından yapılan çalışma PTS ve SIPA'nın güvenilir öngörücüler olduğunu, SIPA ve PTS için ciddi yaralanmayı ayırt etmede bize önbilgi verdiği ve böylece her iki skorlama sistemi de yüksek özgüllüklerle farklı olarak doğruladığını gösterdi (10,11). Bizim çalışmamızda PTS skorunun 5-9 ve 10-14 yaş gruplarında azaldığı diğer gruplarda arttığı görüldü. İstatiksel olarak anlamlı bir fark bulunamadı. PTS skorunun düşük olan hastalarda genellikle ekstremite yaralanmalarına ek olarak çoklu organ yaralanmalarının eşlik ettiği görüldü.

Göğüs yaralanması olan 151 depremzede hastasında akciğer kontüzyonları 120'sinde (%79,5), kaburga kırıkları 106'sında (%70,2), pnömotoraks 47'sinde (%31,1), hemotoraks 39'unda (%25,8) ve pnömomediastinum 33'ünde (%21,9) saptanmış (12). Bizim çalışmamızda ise pnömotoraks 5 hasta (%2,5) görülmüş ve 3 hastaya da tüp torakostomi yapılmış. Hemotoraks ve pnomomediatinum görülmedi.

SONUÇ

Bizim çalışmamızda elde ettiğimiz bulgular, pediatrik acil servislerde ve çocuk cerrahisi bölümlerinde, yaş gruplarına göre özelleştirilmiş tedavi ve müdahale stratejilerinin geliştirilmesi için önemli veriler sunmaktadır. Ayrıca, travma sonrası komplikasyonların önlenmesi ve erken müdahale için risk faktörlerinin daha iyi anlaşılmasına katkıda bulunabilir. Sonuç olarak, bu çalışma, pediatrik travma yönetimi alanında kapsamlı bir kaynak oluşturarak, çocuklarda travma sonrası bakımın iyileştirilmesine yönelik stratejilerin geliştirilmesine yardımcı olabilir.

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THE EFFECT OF THE MULLIGAN TECHNIQUE ON BASKETBALL PLAYERS WITH KNEE MENISCAL INJURIES. CASE STUDY

Selda Sokoli (Veizaj)[1], Klotilda Vrenjo[2], Aida Zotaj (Lako) [3]

Abstract: Basketball elite players suffer from numerous injuries at the level of the knee joint. One of the injuries that often limits their sports activity are meniscal fissures combined with damage to the anterior cruciate ligaments. The Mulligan concept aims is to rehabilitate and return as soon as possible to their sports activity. Evaluation of the effect of the Mulligan Technique (MWM) in the non-weight bearing position, in the weight bearing position and weight bearing position with a belt improving their flexibility and pain. This a case report. professional basketball player 38-year-old female. After having injured her knee during sports, she underwent for MRI. Several tests were applied like: goniometry, numerical pain scale (VAS), demographic and anthropometric data. The basketball player referred to values of VAS= 5 before applying the Mulligan technique. BMI = 23.5 kg/m2. During the evaluation of the flexibility of the knee in flexion and extension movements, it was noticed that there was increased the ROM, especially in the flexion movement with values pre/post = fle/ex110/6˚ in the second session Fle/ext 120/1 and in the third session in Flexion/extension 135/0 ˚, for right knee. The manual Mulligan technique combined with non-weight bearing position, in the weight bearing position and weight bearing position with a belt is effective in increasing knee flexibility and pain.

Keywords: Mulligan technique, MWM, elite basketball, meniscal tears, knee goniometry

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INTRODUCTION

Meniscal injury in the sport of basketball (Lian, J., et al 2022) is considered the second (Hudson, R., et al 2016) [1] (Tummala, S. V., et al 2022)[3]most common form of knee injury. This sport is characterized by several maneuvers such as jumps, changes of direction, changes of movement and rotations (Rubin, E. B.et al, 2021) [5], (Hannington, M., et al 2022)[15] and makes it susceptible to musculoskeletal injuries (Tummala, S. V., et al 2022)[3, ([Khan, M., et al 2020)[4]. Meniscal injury e to the knee as well as many others show to have an impact on performance and return to the field of play (Tummala, S. V., et al 2022)[3]. Nearly 80-90% of meniscus injuries are directly related to sports activity, often accompanied by injuries of anterior cruciate ligament (ACL) (Shieh A,et al 2013). Clinically, meniscus injuries is characterized by reducing of the intra-articular space (Mordecai, S. C., et al 2014)8, pain, loss of knee flexibility,clicing, locking (Hudson, R., et al 2016) [1] edema and often joint stiffness, reducing performance and in some cases, causing the suspend of among the athletes (Zeddeet al ., 1015)[9]. Meniscus injuries are more common in contact sports, including basketball, the medial meniscus is mostly damaged in 70.7% of sportis. Only 5.9% of sportis suffer injuries to both menisci (Drosos GI., et al 2004)[7].

The typical mechanism of meniscal injury in basketball players is the position of the knee in flexion, rotation and compressive forces (Zedde et al., 1015)[9]. Physical examination tests for the identification of injuries to meniscus have resulted efficient and with high accuracy of 90% and 81%, McMurray's test (Soumya et al., 2020)[11], Thessaly's (Specificity 97.7%, Sensitivity 90.3%)(Soumya et al., 2020) [11] and Apley's (Specificity 90%, Sensitivity 13 %) (Reep et al., 2022, Soumya et al., 2020)[10]. A form of treatment for meniscal injuries that is the safest and considered the gold standard is knee arthroscopy Sanchez, B. J., & Baker, R. T. (2017)[12] Drosos, G. I., & Pozo, J. L. (2004) [13]. The purpose of our study is the application of the Mulligan Technique MWM, for increased the range of motion and functionality of the knee joint.

METHODS

Case Description

This was a case study of an elite basketball player of the Flamurtari team, age 38 years old, with BMI= 170cm/68kg= 23.5 kg/m2 with 23 years of sports experience. Her participation in the competition is generally 40 minutes, while the training hours per day are 8 hours/day.

The athlete refers that during a match and in her attempt to throw the ball into the basket, while standing with her right leg to keep her balance, she had in knee extension. She felt a crack and an immediate fall on the floor. However, despite the pain, the basketball player continued the game. And only when the game ended and the night passed, she noticed that the knee was swollen. During the MRI, found a tear of the medial meniscus for the right knee without affecting the anterior cruciate ligaments. Regardless of this, the athlete continues her activity and training. She appeared for physiotherapy a few months after the injury. The diagnosis was determined by an orthopedic doctor, after performing orthopedic tests and observing the MRI.

Our case of the basketball player accept voluntary participation in our study, by filling out a preliminary consent and intervention form. At the same time ethical principles were followed according to the declaration of Helsinki.

Tab 1 Demographic Data

Age, y	38 years
Height, cm	170cm
BMI, kg/m2	23.5 kg/m2
Sports experience	23 years
Games in week	40 minutes
Training hour in day	8 hours/day

Examination

The basketball player assessed in standing posture, where we did not see the presence of any eventual deformity at the knee level. The quadriceps and ischiatic muscles during the inspection were normal, the gait was normal. During the testing of single leg squats, single leg balance, to the elite basketball player performed them successfully, she managed to balance with one leg in more than 40 seconds.

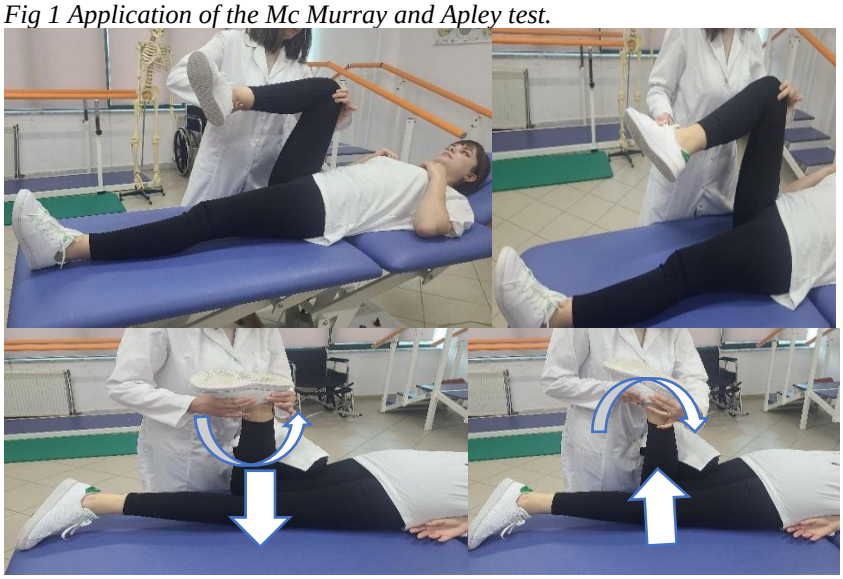
Outcome measures

Outcome measures included pain severity using a visual analog scale (VAS), passive knee joint range of motion (ROM), The measures were performed at baseline prior to the intervention on the first session, second session and third session.

Range of motion and specific tests

On the patient were realized measure the articular amplitudes for both knee joints to assess for the difference. Through the goniometer, the movements of extension and flexion were measured 3 times, positioning the basketball player on the prone. Then, two orthopedic tests were performed to evaluate the condition of the meniscus, McMurrays test and Apley test. The basketball player was assessed with a numerical pain scale of 5.

Fig 1 Application of the Mc Murray and Apley test.



Intervention

The intervention on the basketball player was carried out in the Physiotherapy laboratory at Aleksandër Moisiu University, Durrës in the period of January 2024. The patient was applied 3 forms of the Mulligan technique (MWM) table number 2, the non-weight bearing position, in the weight bearing position and Mulligan with a belt. During the manual Mulligan method (MWM) we positioned the basketball player on the prone position. We worked both on incresed the flexibility in flexion/extension of the knee joint but also on the pain, reaching the PILL effect. Meanwhile, the second Mulligan Technique consists of the weight-bearing position of the basketball player and the manual application of the Mulligan Technique (MWM). During the third form of intervention in the prone position but also in the weight-bearing position was used mulligan belt.The application of each of Mulligan's techniques was carried out according to the description in the textbooks of (Mulligan, 2004) [14]. Over basketball player were applied three sessions for a week. During the same session, all three sub-techniques of Mulligan were applied, with 3 sets/10 times.

Fig 2 Application of Mulligan Technique a) non-weight bearing position and b)weight bearing position with a belt

a) non-weight bearing position b)weight bearing position with a belt

RESULT

In our study, three techniques were applied to the basketball player, which were the same in all three sessions. Positive value were benefited both for scale of pain and for the range of motion for flexion and extension. In the first session, was first applied to the basketball player

non-weight bearing position, in prone position. We use medial glide combined with medial rotation was effective, then we applied the other Mulligan application positions. Regarding the ROM of the knee from the first flexion/extension session 110/6˚ to the third session in the

the right knee, the values were significant after applying the technique in values flexion/extension 135/0˚. All identified data are saved in tab 3.

Tab 2 Application forms of Mulligan technique

Types of treatment applied
non-weight bearing position (prone position, medial glide mobilization with internal glide mobilization with movement)
in the weight bearing position (medial glide and internal glide mobilization)
weight bearing position with a belt. (medial glide mobilization with movement)

Tab 3 The evolution of range of motion and VAS scale

	ROM Dextra	*ROM sinistra*	*VAS*
The first session	flexion/extension110/6˚	flexion/extension 118/5 ˚	5
The second session	Flexion/extension 120/1 ˚	flexion/extension 121/0 ˚	0
The third session	Flexion/extension 135/0 ˚	Flexion/extension 135/0 ˚	0

DISCUSSION

Injuries to the meniscal knee joint in basketball players is one of the most common knee injuries at the world level (Tummala, S. V., et al 2022)3, (Zeddeet al ., 1015)9. Also in Albania in addition to other types of injuries, knee injuries among elite basketball players are very common, regardless of the fact that muscle strengthening programs are applied to them from the category of young basketball players (A.Spahi, et al)[21]. To the basketball player elite were applied 3 sessions / 10 repetitions for 1 week. In the case of our basketball player, it results in the reduction of pain and the increased of the flexibility of the knee joint flexion/extension movement after the first session. Therefore, the number of sessions was a minimum of 3 sessions in only 1 week. In our study we used the Mulligan technique (MWM) in manual medial glide in prone position, non- weight bearing medial glide and medial rotation and weight bearing with the help of a belt. A small number of studies have applied at least one of our techniques, so we mention the study of (Sanchez, B. J., & Baker, R. T., 2017)[16], internal glide rotation mobilization with movement. One of the forms of the Mulligan technique that is most commonly used to treat meniscal injuries in basketball players is Squeeze Technique in the studies of (Sanchez, B. J., & Baker, R. T., 2017)[16], (Hudson, R., et al 2018)[17], (Reep, N. C., et al 2022) [18], (Rhinehart, Alex J. 2015) [19], (Sanchez BJ, Baker RT.,2017) [20] (Soumya Kasturi, et al 2020)[11]. As in our study, the Mulligan technique is effective in increased knee flexibility and pain, regardless of the fact that we used other forms of the Mulligan technique. The treatment time and the benefits of the results were short-term according to some studies where the minimum treatment time varies 11 days (Sanchez, B. J., & Baker, R. T., 2017)[16], 14 days of treatment in the studies of (Hudson, R., et al 2018)[17] , Rhinehart, Alex J. 2015) [19] and 6 weeks of treatment in the study of (Soumya Kasturi, et al 2020) [11]. Regardless of the time of application of the Mulligan method and its form, the results refer to effectiveness in reducing pain and increased knee joint flexibility for flexion/extension movement.

CONCLUSION

In this case report, the Mulligan technique (MWM) specifically, medial glide mobilization and medial rotation in the non-weight bearing position, in the weight bearing position and weight bearing position with a belt was effective in meniscus injuries for basketball players.

Conflict of interest: Author declares that they have no conflict of interest.

Contributorship Information

Concept development (provided idea for the research): S.S.V, A.Z.L.
Supervision (responsible for organization and implementation, writing of the manuscript): K.V
Data collection/processing (responsible for experiments, patient management, organization, or reporting data): S.S.V.
Analysis/interpretation (responsible for statistical analysis, evaluation, and presentation of the results): S.S.V.

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HEALTH MANAGEMENT: INNER WORK, EXPLORING THE PRACTICES AND BENEFITS OF YOGA, MEDITATION, CHIGONG, TAI CHI

Evelina LUSHA[1]

Abstract: Inner work denotes those practices which act in nurturing mental, emotional, and spiritual uplifting. This paper tries to give a brief expression to the advantages and power of the synthesis resulting from yoga, meditation, qigong, tai chi, Osho meditations, and Gurdjieff's work and their relevance in the modern world. The upsurge interest in holistic health practices underscores the need to appreciate the origins, methods, and benefits of these disciplines. An exploration based on ancient traditions and an insight into how scientific validation they got in view of their efficacy in promoting physical, mental, and emotional well-being. It is rooted in ancient Indian tradition and aims to harmonize the body with breath control, meditation for complete well-being. The Buddhist tradition-based key practice increases moment-to-moment awareness and emotional control. Embedded within Chinese culture, it aims to balance the flow of energy using different postures and movement for overall health benefits. While Osho's meditations help to break psychological barriers through dynamic and cathartic ways, Gurdjieff's work combines the development of several different functions to bring about self-awareness and inner peace. This paper will discuss the two practices with respect to their historical and philosophical backgrounds, provide detailed descriptions of methodologies, and review available scientific research on their usefulness. Independent studies and meta-analyses have indicated appreciable levels of reduced stress, increased mental acuity, emotional balance, and physical health. For example, yoga and tai chi have been effective in pain management and improving cardiovascular health when Gurdjieff's exercises are able to focus, energize, and relax the body if practiced with mindfulness attitudes. Although Osho dynamic and Kundalini meditations, as well as Gurdjieff's movements and exercises, have not been widely researched with rigorous scientific methods, clinical evidence shows their many psychological benefits. It is from this evidence that this paper justifies the call for these often, ignored traditions to be harmoniously folded into our existing therapeutic and wellness programs. This reaserch paper compares the practices, bringing out vividly their unique gifts and potential synergy in inducing holistic health. The conclusion emphasizes that further research that is highly rerforming in the overall well-being of a person is vital to understand the mechanisms underlying these practices and the combined effects and applications of these practices across diverse populations. This study calls for the reincorporation of inner work practices as basic methodologies ensuring the development of resilience, well-being, personal growth in an individual.

Keywords: Meditation, practices, yoga, benefits, mental clarity, wellness.

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1. INTRODUCTION

Weighted integral health management has hogged the limelight in the past few years with the mushrooming search amongst individuals for methodologies which can complement their general health. Weighted integral forms of yoga, meditation, qigong, and tai chi based on old traditions have captured the attention of practitioners for confirmed results, scientific support in the present context, for most practicalities in contemporary health care systems. These practices explicitly perceive their mission in promoting a harmonious relationship among body, soul, and mind and thus create multiple ways to treat diseases beyond traditional allopathic medicine. For instance, yoga includes physical postures, breath regulation, and meditation which helps maintain physical fitness and enhances cognition preserving emotional control. Similarly, mindfulness meditation techniques improve emotional regulation and mental clarity while relieving stress and improving cardiovascular health by activating the body's relaxation responses. Although Osho meditations are

very unique, deviant in their dynamic, expressive styles for emotional release, they seem to contribute to different cognitive benefits. This area of study has not been well researched. Qigong and tai chi would be turned toward flow and energy with motion, and this turns out to give potentially huge health benefits in de-stressing or taking the edge off and also in the primary prevention of cardiovascular diseases. They can also help with a person's self-awareness and psychological development through integrative practices which facilitate neuroplasticity and self-regulation. This paper will try to skim over such heterogeneous practices and their collective therapeutic efficacy, proposing them for inclusions in wellness programs, while demanding that more research be conducted into these combined effects so as to spiral into the complicated interplay among different holistic practices that potentially pave the path for personal growth, hardiness, and thriving within an increasingly complicated world.

2. YOGA PRACTICES AND HEALTH BENEFITS

One such comprehensive system of health is yoga comprising posture, breath control, and meditation that work on the different interrelated systems in the body. The postures work on flexibility and strength and also on body alignment and posture, leading to better physical health (Broad). Brown and Gerbarg add that included in the practice are techniques optimizing self-control of the dimensions of life energy, further resulting in modulation of mental and physiological conditions of the autonomic-mediated stress response. This would be beneficial in the management of conditions like hypertension. Meditation is a principal practice of yoga for achieving mental clarity and peace as described by (Goyal et al) it directly influences one’s psychological state of well-being and resilience. Meditation refers to an approach practicing the calmness of human active mental control by intentionally regulating attention. Attention is regulated by controlling focalization and peripheral senses. This modulation resonates through autonomic tone to central and autonomic networks of anxiety. The coordination of these elements creates a synergy that works on both the physical and mental planes and helps in conditions like fibromyalgia by improved self-consciousness and coping strategies. Thus, the holistic approach of yoga does not only alleviate symptoms but also enhances general health by bringing about balance and harmony intra and inter-systems of the body (Streeter et al).

2.1 What impact does yoga have on physical fitness and cognitive functions?

It has consistently been showed that yoga contributes significantly to both physical fitness and mental faculties, forming a holistic approach to health concerning both the body and the mind. More associated with health, Hatha yoga has particularly improved flexibility, muscle strength, and cardiovascular enduranc. Indeed (Tran et al.) argued that it involves a series of posture and breathing exercises that contribute to developing the first three features and also help control or reduce disease conditions, for a case low backache as shown by systematic reviews and meta-analyses provided by (Travis and Shear). Meanwhile, cognitive benefits of yoga, based interventions were tested in randomized clinical trials and found promising results in enhancement of cognitive functions among elderly populations. These, cognitive gains are likely due to yoga's focus on mindfulness and concentration training, which in summary can enhance memory, attention, processing speed through (Zeidan et al). The holistic nature of enhancements in the physical and cognitive aspects through yoga practice evidently indicates that it acts as a complete modality to bring about total well-being. The amalgamation of physical postures, breathing exercises, and meditation make up a balanced practice that acts on several health dimensions at the same time. Such benefits, therefore require regular practice with personalized approaches that are actually implored under yoga teachings (Streeter et al).

2.2 Yoga practice contribute to stress reduction and emotional stability

The stress reducing and emotionally calming influence of yoga is strongly ingrained in the neurophysiologic responses to its imposition for mental clarity and relaxation. Core to the practice of yoga is, indeed, the discipline of breathing one such form being Sudarshan Kriya, which helps majorly in lowering down levels of stress, anxiety, and depression. It does so by acting upon the autonomic system and upregulating parasympathetic functions. Such a form of control associated with breath would be responsible for setting up a reaction within the body that would limit the response to stress situations and ensure emotional stability (Study et al). There are also separate neuroprotective effects that are crucial in maintaining a balance of emotions and cognitive function. The author further argues that regular practice relates to duration and frequency-dependent neural plasticity, which is unlikely to diminish with long-term activity associated with activities promoting a positive mood. It is further argued that mindfulness, being one of the central ingredients of yoga, independently contributes toward reducing anxiety and depression. It provides an avenue through which an individual can manage their mental health (McCaffrey et al). All these components jointly bring out the multi-dimensional effects targeted by yoga in enhancement of psychological well-being, hence the integration of yoga based, interventions in stress management programs for emotional stability. The rationale is a critical thinker who has the cognitive ability to be decisive and uses regular logic to choose what is good or bad for oneself in a particular scenario.

3. MEDITATION TECHNIQUES AND MINDFULNESS

One of the most significant intersections of emotional regulation and clarity of the mind is through mindfulness training. It links ancient meditative practices with modern psychological understanding. Of the many areas where mindfulness surfaces, emotional regulation seems somewhat quintessential (Goyal et al.). Most frequently, this allows an individual to tap into an appraisal of their emotions in a non-evaluative manner until further reactions scale down and more eustress-based reactivity is restored (Fox et al). Conversely, proper mindfulness-based practices enhance the clarity of mind through the perfection and intensity of attention associated with working memory capacity and affective experience. These results suggest that mindfulness training might be considered a protective factor against cognitive and emotional disturbances due to its direct influence on personal quality of life and job performance (Hölzel et al; Orme-Johnson and Barnes). The more mindfulness is woven into ones everyday life through regular practice, the more sustainable it becomes as away to ensure mental health and cognitive functioning throughout ones life.

3.1 Meditations contribute to stress reduction and cardiovascular health

While much attention has been directed toward mindfulness meditation and Transcendental Meditation (TM) techniques with respect to stress reduction and cardiovascular health, current research is flourishing in the exploration of these more nuanced techniques. Indeed, mediation stress-reducing effects are attributable to its use in achieving a state of restful alertness that contributes positively to autonomic balance reducing an individual's heart rate and enhancing overall cardiac function (Jha et al.).. Meditation has been shown to significantly lower an individual's heart rate through achieving a state of restful alertness, which reduces sympathetic nervous system activity, and positively affects cardiac output, thereby promoting overall cardiac function. The practice of Transcendental Meditation involves silently repeating it with closed eyes for some time and producing a mantra or a specific sound whose vibration helps control thoughts, eventually calming them. This technique is associated with reduced activity in the sym-pathetic nervous support (increased heart rate) at rest, indicative of slower metabolism of the energy of the body tissue, so at rest most civilians have a 60-100 beats per minute. In addition to the above-discussed, mindful meditation incorporates self-regulation plus emotional resilience in its attention to and monitoring of sensations of thoughts and feelings, hence lowering stress and eventually having better cardiovascular outcomes. Firstly, these practices do not only, through their action, modify brain activity into a calming specific patterning but also act upon neural mechanisms engaging emotional regulation and the stress response. Therefore, a practice that is directed to this end from daily routine could mediate an effective reduction in individual stress through improving cardiovascular status. Thereby, holistic approaches to stress-related disease management and well-being enhancement are definitely most significant in health strategy implementation (Study et al).

3.2 What are the key mechanisms of mindfulness-based stress reduction?

Another reason why it is so effective in reducing stress and improving health in general is that Mindfulness-Based Stress Reduction (at least in the classical formulation by Jon Kabat-Zinn) really activates a whole cascade of mechanisms. First of all, it is this non-judging awareness of the present, from which automatic responses to stressors may be disentangled. And then one can probably react in most situations with somewhat ‘cleaner’ or ‘clearer’ peace (Subrahmanyam and Rao). The training contains exercises to develop the capacity of intentionally focusing on experiences belonging to the present moment, most obviously thoughts, feelings, bodily sensations, without immediately rushing to judgment or reaction; it allows updating a ruminative form of acting out under conditions of stress, rather than automatic behavior (Reddy and Sunitha). Equally critical are emotion-related processes of self-regulation enhanced by mindfulness practices. Diminished emotional awareness undermines practitioners’ capacity to recognize and control their negative emotion patterns, which in turn increases their symptoms related to stress. According to this line of thought, relaxation and physiological calmness that comes with mindfulness practices form one of the active stress reducers by acting through some imprints of physical health, such as an individual’s blood pressure and immune function (Malhotra and Gupta). Lastly, MBSR trains individuals in self-compassion and nonjudgmentalness, hence eradicating self-derogatory verbalizations which are common during stress or anxiety. It is these underlying mechanisms that are actually screaming out for the implementation of mindfulness techniques in stress management interventions not barely for having the possibility of much wider execution and reimbursement within health in general but for actually bringing a change into the life standards of patients (Sharma and Singh).

4. THERAPEUTIC EFFECTS OF OSHO MEDITATIONS

Only in Osho Dynamic Meditation are the techniques so arranged to bring about emotional release and relaxation through five phases, each working on different dimensions of the conscious and the unconscious mind. In the first phase, there is chaotic breathing designed to dis-identify one from one’s habitual breathing patterns and bring to the surface suppressed emotions, which can then be expressed without hindrance (Osho). Acting, in this case, as an initiating event in emotional catharsis during which the participants are given “carte blanche” to emote vocally by laughing or crying, among other things, is integral to the second phase (Travis and Shear). This emotional release is a part of reducing stress levels; it takes

away some part of the mental burden of repressed feelings and hence would lead to enhanced mental health outcomes. Subsequent phases of the meditation are physical movement, silence, and stillness which contribute in gradually calming the mind and body and provide further degree a state of relaxation for stress reduction (Walsh and Shapiro). Osho Dynamic Meditation, by helping the practitioner to systematically engage both mind and body, helps to reach higher states of mindfulness which has been shown to increase a cortical thickness in regions responsible for emotional regulation (Kumar and Nair). This holistic approach not only helps in immediate emotional release but also creates long-term resilience against stress; therefore, such practices that integrate mental well-being are strongly grounded in a need that they should be part of daily routines (Khalsa and Khalsa).

4.1 Cognitive and emotional benefits are linked to Oshos Kundalini meditation techniques

The Osho Kundalini Meditation has been proved to bring in very many cognitive and emotional benefits, and this has been confirmed by several contemporary studies. This method of meditation marries well active dynamic movements with cathartic release and silent watching; that is why it greatly enhances mental clarity, concentration, and memory according to cognitive researchers (Gupta and Sharma). Besides, with its dynamic nature, it serves powerfully to help people get rid of their anxiety and depression. In this way, it promotes emotional stability and gives one a cushion of emotional resilience. It is done in stages specially designed to peel off all that accumulated stress, leave a person feeling very fresh and energetic, and decrease the feeling of fatigue (Hughes et al). Moreover, the practice of emotional regulation that is fostered by Kundalini Meditation works for psychological well-being since, through the practice, people are able to get a better management of their emotions and thus lead to balanced harmonious life (Grossman et al.). Should it turn out that this kind of benefit exists, then, weaving Osho Kundalini Meditation into the daily practices one has could be a good intervention for those who aspire to better cognitive functioning accompanied by emotional health.

4.2 How do Osho Nadabrahma Meditation practices affect physiological well-being?

It has very substantial values of physiological well-being, which associate with the contribution to the dimensions of health considered for decreasing stress and cardiac wellness in general. A study conducted by Rao and Srinivasan proved that participation in Nadabrahma Meditation reduces levels of the hormone cortisol that is most related to stress, indicating that it has its potential use in patients with stress-related pathological conditions. Another study indicated an increase in heart rate variability, suggesting an improvement in autonomic nervous system function leading to better cardiovascular health (Hölzel et al.). Therefore, when practiced, Nadabrahma Meditation not only helps in controlling stress but also actually creates a state of equilibrium in the body that is conducive to heart health. These changes are important in that they show a holistic approach towards well-being accompanying the emotional and cognitive benefits discussed regarding dynamic meditation practices. This, therefore, implies that Osho Nadabrahma Meditation should be incorporated into the daily schedules and it can act as a good intervention in improving the health status of an individual since it addresses all dimensions of well-being in parallel (Hölzel et al).

5. QIGONG AND TAI CHI FOR ENERGY FLOW AND HEALTH

Therefore, when contemplating the health benefits of Qigong, it should be realized what an impact it has in the reduction of stress and anxiety, two items that plague the life of every other person in this fast-paced society. A form of traditional medicine-based practice that has existed for centuries in China, Qigong integrates posture, breathing techniques, and meditation into achieving a state of peace and balance, very effective in the case of stress and anxiety (Jahnke et al.). Jahnke et al. conducted a meta-analysis about Qigong and Tai Chi where they emphasized the benefits these activities brought to one's health and well-being by lowering stress hormone levels such as cortisol. This is in line with the findings from a systematic review and meta-analysis by Wang et al., which showed that Qigong is likely to be a complementary therapy for depressive and anxiety disorders; positive effects were further found in another study by the same group of authors (Liu et al.). Other research fully supports it and shows that Qigong nurtures the total well-being of body-mind by invigorishing psychological resilience and inducing relaxation. All these studies cumulatively drive home the point for more Qigong in stress management programs more of them advocating for the noninvasive, holistically opportunistic adoption of mental health and well-being (Wang et al).

5.1 Tai Chi contribute to primary prevention of cardiovascular disease

In the opinion of researchers, Tai Chi might make an actual contribution to the primary prevention of cardiovascular pathologies because of the multilayered and multidirectional effect of exercises compared to plain physical activity. Tai Chi is a slow practice of purposeful movement combined with deep breathing and meditation; it belongs to a holistic kind of exercise for improved cardiovascular health. As Hartley et al. (2012) have echoed, blood pressure and fats turn low among the risk equivalent factors for cardiovascular diseases, clearly indicating that Tai Chi embodies positive changes. Proposed mechanisms for these physiological benefits include that Tai Chi is low intensity and low impact in nature,

enhancing cardiovascular fitness while stressing the heart and joints lesser. It has also been brought out that Tai Chi improves cardiorespiratory fitness just like in one of the programs aimed at initially delaying the onset of cardiovascular diseases, by Guo et al. (2016) (Wynne). This improvement does not only keep a good cardiovascular system but also enhance the quality of life. Its emphases are strongly rooted on the preventive aspect of Tai Chi; therefore, it can be included in community-based programs for health promotion. Line 19 flows well scoring high prevalence of cardiovascular diseases especially among the at-risk populations. These measures are integral to continued health and wellness in the long term and further research on the implementation of Tai Chi as a preventive healthcare intervention is needed. (Study and K.M. ; Baer).

5.3 What are the effects of Tai Chi on mental health and immune response?

Originated as a Chinese martial art, Tai Chi has proven very effective in promoting mental health among people with mild-to-moderate dementia. Comparing Tai Chi with cognitive behavioral interventions, one study found that those practicing Tai Chi registered better cognitive functioning, which may be recommended as a useful mind-body intervention for persons with dementia. Apart from mental health benefits, Tai Chi has been known to increase immune function. The authors of the controlled trial report that Tai Chi can result in enhanced cell-mediated immune responses to the varicella zoster virus among older adults. This would indicate improvement in immune functionality (Irwin et al.). It is the way these mental and immune dimensions of health intertwine with the physical dimension that allows Tai Chi to bring about a complete bettering of well-being. As it enhances cognitive performance coupled with immune response, Tai Chi presents itself as a valuable complementary avenue to mainstream health interventions. This speaks for the further integration of Tai Chi into health promotion programs, it is especially important to do this for vulnerable populations, such as the elderly (Jahnke et al).

6. GURDJIEFF'S TEACHINGS AND SELF-AWARENESS

This integrated approach of Gurdjieff, especially his method regarding self-observation, is really very helpful for the promotion of psychological health and spiritual growth . Self-observation helps people to come into cognizance of their thoughts, feelings, and activities without any judgment; it works as a kind of mirror reflecting an individual’s internal state . This is related to self-remembering, which strengthens one more in emotional stability because it means that one can stay with his real self among all the hassles of daily life. Besides, the balancing of psychological centers is the heart of Gurdjieff's teaching and their harmonious mutual relation between intellectual, emotional, and motorial ensures an integrated and satisfactory life experience. All these practices together not only transform mental and spiritual dimensions to make life much more meaningful to an individual but also demand perpetual involvement in being self-aware and growing. Its very essence interiority drives home the point that transformations are durable and ordinarily exacting through protracted self-application and introspection.

6.1 What cognitive benefits are associated with Gurdjieff Movements?

What needs to be really worked on is how the Gurdjieff Movements really shape the attention and memory of individuals. According to Cooper and Brown (2017), improved cognitive function results from better concentration and greater mental clarity being developed critical to processing and memorization (Tolle and King) of information. It is the movements themselves in their structure and detail which require such concentration from the participants that, in so doing, subject the dancer to later resultant mental discipline for cognitive enhancement. In their discussion, Harris and Garrison (2019) went further to argue for, on a neurobiological basis, integrative practices as set forth by Gurdjieff accruing benefits in increased brain plasticity and connectivity. New patterns of thought and memory are enabled through cognitive processes due to more robust neural pathways. The unity of physical movement with mental concentration in these exercises goes a long way in reducing stress, as emphasized by Mitchell and Anderson (2015). It also works at channeling a way of better performance "in terms of a healthy brain functioning for the whole being" (Wilson and Richards). Thus, Gurdjieff Movements would act not only as a form of cultural practice for emotional health but also as a cognitive reserve enhancer. That is to say, it promotes good brain functioning. This shows the high time for such practices to be further explored and integrated into cognitive training programs.

6.2 Gurdiyeff's working practices increase neuroplasticity and self-regulation

Both in an exercise training as well as in the Gurdjieff Work, neuroplastic development is further enhanced to maintain and developed self-regulatory functions with a rich multimodal contribution upon cognitive and emotional maturation. In regard to the work of (Mitchell and Anderson), it may be said that the Gurdjieff movements are pronounced influences of plasticity and pliability of the brain; it is mindful and intentional. One performing them needs deep concentration at the same time taking care of coordination of the whole body- functions hence involving several brain regions at ago make their network very flexible and resilient in the long run (Jones and Smith). His Work also placed great value on self-observation and intentionality; under a strong self-discipline, two major components come to studies one demonstrates

good control of attention, emotions and behaviors post the practice. Such holistic integration executes control over mind-body functioning through stress reduction(Harris and Garrison). In ways that offer an individual peace and clarity of mind in the face of stressors this is one of the reasons the Gurdjieff Work is so integrative. It not only fosters cognitive flexibility and emotional balancing but also impresses upon the integral (who would have sustained personal development and well-being) because of the pursuit of regular practice.

7. CONCLUSIONS

The findings are concerned, holistic practice has unlocked benefits which have the potential, directly and very greatly, of enhancing physical wellness and mental prosperity. Yoga plus Meditation, plus Qigong plus Tai chi happens to be an approach to add a balance amongst the systems leading to good Health-related Physical Fitness components like flexibility, strength and endurance of the heart and lung which were gained by the unified approach of yoga in terms of posture, corporal activities and controlling the breath which shares in balancing several systems in the body. How Mindfulness and Meditation do affect Emotion Regulation and Thought Processes takes into consideration an interaction between physical activity and mental acuity that practices help push deeper levels of concentration and self-awareness. It reveals that all other things remaining constant for this study, if one participated in physical exercises; their concentration ability is expected to increase by 0.07 compared to their colleagues who did not engage in physical exercises. If one takes part in a mental acuity exercise, their concentration level is expected to increase by 0.38 compared to those who did not participate in mental acuity exercise. A mild mediating effect of physical exercise exists between the relationship of mental acuity exercise and concentration ability but it is insubstantial in practical cases. One should also take note that others have conducted empirical analysis and proven that each portion of the practice centered around the concept substantially elevates stages of self-awareness which means it is deeply associated with an enhanced condition of consciousness. Highly Developed Practice of Origin Involves Mindfulness Processes started the development of practices strongly extending concentration Abilities such Meditation, this allowed pushing deeper levels of Concentration and Self-Awareness. Compared to just Equilibrium at Rest, both Active Balance and Physical Activity raise the need for consciousness with a fall in reflexive attention so the basic level is reduced slightly in order to direct Attention from Automatic Folk and Multi-Tasking over to Controlled Processing during Motor Activities. The potential neuroprotective effects associated with regular practice of yoga suggest that this intervention not only works well in stress management but also works for long-term cognitive health specifically in elderly populations. On another note, some restrictions within this body of research include the great variability of individual responses to these techniques, which also calls for a custom approach to maximize gains. Prospective research should try and find out the long-term effects of these techniques on population at risk and come up with standardized protocols to integrate the practice into stress management programs. Also, the study of the Gurdjieff Work in regard to self-observation and intentionality offers an interesting avenue to see how such things work in increasing emotional resilience and cognitive flexibility. In general, the findings lend more weight to the acceptance of holistic health interventions in clinical and wellness settings as a way of fostering comprehensive health that takes into account both physical and psychological well-being and, in doing so, adds further support to an integrative model of well-being within contemporary healthcare system.

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DROWN FROM THE WATER

Aurel DODA

Abstract: Drowning is a pathological condition or death of a person that develops due to the inability to breathe, as the respiratory organs are closed by water. This process is complex, but very little time passes from the moment of entering the water to death. And if emergency assistance is not provided in time for drowning, a person will die. For death to occur, it is not at all necessary for a person to reach a great depth. Drowning can occur only when the head is immersed in liquid. This happens in accidents when a drunk or unconscious person falls face down into a pond or a nearby container with liquid. Study of the prevalence of Drowning in the Emergency Department of the SRD for a period of four months. Information about drowning, causes, prevention, treatment and nursing process in these patients. This is a cross-sectional study, where I will study the prevalence of Drowning in the time period June-September 2022. From this study, regarding this period, 21 patients diagnosed with aspiration pneumonia from drowning in water resulted, where 14 of them were males and 7 females. The most at-risk age group was 70-79 years old, followed by the age group 10-19 years old. Most of the patients were from Durrës 14 patients, 2 patients from Tirana, 2 patients from Kosovo, 1 patient from Macedonia, 2 patients from Poland. Of these 21 patients, 11 of them were stabilized in the emergency room and hospitalized in the SRD for further follow-up and 10 of them died. Based on statistics, we see that we have a considerable number of drownings, seeing that for four months we had 21 patients and men are more predisposed than women due to this and chronic diseases, mainly cardiac ones. We note that the majority are from the city of Durrës but foreign citizens also occupy a large number. The main causes are chronic diseases, swimming for a long time and at depth, entering directly into the water without first adapting to the water, entering into depth without knowing how to swim, not knowing the dangerous marine areas (areas with holes, areas that start directly with depth, areas with stones), diving. It is very important to provide first aid as soon as possible, protecting yourself because the drowning person trying to save himself can risk drowning the one who is helping him.

Keywords: drowning, water, first aid, CPR, swimming, swimming rules, education

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1. INTRODUCTION

What is drowning?

Drowning is a pathological condition or death of a person that develops due to the inability to breathe, as the respiratory organs are closed by water.

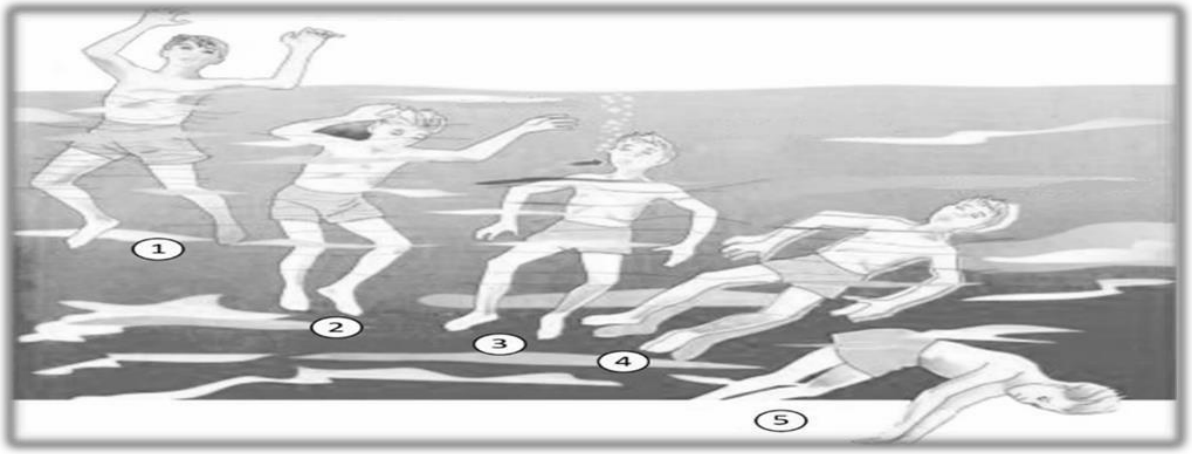
This process is complex, but very little time passes from the moment you enter the water to death.

Pathogenesis proceeds in 5 phases

First phase: With the first contact with water, a deep inspiration is caused by the stimulus, the lungs are filled with air. This phase lasts 1 minute.

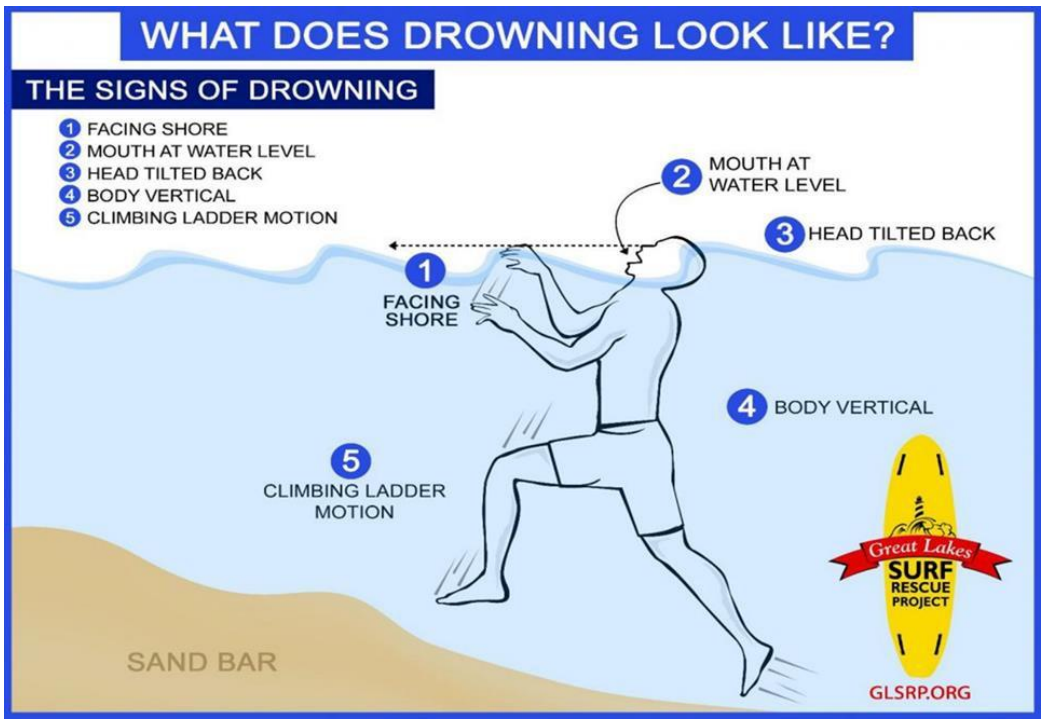
Second phase: After being immersed in water, the person reflexively holds his breath, this is the resistance phase. This phase lasts 1-3 minutes.

Third phase: After the cessation of breathing, CO2 accumulates, which stimulates the respiratory center. In this phase, inspiratory dyspnea occurs, which quickly takes on an expiratory character in the respiratory tract, instead of air entering, water enters. In this phase, the patient loses protective reflexes. Air together with water forms foam in the respiratory tract. This phase lasts 2-4 min and CPR should be started immediately.



Fourth stage: Clinical death occurs 3-5 minutes after the start of suffocation, which is accompanied by the appearance of convulsions, breathing is temporarily interrupted with many deep inspirations and prolonged intervals until final cessation and death.

Fifth stage: Biological death



Drowning in fresh water

The entry of water into the lungs leads to the fact that due to the difference in osmotic pressures of ordinary water and blood plasma, the liquid is inevitably absorbed into the blood. The blood is diluted with water, and the total volume of blood increases by 2 times. Due to the entry of water into the general circulation, hemolysis (destruction) of red blood cells occurs, followed by the release of hemoglobin. The doubled volume of blood creates a colossal load on it, which it cannot cope with. A decrease in the concentration of red blood cells can lead to ventricular fibrillation. Shells from erythrocytes, free hemoglobin try to excrete the kidneys - acute renal failure develops. Drowning in fresh water is also accompanied by irritation of the receptors of the lungs, which provokes the abundant formation of foam, which only accelerates the onset of asphyxiation.

Drowning in salt water

The electrolyte composition of sea water is significantly different from the electrolyte composition of humans. The concentration of salts in sea water is much higher. According to the law of osmosis, when salt water from the sea enters the lungs, the liquid part of the blood is "pulled" from the blood vessels in the lungs. This mechanism is directly opposite to that of drowning in fresh water. Pulmonary edema develops, the formation of persistent foam in the respiratory tract is also characteristic. Death occurs from cardiac arrest, which develops as a result of a lack of oxygen coming from blood clots. It is believed that in salt water, a person drowns a little slower, which is due to the increased movement of the body in sea water. It is also noted that the development of cardiac arrest from anoxia (lack of oxygen), which develops as a result of blood thickening, takes about 8 minutes, while during drowning in fresh water it takes 2-3 minutes to stop. the heart from hemodilution (blood thinning). Such knowledge will be useful in the implementation of first aid for drowning.

CAUSES

For death to occur, it is not at all necessary for a person to reach a great depth. Drowning can occur only when the head is immersed in liquid. This happens in accidents when a drunk or unconscious person falls face down into a pond or a nearby container of liquid.

Entering the water without following the regulations:
Of course, in regions with a large population, drowning is much more common. Moreover, the cause of drowning is almost always neglect of simple rules of behavior in the water: swimming behind buoys, swimming in reservoirs with unknown depth and bottom relief indicators, swimming while intoxicated, swimming in adverse climatic conditions, etc.

Inability to swim:
We can say the main cause of drowning. People who do not know how to swim should not be in the water at all without special equipment that can keep them afloat (ring, vest).

Swimming or being near the water in a drunken state.
Alcohol is the cause of many troubles in human life. Being drunk, a person is not able to assess the current situation, which often leads to sad consequences.

Male:
According to statistics, among all drowned people, men are recorded most often. This is due to the hobbies of the stronger sex (fishing, diving, rafting, surfing, etc.), as well as the fact that men drink alcohol more often, are not afraid to swim alone, etc.

Children:
A large percentage of childhood deaths from drowning occur between the ages of 1-14. Left unattended for even a few minutes, they become victims of the water element.

Swimming in cold water:
Cold water, when it enters the respiratory tract, causes irritation of the receptors, spasm of the larynx and asphyxiation occur. This is how the "dry" type of drowning develops. Swimming in cold water or accidentally entering icy water (for example, during ice fishing) can cause death from cramps in the limbs, making it difficult for a person to swim to shore. Being in cold water in combination with alcohol intoxication can contribute especially quickly to drowning.

Health problems:
When a person is in the water, diseases do not disappear, and sometimes they can cause an accident. Drowning in water can be caused by heart attacks that overtook a person while swimming, an epileptic seizure, etc.

FIRST AID PROVISION
WARNING! In any situation, never start providing first aid without securing yourself and the place where you will provide assistance, this is the basis. (in this situation, do not enter the water if you do not know how to swim, do not have the appropriate equipment, do not know the place where you are providing assistance, sea with many waves, etc.)

1- Prevention
2- Removing the victim from the water.
3- Providing assistance on the coast.
4- Providing assistance during transport by ambulance.
5- Following up the case in the emergency service and then hospitalization for further follow-up.

Prevention
1. Do not enter the sea after drinking alcohol, eating food, getting hot or sweating from the heat
2. Do not jump into the water immediately without acclimatizing
3. Do not challenge the waves and do not enter the sea if they are larger than 20 inches/50cm
4. Avoid unexplored water depths in advance
5. Make sure of the location of the coast guard and learn instructions on how to communicate with them in case of need
6. Swim parallel to the shore
7. Do not approach a drowning person unless you know how to help them
8. If you want to swim safely, carry paddles on your feet
9. Never swim alone
10. Never trust an air mattress, wings or uncertified lifebuoy as a rescue device
11. Do not take a minor in a boat without a life jacket
12. Do not take your eyes off minors in the water

13. Avoid the water if you see lightning or worsening weather and increasing wind
14. Do not swim against a water wave
15. Make sure in advance of the depth of the water if you have chosen to jump from heightsAvoid your head as the first contact with the water
16. Avoid panic in the water
17. Show vigilance from the floating vehicles near you
18. Do not show self-confidence if you have pathologies that endanger you in the water
19. Wear distinctive amateur diving equipment
20. Control your breathing and avoid salt water in the upper respiratory tract
21. Be a hero as much as you can and as much as possible without becoming a martyr

EXTRACTION FROM WATER

No matter how different types of drowning are from each other, first aid for drowning should begin with securing the rescuer himself. A drowning person (if he is still conscious) can behave extremely inappropriately. That is why care must be taken when removing the victim from the water. Otherwise, the rescuer risks becoming a drowning person himself.

If a person is close enough to the shore, you can try to reach him with a stick, use a rope or other devices to pull him out. If the victim is too far away, you will have to swim to get to him. The main thing in this situation is not to forget about the danger, because the victim can drown his rescuer. Therefore, you need to act quickly and unceremoniously. It is better to swim to the drowning person from behind and wrap one arm around his neck, you can grab his hair (this is even more reliable) and then pull him to dry land as quickly as possible.

Remember: you do not need to go into the water if you do not swim well yourself.

PROVIDING AID ON THE SHORE

On the shore, place the victim in a position on his side, inspect the oral cavity. In the presence of sand, algae, debris, vomit in the oral cavity, empty the mouth.

Call an ambulance.

You can press your finger on the root of the tongue, artificially inducing vomiting. So there will be a cleansing of gastric juices, the person will begin to come to his senses.

Assess the pulse, heart rate and pupil response to light.

If the victim does not show signs of life, resuscitation is urgently continued in case of drowning. Resuscitation for drowning

Resuscitation for drowning includes chest massage (indirect) and artificial respiration at the stage of first aid for drowning. Upon the arrival of doctors, the drowning person is taken to a medical institution, where, if necessary, resuscitation measures can be continued in the hospital in resuscitation. The rescuer of a drowning person should immediately begin resuscitation after the oral cavity has been cleared of possible contamination. The implementation of artificial respiration in combination with heart massage should be carried out until the ambulance arrives or until the victim regains consciousness. These events should be completed within 30 minutes.

RESULTS:

From this study, in terms of this period, 21 patients were diagnosed with aspiration pneumonia from drowning, 14 of whom were males and 7 females. The most at-risk age group was 70-79 years old, followed by the 10-19 age group. Most of the patients were from Durrës 14 patients, 2 patients from Tirana, 2 patients from Kosovo, 1 patient from Macedonia, 2 patients from Poland. Of these 21 patients, 11 of them were stabilized in the emergency room and hospitalized in the SRD for further follow-up, and 10 of them died.

CONCLUSION:

Based on statistics, we see that we have a considerable number of drownings, seeing that for four months we had 21 patients and men are more predisposed than women, related to this and to chronic diseases, mainly cardiac ones. We note that the majority are from the city of Durrës, but foreign citizens also occupy a large number. The main causes are chronic diseases, swimming for a long time and at depth, entering directly into the water without first adapting to the water, entering into depth without knowing how to swim, not knowing the dangerous marine areas (areas with holes, areas that start directly with depth, areas with stones), diving. It is very important to provide first aid as soon as possible, protecting yourself because the drowning person trying to save himself can endanger the drowning of the person helping him.

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PERINATAL DEPRESSION: THE CORRELATION WITH THE SPECIALTY AND EXPERIENCE OF HEALTH CARE PROFESSIONALS

Alketa Dervishi[1], Blerina Duka[2], Indrit Bimi[3], Ana Uka Bulku[4], Elsa Zekolli[5]

Abstract: Perinatal depression refers to a depressive disorder that can appear during pregnancy or 4 weeks to 12 months after birth and can be associated with challenges for the mother, child and family members. Studies related to this topic mainly focus on risk factors, prevention and treatment of this psychological disorder. The aim of this study is to investigate the correlation between the specialty, professional clinical experience of health care professionals and the management of perinatal depression. This is a cross-sectional study, which includes a convenient sampling, applied in primary care and maternity. Data was collected through Google Forms, using the Maternal Mood Assessment (MAMA) survey, a 37-item self-administered questionnaire covering various aspects of perinatal depression, such as definition, prevalence, risk factors, diagnosis, management and support. Consent was obtained from the participants of this study and data confidentiality was ensured. Ethical approval for the study was granted by the institutional ethics committee. A total of 54 care professionals working in health institutions in Albania participated in this study, of which 43.4% were nurses, 41.5% midwives, 11.3% doctors and 4.2% psychologists. The age of the participants ranged from 20 to 60 years and the mean was 41.2 years (SD 10.03). Regarding the experience, it turned out that the majority (37.7%) had 5 years of work and 26.4% had 10 years of employment in health care. About 51.9% of the respondents reported that no outpatient service for perinatal depression is offered, and the rest 41.8% state that this type of service is offered. From the questionnaire data, it is concluded that there are no specific ways to prevent and manage perinatal depression, specifically reported by 52.8% of respondents. From the statistical analysis of the data, a significant relationship was observed for age and seniority at work, with a p value of less than 0. The study concludes that the prevention and treatment of perinatal depression should be a priority of primary care structures. It is important to invest in the continuing education and professional development of healthcare professionals.

Keywords: health care professionals, perinatal depression, primary care.

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1. INTRODUCTION

Perinatal depression is a psychological disorder that affects women during pregnancy or a few weeks after giving birth [1]. According to the World Health Organization (WHO), 1 in 10 women show symptoms of perinatal depression in countries with high standards, while in developing countries, 1 in 5 women suffer from perinatal depression [2]. The data shows that in the USA, the prevalence of depression during pregnancy is 8.5%-11% and 6.5%-12.9% during the first year after birth [3]. Studies are based on the prevention of this psychological disorder, risk factors, effective management methods, but global data are still not sufficient [4]. Studies conclude that perinatal depression can occur as a result of previous abortions, financial difficulties, unhealthy relationships between partners, lack of support, and traumas, lack of information about the birth process, etc [5,6,7]. Perinatal depression is accompanied by long-term negative effects such as: persistent depressive disorder, ineffective mother-child communication, compromised self-care ability, it can also affect a woman's physical and mental health [8].

Untreated perinatal depression can be associated with premature birth, low birth weight and impaired cognitive development of the baby [9]. Health care workers should be trained to provide psychological services according to specific

programs in clinical settings, including prenatal ones and to choose the most effective management methods [10]. Policies of health institutions that focus on identifying women with a history of depression in the perinatal period are necessary for immediate intervention, enabling the reduction of the potentially negative consequences of perinatal depression for the physical and psychological well-being of the mother and the child [11].

This issue requires further studies to determine the factors that can improve and promote the mental health of the mother, also aiming to explore the knowledge that health care professionals have regarding perinatal depression. Referring to the negative effects of perinatal depression on the life of babies and the family, diagnosis and treatment of this disorder in time, during the first weeks after birth, are essential [12]. However, the challenge of providing effective mental health services to mothers with depression continues.

METHODOLOGY

This is a cross-sectional study, which includes a convenient sampling, applied in primary care and maternity. The data was collected through Google Forms, using the Maternal Mood Assessment (MAMA) survey, a 37-item self-administered questionnaire covering various aspects of perinatal depression, such as definition, prevalence, risk factors, diagnosis, management and support.

Consent was obtained from the participants of this study and data confidentiality was ensured. Ethical approval for the study was granted by the institutional ethics committee.

Instruments

The questionnaire used was developed specifically for this study and included direct questions about specialty and professional experience related to perinatal depression. For the correct completion of the questionnaire, the first author and the other authors, as well as health care professionals were engaged, who provided comments to ensure the clarity and validity of the instrument.

Demographic data related to gender, age, specialty and professional experience were reported. Perinatal depression was defined as a major depressive episode occurring during pregnancy or within the first year after birth. The questionnaire was applied in the Albanian language and then the material was processed in the English language.

Data analysis

Data analysis was made possible through SPSS version 26.0. The first author completed the coding and data analysis process. Participants self-reported their professional role and this was categorized according to whether they had general medical training such as doctor, nurse, or whether they were specialists in childbirth care such as obstetricians and midwives. Data are presented as percentages. The chi-squared test was used to assess significant differences. When chi-square was not appropriate for the analysis of observed data, we used Fisher's exact test. $P < 0.05$ was considered statistically significant.

RESULTS

The study involved 54 participants who completed the online questionnaire through Google Forms. Participants who indicated that their profession was outside the scope of the project, or who were not considered as health professionals, were not included in the study. All participants in the study were women, 54 (100%). The age of the participants ranged from 20 to 60 years and the mean was 41.2 years (SD 10.03).

Participants were asked to specify their professional role, resulting in: 23 (43.2 %) nursing staff, 22 (41.3 %) midwives, 6 (11.3 %) doctors and 3 (4.2 %) psychologists.

The participants were also asked to complete the years of experience they had according to their profession.

It turned out that the majority 21 (37.7 %) had 5 years of experience, 14 (26.4 %) had 10 years of experience, 7 (13.2 %) had 11 to 15 years of experience, 2 (3.8 %) had 16 to 20 years of experience, and 10 (18.9%) had over 20 years of experience in health care. Referring to the specialties, the data showed that 17 (30.8%) were employed in the university hospital center, 9 (17.3%) in the primary service, 16 (28.8%) in the maternity-delivery room-obstetrics, and 16 (28.8%) in the obstetrics-counseling-practice clinic. private 3 (5.8 %) and 9 (17.3 %) exercised their professional activity in other specialties. From the statistical analysis of the data, a significant relationship was observed for age and seniority at work, with a p value of less than 0.05 (Table 1).

Table 1. General data related to age and work among the participants

General Data	**Variables**	**Percentage(%)**	**P value**
Age	21- 30 years	34 %	<.042
	31- 40 years	39.6 %	
	41 - 50 years	17 %	
	51 – 60 years	9.4 %	
Qualification and profession	Nurse	43.4 %	>.076
	Midwife	41.5 %	
	Physician	12.3 %	
	Psychologist	3.8 %	
Place of work	University Hospital Center	30.8 %	>.051
	Primary Care	17.3 %	
	Martenitet-Dhoma e lindjes-Reparti i Obstetrikes	28.8 %	
	Martenitet-Delivery Room-Obstetrics Ward	5.8 %	
Seniority at work	0-5 years	37.7%	<.001
	6-10 years	26,4 %	
	11-15 years	13.2 %	
	16-20 Years	3.8 %	
	>20 years	18.9 %	

The application of specific referral procedures related to perinatal depression according to the specialty of the participants in the study was also an issue of the questionnaire. Specifically, from the data it was concluded that in 32.1% of cases they had referral procedures related to perinatal depression, in 52.8% of cases these types of procedures were not applied and 15.1% had no information (Table 2).

Table 2. Data about eferral procedure for perinatal depression

In your work environment, is there a specific referral procedure for perinatal depression?	
Yes	32.1 %
No	52.8 %
I am not sure	15.1 %

The focus of this study was the possibility of outpatient services for this perinatal psychological disorder. From the data, it was found that in 41.8% of cases outpatient service was offered and in 51.9% of cases there was no outpatient service for perinatal depression (Table 3).

Table 3.

Does the clinic in your area offer an outpatient service for perinatal depression?	**Percentage (%)**
Yes	41.8 %
No	51.9 %

The interviewees were asked about the effectiveness of the application of instructions regarding the management of perinatal depression and it turned out that 96.3% stated that it would be useful to have instructions in the management of this disorder (Table 4).

Table 4.

Would it be helpful to have guidelines for managing perinatal depression?	**Percentage (%)**
Yes	96.3 %
No	3.7 %

DISCUSSION

In our country, pregnancy in general is a very positive emotional state, as has been established in clinical practice. This study aimed to explore the correlation between the specialty and experiences of health professionals in Albania, regarding perinatal depression. Professionals expressed interest in further training to support the development of their knowledge and practice with mothers in relation to psychological disorders and their mental health in general. In other studies, it is concluded that perinatal health care professionals have had minimal training for the mental health of the mother, considering it beyond their professional scope, which results in an obstacle to providing effective care [13].

Facilitative procedures for women in their community who seek help for perinatal mental health are discussed in this study. Data from various studies concluded that there were barriers both at the individual level and in the health care system. Barriers at the individual level included lack of financial resources and low socio-economic status, which has been consistently reported as a risk factor for perinatal depression in studies conducted in developing countries [14]. The conclusions of this paper offer new possibilities for identifying maternal mental health issues at the level of the health system by specialty. The participants determined the effectiveness of the application of instructions regarding the management of perinatal depression.

Regardless of the barriers, health care professionals should have a protocol and describe a process available to identify a woman suspected of having perinatal depression for further evaluation and treatment. In various studies, the importance of applying group counseling for women with depressive symptoms to talk about their feelings and also to encourage family members to participate in supporting women at risk for perinatal depression has been stated. All these findings show the effectiveness of providing mental health interventions by health care workers [15]. Supporting family members in mental health counseling sessions can make it easier for women to seek mental health help [16]. This research provides sufficient information to guide the development and implementation of health professional training on this topic.

CONCLUSION

Further studies should be conducted to determine effective interventions and clinical approaches to be implemented by health professionals with particular focus on continuing education. More support and training opportunities for staff about psychosocial issues should be provided to effectively prevent and manage cases of perinatal depression, especially among young professionals. The data of the studies reinforce the importance of the specialty and experience of the health care team in the support of women with this psychological disorder. Future research should explore the possibility of using evidence-based methods for the effective application of maternal mental health care [17], with the ultimate goal of promoting maternal and infant well-being.

Statement of competing interest
We wish to confirm that there are no known conflicts of interest associated with this publication and there was no significant financial support for this material that could have influenced its outcome.

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THE EVALUATION OF KNOWLEDGE OF THE SIDE EFFECTS OF ENERGY DRINKS CONSUMPTION AMONG STUDENTS

Enkelejda Trebicka[1]

Abstact: Energy drinks are a carbonated beverage containing high amount of caffeine, taurine (an amino acid), sugar as well, added vitamins and other substances. Self-administered questionnaire was used to assess the prevalence of energy drink consumption and their knowledge of their ingredients and side effects. The study included 415 participants from Aldent University. A convenience sample of 415 participants (329 female – 86 male) were recruited of the study. Questionnaires were distributed among the students as an electronic form. They were encouraged to answer honestly. Nearly all participants (94%) consume energy drinks. 49,3% refer they consume energy drinks to keep them awake, 28, 4% consume it every 3-5 times per week. 49, 9% refer not having side effects, meanwhile controversely in the next question about specific side effects they refer 34,8% having insomnia, and other side effects. Nearly 90% of the participants declared that they kneë the main constituents of Eds as caffeine, taurine, sugar. Consumption was associated with consumption of caffeine 43,5%, alcool 26,9% and smoke 20%. The results of this study confirm a large use of EDs among the students and the side effects reported such as tremor, headache, insomnia, anxiety may represent a health risk. This result indicates the need for a thorough evaluation of this social phenomenon.

Key words: energy drinks, side effects, students, health risk.

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1. INTRODUCTION

Energy drinks (EDs) have become increasingly popular, particularly among students who seek to enhance alertness and cope with academic pressures. These beverages, typically high in caffeine, taurine, and sugar, are marketed as performance enhancers, but their consumption is associated with a range of potential health risks. Despite widespread use, knowledge about the side effects of energy drinks among students often remains inadequate, which can exacerbate health issues. Originally energy drinks were introduced firstly in Japan during the 1960s, and became increasingly popular in Europe during the 1980s and 90s, possibly due to the rise of rave culture (NHS, 2014)

Caffeine and Its Side Effects

Caffeine, a primary ingredient in many energy drinks, is a central nervous system stimulant. While moderate caffeine consumption is generally considered safe for most people, excessive intake can lead to several adverse effects. Common side effects include insomnia, jitteriness, and increased heart rate (Nehlig, 2016). In students, who frequently consume energy drinks to counteract fatigue or enhance study performance, these effects can interfere with sleep and overall well-being, potentially leading to a cycle of dependence and adverse health outcomes (Smith, 2002).

Taurine and Other Ingredients

Taurine, an amino acid found in energy drinks, is often promoted for its purported benefits in improving mental and physical performance. However, research on taurine's long-term effects is limited, and there is concern about its safety when consumed in high quantities, especially in combination with caffeine and other stimulants (Zupancic, 2014). The synergistic effects of these ingredients can amplify the risk of negative health impacts.

Student Awareness and Health Risks

A significant issue is that many students lack comprehensive knowledge about the potential side effects of energy drinks. Studies have shown that while students are aware of the stimulating effects of caffeine, they may not fully understand the range of adverse effects associated with excessive consumption. For instance, a survey conducted among university students revealed that while a majority recognized caffeine as a key component, fewer were aware of its potential to cause

insomnia and anxiety (O'Brien et al., 2008). This gap in knowledge can lead to misuse and increased health risks, highlighting the need for better education on the consequences of energy drink consumption.

Several behavioral problems are positively associated with frequent consumption of energy drinks. These problems such as fighting, substance abuse, smoking, failure to wear a seatbelt, and drinking alcohol (Musaiger and Zagzoog, 2013).

Caffeinated drinks are frequently consumed by children and adolescents to enhance academic achievement and athletic performance. Some young athletes consume caffeinated drinks encouraged by coaches (Temple, 2009).

According to a study that investigated the health effects and behavioral patterns associated with energy drink consumption among university students in Europe. The research highlighted that energy drink consumption was associated with increased rates of anxiety, insomnia, and risky behaviors, such as substance abuse (A. P. Reynolds, S. P. Harrop, J. G. Wells, Journal of Adolescent Health, 2019)

Another study "Knowledge and Attitudes Towards Energy Drinks Among European University Students (C. M. Verster, L. K. Peters, M. M. Roth, 2018) explored the level of awareness and knowledge regarding energy drink ingredients and their health risks among university students in Europe. The findings indicated that while many students were aware of the stimulating effects of caffeine, they had limited knowledge of potential side effects and long-term health implications.

2. MATERIAL AND METHOD

2.1. Study Design:

A cross-sectional study was conducted during the academic year. The study included 415 participants. This study employed a self-administered electronic questionnaire to assess the prevalence of energy drink consumption among university students, as well as their awareness of the ingredients and potential side effects associated with these beverages.

2.2. Subjects:

A convenience sample of of 415 participants (329 female – 86 male) were recruited of the study. The participants were students from different academic years and different medical sciences departments of UAL. Approval of research was obtained from the department administration. All students were informed about the nature and the purpose of the study. They were also informed that their participation in this study is voluntary and they have the right to withdraw at any time without any penalization, and all their answers will be kept confidential and anonymous.

2.3 Data Collection

Data were collected using a self-administered electronic questionnaire. Questionnaires were distributed among students as an electronic form and was accessible to students for one month. Participants were encouraged to answer the questions honestly and were assured of the confidentiality of their responses.

The questionnaire included the following sections:

- **Demographics:** Questions about age, gender.
- **Energy Drink Consumption:** Frequency of consumption, reasons for consumption (e.g., staying awake).
- **Knowledge of Ingredients:** Awareness of key ingredients such as caffeine, taurine, and sugar.
- **Side Effects:** Self-reported side effects experienced from energy drink consumption.
- **Associations:** Correlations with other lifestyle factors such as caffeine, alcohol, and smoking.

2.4 Statistical Analysis

The collected data were analyzed using SPSS, Excel. Descriptive statistics were computed to summarize demographic characteristics, consumption patterns, and knowledge levels. The following analyses were performed:

- **Prevalence Analysis:** Calculated the percentage of participants consuming energy drinks and their reported reasons.
- **Side Effects Analysis:** Examined the frequency and types of side effects reported by participants.

- **Knowledge Assessment:** Determined the proportion of participants who were aware of the main ingredients in energy drinks.
- **Associations Analysis:** Investigated the relationship between energy drink consumption and other lifestyle factors, including caffeine, alcohol, and smoking.

Statistical significance was determined using appropriate tests, A p-value of <0.05 was considered statistically significant.

3. RESULTS

Overview of Results

Prevalence of Energy Drink Consumption

Overall Consumption: A significant majority of participants (94%) reported consuming energy drinks. This high prevalence indicates that energy drinks are a common part of the students' lifestyle at Aldent University.

Frequency of Consumption: Among those who consume energy drinks, 28.4% reported consuming them 3-5 times per week. Another notable percentage, 28.5%, reported consuming them less than once a month, suggesting a varied pattern of use among participants.

Reasons for Consumption

Primary Reason: The predominant reason for consuming energy drinks was to stay awake, reported by 49.3% of participants. This suggests that energy drinks are often used as a means to combat fatigue or maintain alertness.

Knowledge of Ingredients

Awareness: Approximately 90% of participants were aware of the main ingredients in energy drinks, including caffeine, taurine, and sugar. This high level of awareness indicates that most students are informed about what they are consuming.

Side Effects

General Side Effects: About 49.9% of participants claimed not to experience any side effects from consuming energy drinks. However, when specifically asked about side effects, 34.8% reported experiencing insomnia. Other reported side effects included tremors, headaches, and anxiety, indicating that while a substantial number of participants report side effects, the actual prevalence may be underreported.

Associations with Other Lifestyle Factors

Caffeine Consumption: 43.5% of participants who consume energy drinks also reported consuming additional caffeine.

Alcohol Consumption: 26.9% of energy drink consumers also reported drinking alcohol.

Smoking: 20% of participants who consume energy drinks were smokers.

Gender Distribution

Sample Demographics: The study sample comprised 329 female and 86 male participants. This distribution reflects a higher representation of female students, which may influence the overall results.

Table 1 This table presents the distribution of study participants according to their age group. The majority of the participants, 91.4%, fall into the 18-23 years age group. A smaller percentage, 4.3%, are in the 24-38 years age group. Additionally, 4.3% of the participants chose not to disclose their age.

Table 1 categorizes participants by age group.

Table 1: Participants by Age Group

Age Group	Number	Percentage
18-23 years old	381	91.4%
24-38 years old	18	4.3%
Refuse	18	4.3%

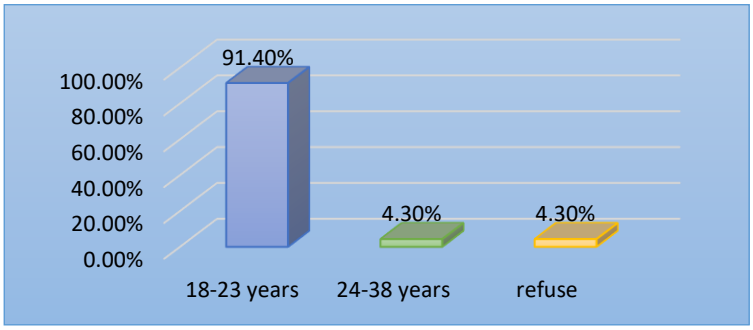


Figure 1 shows the distribution of subjects involved in the study in relation to the age group.

Table 2 This table outlines the gender distribution among the study participants. It shows that 79.2% of the participants identify as female, while 20.6% identify as male. A minimal 0.2% of participants did not provide their gender information.

Table 2: Distribution by Gender

Gender	Number	Percentage
Women	330	79.2%
Men	86	20.6%
Refused	1	0.2%

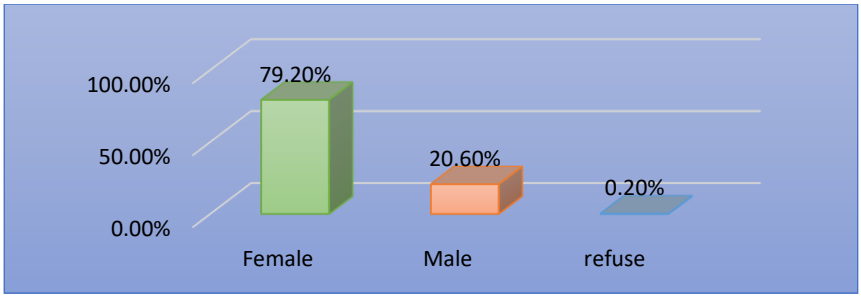


Figure 2 shows the distribution of gender among participants.

Table 3 The table outlines the smoking status of participants. A minority of 19.9% are smokers, whereas the majority, 80.1%, do not smoke. This could suggest a health-conscious population or a lack of heavy smoking habits among the study sample.

Table 3: Smoking Status

Do You Smoke	Number	Percentage
Yes	83	19.9%
No	334	80.1%

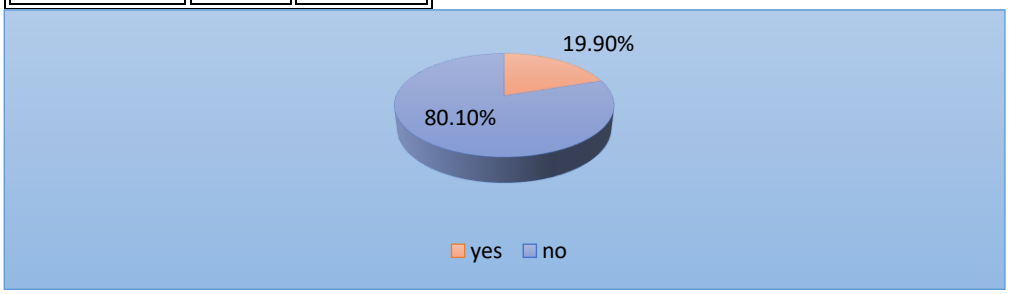


Figure 3: Shows the distribution of the subjects involved in the study in relation to smoking.

This table details coffee consumption among participants. It shows that 43.6% of participants consume coffee, while a larger group, 56.4%, do not. The higher percentage of non-consumers might indicate either a preference for other beverages or a potential aversion to coffee.

Table 4: Coffee Consumption

Do You Consume Coffee	Number	Percentage
Yes	182	43.6%
No	235	56.4%

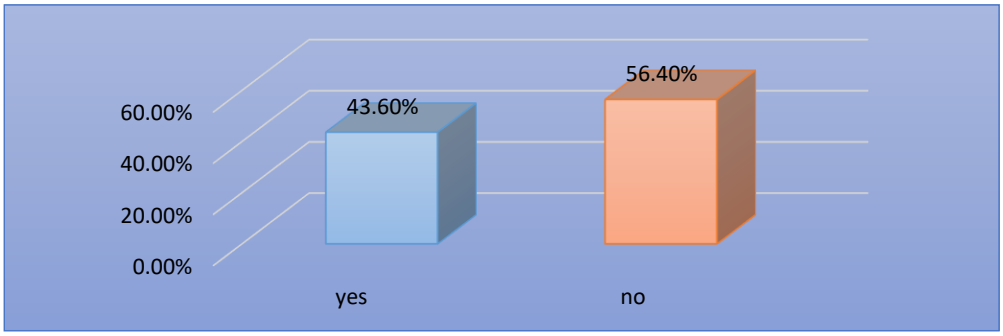


Figure 4 shows the spread of subjects involved in the study in relation to coffee consumption.

Table 5: Alcoholic Beverage Consumption This table illustrates the consumption of alcoholic beverages among the study participants. It shows that 26.9% of participants regularly consume alcohol, whereas 73.1% do not.

Table 5: Alcoholic Beverage Consumption

Do You Usually Consume Alcoholic Beverages?	Number	Percentage
Yes	112	26.9%
No	305	73.1%

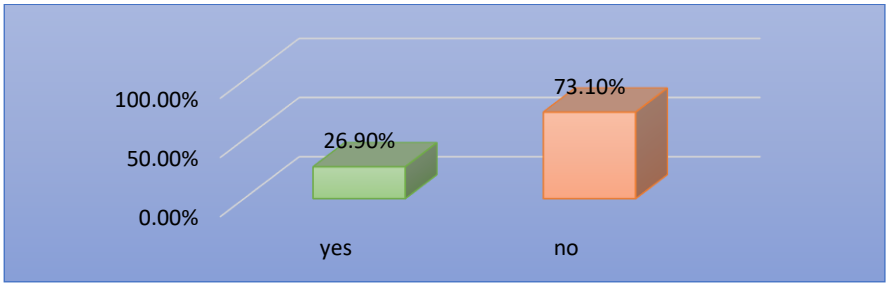


Figure 5 shows the distribution of the subjects involved in the study regarding alcoholic beverage consumption

Table 6 highlights the consumption of energy drinks by participants. A substantial 94% of participants consume energy drinks, while 6% do not.

Table 6: Energy Drink Consumption

Do You Consume Energy Drinks?	Number	Percentage
Yes	392	94%
No	25	6%

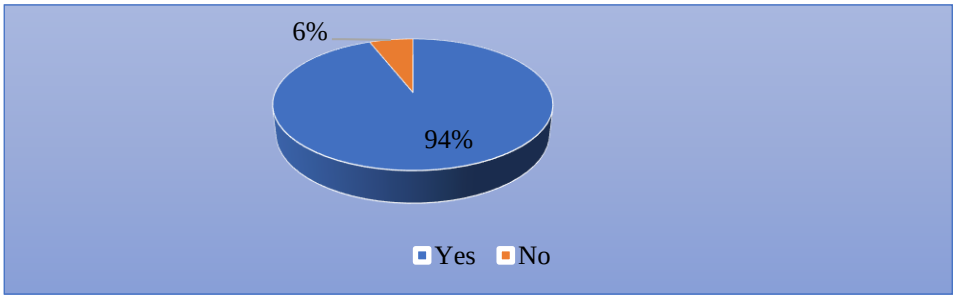


***Figure 6** Energy Drink Consumption*

Table 7 This table categorizes the perceived effects of energy drinks as reported by participants. The most common effect, experienced by 49.2% of participants, is staying awake. Other effects include enhanced physical resistance (16.5%), metabolism boosting (9.4%), and increased focus (8.6%). The "Other" category, reported by 16.3%, likely includes various personal experiences or benefits not listed.

Table 7: Perceived Effects of Energy Drinks

What Are the Effects of the Energy Drinks You Consume?	Number	Percentage
Boost Metabolism	39	9.4%
Increase Focus to Study, Work	36	8.6%
Enhance Physical Resistance	69	16.5%
Keep Awake	205	49.2%
Other	68	16.3%

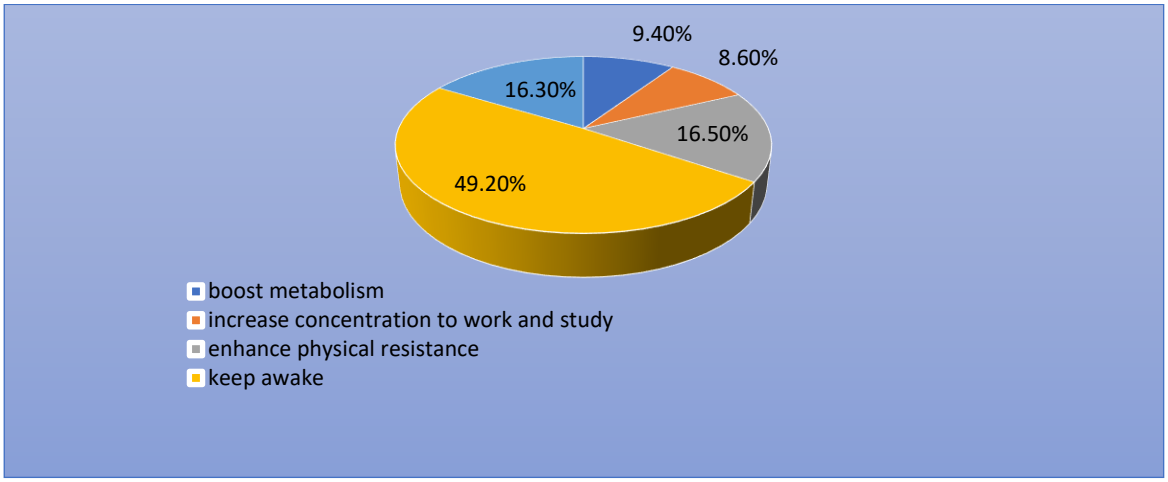


Figure 7 shows the distribution of perception of the subjects involved in the study regarding the effects of energy drink use.

Table 8. This table shows how frequently participants consume energy drinks. The largest group, 28.5%, consumes them less than once a month. The second-largest groups are those consuming energy drinks 3-5 times a week (28.3%) and 1-2 times a week (26.6%). A small percentage, 15.6%, consumes them 2-4 times a month, and 1% refused to answer, which might reflect varied consumption habits.

Table 8: Frequency of Energy Drink Consumption

Frequency of Consumption	Number	Percentage
1-2 Times a Week	111	26.6%
3-5 Times a Week	118	28.3%
Less Than Once a Month	119	28.5%
2-4 Times a Month	65	15.6%
Refused	4	1%

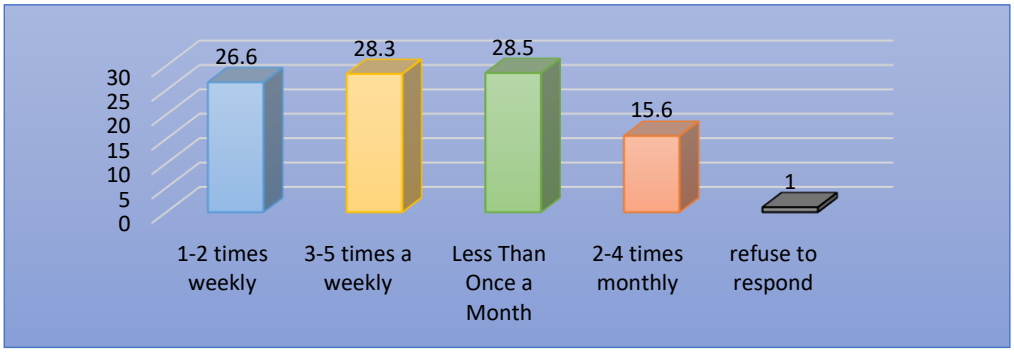


Figure 8 shows the distribution of subjects involved in the study in relation to the frequency of energy drink consumption.

Table 9: Consumption of Energy Drinks with Alcoholic Beverages

Do You Consume Energy Drinks with Alcoholic Beverages?	Number	Percentage
Yes	41	9.8%
No	376	90.2%

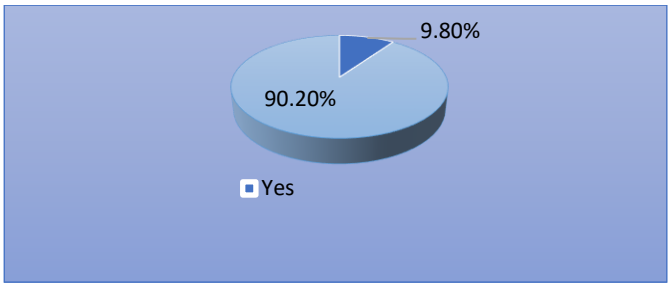


***Figure 9* Consumption of Energy Drinks with Alcoholic Beverages**

Table 10 This table reports the incidence of side effects from energy drink consumption. It indicates that 50.1% of participants have experienced side effects, 49.6% have not, and 0.2% refused to answer.

Table 10: Side Effects from Energy Drink Consumption

Have You Had Side Effects from Energy Drink Consumption?	Number	Percentage
Yes	209	50.1%
No	207	49.6%
Refused	1	0.2%

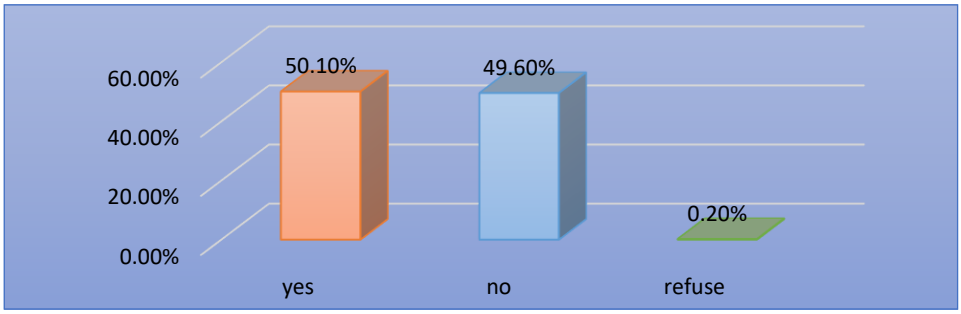


Figure 10 the incidence of side effects from energy drink consumption

Table 11. This table explores the relationship between gender and smoking. It shows that 59.8% of female participants and 40.2% of male participants are smokers. The table includes a p-value of 0.000, indicating a statistically significant association between gender and smoking status.

Table 11: The relationship between gender and smoking.

Gender	Yes (Number/Percentage)	No (Number/Percentage)	p-value
Female	49 (59.8%)*	281 (84.1%)	0.000
Male	33 (40.2%)	53 (15.9%)	

Note: p-value is calculated using the Chi-square test.

*Absolute value and percentage in brackets

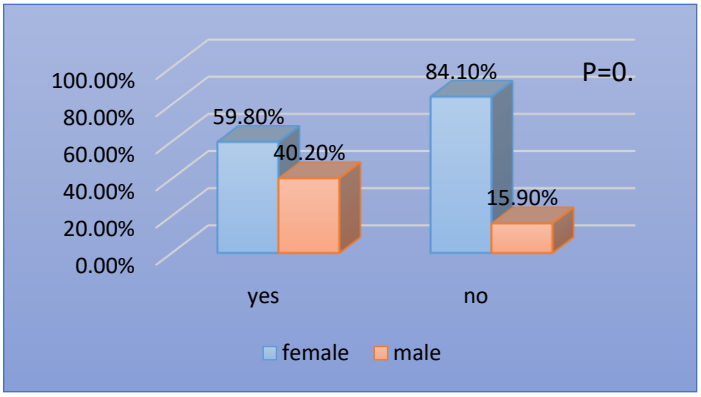


Figure 11 **the relationship between gender and smoking.**

Table 12. This table examines the relationship between gender and reported side effects from energy drink consumption. A higher percentage of females (84.2%) report experiencing side effects compared to males (15.8%). The p-value of 0.013 indicates a statistically significant association.

Table 12: the relationship between gender and reported side effects from energy drink consumption.

Gender	Yes (Number/Percentage)	No (Number/Percentage)	p-value
Female	176 (84.2%)*	153 (74.3%)	0.013
Male	33 (15.8%)	53 (25.7%)	

Note: p-value is calculated using the Chi-square test. *Absolute value and percentage in brackets

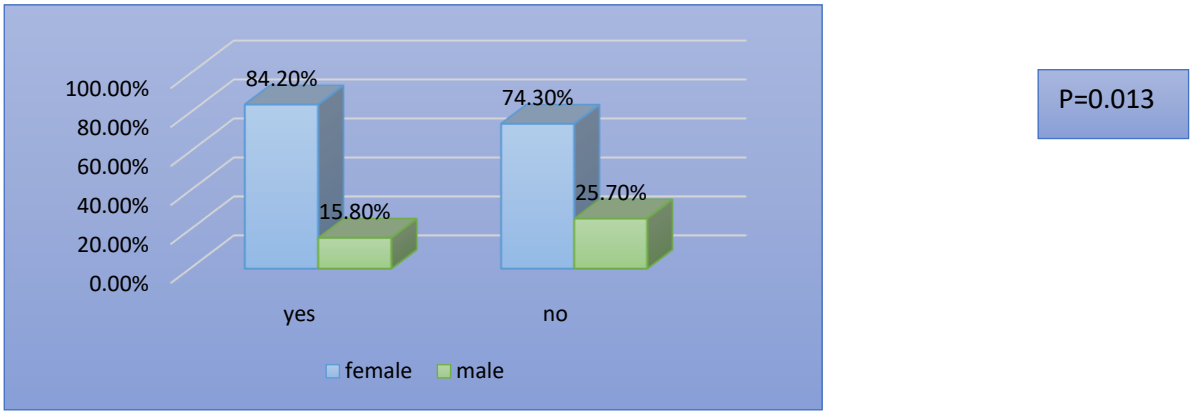


Figure 12 the relationship between gender and reported side effects from energy drink consumption.

Table 13 shows the relationship between gender and coffee consumption in the subjects involved in the study. The results of the study show that there is a statistically significant link as p =0.000. These data appear more detailed in the figure below.

***Table 13* shows the relationship between gender and coffee consumption in the subjects involved in the study.**

Table 13: Link Between Gender and Coffee Consumption

Gender	Yes (Number/Percentage)	No (Number/Percentage)	p-value
Female	129 (71.3%)*	201 (85.5%)	0.000
Male	52 (28.7%)	34 (14.5%)	

Note: p-value is calculated using the Chi-square test

*Absolute value and percentage in brackets

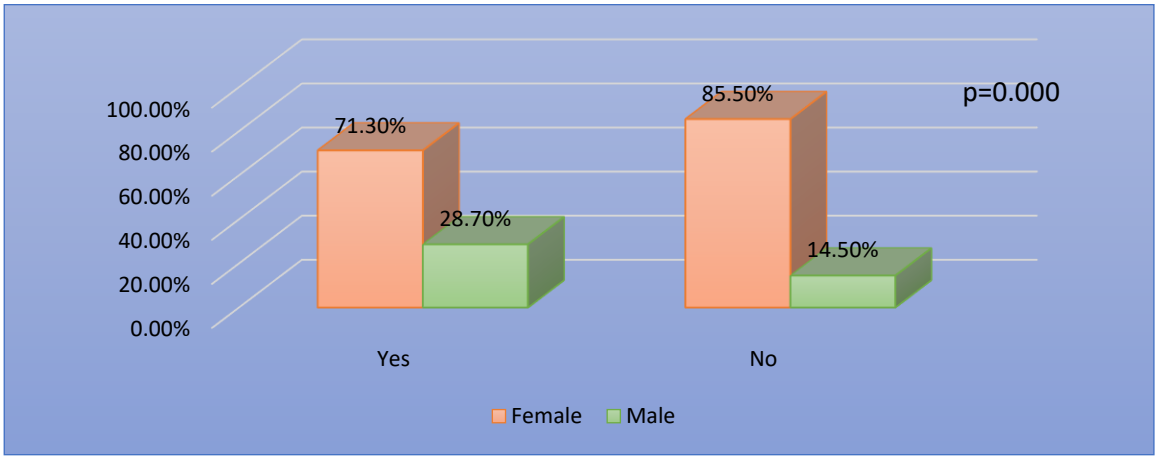


Figure 13

Table 14 shows the link between gender and alcoholic beverage consumption in the subjects involved in the study. The results of the study show that there is no statistically significant link as p =0.795. These data appear more detailed in the figure below.

Table14 Gender and alcoholic beverage consumption

Gender	Yes	No	P Value
Female	89 (80.2%)	241 (79%)	
Male	22 (19.8%)	64 (21%)	P = 0.795

*Absolute value and percentage in brackets

£p-value according to the hi-square test

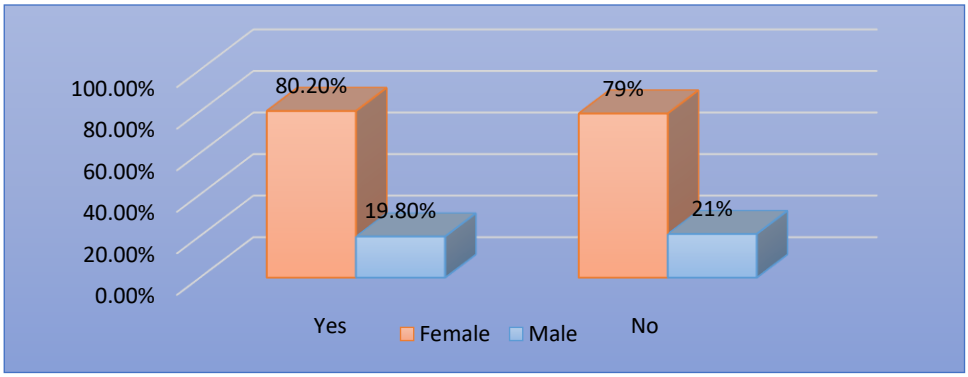


Figure 14 shows the link between gender and alcoholic beverage consumption in the subjects involved in the study.

Table 15 shows the relationship between gender and the association of energy drinks with alcoholic beverages in the subjects involved in the study. The results of the study show that there is no statistically significant link p =0.764.

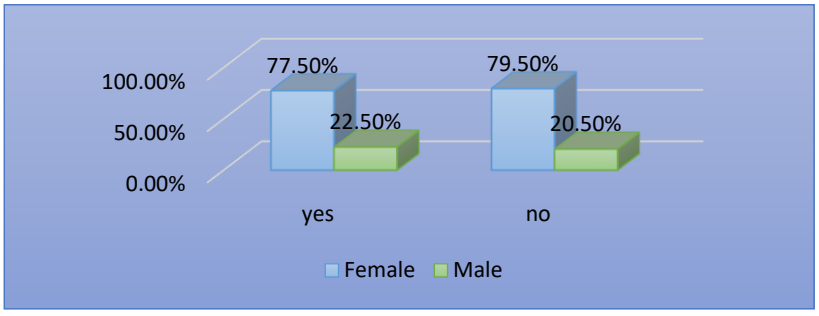
Table 15 shows the relationship between gender and the association of energy drinks with alcoholic beverages in the subjects involved in the study.

Table 15: Gender and Association of Energy Drinks with Alcoholic Beverages

Gender	Yes	No	P Value
Female	31 (77.5%)*	299 (79.5%)	
Male	9 (22.5%)	77 (20.5%)	P = 0.764

*Absolute value and percentage in brackets

£p- value according to the Chi-square test



P=0.764

Figure 15 shows the relationship between gender and the association of energy drinks with alcoholic beverages in the subjects involved in the study.

4. DISCUSSION AND CONCLUSIONS

Energy drinks refer to beverages that contain caffeine in combination with other ingredients that claims to provide its consumers with extra energy. Energy drinks are widely promoted as products that increase alertness and enhance physical and mental performance. Furthermore, consumption has grown among adults and students.

Summary of Findings

This study reveals that a high proportion of students at Aldent University (94%) consume energy drinks (EDs). The primary reasons for consumption include the desire to stay awake, with nearly half (49.3%) indicating this as their motivation. Regular consumption patterns are also evident, with 28.4% consuming EDs 3-5 times per week. Despite a significant portion (49.9%) reporting no side effects, specific adverse effects such as insomnia (34.8%) were reported. Furthermore, the study highlighted associations between ED consumption and other behaviors such as caffeine (43.5%), alcohol (26.9%), and smoking (20%).

Prevalence of Energy Drink Consumption

The study found a remarkably high prevalence of energy drink consumption among students at Aldent University, with 94% of participants reporting regular use. This finding aligns with previous research indicating that energy drinks are popular among young adults, particularly students who may use them to enhance alertness during academic demands (Higgins et al., 2018). The varied consumption patterns, with some students consuming energy drinks 3-5 times per week and others less frequently, suggest that while energy drinks are a common part of many students' routines, their use is not uniform.

Reasons for Consumption.

The predominant reason for consuming energy drinks was to stay awake, reported by nearly half of the participants (49.3%). This is consistent with other studies that have identified fatigue and the need for increased alertness as key motivators for energy drink consumption (Nawaz et al., 2021). The reliance on these beverages to combat tiredness highlights a potential area of concern, as it may indicate poor sleep habits or excessive workload among students.

Knowledge of Ingredients

A high level of awareness regarding the main ingredients of energy drinks was observed, with 90% of participants correctly identifying caffeine, taurine, and sugar. This suggests that the majority of students are informed about the contents of the beverages they consume. However, despite this awareness, there seems to be a disconnect between knowledge and the experience of side effects, indicating that more education on the potential risks associated with these ingredients might be necessary.

Energy Drink Use and Perceived Effects

The high prevalence of energy drink consumption (94%) is consistent with trends observed in younger populations (Nabors et al., 2018). The perceived effects of energy drinks, such as staying awake (49.2%) and enhancing physical resistance (16.5%), reflect common consumer motivations. These perceptions are supported by studies indicating that energy drinks are frequently used for increased alertness and physical performance (Reissig et al., 2009).

Side Effects

While 49.9% of participants reported no side effects, a substantial proportion (34.8%) experienced insomnia, and other adverse effects such as tremors, headaches, and anxiety were noted. These findings are concerning as they reflect a significant incidence of negative health outcomes associated with energy drink consumption. Previous research has similarly linked energy drink use with various health issues, including sleep disturbances and increased anxiety (Reissig et al., 2009; Smit & Rogers, 2000). The discrepancy between reported side effects and the number of participants who claim not to experience any might be due to underreporting or a lack of awareness of less obvious side effects. Despite a strong awareness of ED ingredients (90% correctly identified caffeine, taurine, and sugar), there is a discrepancy between knowledge and experience of side effects. This suggests that while students are aware of what EDs contain, they may not

fully grasp the potential health risks or may underestimate their severity. Studies have shown that awareness does not always correlate with reduced risk behaviors (Johnson & Lee, 2019).

Associations with Other Lifestyle Factors

The study found that energy drink consumption was associated with higher caffeine intake, alcohol consumption, and smoking. These associations are consistent with existing literature suggesting that energy drink consumers may have higher rates of these behaviors, potentially due to shared patterns of stimulant use and lifestyle choices (Wells et al., 2017). This interconnectedness underscores the need for a broader public health approach to address multiple risky behaviors simultaneously. This aligns with findings from other studies suggesting that ED consumers may engage in multiple risk-taking behaviors (Wilkins et al., 2018). The interplay between these behaviors could compound health risks and suggests that interventions should address multiple risk factors simultaneously.

Coffee and Alcohol Consumption: Coffee consumption is reported by 43.6% of participants, with a significant link between gender and coffee consumption ($p = 0.000$). This aligns with existing literature suggesting that coffee consumption is higher among women (Smith, 2021). Alcohol consumption is less prevalent among the participants (26.9%), and there is no significant association between gender and alcohol use ($p = 0.795$). This finding suggests that alcohol consumption habits in this sample are less influenced by gender compared to coffee consumption.

Gender Distribution

The study sample had a higher proportion of female participants (329 females vs. 86 males), which may influence the results. Gender differences in energy drink consumption and associated side effects have been reported in other studies, with varying patterns observed between males and females (Miller et al., 2015). Future research could explore these gender differences in more detail to provide a more nuanced understanding of energy drink use and its effects.

Side Effects and Frequency of Consumption

The study reveals that 50.1% of participants have experienced side effects from energy drinks. This finding is concerning given that energy drinks have been associated with a range of adverse health effects, including cardiovascular issues and sleep disturbances (Gunja & Brown, 2012). The frequency of consumption varies, with a significant portion consuming energy drinks 3-5 times a week (28.3%) and less than once a month (28.5%). Frequent consumption patterns could exacerbate the risk of adverse effects.

Intervention Strategies

Universities might consider implementing educational programs on the risks of ED consumption and promoting healthier alternatives for managing stress and fatigue. Additionally, integrating information about EDs into broader health and wellness curricula could be beneficial.

Policy Recommendations

Policies aimed at regulating the marketing and availability of EDs, especially in academic settings, could help reduce consumption rates. Measures such as limiting sales on campus or enforcing clearer labeling on ED products might also be considered.

Future Research

Longitudinal Studies

Future research should investigate the long-term health effects of ED consumption and its impact on academic performance and overall well-being. Longitudinal studies could provide more comprehensive data on the consequences of sustained ED use.

Intervention Efficacy

Evaluating the effectiveness of different intervention strategies in reducing ED consumption and its associated risks would be valuable. This could include assessing the impact of educational campaigns, policy changes, or support programs for students.

Comparative Studies

Comparative studies involving different demographics or educational institutions might reveal whether the findings at Aldent University are consistent with broader trends and help tailor interventions to specific populations.

The study highlights a significant prevalence of energy drink consumption among students at Aldent University, with reported side effects including tremor, headache, insomnia, and anxiety. These side effects suggest potential health risks associated with energy drink consumption. Given the high rates of use and the reported adverse effects, there is a clear need for a comprehensive evaluation of this social phenomenon. Educational interventions and further research are recommended to address the potential health risks and to promote informed consumption practices among students.

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It should be written as short as possible and expressing the contribution made without giving the number.

Ethics Committee Approval

N/A

Peer-review

Externally peer-reviewed.

Author Contributions

Enkelejda Trebicka

Conflict of Interest

The authors have no conflicts of interest to declare.

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SELF-MEDICATION WITH ANTIBIOTICS, A CROSS-SECTIONAL STUDY

Klodiola Dhamo *[1], Mirva Hoxha[2]

Abstract: Self-medication refers to using over-the-counter medications to treat symptoms or health issues that one has self-diagnosed. Antibiotic self-medication is a worldwide problem that is especially common in developing nations because of lax regulatory frameworks. This study aims to evaluate the frequency of antibiotic self-medication in Tirana as well as several aspects of its usage, including the most commonly used antibiotic, the quantity of antibiotic prescriptions recorded, the dosage forms used, etc. A cross-sectional study was carried out in the city of Tirana "between" December 2023 and May 2024. One hundred and twenty Tirana residents were given a self-administered questionnaire. The main objective of this research project was to find out how common self-medication is among the general public in Tirana. A pre-structured, semi-self-administered questionnaire that was tailored to the goals and target population of the current study was used to gather data. It was taken from the literature. Convenience sampling was used to deliver 120 questionnaires in total. The purpose of the questionnaire was to collect data about the respondent's statistics, use of antibiotics for self-medication, reasons why they did so, type of antibiotic, and source of antibiotic. To carry out this work, data was collected from 105 prescriptions in a pharmacy in the city of Tirana. The data were tabulated by ordering them according to ordinal number. The class of each antibiotic mentioned was specified, the number of prescription drugs and the number of antibiotics per prescription, as well as the dosage form used. The data were processed in Microsoft Excel and presented in tables and graphs as follows. Ninety percent of the 120 participants used antibiotics for self-medication. The most often prescribed antibiotic for self-medication was amoxicillin. 77% of participants were content with using antibiotics for self-medication as a successful course of treatment. Three-quarters of the antibiotic's supply came from community pharmacies. The results of the study demonstrated a strong correlation between the participants' occupational standing and their use of antibiotics for self-medication. In the general populace of the city of Tirana, antibiotic self-medication was very common. Still, Tirana has an abundance of medical facilities. It is necessary to put regulatory controls in place to stop the distribution of antibiotics without a prescription.

Keywords:self-medication; antibiotics; prevalence; public; antimicrobial resistance

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1. INTRODUCTION

An antibiotic is a drug used to treat and manage infections caused by bacteria or other microorganisms. It works either by killing the bacterial organism or by inhibiting its growth. Self-medication is defined as "the use of drugs to treat self-diagnosed disorders or symptoms without a prescription or continuation of a previously prescribed drug used for chronic or recurrent disease or symptoms or sharing it with family or friends or using the remaining grass stored at home. ". In other words, self-medication is the act of taking and consuming medications/drugs without a doctor's prescription to treat specific signs and symptoms [9]. Self medication with antibiotics is one of the most significant health care improvement; however, antibiotics are increasingly becoming less effectiv edue to this in appropriate and irritational use [11].

2. MATERIAL AND METHOD

This was a cross-sectional study conducted "between" December 2023 and May 2024 in the city of Tirana.

A self-administered questionnaire was distributed to 120 individuals living in the city of Tirana. The primary outcome of this study was to investigate the prevalence of self-medication among the general population living in the city of Tirana.

Data were collected using a pre-structured semi-self-administered questionnaire, which was adapted from the literature [2], modified to fit the objectives and population of the current study. A total of 120 questionnaires were distributed using the convenience sampling method. The questionnaire was used to obtain information about the respondent's demographic

data, self-medication with antibiotics, reasons for practicing self-medication, the name of the antibiotic, and the source of the antibiotic.

Data were analyzed using the Statistical Package for the Social Sciences SPSS, version 21. Descriptive statistics describe the data; continuous data presented as mean ± SD, and categorical data expressed as numbers with percentages. The 0.05 level was the cutoff point for statistical significance with a confidence level of 95%.

2.1. Characteristics of the study population

Out of 120, 20 responses were excluded due to incomplete information and response. 100 participants from the general population living in the city of Tirana were surveyed. The overall average age of the participants was 30 to 46 years old.

3. RESULTS

Table 1, Section A shows that more than half of the respondents, 53%, were male and more than half, 47%, were employed.

Table 1.: A: Socio-demographic characteristics of respondents (N=100),

B: self-medication with antibiotics and reason for self-medication with antibiotics (N=100),

C: attitudes (reading leaflet) and satisfaction towards self-medication with antibiotics (N=100)

Variables	Number of respondents, (n)	Percentage of respondents (%)
Section A: Age Range (years old)		
0-17	1	1
18-39	80	80
40-59	19	19
Occupation		
Employed	47	47
Unemployed	53	53
Gender		
Male	53	53
Female	47	47
Section B: Self-medicate with antibiotic		
Yes	90	90
No	10	10
Name of antibiotic		
amoxicillin + clavulanic acid	23	23
Amoxicillin	39	39
cephalexin	20	20
cefixime	2	2
Others	16	16
Reason for self-medicating with antibiotic		
Convenience	54	54
Cost	27	27
Other	19	19
Section C: Reading medication leaflet		
Yes	71	71
No	29	29
Satisfaction from self-medicating with antibiotics		
Yes	77	77
No	23	23

Antibiotic use, antibiotic self-medication and source of antibiotic treatment

Table 1 Section B shows that self-medication with antibiotics was found to be widespread 90% among the general population in the city of Tirana reported that they self-medicate with antibiotics. The most frequent self-medicated antibiotics were amoxicillin 39% followed by (amoxicillin + clavulanic acid) 23%, cephalexin 20%, cefixime 2%, and others 16%. More than half of respondents, 54%, reported that convenience was the most common reason for choosing to self-medicate with antibiotics.

Antibiotic source and respondent considerations for antibiotic self-medication

Sources of antibiotics were as follows: community pharmacy 38%, previous treatment 36% and relatives/friends 26% (Chart 1). The most reported compliance associated with self-medication with antibiotics was the standard cold 59% (Chart 2)

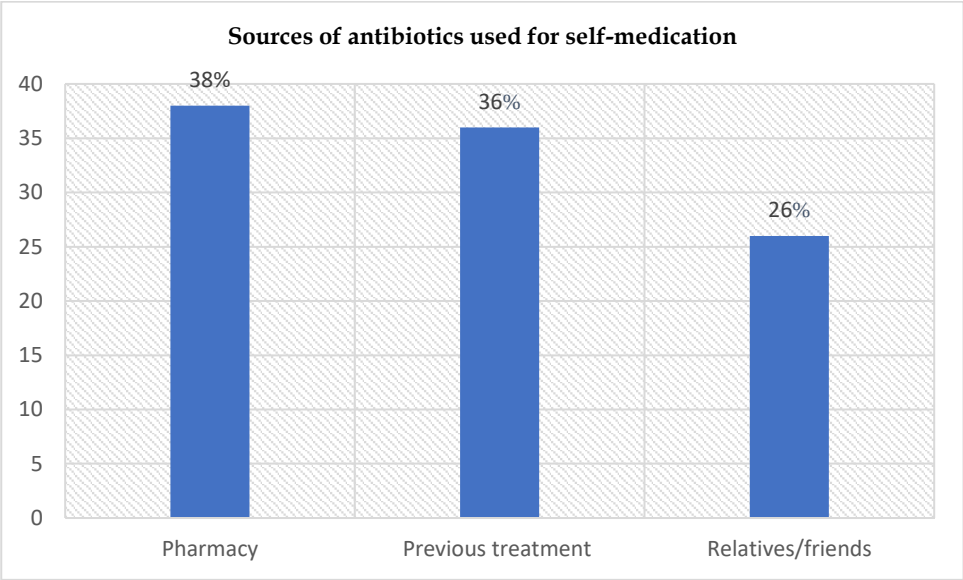

Chart 1: Sources of antibiotics used for self-medication

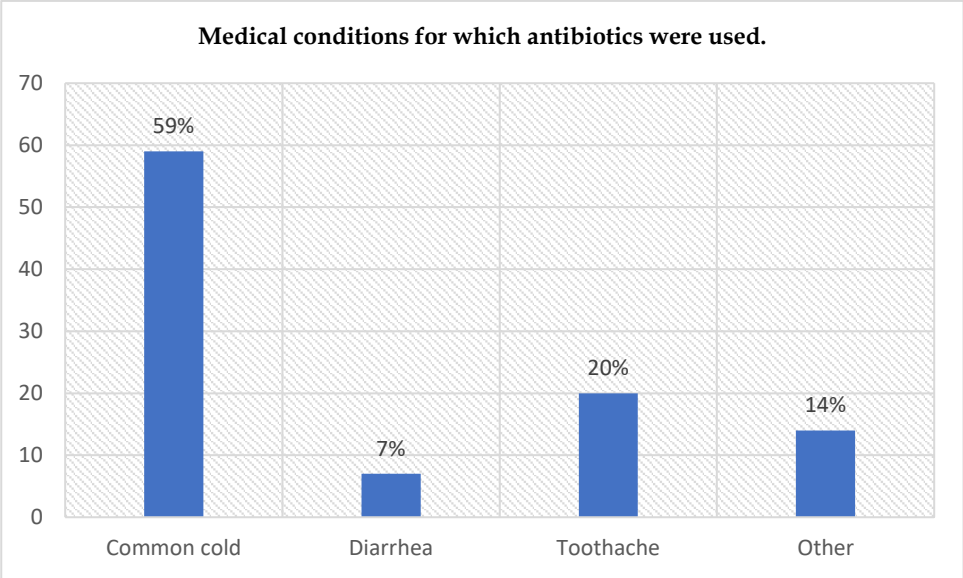

Chart 2: Medical conditions for which antibiotics were used (self-medication)

Our findings showed that the majority of respondents 71% check the leaflets Inside the medicine package for instructions for use. At the same time, the majority of respondents reported feeling satisfied with self-medication with antibiotics, so their feeling was that they were successfully treated (Table 1 Section C).

4. DISCUSSION AND CONCLUSIONS

Self-medication with antibiotics was found to be widespread 90% of the general population in the city of Tirana reported that they self-medicate with antibiotics. A study performed in Hungary reported less prevalence of SMA (7.8%).[3]

Studies carried out in developed countries including Macedonia (17.8%), Lithuania (31%), and Poland (41.1%) showed a slightly higher prevalence rate when compared with the results of the current study.[8], [4], [6].

The most frequent self-medicated antibiotics were amoxicillin 39% followed by (amoxicillin + clavulanic acid) 23%, cephalexin 20%, cefixime 2%, and others 16%. This observation highlighted the potential misuse of antibiotics in this population. Mansour A. MAHMOUD et. al [5] mentioned azithromycin and amoxicillin as the most commonly used antibiotics. 10 Studies have reported high self-consumption of these antibiotics in other parts of the world [1],[10],[7]. More than half of respondents, 54%, reported that convenience was the most common reason for choosing to self-medicate with antibiotics. In the city of Tirana, despite so many healthcare centers in different regions, self-medication with antibiotics was found to prevail. In the era of antimicrobial resistance, such behaviors may be significantly associated with the emergence of antimicrobial-resistant strains of microorganisms. Antimicrobial stewardship strategies should be protected in the city of Tirana and regulatory controls should be implemented for the sale and distribution of antibiotics to reduce the frequency of antibiotic misuse. The study showed us that the use of antibiotics is a multifactorial behavior formed by demographic, individual (knowledge and attitude), and organizational factors. Most of the patients questioned in this study did not have a good level of knowledge and took antimicrobials not only with a doctor's prescription. Repeated antibiotic therapies, although common practice, may have limited benefits and indications of adverse outcomes. At the organizational level, the healthcare system in the public and private sectors should provide training for professionals who have the authority to prescribe antibiotics, to increase awareness about antibiotic prescribing guidelines and the patient-healthcare provider communication process regarding the appropriate use of antibiotics.

LimitationsOur study has limitations. Firstly, this study was a cross-sectional study, and it is difficult to determine the causal relationship between antibiotic comsuption and non-prescribed antibiotics use. Secondly, self-administrated questionnaire in our study only included some contents of the knowledge, attitudes, and practices towards antibiotics, and this was a study conducted only in Tirana.

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Ethics Committee Approval

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Peer-review

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Author Contributions

Conceptualization: K.DH.; Investigation: K.DH, M.H.; Material and Methodology: K.DH, M.H.; Supervision: K.DH; Visualization: M.H.; Writing-Original Draft: K.DH, M.H.;.Writing-review & Editing: K.DH, M.H.

Conflict of Interest

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CURRENT APPROACH TO THE BENEFITS AND RISKS OF MENOPAUSAL HORMONE THERAPY

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Abstract: The average age of menopause is 51 in the world, and generally, 95% of women enter menopause between the ages of 45 and 55. During the menopausal transition and the subsequent postmenopausal period, most women experience moderate to severe hot flashes, and the most effective and widely accepted treatment for this condition today is systemic estrogen therapy (estrogen replacement therapy). Similarly, for women experiencing vulvovaginal symptoms such as dyspareunia during this period, topical estrogen therapy is often routinely applied. The use of menopausal hormone therapy (MHT) declined significantly over the decade following the publication of the WHI results in 2002. The available datas emphasize that the risks of hormone replacement therapy (HRT) in younger postmenopausal women are significantly lower compared to older women. In estrogen-treated women, the excess risk of endometrial hyperplasia and carcinoma can be largely eliminated by concomitant therapy with a progestin given in a cyclic or continuous regimen. The risk of endometrial hyperplasia and cancer with unopposed estrogen therapy is both duration and dose dependent. The current consensus is that many expert groups recommend MHT for younger postmenopausal women with moderate to severe symptoms and no contraindications to estrogen use This article will focus on the benefits and risks of menopausal hormone therapy rather than the specific symptoms experienced by postmenopausal women.

Keywords: menopause, menopausal hormone therapy, current approach

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The average age of menopause is 51, and generally, 95% of women enter menopause between the ages of 45 and 55.

During the menopausal transition and the subsequent postmenopausal period, most women experience moderate to severe hot flashes, and the most effective and widely accepted treatment for this condition today is systemic estrogen therapy (estrogen replacement therapy).

Similarly, for women experiencing vulvovaginal symptoms such as dyspareunia during this period, topical estrogen therapy is often routinely applied. This article will focus on the benefits and risks of menopausal hormone therapy rather than the specific symptoms experienced by postmenopausal women.

A clinical practice guideline published by the Endocrine Society outlines a personalized approach to treatment, which involves assessing a woman's baseline risks for cardiovascular issues and breast cancer before starting therapy (1). Table 1.

Evaluating CVD risk in females contemplating MHT

10-year CVD risk	Years since menopause onset
	<10 years
Low (<5%)	MHT ok
Moderate (5 to 10%)	MHT ok (choose transdermal)
High (>10%)*	Avoid MHT

CVD risk calculated by ACC/AHA Cardiovascular Risk Calculator. Methods to calculate risk and risk stratification vary among countries.

CVD: cardiovascular disease; MHT: menopausal hormone therapy; ACC: American College of Cardiology; AHA: American Heart Association.

* High risk includes known myocardial infarction (MI), stroke, peripheral artery disease, etc.

Adapted from:

1. *Manson JE. Current recommendations: what is the clinician to do? Fertil Steril 2014; 101:916.*
2. *Stuenkel CA, Davis SR, Gompel A, et al. Treatment of symptoms of the menopause: An Endocrine Society Clinical Practice Guideline. J Clin Endocrinol Metab 2015; 100:3975.*

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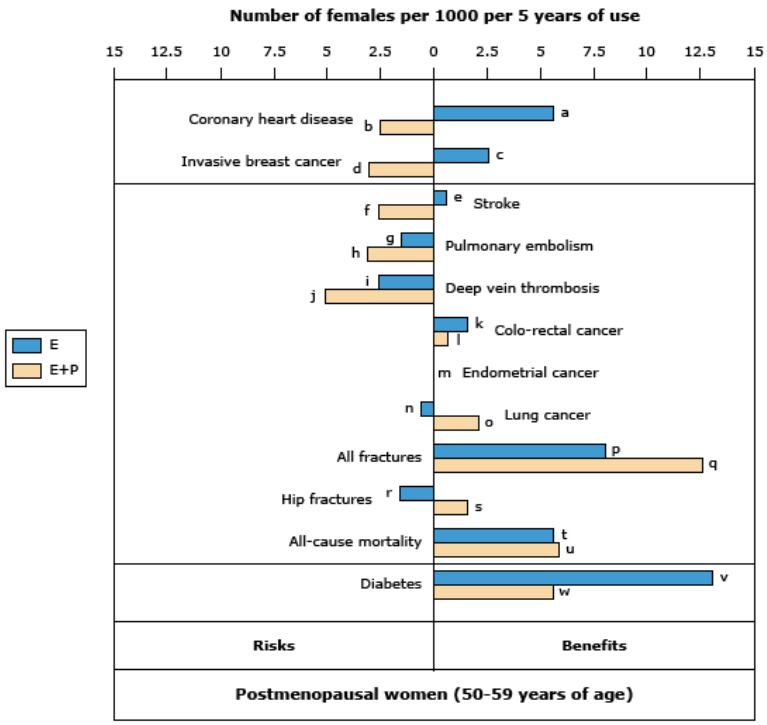
Similarly, the Endocrine Society, like most guidelines, acknowledges that menopausal hormone therapy (MHT) is appropriate for the treatment of menopausal symptoms, including hot flashes, but not for the prevention of cardiovascular disease, osteoporosis, dementia, or other conditions. According to the generally accepted view, the benefits of MHT appear to outweigh the risks for women with menopausal symptoms who are under age 60 or have been in menopause for less than 10 years (Figure 1). (2,3).

Figure 1.



In the past, due to datas suggesting the positive effects of estrogen on bone and heart health, menopausal hormone therapy (MHT) was frequently prescribed to prevent coronary diseases and osteoporosis. However, according to the WHI (Women's Health Initiative) study ((unopposed estrogen and continuous, combined estrogen-progestin therapy versus placebo) involving approximately 27,000 postmenopausal women (mean age 63 years)), the observed increase in risks for coronary diseases, stroke, venous thromboembolism, and breast cancer, the approach has shifted to personalized treatment based on individual patient needs (4).

Similar results were observed in a study conducting a meta-analysis of 22 studies (5) and in the 2017 updated United States Preventive Services Task Force (USPSTF) meta-analysis [6,7]. Both studies included the WHI, and the average age of participants was >60 years. Based upon their meta-analysis, USPSTF continues to not recommend against the use of both combined estrogen-progestin and unopposed estrogen (for women post hysterectomy) for the prevention of chronic conditions. Interestingly, they did not address the use of MHT for menopausal symptoms, nor did they also consider the WHI data showing the low absolute risks of MHT in younger menopausal women (8).

The current consensus is that many expert groups recommend MHT for younger postmenopausal women with moderate to severe symptoms and no contraindications to estrogen use (4). Women seeking information about MHT should be reassured psychologically by providing them with the information that 'the risk of complications for healthy, young postmenopausal women using MHT for five years is very low (Figure 1).

Why has the use of MHT declined?

The use of menopausal hormone therapy (MHT) declined significantly over the decade following the publication of the WHI results in 2002. According to the National Health and Nutrition Examination Survey (NHANES), the use of oral MHT in women over age 40 in the United States dropped from 22% in 1999-2002 to 12% in 2003-2004, and reached a low of 4.7% in 2009-2010. This continued decline occurred despite reassuring data that MHT provides more benefits than risks for most young postmenopausal women (within 10 years of menopause or under age 60).

According to this data, avoiding the use of estrogen-only during early menopause has increased additional chronical diseases and treatment costs due to the lack of protection provided by estrogen therapy against chronic conditions. This has resulted in an additional $4.1 billion in the United States for chronic diseases [breast cancer, coronary heart disease, colon cancer, fractures], with 37,549 excess events.

Although most data on hormone therapy is derived from women over 60 (over age 60 years or more than 10 years since menopause), the vast majority of women seeking medical treatment for menopausal symptoms are in their late 40s or 50s. Therefore, clinicians should primarily have documentation of the potential risks and benefits for women in this age group. While limited, such clinical data is available (1,4,9).

In women receiving combined HRT, for every 1,000 women over five years of hormone use, compared to placebo, the number of additional or reduced cases is as follows:

- Coronary heart disease (CHD) – 2.5 additional cases
- Invasive breast cancer – 3 additional cases
- Stroke – 2.5 additional cases
- Pulmonary embolism – 3 additional cases
- Colorectal cancer – 0.5 fewer cases
- Endometrial cancer – No difference
- Hip fracture – 1.5 fewer cases
- All-cause mortality – 5 fewer events

Estrogen alone therapy: The available datas emphasize that the risks of hormone replacement therapy (HRT) in younger postmenopausal women are significantly lower compared to older women (as those in the WHI study). To explain the mechanism of absolute excess risk difference between older and younger postmenopausal women, the cardinal reason is that younger postmenopausal women have lower baseline risks of coronary heart disease (CHD), stroke, venous thromboembolism (VTE), and breast cancer (4,9). Similarly, combined therapy (combined conjugated estrogen-

medroxyprogesterone acetate) has been associated with higher risks of coronary heart disease (CHD) and breast cancer compared to unopposed conjugated estrogen therapy.

Cardiovascular Effects: The Women's Health Initiative (WHI) study showed that many of the benefits of menopausal hormone therapy (MHT) in earlier observational studies were not confirmed in the randomized controlled trials. So that, the risk of coronary heart disease (CHD) events increased rather than decreased (plus eight additional events per 10,000 person-years, respectively; hazard ratio [HR] 1.23, 95% CI -0.3 to 16.0). Possible methodological explanations for the striking difference in CHD data include;

- "Healthy user" bias,
- Older age of the study population,
- Timing of treatment initiation (in the WHI, women who were <10 years since menopause or between the ages of 50 to 59 years did not have excess risk, or possibly had a reduction in risk (11).

In the unopposed estrogen trial, conjugated equine estrogen did not appear to affect the incidence of coronary heart disease (CHD) events over an average follow-up of 6.8 years (hazard ratio for conjugated equine estrogen versus placebo 0.96, 95% confidence interval 0.78-1.16 [three fewer events per 10,000 person-years]) (10,11).

Subgroup analysis of a 10-year study of MHT for osteoporosis (Danish Osteoporosis Prevention Study [DOPS]) reported that women taking MHT had a reduced risk of composite outcomes such as mortality, heart failure, or myocardial infarction without an increased risk of stroke, venous thromboembolism, and cancer (12). However, there are methodological concerns regarding this study, such as the lack of a placebo group and the inadequate definition of the compound concept that was not defined in the original study protocol.

KEEPS (The Kronos Early Estrogen Prevention Study), a four-year, randomized, double-blind, placebo-controlled study, combined cyclical monthly oral progesterone with oral conjugated estrogen (0.45 mg daily) or transdermal estrogen (50 mcg daily) (ages 45 to 54 years). In women, both menopausal symptoms were reduced and were not found significantly different in the hormone therapy (HT) and placebo groups about surrogate markers of atherosclerosis (coronary artery calcium and carotid intima-media thickness [CIMT]) (13).

In the ELITE (Early versus Late Intervention Trial), 643 postmenopausal women were classified into early or late intervention groups based on the time since menopause (<6 years or >10 years, respectively) and received either oral estradiol (with progesterone for women with a uterus) or a placebo for five years (14). Progression of subclinical atherosclerosis (measured as CIMT) was slower in the early intervention group compared to the placebo, while progression rates in the late intervention group were similar to those of the placebo. Estradiol had no effect on coronary artery calcium as measured by computed tomography (CT) in either the early or late intervention groups.

General risk and benefit estimates for young postmenopausal women taking MHT for five years are as follows; A 2015 meta-analysis of 19 studies of oral (including the WHI study and excluding transdermal drugs) MHT in more than 40,000 postmenopausal women conducted subgroup analyzes only in women who initiated MHT within 10 years of postmenopause [15]. The results included the following:

• Lower risk of CHD (combined death from cardiovascular causes and non-fatal myocardial infarction) compared with placebo (relative risk [RR] 0.52, 95% CI 0.29-0.96; eight fewer heart diseases per 1000 women treated per year case).

•A lower mortality rate (RR 0.70, 95% CI 0.52-0.95; six fewer deaths per 1000 women treated per year).

• The quality of evidence for the mortality and CHD meta-analyses was rated as moderate (rated down one level due to the inclusion of DOPS, a methodologically flawed study). When DOPS was removed, the analyzes were no longer significant.

Stroke: General risk and benefit estimates for young postmenopausal women taking

MHT for five years are described below;

In the WHI, a 31 percent increase in stroke risk was seen with combined conjugated equine estrogen-medroxyprogesterone acetate use compared with placebo (intention-to-treat HR 1.31, 95% CI 1.02-1.68). However, it has been emphasized that this increase is only for ischemic stroke (not for hemorrhagic stroke) and covers all age groups and does not vary according to the age of the patient (16). In the unopposed estrogen trial, the risk of stroke was significantly increased with conjugated equine estrogen compared to placebo (HR 1.39, 95% CI 1.1-1.77) (10). The authors calculated

an extremely low absolute excess risk of stroke in women aged 50 to 59 years (0.15 versus 0.13 cases per 100 women per year for hormone therapy and placebo, respectively) (11).

The risk of stroke appears to be lower with transdermal medication compared with oral estrogen preparations.

Venous Thromboembolism — In the WHI study, the rate of VTE increased with the use of combined conjugated equine estrogen and medroxyprogesterone acetate (34 per 10,000 person-years vs. 16, HR 2.06, unadjusted 95% CI 1.6-2.7). (17). The risk increase was similar for both deep vein thrombosis (DVT) and pulmonary embolism (PE), and similar results were also observed in the Heart and Estrogen/Progestin Replacement Study (HERS) trials.

The risk of VTE was increased with conjugated equine estrogen compared to placebo (HR 1.33, 95% CI 0.99-1.79) (10). However, only the increase in DVT rates reached statistical significance. For women aged 50 to 59, the group with the highest likelihood of receiving hormone therapy (HT) showed estimates of excess VTE risk, with 4.7 and 1.3 additional cases per 1,000 women over five years of combined estrogen-progestin or conjugated estrogen use, respectively (9).

The risk of VTE appears lower with transdermal formulations compared to oral estrogen preparations. Additionally, risks may vary depending on the type of progestin used (higher with medroxyprogesterone acetate).

The effects of MHT on general mortality

To date, the available datas indicate that menopausal hormone therapy (MHT) is not associated with an increased mortality rate compared to placebo. In fact, there is actually a reduction in all-cause mortality rates with MHT in women in early menopause (ages 50 to 59) (18). Several epidemiological studies have reported a reduction in mortality with MHT (10,11,18). Concerns existed that menopausal hormone therapy (MHT) might be associated with an increase in cardiovascular mortality rates, due to reports of elevated cardiovascular risks in early reports from the Women's Health Initiative (WHI). However, it appears that according to the current datas, such an increase in risk has not been observed.

Other evidence regarding the effect of MHT on mortality rates comes from age-specific datas from the two WHI trials (women aged 50 to 59) and from a meta-analysis of 19 randomized controlled trials involving younger postmenopausal women, including 17 trials with an average participant age of less than 60 (19). In a combined analysis of approximately 16,000 women (average age 55) followed for an average of 5.1 years, HT was associated with a 27% reduction in mortality compared to placebo (relative risk [RR] 0.73, 95% CI 0.52-0.96). These datas provide additional reassurance that HT is a safe option for treating symptoms in younger postmenopausal women (20).

Cancer and MHT

Breast Cancer—In the WHI study, the risk of invasive breast cancer was significantly increased with combined hormone therapy (HT) at a median follow-up of 5.6 years (hazard ratio [HR] 1.24, unadjusted 95% CI 1.01–1.54) [21].

In contrast to the results of the combined HT study, the unopposed estrogen study showed a slightly lower risk (This comparison was not statistically significant but was very close ($p = 0.06$) of breast cancer (HR 0.77, 95% CI 0.59–1.01 for unopposed estrogen vs. placebo) [10].

A 2019 meta-analysis of all available epidemiological evidence on the association between menopausal hormone therapy (MHT) use and breast cancer risk has been published [22]. The analysis included approximately 145,000 women with breast cancer (51 percent of whom used MHT) and approximately 425,000 women without breast cancer. Their findings included:

- Similar to the WHI, estrogen-progestin regimens were associated with an excess risk of breast cancer. Excess risk was also seen with estrogen-only regimens (a reduction in risk was seen in the WHI). No excess risk was seen with vaginal estrogens.

- Breast cancer risk increased with the duration of systemic MHT use. Unlike previous studies, obesity was not associated with an excess risk; instead, it reduced the risk.

- The study authors calculated that for average-weight women, five years of MHT use starting at age 50 would increase the 20-year risk of breast cancer (ages 50 to 69) by approximately:

    - 1 in every 50 people using estrogen plus daily progestin

    - 1 in every 70 people using estrogen plus intermittent progestin

- 1 in every 200 people using an estrogen-only regimen

There were important limitations to this study. Unlike the WHI, which was a series of randomized clinical trials, this meta-analysis included only observational studies. In addition, the majority of women included in the analysis were taking conjugated estrogens and medroxyprogesterone acetate. Current MHT regimens typically contain lower estrogen doses and a different type and route (for example, transdermal 17-beta estradiol [17-beta-E2]) and include micronized progesterone; micronized progesterone is now considered the progestin of choice by most experts [1,3,4]. Transdermal 17-beta-E2 and micronized progesterone may be associated with a lower risk of breast cancer than conjugated estrogens and medroxyprogesterone acetate; however, the data are not yet conclusive. Although this meta-analysis has renewed concerns about the association between MHT and breast cancer in some individuals, we continue to recommend an individualized approach when counseling symptomatic postmenopausal women about treatment. This includes considering the risk of breast cancer (and cardiovascular disease) in the context of the benefits of MHT (e.g., relief of vasomotor symptoms, improvement of sleep and quality of life, and prevention of bone loss) (figure 1) [1,2,3].

Ovarian Cancer and MHT

In combination estrogen-progestin therapy, a negligible increase in ovarian cancer risk was observed in WHI (HR 1.6, 95% CI 0.8-3.2; 42 versus 27 cases per 100,000 person-years in the hormone and placebo groups, respectively). This increase was not significant statistically. Ultimately, the authors concluded that because of the small number of ovarian cancer cases and the limited precision in estimating effects in the study, these results should not influence a woman's decision to take MHT for symptomatic relief.

A meta-analysis of 52 epidemiological studies involving 21,488 postmenopausal women with ovarian cancer shows a small increase in ovarian cancer risk associated with MHT use (23). Importantly, the risk of ovarian cancer was higher in ever users of MHT compared with never users (relative risk [RR] 1.14, 95% CI 1.10–1.19). Risks were similar in those receiving estrogen alone and those receiving combined therapy. The calculated absolute excess risk associated with MHT was very low; five years of MHT use in women aged 50 to 54 years would result in approximately one additional case of ovarian cancer per 1000 users and one additional ovarian cancer death per 1700 users. Additionally, age at medication initiation, smoking, body mass index, and past oral contraceptive use had little effect on RR.

In one case-control study of 162 matched sets of women with BRCA1 or BRCA2 mutations, postmenopausal MHT did not appear to increase the risk of ovarian cancer; the odds ratio (OR) for each use of HT was 0.93 (95% CI 0.56–1.56) (24). Finally, when deciding to use MHT for symptomatic relief, we do not consider ovarian cancer as a major concern because the absolute risk of ovarian cancer with MHT is very low.

Endometrial hyperplasia & Carcinoma and MHT

It is a fact that treating postmenopausal women with estrogen alone increases the risk of endometrial hyperplasia and carcinoma. Endometrial hyperplasia can be demonstrated in 20% to 50% of women taking unopposed estrogen over a 1-year period.

Indeed, multiple case-control and prospective studies have shown that the incidence of endometrial carcinoma increases with long-term unopposed estrogen, with RRs ranging from 3.1 to 15 (25). Roughly speaking, if the absolute risk for endometrial carcinoma in postmenopausal women is approximately 1 in 1000, the same risk increases to approximately 1 in 100 in women taking unopposed estrogen (26). The risk of endometrial hyperplasia and cancer with unopposed estrogen therapy is both duration and dose dependent.

In one study, when given at a low dose (0.3 mg conjugated equine estrogen per day) for more than eight years, the risk of endometrial cancer was increased ninefold. The same study did not identify a risk of endometrial hyperplasia (27). Cyclic or continuous unopposed estrogen therapy does not alter the risk of endometrial hyperplasia and cancer.

Protective effect of Progestins

In estrogen-treated women, the excess risk of endometrial hyperplasia and carcinoma can be largely eliminated by concomitant therapy with a progestin given in a cyclic or continuous regimen. In the Postmenopausal Estrogen/Progestin Interventions (PEPI) study, combined estrogen-progestin therapy resulted in significant reductions in the incidence of simple (0.8% vs. 27.7%), complex (0.8% vs. 23.7%), and atypical hyperplastic (0% vs. 11.8%) endometrial lesions compared with unopposed estrogen (28). The PEPI and a trial in the Cochrane Database both found that cyclic progestin (administered for at least 12 days per month) was as effective as continuous low-dose progestin. Shorter courses of progestin (less than 10 days) might offer less protection.

Levonorgestrel-releasing intrauterine systems (LNG-IUS) are contraceptive agents used off-label by some physicians for endometrial protection in some peri- and postmenopausal women taking estrogens. The goal of this method is to avoid the potential excess risk of cardiovascular disease and breast cancer associated with systemic progestins such as medroxyprogesterone acetate.

Colorectal Carcinoma and MHT

In the WHI study, the risk of colorectal cancer was reduced by the combined use of conjugated equine estrogen-medroxyprogesterone acetate (43 versus 72 cases in the hormone and placebo groups, respectively; HR 0.56, 95% CI 0.38–0.81) (figure 2) (29). This risk reduction is similar to that seen in epidemiological studies. In contrast to the combined MHT results, no significant difference in the rate of colorectal cancer was found between the use of unopposed conjugated equine estrogen and placebo (HR 1.08, 95% CI 0.75–1.55) (10).

Lung Cancer and MHT

Survival for women receiving combined estrogen-progestin therapy who developed non-small cell lung cancer (NSCLC) were found to be significantly shorter compared to those who received a placebo.

Osteoporotic Fracture and MHT

The risk of osteoporotic fractures was reduced with MHT compared with placebo at the hip (hazard ratio [HR] 0.67, unadjusted 95% CI 0.47-0.96) and at the spine and wrist (HR 0.65, unadjusted 95% CI 0.46-0.92 and HR 0.71, 95% CI 0.59-0.85, respectively) (30). For early postmenopausal women aged 50 to 59 years, unopposed estrogen alone provided greater risk reduction than combined MHT (5.9 vs. 4.9).

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EARLY DETECTION, INTERVENTION STRATEGIES, AND NURSING CARE IN AUTISM SPECTRUM DISORDER: A COMPREHENSIVE REVIEW

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Abstract: Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterized by challenges in social communication and the presence of restricted, repetitive behaviors. Early detection and intervention are critical for improving outcomes in individuals with ASD. This review synthesizes current literature on the efficacy of screening tools, intervention strategies such as Applied Behavior Analysis (ABA), family support programs, and the role of nursing care in enhancing social and communication skills in children with ASD. The findings underscore the importance of multidisciplinary approaches and highlight gaps in research that warrant further investigation.

Keywords: Autism Spectrum Disorder, early detection, intervention strategies, nursing care, family support.

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1. INTRODUCTION

Autism Spectrum Disorder (ASD) encompasses a range of developmental conditions characterized by impairments in social interaction, communication, and behavior (American Psychiatric Association, 2013). The prevalence of ASD has increased globally, with significant variability across regions and demographic groups (Zhou et al., 2020; Tsai & Lai, 2019). Early identification and intervention are crucial for optimizing developmental outcomes and quality of life for individuals with ASD (Zwaigenbaum et al., 2015).

Historical Context: Research into ASD has evolved significantly since the early 2000s. The introduction of the DSM-5 in 2013 marked a significant shift in diagnostic criteria, consolidating various subtypes into a single spectrum. This period also saw a heightened focus on the epidemiology and prevalence of ASD, with studies highlighting increases in diagnosis rates and variations by region (Yeargin-Allsopp et al., 2003; Wing & Potter, 2002).

2. MATERIAL AND METHOD

A comprehensive literature search was conducted using electronic databases including PubMed, PsycINFO, Web of Science, and Scopus. Keywords included "autism spectrum disorder," "ASD screening tools," "intervention strategies," "nursing role," "family support," and "pediatric nursing." Articles published in English from 2000 to 2023 were reviewed to identify relevant studies focusing on early detection, intervention efficacy, family-centered care, and nursing interventions in ASD management. Key references from previous decades were also included to provide historical context.

3. RESULTS

3.1. Early Detection and Screening Tools

Evolution of Screening Tools: Early detection tools for ASD have seen significant advancements since the early 2000s. The Modified Checklist for Autism in Toddlers (M-CHAT), developed in the early 2000s, was a major advancement in screening tools, allowing for early identification based on parent-reported symptoms (Robins et al., 2001). Subsequent years saw the development and validation of tools such as the Autism Diagnostic Observation Schedule-2 (ADOS-2), which remains a gold standard for observational assessment (Lord et al., 2000).

From 2010 to 2023, research focused on refining these tools and developing new methods for earlier identification. For instance, advancements in technology led to the creation of digital and telehealth-based screening tools, which have expanded access to early diagnosis (Shattuck et al., 2009). However, disparities in access to these tools persist, particularly in underserved communities (Zhou et al., 2020).

3.2. Intervention Strategies

Applied Behavior Analysis (ABA): ABA has been a cornerstone of ASD intervention since its development in the 1970s. The 2010s saw a significant emphasis on evidence-based practices, with numerous studies confirming the efficacy of ABA in improving various outcomes for individuals with ASD (Dawson et al., 2010). The focus has expanded to include individualized treatment plans and the integration of ABA with other therapeutic modalities (Reichow & Wolery, 2009).

Other Intervention Approaches: The literature from the 2010s highlights a growing recognition of the importance of integrating multiple intervention strategies. Speech-language therapy, occupational therapy, and social skills training have become integral components of comprehensive ASD treatment plans (Kasari et al., 2014; Bearss et al., 2015). These therapies target specific developmental domains and are tailored to meet the unique needs of individuals with ASD across the lifespan.

Recent studies have emphasized the importance of holistic approaches that combine various therapeutic modalities to address the diverse needs of individuals with ASD and improve overall outcomes (Schreibman et al., 2015).

3.3. Family Support Programs

Development of Family-Centered Interventions: Family-centered interventions have gained prominence over the past decade. Research has demonstrated that programs focusing on parent training, support groups, and psychoeducation significantly improve family outcomes and enhance coping strategies (Brookman-Frazee et al., 2016; Hedges & Odom, 2018). These programs have evolved to address diverse family needs and cultural contexts, reflecting a more holistic approach to ASD care.

3.4. Impact of Nursing Care

Nursing Contributions Over Time: Nursing care for individuals with ASD has expanded from traditional roles to encompass comprehensive support across various healthcare settings. Research from the 2010s has underscored the importance of nursing interventions in promoting health literacy, facilitating access to services, and implementing evidence-based practices (American Nurses Association, 2020). Nurses play a pivotal role in coordinating care, advocating for patients, and collaborating with multidisciplinary teams to optimize developmental outcomes (Volkmar et al., 2005).

4. DISCUSSION AND CONCLUSIONS

Early detection and intervention significantly impact the trajectory of ASD, highlighting the importance of timely access to diagnostic and therapeutic resources (Baio et al., 2018). This review highlights the evolution of research and practices from the early 2000s to the present, illustrating advancements in screening tools, intervention strategies, and family support programs. Despite progress, gaps remain, particularly regarding global disparities and the need for culturally competent approaches (Zhou et al., 2020).

Future Directions: Future research should address global disparities in ASD prevalence, enhance the cultural competence of intervention approaches, and investigate innovative therapeutic modalities to improve outcomes for individuals with ASD and their families (Albanian Autism Foundation, 2022). Advances in technology, such as telehealth and digital interventions, offer new opportunities for expanding access and improving care (Shattuck et al., 2009).

By advancing knowledge and practice in ASD care, healthcare providers can promote inclusive environments and support the holistic development of individuals with ASD across the lifespan.

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Author Contributions

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Conflict of Interest

The authors have no conflicts of interest to declare.

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INVESTIGATION OF THE RELATIONSHIP BETWEEN HYPERTENSION PATIENTS' ADHERENCE TO TREATMENT AND QUALITY OF LIFE

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Abstract: The aim of this study is to determine the adherence of hypertensive patients to treatment and to explain the factors affecting their quality of life in light of current information. It is known that if hypertension is not controlled and treated, it can lead to serious coronary diseases and organ failure. Therefore, it is extremely important that the management of hypertension is conducted appropriately and correctly under these circumstances. For patients to maintain a high quality of life, it is essential that they adhere to treatment. Various factors affect treatment adherence, including the healthcare team, socioeconomic factors, factors related to the healthcare system, disease-related factors, patient-related factors, and treatment-related factors. It has been observed that as patients' adherence to medication and lifestyle changes increases, their quality of life also improves. In conclusion, when hypertension is evaluated in terms of cardiovascular diseases, it can be controlled and is an independent risk factor, whereby effective interventions can minimize potential risks and enhance quality of life. Programs can be organized for effective nursing care and patient education in this area.

Keywords: hypertension, treatment adherence, quality of life

Hipertansiyon Hastalarının Tedaviye Uyumu Ve Yaşam Kalitesi Arasındaki İlişkinin İncelenmesi

Özet: Bu çalışmanın amacı, hipertansiyonlu hastaların tedaviye uyumunu belirlemek ve yaşam kalitelerini etkileyen faktörleri mevcut bilgiler ışığında açıklamaktır. Hipertansiyon kontrol altına alınmadığında ve tedavi edilmediğinde ciddi koroner hastalıklara ve organ yetmezliğine yol açabileceği bilinmektedir. Bu nedenle, hipertansiyonun bu koşullar altında uygun ve doğru bir şekilde yönetilmesi son derece önemlidir. Hastaların yüksek bir yaşam kalitesini sürdürebilmeleri için tedaviye uyum sağlamaları gerekmektedir. Tedaviye uyumu etkileyen çeşitli faktörler bulunmaktadır; bunlar arasında sağlık ekibi, sosyoekonomik faktörler, sağlık sistemi ile ilgili faktörler, hastalığa özgü faktörler, hasta ile ilgili faktörler ve tedavi ile ilgili faktörler yer almaktadır. Hastaların ilaç ve yaşam tarzı değişikliklerine uyumları arttıkça, yaşam kalitelerinin de iyileştiği gözlemlenmiştir. Sonuç olarak, hipertansiyon kardiyovasküler hastalıklar açısından değerlendirildiğinde kontrol altına alınabilir ve bağımsız bir risk faktörüdür; bu nedenle etkili müdahaleler potansiyel riskleri azaltabilir ve yaşam kalitesini artırabilir. Bu alanda etkili hemşirelik bakımı ve hasta eğitimi için programlar düzenlenebilir.

Anahtar kelimeler: hipertansiyon, tedaviye uyum, yaşam kalitesi

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Giriş

Hipertansiyon (HT), mortalite ve morbidite sıklığını arttıran kardiyovasküler hastalıkların en önemli düzeltilebilir ve bağımsız risk faktörlerinden biridir (Williams vd., 2018). Hipertansiyonun yol açtığı kronik hastalıkların komplikasyonu ve yüksek seyreden kan basıncı sonucu her yıl dünya üzerinde 9.4 milyon insanın ölümüne yol açmaktadır. Bu durum dünya çapında her dört erkeğin birinde ve her beş kadının birinde hipertansiyonunun görüldüğüne işaret etmektedir (DSÖ, 2024).

Tanım

Hipertansiyon, yetişkinlerde ölçülen sistolik kan basıncının ≥140 mmHg ve/veya diyastolik kan basıncının ≥90 mmHg olması durumuna denilmektedir ve her gün 25 binden fazla insanın hipertansiyon kaynaklı ölümleri tespit edilmiştir (Türk Kardiyoloji Derneği, 2019; Williams, 2018).

Hipertansiyon kontrol altına alınamaz ve uygun tedavi verilmez ise kalp ve böbrek yetersizliğine, miyokard infarktüsüne, inmeye ve ciddi koroner kalp hastalıklarına neden olduğu bilinmektedir. Hipertansiyona bağlı gelişebilecek bu hastalıklar göz önüne alındığında hipertansiyonun doğru yönetilmesi büyük önem arz etmektedir (Tokem Y, Taşcı E, ve Yılmaz M., 2013).

Hipertansiyon tedavisinde temel amaç kan basıncının konrol altında tutulmasıyken son yıllarda yapılan çalışmalara göre kötü kan basıncı kontrolünün başlıca nedeni hipertansiyon hastalarının tedaviye karşı gösterdikleri uyumsuzluk olarak belirtilmiştir (Williams vd., 2018).

Hipertansiyon Hastalarının Tedaviye Uyumu

Hipertansiyon hastalarının kontrollerine ve tedavilerine karşı gösterdikleri uyumsuzluk, toplum için büyük bir sorun olmasına rağmen sıklıkla ihmal edildiği görülmüştür (Uzun vd., 2009)

Yapılan çalışmalarda hastaların tedavi rejimine uyumları incelenmiş ve uyumun yüksek (Laila and Nidal, 2017; Gee M. et al., 2012) olduğunu gösteren çalışmalar olduğu gibi uyumun düşük (Al-Hajje, et al., 2015; Osamor and Owumi., 2011) olduğunu belirten çalışmalarda tespit edilmiştir.

Tedaviye uyum sağlamada hastalar birden çok faktörden etkilenmektedir. Dünya Sağlık Örgütü (DSÖ) bu faktörleri; sağlık ekibi, sosyoekonomik faktörler, sağlık sistemiyle ilişkili faktörler, hastalıkla ilişkili faktörler, hastayla ilişkili faktörler ve tedaviyle ilişkili faktörler şeklinde sıralamış ve incelemiştir (DSÖ, 2003).

Hastalıkla ilişkili faktörler

Hipertansiyon hastaları için hayvansal gıda ağırlıklı beslenme ve tuz kullanımı ciddi sorun oluşturmaktadır. Koçoğlu ve Gedik (2016)'in yaptığı çalışmada hastaların nerdeyse yarısı hayvansal gıdalarda kısıtlama yaptıklarını ve sebze-meyve ağırlıklı beslendiklerini belirtmiştir. Fakat bütün hastaların bu davranışı benimsemeleri istendiği için yetersiz görülmüştür. Hastalar için ana sorunun ise tuz kısıtlamasının yapılmaması olmuştur. Ülkemizde halk sağlığının korunması ve hastalıkların önlenmesi dahilinde multidisipliner bir yaklaşım gösterilerek tuz kullanımının düşürülmesi hedeflenmiştir (Sağlık Bakanlığı, 2016). Yapılan diğer çalışmalarda hipertansiyon hastalarının diyetlerine uygun beslenmedikleri ve özellikle de aldıkları gıdalarda tuz kısıtlaması yapmadıkları görülmüştür (Atan ve Yılmaz Karabulutlu, 2016; Koçoğlu ve Gedik, 2016).

Ailesinde hipertansiyon tanısı olan hastaların hipertansiyonun ciddiyetinin farkında olmasından kaynaklı olabileceği düşünülerek ilaç tedavilerine uyum gösterdikleri, sağlık kontrollerini düzenli yaptırdıkları ve yaşam değişikliğine de aynı zamanda uyum gösterdikleri tespit edilmiştir (Oğuz vd., 2019).

Sosyoekonomik faktörler

Birçok yapılan çalışma hastaların sosyoekonomik faktörlerden etkilendiğini belirtmiştir. Fakat bu faktörleri içine alan birden çok özellik olduğu gibi olumlu ya da olumsuz etkiler değişkenlik göstermiştir. Aşiret ve Okutan, (2019) çalışmasında hipertansiyon hastalarınının yaşam kalitesi ile bireylerin tanımlayıcı özellikleri karşılaştırıldığında; 65 yaşından küçük, bekar, lise ve üstü olan hastalar arasındaki farkın istatistiksel olarak anlamlı derecede yüksek olduğu tespit edilmiştir.

Hastaların sosyoekonomik düzeylerinin düşük olması diyet, beslenme, fiziksel aktivite ve sağlık kontrolleri gibi tedavi sürecinde yer alan faktörlerin gerçekleştirilmesinde hastaların eksik kalabileceği ve bu durumun hipertansiyon tedavisine uyum sağlama sürecinde olumsuz bir etki yaratacağı düşünülmüştür (Tümer vd., 2016).

Tedaviyle ilişkili faktörler

Hipertansiyon hastalarının ek kronik hastalık sayısı arttıkça orantılı olarak kullandıkları ilaç sayıları artmakta, aldıkları tedavi süreci zorlaşmakta ve hastaların tedaviye uyumu azalmaktadır. (Rijken, et al., 2005). Hipertansiyon hastalarının, ek kronik hastalığı olanlara göre olmayanların tedaviye uyum düzeylerinin ve bilgi düzeylerinin daha düşük olduğu belirtilmiştir (Gürdoğan M. ve Gürdoğan Paslı, 2019). Laila ve Nidal (2017)'ın çalışmasında farklı olarak ek kronik hastalık varlığı hastaların hipertansiyon tedavisine olan uyumu arttırmıştır. Bu durumun nedeni olarak ise hastaların hastaneye daha sık gitmeleri, sağlık profesyonelleriyle daha sık etkileşimde olmaları ve bilgi düzeylerinin de bu sayede yükselmesi olarak öngörülmüştür.

Yapılan çalışmalarda evde kan basıncı takibi yapan hipertansiyon hastalarının evde takip yapmayanlara göre tedaviye uyum düzeylerinin daha yüksek olduğu görülmüştür (Al-Hajje et a.,2015; Yassine et al.,2016; Laila and Nidal, 2017).

Düzenli egzersiz yapımı, bireylerde hipertansiyon gelişme riskini %20-50 azalttığı belirtilmiştir. JNC-8 (Joınt National Commite-8) 'de yetişkin bireylerin hafttada 3-4 kere minimum 40 dakika orta hızda fiziksel aktivite yapılmasını önermiştir (JNC-8, 2018). Yapılan çalışmalarda düzenli egzersiz yapan hipertansiyon hastalarının ilaç tedavisine olan uyumları yüksek çıkmıştır (Oğuz vd., 2019; Irmak vd., 2007).

Antihipertansif tedavi alan hastaların özellikle ilaçların kullanımı ve yaşam tarzı değişikleri konusunda uyumsuz bir tavır segiledikleri görülmüştür. Hipertansiyon tanısı almış olan hastaların tedavilerinin ilk yarısında tedaviyi bıraktıkları ve yaklaşık %10'unun ise gün içinde ilaçlarını almayı unuttukları görülmüştür (Hipertansiyon Tanı ve Tedavi Kılavuzu, 2018).

Antihipertansif tedavi için kullanılan tek doz ilaçların maksimum dozları bile hastaların en fazla %25'inin kan basıncı kontrolünü sağlamaktadır. Genellikle hastaların çoğu hedef kan basıncı değerine ulaşmak için iki veya daha fazla ilacın kombinasyonu şeklinde kullanılması gerekmektedir. İlaç kombinasyonu tedavisinin pek çok avantajı varken hastaların tedaviye olan uyumlarını azalttığı tespit edilmiştir. Yapılan bir çalışmada tek doz ilaç kullananların iki veya daha fazla ilaç kullananlara göre tedaviye gösterdikleri uyum yüksek çıkmıştır (Abdul Rahman et al., 2015; Gürdoğan M. ve Gürdoğan Paslı, 2019).

Hastayla ilişkili faktörler

Hipertansiyonlu hastalar üzerinde cinsiyet faktörüne bakıldığında, tedaviye uyum düzeyini etkileyen çalışmalar mevcutken etkilemeyen (Vatansever ve Ünsal, 2014; Tümer vd., 2016) çalışmalarda göze çarpmaktadır. Cingil vd., (2022)'nin çalışmasında erkeklerin, Karadağ vd., (2012)'nin çalışmasında ise kadınların hipertansiyon tedavilerine olan uyumları daha yüksek çıkmıştır.

ESC/ESH (European Society of Cardiology (Avrupa Kardiyoloji Birliği) /ESH: European Society of Hypertension (Avrupa Hipertansiyon Birliği) 2018 yılında yayınladığı kılavuzda hastaların tedaviye uyum düzeylerinin arttırılması için hipertansiyonla alakalı bilgi düzeylerininde arttırılması gerektiğini vurgulamıştır (Williams vd., 2018).

Gürdoğan M. ve Gürdoğan Paslı, (2019) çalışmasına katılan hastaların sadece %33'ü sağlık kontrolleri sırasında hipertansiyonla alakalı bilgi aldığını ifade etmiştir ve bilgi düzeyi artan hastaların bilgi almayan hastalara göre tedaviye daha çok uyum gösterdikleri ve sonuç olarak kişilerin bilgi düzeyleri arttıkça tedaviye uyumlarıda artmaktadır.

Literatürde hastaların hipertansiyonla ilişkili bilgi düzeyleri değişkenlik göstermektedir. Bu durum hastaların sosyo-demografik düzeyleri ve hastayla ilişkili değişkenlerin yanı sıra sağlık profesyonellerinden aldıkları eğitimle ve hastaların sağlık okuryazarlığı ile ilişkili olduğu belirlenmiştir (Laila and Nidal, 2017; Nidal and Laila, 2016; Zinat Motlagh et al., 2015).

Gün ve Korkmaz, (2014) Tedaviye uyum skorları ile hipertansiyon süreleri arasındaki ilişkiyi incelemiştir. "1-5 yıl" olan grup ile "6-10 yıl" olan grup ve "21 yıl ve üzeri" olan grup arasından; hipertansiyon süresi 1-5 yıl olan grubun tedaviye olan total uyum düzeyi diğer gruplardan daha düşük çıkmıştır. Okuryazar olan hipertansiyon hastalarının olmayanlara göre ve kadınlarında erkeklere göre beslenme uyumu daha yüksek, hipertansif evli olan hastaların tedaviye uyum oranları bekarlara göre daha düşük çıkmıştır (Gün ve Korkmaz, 2014).

Hipertansiyon Hastalarının Yaşam Kalitesi

Sağlık alanındaki yaşam kalitesi, tüm toplumların iyileştirmeyi amaçladığı büyük önem taşıyan evrensel kavramlardan biridir. Sağlık bakım hizmeti yöneticilerinin ve sağlık profesyonellerinin temel hedeflerinden biri yaşam kalitesinin arttırılmasıdır (Ergin vd., 2011).

Hipertansif kadınların erkeklere göre, dul/boşanmış ve bekar olanların ise evli olanlara göre yaşam kalitesi daha düşük (Vatansever ve Ünsar, 2014; Şarlı, 2011) olduğu belirtilmiştir. Çalışmaları destekler nitelikte olan Alemdar ve Pakyüz, (2015) çalışmasında da yaşam kalitesi, hipertansiyonu olan erkeklerin kadınlara göre daha yüksek olduğu görülmüştür. Kadınların yaşam kalitesinin düşük olması, duygusal olmaları ve yaşam şartlarından oldukça negatif etkilendiklerinden kaynaklı olabileceği öngörülmüştür. Evlilerin yaşam kalitesinin bekarlardan daha yüksek olmasının nedeni ise evlilerin aile bireylerinden aldıkları sosyal, psikolojik ve ekonomik destekler olabilir (Runa ve Bahar, 2023).

Hastaların eğitim düzeyi arttıkça hastaların yaşam kalitesinin de arttığı görülmektedir. Bu durumun nedeni egzersiz ve diyet gibi yaşam tarzı değişikliklerine daha fazla uyum sağlayarak iyileşeceklerine olan farkındalıklarının yüksek olmasından kaynaklanabilir (Runa ve Bahar, 2023).

Erci ve Elibol, (2018) çalışmasında her gün tansiyon ölçtüren hastaların fiziksel fonksiyon puanları daha yüksek çıkmıştır. Hipertansiyonla alakalı bilgi alan hastaların canlılık fonksiyonu puan ortalaması daha yüksek ve farkın önemli olduğu belirtilmiştir. İçyeroğlu, (2012) çalışmasında hipertansiyon eğitimi alan ve kontrollerine düzenli giden hastaların fiziksel ve mental sağlık puanları daha yüksek çıkmıştır.

Sonuç

Hipertansiyon, her yıl dünya üzerinde milyonlarca insanın ölüm nedenlerinden biridir. İnme, miyokard enfarktüsü, kalp ve böbrek yetmezliği gibi ciddi hastalıkların oluşumuna da zemin hazırlamaktadır. Gelişebilecek bu hastalıkların oluşma riskinin en aza indirilmesi için hipertansiyon hastaları kontrollerine düzenli gitmeli ve tedavilerine uyum sağlamalıdır. Tedavilerine uyum göstermeyen hipertansiyon hastaların, kan basınçları normal sınırlarda kalmamakta ve yaşam kaliteleri de olumsuz etkilemektedir. Çalışmalar gösteriyor ki tedavilerine uyum gösteren hastaların göstermeyenlere göre yaşam kaliteleri daha yüksektir. Hipertansiyon hastalarına doğru tanı konulduktan sonra uygun tedavi uygulanmalı ve hastalar ilaç tedavilerine tam uyum göstermelidir. İlaçlarını kombinasyon şeklinde kullanan hastaların ilaçlarını günün hangi öğün ve saatinde alacakları konusunda dikkat etmelidirler. İlaç tedavisinin yanı sıra hastaların yaşam tarzı değişiklerini de hayatlarına katmalılar. Egzersiz ve diyet programlarını aksatmamalılar.

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THE CORRELATION BETWEEN DIFFERENT LEVELS OF HEMOGLOBIN AND MCV

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Abstract: The mean corpuscular volume (MCV) is a crucial measurement to determine the underlying cause of anemia. MCV is considered a critical step in the diagnostic process for anemia, providing valuable information about the average size and volume of red blood cells. Descriptively, MCV can be viewed as a "footprint" of the anemia, indicating its characteristics. MCV, in conjunction with other parameters such as hemoglobin and hematocrit, helps classify anemia into 3 main categories: microcytic, normocytic, and macrocytic. Microcytic, normocytic, and macrocytic anemia are defined by MCV levels below, within, and above the normal range, respectively. The purpose of this study is to highlight the correlation between different low levels of hemoglobin and MCV. The type of study used is retrospective and it was attended by 120 individuals who performed the basic medical CBC test during the 2024 year at the health care center no. 1, Tirana, Albania. We investigate respectively 60 women and 60 men. The age of the patients was from 35 to 70 years. The average age of women was 53 years, while men were 56 years old. Patients were categorized according to hemoglobin levels, respectively for each gender there were 30 with hemoglobin levels under 11g/dl and 30 with hemoglobin levels 11-13 g/dl. In the complete blood analysis, data were collected in the table for the number of erythrocytes, hemoglobin, MCV, MCH, MCHC, RDW and HCT. To perform the complete blood analysis, venous blood with a K3EDTA tube was used, measured with a Sysmex XS 1000i and XN 2001/2002 type cell counter, having as the exposure index the red blood cell of the complete blood. In our study we used the Pearson correlation coefficient to assess the strength and direction of the linear relationship between the variables of interest. This statistical measure is widely recognized for its effectiveness in identifying correlations in quantitative data. The correlation between MCV and the number of erythrocytes in individuals with normal hemoglobin values seems to be stronger than the correlation in individuals with pathological hemoglobin values. The mean corpuscular volume is a crucial measurement used to determine the underlying cause of anemia. This measurement is considered a critical step in the diagnostic process for anemia, providing valuable information about the average size and volume of red blood cells. Descriptively, mean corpuscular volume is the footprint of the anemia, indicating relevant characteristics. There is a strong positive relationship between different hemoglobin values and different hematocrit values.

Keywords: MCV, hemoglobin, anemia, hemogram.

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1. INTRODUCTION

Erythrocytes are a type of blood cell that is made in the bone marrow and found in the blood.[1,2] Erythrocytes contain a protein called hemoglobin, which carries oxygen from the lungs to all parts of the body.[2] Checking the number of erythrocytes in the blood is usually part of a complete blood cell (CBC) test. It may be used to look for conditions such as anemia, dehydration, malnutrition, and leukemia. Also called RBC and red blood cell.[3,4]

Hemoglobin is a complex protein made up of four globin molecules and four heme groups in the RBC structure, each of which contains an iron ion, is the basic component of every red blood cell.[4] In the lungs, hemoglobin and oxygen combine to produce oxyhemoglobin, a reversible connection that facilitates effective oxygen delivery. RBCs take up carbon dioxide and release oxygen to tissues and organs as blood circulates throughout the body, generating carbaminohemoglobin. The delicate balance of gases in circulation and the maintenance of cellular respiration depend on the dynamic interaction between hemoglobin and oxygen.[5]

Hematocrit is the amount of whole blood that is made up of red blood cells. It depends on the number and size of red blood cells. A hematocrit test is usually part of a complete blood count (CBC). It may be used to check for conditions such as anemia, dehydration, malnutrition, and leukemia. Also called HCT.[6,7,8]

The mean corpuscular volume (MCV) is a key laboratory parameter used to determine the etiology of anemia.[7] MCV represents the average size and volume of red blood cells (RBCs) and is a crucial factor in diagnosing various types of anemia. It is reported in femtoliters (fL).[8] The MCV is calculated by dividing the hematocrit percentage by the erythrocyte count and then multiplying by 10, as follows:[9,10]

$$\text{MCV (in fL)} = (\text{Hematocrit \%})/ (\text{RBC count} \times 10^{12}/\text{L}) \times 10$$

MCV is considered an important indicator of the morphological characteristics of RBCs in anemia.[10] When evaluated alongside other parameters such as hemoglobin and hematocrit, MCV helps classify anemia into three main categories: microcytic, normocytic, and macrocytic.[11] An MCV value below, within, or above the normal range corresponds to microcytic, normocytic, and macrocytic anemia, respectively.[12] Additionally, MCV plays a role in calculating the red blood cell distribution width (RDW), providing further insight into RBC size variability.[13,14,15]

The correlation between mean corpuscular volume (MCV) and hemoglobin levels is essential in the evaluation and classification of anemia.[14] MCV measures the average size of red blood cells (RBCs), while hemoglobin quantifies the oxygen-carrying capacity of these cells.[15] Both parameters are critical for identifying the type and underlying cause of anemia.[16]

When hemoglobin levels are low, indicating anemia, MCV helps determine whether the anemia is microcytic, normocytic, or macrocytic.[17] For example, low hemoglobin levels combined with a low MCV suggest microcytic anemia, often caused by iron deficiency or chronic disease.[18] Conversely, low hemoglobin with an elevated MCV points to macrocytic anemia, which may result from vitamin B12 or folate deficiencies. Normocytic anemia, where MCV remains within the normal range despite low hemoglobin, can be seen in conditions like acute blood loss or chronic kidney disease.[19,20]

The correlation between MCV and hemoglobin offers valuable insights into the pathophysiology of anemia and helps guide further diagnostic evaluation and management.[20]

2. MATERIAL AND METHOD

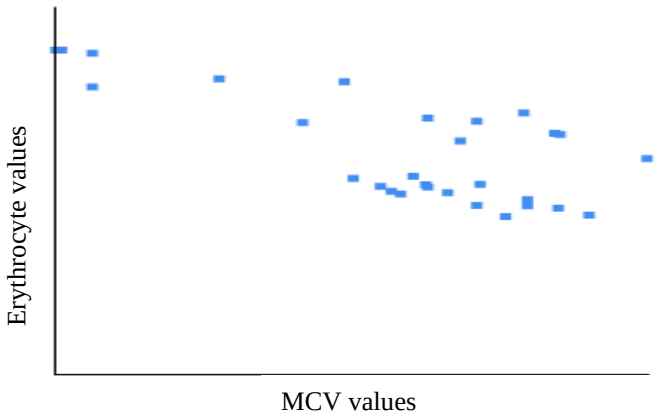
The type of study used is retrospective and it was attended by 120 individuals who performed the basic medical CBC test during the 2024 year at the health care center no. 1, Tirana, Albania. We investigate respectively 60 women and 60 men. The age of the patients was from 35 to 70 years. The average age of women was 53 years, while men were 56 years old. Patients were categorized according to hemoglobin levels, respectively for each gender there were 30 with hemoglobin levels under 11g/dl and 30 with hemoglobin levels 11-30 g/dl. In the complete blood analysis, data were collected in the table for the number of erythrocytes, hemoglobin, MCV, MCH, MCHC, RDW and HCT. To perform the complete blood analysis, venous blood with a K3EDTA tube was used, measured with a Sysmex XS 1000i and XN 2001/2002 type cell counter, having as the exposure index the red blood cell of the complete blood. In our study we used the Pearson correlation coefficient to assess the strength and direction of the linear relationship between the variables of interest. This statistical measure is widely recognized for its effectiveness in identifying correlations in quantitative data.

3. RESULTS

3.1.Correlation coefficient between erythrocyte values and MCV in females with Hb<11g/dl

The correlation coefficient (R) is calculated to be -0.7291. This indicates a moderate negative correlation between the two variables. Specifically, it suggests that as the MCV (Mean Corpuscular Volume) values increase, the erythrocyte (red blood cell) count tends to decrease. In other words, higher MCV values are generally associated with lower erythrocyte values, demonstrating an inverse relationship between these two variables.

Moreover, the coefficient of determination (R^2) is 0.5316. This value indicates that approximately 53.16% of the variance in erythrocyte levels can be explained by the changes in MCV values.

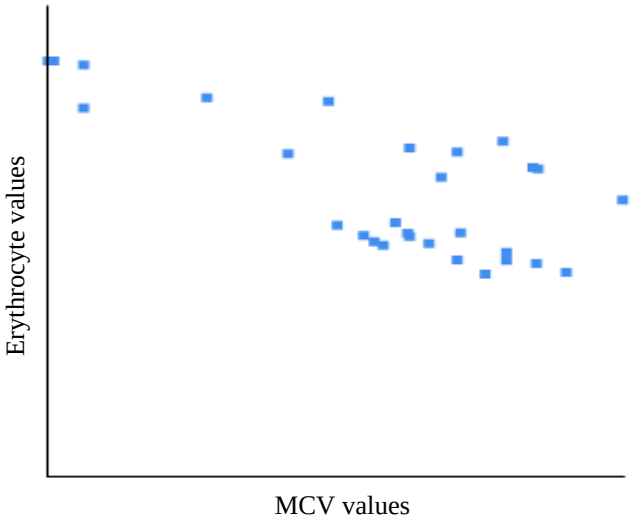


Graphic 1: The correlation between erythrocyte values and mcv in females with hb<11g/dl.

3.2.Correlation coefficient between erythrocyte values and MCV in females with Hb 11-13g/dl

The correlation coefficient, represented as R, has a value of -0.7291. This indicates a moderate negative correlation between the two variables in question. In practical terms, this means that as the scores for the MCV variable increase, there tends to be a corresponding decrease in the scores for the erythrocyte variable. This relationship suggests an inverse association, where higher values of one variable are generally linked to lower values of the other.

Furthermore, the coefficient of determination, R^2, is calculated to be 0.5316. This value provides insight into how well the variations in the MCV variable can explain the variations in the erythrocyte variable. Specifically, an R^2 of 0.5316 implies that approximately 53.16% of the variability in erythrocyte scores can be accounted for by the MCV scores. This indicates a moderate degree of explanatory power regarding the relationship between these two variables.

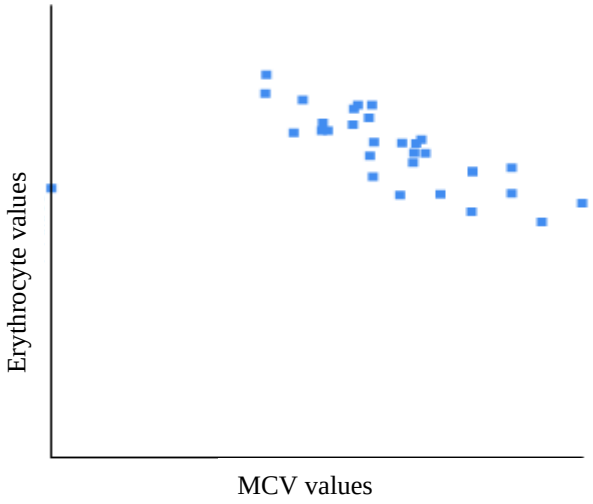


Graphic 2 : The correlation between erythrocyte values and mcv in females with hb 11-13g/dl.

3.3. Correlation coefficient between erythrocyte values and MCV in males with Hb<11g/dl

The correlation coefficient, R, is calculated to be -0.522. This value indicates a moderate negative correlation between the two variables being analyzed. In practical terms, this suggests that as the scores for the MCV variable increase, there is a tendency for the scores for the erythrocyte variable to decrease. Essentially, this reflects an inverse relationship, implying that higher values of the MCV variable are associated with lower values of the erythrocyte variable.

Additionally, the coefficient of determination, represented as R^2, is found to be 0.2725. This statistic provides insight into the degree to which the variability in the MCV variable can account for the variability observed in the erythrocyte variable. Specifically, an R^2 value of 0.2725 indicates that approximately 27.25% of the variation in erythrocyte scores can be explained by changes in MCV scores. This indicates a moderate level of explanatory power regarding the relationship between these two variables.

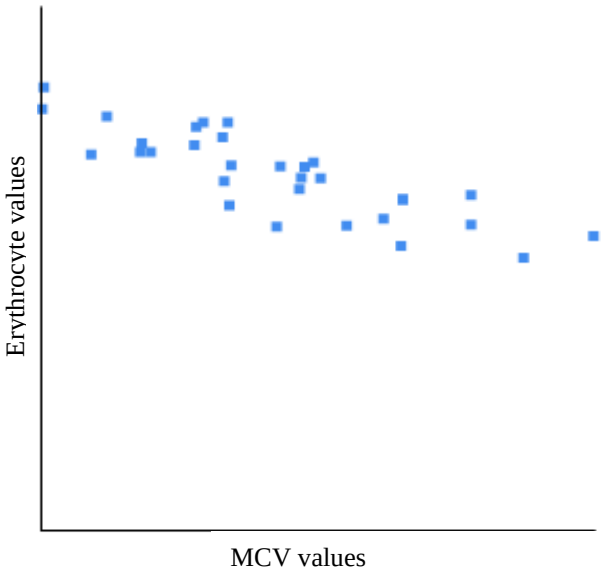


Graphic 3: The correlation between erythrocyte values and mcv in males with hb<11g/dl.

Correlation coefficient between erythrocyte values and MCV in males with Hb11-13g/dl

The correlation coefficient, denoted as R, has a value of -0.8406, indicating a strong negative correlation between the two variables under consideration. This suggests that as the scores for the MCV variable increase, there is a corresponding decrease in the scores for the erythrocyte variable. In other words, higher MCV values are closely associated with lower erythrocyte values, reflecting a significant inverse relationship between these two metrics.

Moreover, the coefficient of determination, represented as R^2, is calculated to be 0.7066. This statistic sheds light on the extent to which variations in the MCV variable can explain the variations in the erythrocyte variable. Specifically, an R^2 value of 0.7066 indicates that approximately 70.66% of the variability in erythrocyte scores can be accounted for by changes in MCV scores. This suggests a strong degree of explanatory power in the relationship between these two variables.

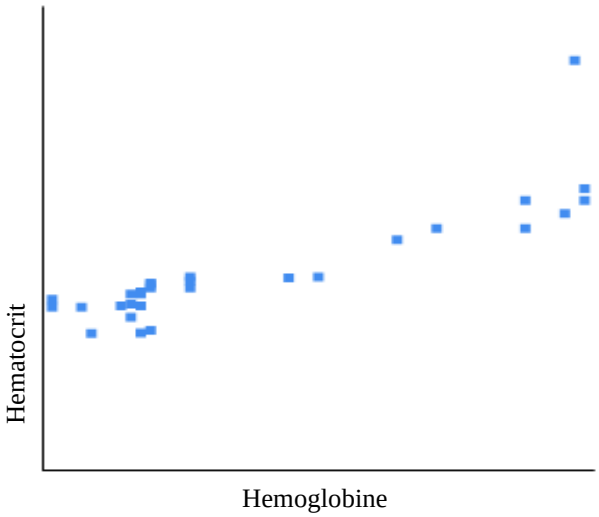


Graphic 4: The correlation between erythrocyte values and mcv in males with hb 11-13 g/dl.

The correlation between hemoglobin and hematocrit:

The correlation coefficient, represented as R, has a value of 0.8662, indicating a strong positive correlation between the two variables being analyzed. This suggests that higher scores in the HCT variable are associated with higher scores in the HGB variable. In practical terms, as the values of the HCT variable increase, the values of the HGB variable tend to increase as well, reflecting a significant direct relationship between these two measures.

Additionally, the coefficient of determination, denoted as R^2, is calculated to be 0.5216. This statistic provides insight into how well the variations in the HCT variable can explain the variations in the HGB variable. Specifically, an R^2 value of 0.5216 indicates that approximately 52.16% of the variability in HGB scores can be accounted for by changes in HCT scores. This suggests a moderate level of explanatory power regarding the relationship between these two variables.

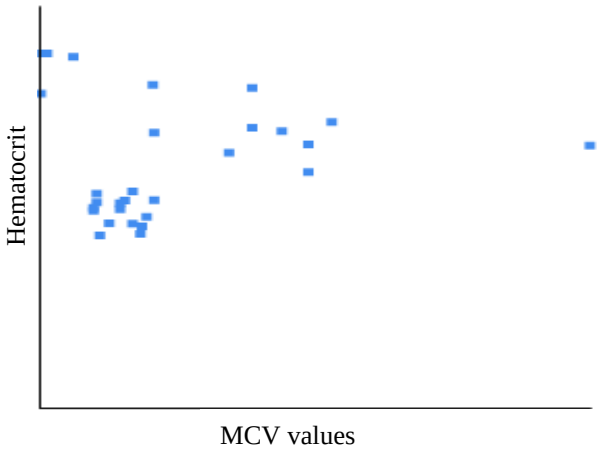


Graphic 5: The correlation between hemoglobin and hematocrit.

The correlation between hematocrit and MCV:

The correlation coefficient, denoted as R, is measured at 0.0854. While this value indicates a positive correlation between the two variables, the relationship is quite weak. This suggests that there is very little tendency for changes in one variable to correspond with changes in the other.

Furthermore, the coefficient of determination, represented as R^2, is calculated to be 0.0073. This statistic reveals the extent to which variations in one variable can explain variations in the other. Specifically, an R^2 value of 0.0073 indicates that only about 0.73% of the variability in one variable can be accounted for by the other. This underscores the minimal explanatory power of the relationship between these two variables.



Graphic 6: The correlation between mcv and hematocrit.

3.The concluded results of the graphics

Table 1: Correlation coefficient and coefficient of determination based on hemoglobine values.

Hemoglobin values	**Correlation coefficient (R)**	**Coefficient of determination(R^2)**
Females with Hb<11g/dl	-0.7291	0.5316
Females with Hb11-13g/dl	-0.8859	0.7848
Males with Hb<11g/dl	-0.522	0.2725
Males with Hb11-13g/dl	-0.8406	0.7066
Hemoglobin and hematocrit	0.8662	0.5216
Hematocrit and MCV	0.0854	0.0073

4.DISCUSSION AND CONCLUSIONS

The correlation between MCV and the number of erythrocytes in individuals with normal hemoglobin values seems to be stronger than the correlation in individuals with pathological hemoglobin values.

The mean corpuscular volume is a crucial measurement used to determine the underlying cause of anemia. This measurement is considered a critical step in the diagnostic process for anemia, providing valuable information about the average size and volume of red blood cells. Descriptively, mean corpuscular volume is the footprint of the anemia, indicating relevant characteristics.

There is a strong positive relationship between different hemoglobin values and different hematocrit values.
There is no correlation between MCV and hematocrit values.

In discussing the findings of this study, it is crucial to acknowledge that the sample size was relatively small. This limitation may impact the generalizability of our results, as conclusions drawn from a limited number of cases may not fully represent broader populations. Consequently, while the findings provide valuable insights, they should be interpreted with caution.

Despite this limitation, the conclusions reached in this study are consistent with those of other research in the field. Previous studies have identified similar trends and relationships, reinforcing the validity of our findings.

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Conflict of Interest
The authors have no conflicts of interest to declare.

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THE IMPORTANCE OF KEEPING HEALTH RECORDS BY GYMS AND FITNESS CENTERS AND DRAFTING OF MEDICAL PROTOCOLS IN ALBANIA

Klotilda Vrenjo *[1]

Abstract: Engaging in physical activity is important and advisable for every individual, but in the case of gym goers certain precautions need to be applied besides encouragement and instruction on physical engagement. This study carries out an analysis of the current situation in gyms and fitness centres in Albania. It aims to find out how informed are gym goers and instructors about the importance of health checks and health records as well as cooperation with doctors when creating and implementing a training plan. Through the survey of the target population included in the Quantitative/Transversal type study, we randomly seek to assess the existence and importance given to the completion of the health records, the examination before the start and during exercising at the gym. Survey period January-April 2022, 100 gym attenders/goers attending the gym 49M (49%) and 51F (51%). Measurements were carried out with standardized devices such as measuring scales, meters, pulse oximeters, mercury blood pressure devices. The average age of the sample is 25.31. 14% of the subjects who attend the gym have performed Spirometry and 14% ECG-effort test. 3% of the surveyed subjects are aware that they suffer from a chronic disease and 28% of them take protein supplements. 15% have suffered an injury while exercising at the gym. 26% of them go to these centres 2-3 times/week while 74% go 4- 7 times/week, exceeding the average time needed for physical activities per week recommended by WHO. The information obtained from this study shows the necessity of raising awareness about the importance of periodic measurement of functional parameters among gym attenders in Albania. This analysis also identifies the need for strict control by the government for the unification of the standard health records mandatory to be kept for every individual attending the gym. In order to create and institutionalize cooperation between gyms and health centres as a result of the lack of a sports doctor. Moreover, based on the findings we suggest that it's right time to draft and implement mandatory standardised medical protocols by all gym and fitness centres in Albania

Key words: Physical activity, gyms, health records, medical protocols

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1. INTRODUCTION

Engaging in physical activity of any kind and specifically at gyms is important but on the condition that it is performed safely and correctly. During the recent years there has been a mass attendance of gyms and fitness centres, thus this study undertakes to carry out an analysis of the current situation in the gyms of our country, as well as the awareness of the population and gym instructors about the importance of cooperation with the doctor, in the sense that it is strongly advised to keep health records and to fill out the health/medical record/card of every gym goer prior to the design of the training plan as this depends on the individual's physiological characteristics. Gym attenders and goers are of different ages, implying that these people besides their objectives they have when attending the gym (losing weight, building muscles, being active, etc), they also have various health problems such as; obesity, hypertension, diabetes, arthrosis, asthma, pre-menopause, etc. All these health-related problems must be reflected in the health card, which needs to be an approved and certified template, so that the gym instructors are informed and based on that they will design and apply the training plan, and will create healthy and safe approaches to people's health and physical activity.

Through this study we also aim to emphasize that the measurement of some functional parameters before the start of physical activity should be mandatory as in this way it minimizes the risk of injury, disability or even death as cases of loss of life at gyms have been reported in our country(1, 2)

An Italian study involving more than 34,000 people found that sports-related deaths were less common in people who had undergone prior examinations by qualified sports physicians (3)

The reason for conducting these examinations is to make physical activity as safe as possible by minimizing health-related risks as well as disease prevention (4,5)

The most important strategy is to explain to gym goers that they must start with low-intensity physical activity, gradually increasing the intensity. In general, it is best to spread physical activity throughout the week with the aim of being active at least 3-5 days per week according to WHO recommendations (6)

Whenever possible, periods of physical activity should include a warm-up and cool-down component. Increasing muscle strength around weight-bearing joints, particularly the knee, also reduces the risk of musculoskeletal injury.

In the respective literature, it is stated that the minimum protein requirement is estimated to be 0.8-1 gram per kilogram (kg) of body weight, but when we engage in physical activity that lasts more than 90 minutes, it is important to increase this amount and when it is required to increase muscle mass the supplement is 1.4-1.7 grams per kilogram (kg) of body weight. It is important that these amounts are taken from plant and animal-based foods because the amount of amino acids in the content varies (7). Due care needs to be taken by diabetics and those with renal problems, vegetarians, etc. These issues are resolved by the doctor or a licensed Dietitian, and it is worth mentioning that in Albania there is only one individual licensed by the Order of Physicians of Albania.

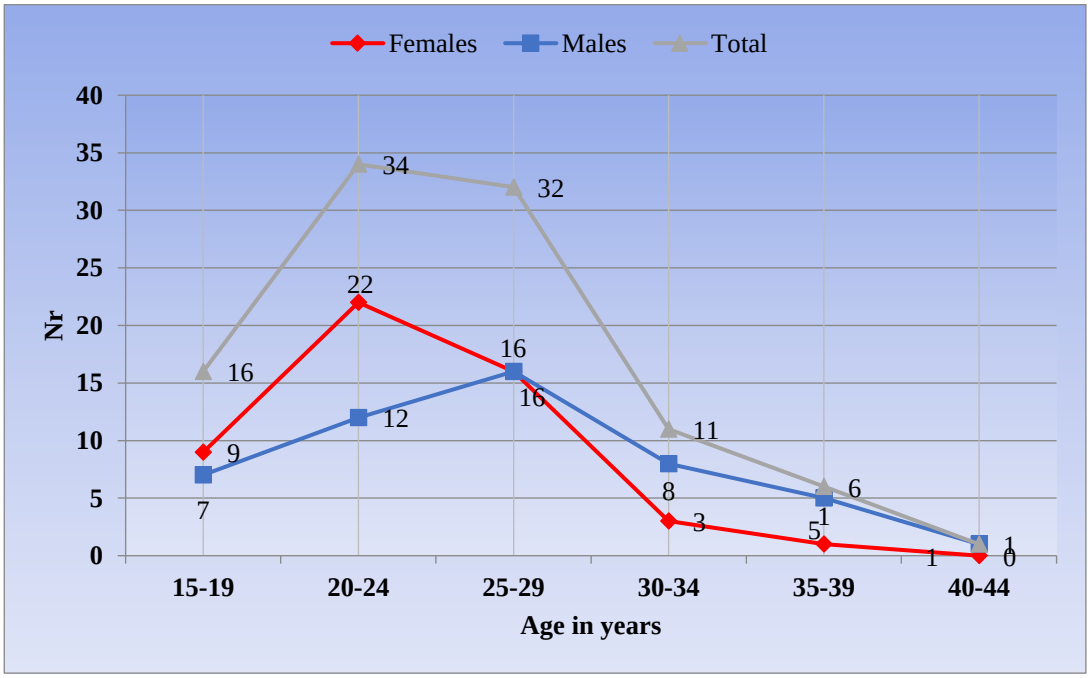
2. MATERIAL AND METHOD

Through the survey of the target population included in the Quantitative/Transversal type study, we randomly seek to assess the existence and importance given to completing the health record form/card before starting physical activity, and measuring some of the functional parameters such as: arterial pressure, frequency cardiac, respiratory frequency, VO2, blood glucose before/after activity at the gym, as well as to evidence the indiscriminate use of harmful supplements. The survey period was January-April 2022, including 100 people who attend the gym in the city of Tirana and Lezha. The measurements were carried out with standardized devices such as scales, meters, pulse oximeters, mercury sphygmomanometers. We must state that these measurements were made at the same time or within 1 minute of each other.

3. RESULTS

The total population of our study is 100 individuals. The results of the distribution by gender show that 51 (51%) of the individuals were females and 49 (49%) were males. The average age of male subjects is 26.96. The average age of female subjects is 23.98. The average age of the entire sample is 25.31, showing that gyms are mostly frequented by young people of both genders.

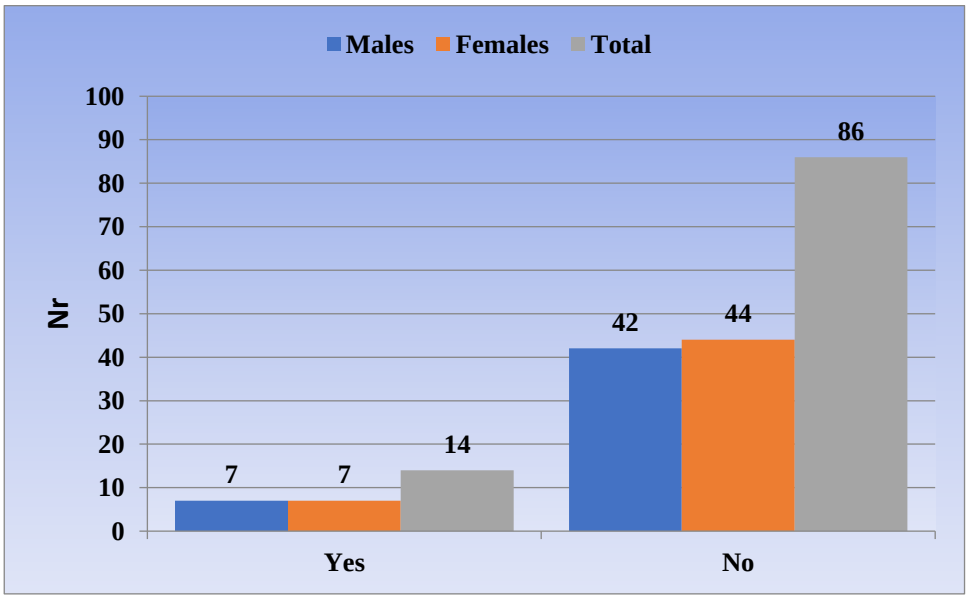
Graph 1: Study subjects given by age groups and genders.



Graph 1 shows the distribution of the sample by age groups: the highest attendance is by the age group of 20-29 years of both genders, with 66% of the total. It is also noticeable that the 40-44 age group has a very low percentage, 1% of the total. The 15-19 age group accounts for 16% of the total, which is a significant turnout although the gym is not recommended for this age group.

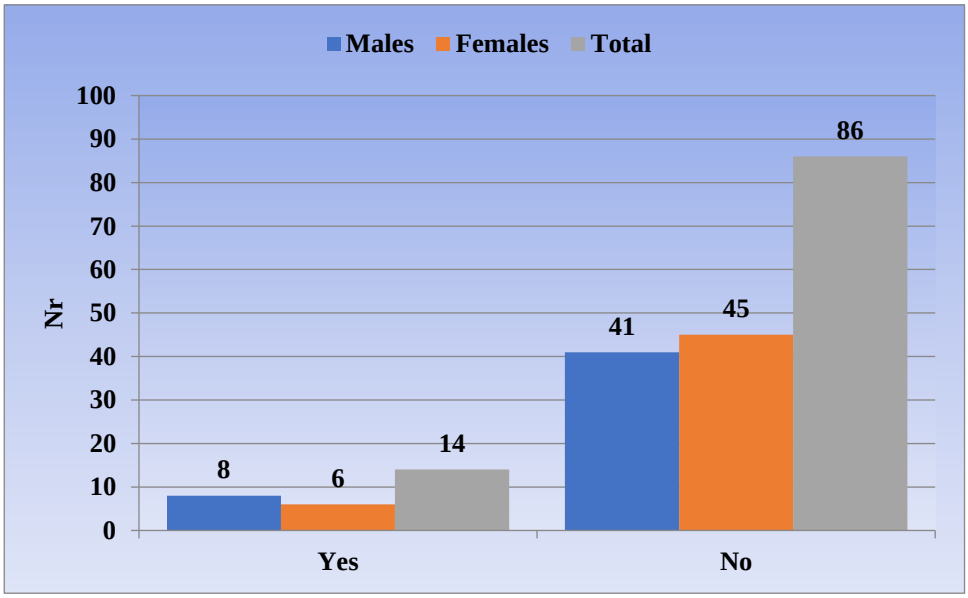
Another interesting fining is that with increasing age, the number of men who attend the gym is higher than the number of women, this is due to the fact that they have more free time for themselves.

Graph 2: Results given by gender for the question: Have you ever undergone the Spirometry test?



Graph 2, indicates that 14% of sampled individuals who attend the gym have performed the medical examination i.e. Spirometry, and both genders seem to be equally aware and responsible of the importance of this test even though at a low percentage, since this examination is mandatory before starting physical activity, and it is even recommended to be performed periodically every year. Another fact is that after the situation of Covid 19 people should have heard about this examination and its importance (5).

Graph 3: Results given by gender for the question: Have you ever undergone the ECG-effort test?



Graph 3, shows that 14% of the sample have undergone the medical examination of exercise test or the ECG-effort test during their life, and in this aspect men seem to be more responsible in taking the test to evaluate one component

of their health. However, even in this case the percentage is very low since this examination is mandatory before starting physical activity, and it is even recommended to be performed annually (4).

Table 1: Results given by gender for the question: Do you have any chronic disease?

Gender	Yes	No
Females	2	49
Males	1	48
Total	**3**	**97**

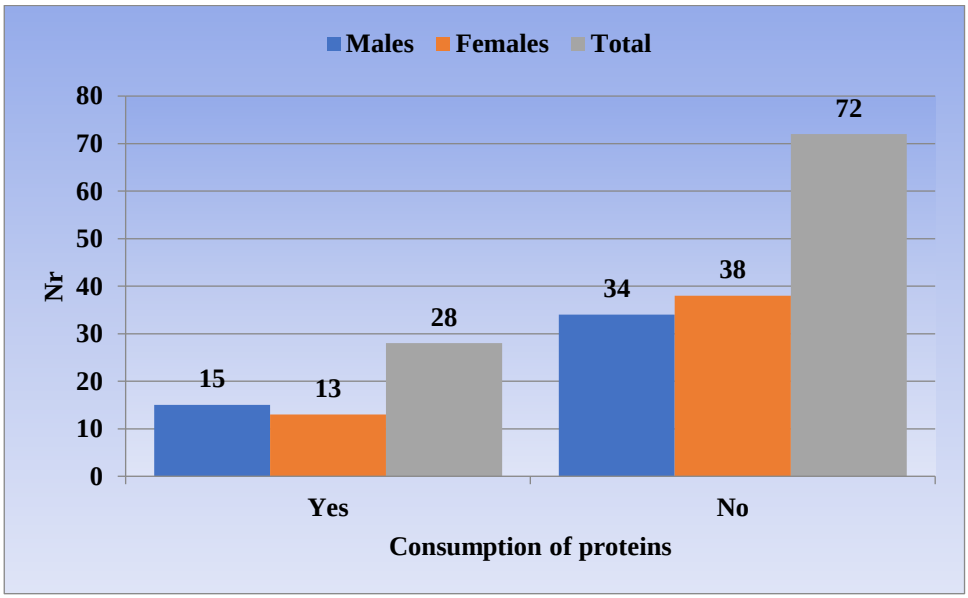
F- 1/ Migraine: 1/ Low blood pressure

M- 1/ Diabetes

In Table 1, we see that 3% of people who attend gyms are aware that they suffer from a chronic disease. This number is small, but the diagnoses are diverse, which shows us that each of them requires special care and a special exercising plan for which the gym/fitness instructor is unprepared (4).

For example, a person suffering from diabetes should measure the glucose level before and after the exercising session. These individuals need to have food with them at any time and need to be recommended on their diet and nutrition continuously (10).

Graph 4: Consumption of proteins given by genders.



In Graph 4, we see that 28% of the sample consume proteins that they get directly at the gym. This number is considerable considering the fact that they take these supplements without prior recommendation by a doctor or a nutritionist. 72% of them do not consume additional proteins for various reasons, and it is emphasized that they try to complete their protein intake through various food, and some of them they do not take supplements because they are costly. Those people who used proteins as supplements do not take them in the right amount according to the body's needs, there is no correct distribution of these proteins between meals, and the type used is not in accordance with what the body requires. In other terms, they do not consult with a dietitian or any doctors about the exact amount and method of taking these supplements (7, 9).

Table 2: Result of injury during exercising at the gym given by gender.

Gender	Yes	No
Females	6	45
Males	9	40
Total	**15**	**85**

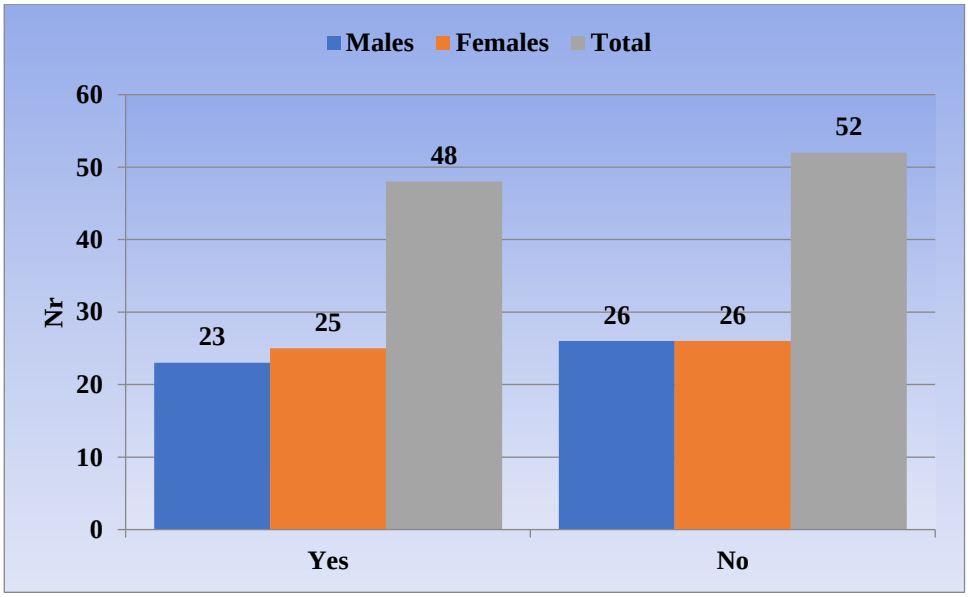
According to Table 2, it results that 15% of the individuals have suffered injuries while exercising at the gym, which shows the necessity of providing medical assistance in gyms or in the case of the absence of a doctor, the instructor must have completed a training course to manage or treat injuries that occur during exercising in gyms.

Table 3: Frequency of gym attendance times/week given by gender.

Gender	1 times/week	2-3 times/week	4-7 times/week
Females	0	18	33
Males	0	8	41
Total	**0**	**26**	**74**

According to table 3, it results that 26% of people attend gyms for recreational reasons, while the rest 74% of them go to develop their physical capacities to the maximum, and making it possible to reach their objectives faster, exceeding the time average required for physical activities per week, as recommended by WHO (6). It is also worth mentioning that attending the gym more than 4 times a week increases the risk that those people will exceed the recommended exercise load and in most of the cases it happens because they are not informed on this aspect.

Graph 2: Results given by gender for the question: Have you ever measured your blood pressure?



Graph 5 shows that 48% of people have measured blood pressure before, but it is worth noting that this number is small even though the device for measuring blood pressure is found in most homes due to elderly family members who frequently use it. 52% of the sample had their blood pressure measured for the first time during this study, and they were nervous during the measurement that might affect the values taken at some of the measurements.

Table 4: Systolic Blood Pressure (SBP) at rest given by gender.

SBP / Gender	SBP at Rest 90-119	SBP at Rest 120-139	SBP at Rest >140
Females	27	24	0
Males	19	28	2
Total	**46**	**52**	**2**

Table 4 shows that 52% of our sample have SBP at rest within the norm, but it is noted that 46% of them, a significant percentage, SBP is below the norm, which shows that physical activity has an impact on lowering blood pressure. Only 2% have SBP over 140, so they can be called hypertensive.

Table 5. SBP after training given by gender.

SBP / Gender	SBP after Training 90-119	SBP after Training 120-139	SBP after Training >140
Females	9	32	10
Males	8	26	15
Total	**17**	**58**	**25**

Table 5 indicates that 25% of people have SBP above 140, 58% at 120-139 and 17% have below 120. It is noticeable that almost all the values are higher than SBP at rest.

4. DISCUSSION AND CONCLUSIONS

Research related to the importance of the measurement of functional parameters before starting physical activity are partial, at national level, or scarce and non-existent. This present study, with a sample of 100 individuals, in other words it has a low representing sample, that is why it is necessary and recommended to carry out other further studies with a larger sample. Future studies should be more extensive, covering the entire territory of Albania, and also must include comparison between cities, etc.

In the context of prevention, it is emphasized the importance of designing and delivering educational and awareness rising programs that highlight the importance of health check-ups and measurement of vital parameters before an individual starts attending the gym by licensed doctors, at least once a year.

We also recommend to adapt the legal basis in order to make mandatory and specify the necessary examinations to be performed by the individuals engaging in physical activity and exercising at the gyms. We also recommend strict controls by the state for the unification of the standard medical/health record card to be completed and kept for each individual attending the gym, as well as these health checks to be repeated annually. Moreover, this study seeks to raise the assumption claim that it is right time to commence the drafting of medical protocols in this area, as they are not applicable and non-existent yet, as well as to ensure the establishment and observance of hygiene and sanitary protocols at gyms and fitness centres, in order to prevent the spread of infectious disease.

It is necessary to create the right instruments to follow-up this process at all its stages, which means, mandatory control at the start, mandatory checks by respective doctors, continuous monitoring of the gym and fitness premises to supervise the implementation of these programs during physical activity, as well as punishment of the individuals who do not implement these standards being them instructors or the owners of these institutions. So, there must be a specification of clear set and respective obligations of each actor involved, that is, assigning duties and imposing fair punishment, or sharing responsibility between them.

Additionally, interventions to adapt the law, which does not include gym attendance but only engagement in federated sports [8], instructor certifications for different age groups, people with chronic diseases, pregnant women or the elderly >65 years old, so that the gyms and fitness centres can be accessed and becomes frequented by everyone, regardless of accompanying health diagnoses, also serving as physical therapy.

Another phenomenon that it is noticed among gym goers is the use of protein either through nutrition or in the form of powder or milkshake offered inside the gyms. It is also needed strict control by the state to regulate and supervise the marketing of various products that are targeted to be used by people engaged in sports and physical activity and the urgent opening of specialization study programs in the field of Nutrition and Sports Medicine.

Conflict of Interest

The author declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article

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OCCUPATIONAL BURNOUT AND STRESS AMONG HEALTHCARE WORKERS AT THE UNIVERSITY CLINICAL CENTER OF KOSOVO (UCCK): IMPLICATIONS FOR ORGANIZATIONAL SUPPORT AND WELL-BEING

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Abstract: This study investigates burnout and stress among healthcare workers at UCCK, aiming to understand their prevalence, contributing factors, and implications for organizational support and employee well-being. The BAT-12 scale was used to measure burnout, and the PSS-4 scale was used to measure stress. The sample was limited to 220 individuals who worked with patients during the COVID-19 pandemic. The prevalence of burnout ranged from 31.7% in other nonmedical staff to 37.5% in nurses. Both physicians ($p = 0.011$) and nurses ($p < 0.001$) were at higher risk of burnout. Only 7% of the respondents decided to use various forms of psychological support during the pandemic. The findings highlight specific challenges faced by healthcare workers at UCCK, underscore the need for targeted organizational interventions to mitigate burnout and stress, and emphasize the importance of enhancing support systems to promote employee well-being and retention.

Keywords: *burnout, stress, healthcare workers, UCCK, organizational support, well-being.*

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Introduction

The term 'burnout' was first introduced by Herbert Freudenberger in 1974, describing it as the emotional and psychological stress experienced by workers (Freudenberger, 1974). This concept has evolved to encompass chronic emotional, physical, and mental exhaustion resulting from prolonged and excessive stress, particularly in high-stress professions like healthcare (Maslach & Leiter, 2016). Burnout is characterized by three primary dimensions: emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment. In the healthcare sector, these symptoms are particularly alarming due to the critical nature of patient care and the emotional demands placed on healthcare professionals.

Stress is a complex psychological and physiological response to perceived challenges or threats. Stress is a psychological and physiological reaction to perceived demands or threats, impacting overall health. Stress arises when demands exceed an individual's ability to cope (Lazarus & Folkman, 1984). Acute stress causes immediate responses like increased heart rate and cortisol levels (Selye, 1976), while chronic stress is linked to serious health problems including cardiovascular disease and mental health issues (Cohen et al., 2016). Recent research highlights that chronic stress negatively affects cognitive functions and mental health (Kivimäki et al., 2020). Effective stress management includes techniques such as mindfulness and organizational improvements to enhance working conditions (Goyal et al., 2014; Williams et al., 2022).

Over recent decades, the prevalence of burnout and stress among healthcare workers has increased significantly. The nature of healthcare work—demanding long hours, frequent shift work, and intense emotional labor—contributes substantially to these conditions. Wolff et al. (2021) note that healthcare workers are especially vulnerable to burnout due to the pressure to meet patient demands and ensure safety. This vulnerability is exacerbated by the extended working hours and high prevalence of shift work, which are associated with increased risk of stress and burnout (Dall'Ora et al., 2015; Spence et al., 2006).

Recent literature highlights that burnout and stress are not merely individual issues but are significantly influenced by organizational and administrative factors. Jovanović et al. (2024) point to inadequate staffing levels and high workloads as critical contributors to burnout. Aliu and Shala (2024) emphasize the impact of excessive workloads and staffing shortages, while Hoxha et al. (2024) identify insufficient support structures, inadequate facilities, and lack of essential medical equipment as significant stressors, and psychological support further exacerbates these conditions (Rajčević & Janković, 2024).

The COVID-19 pandemic has exacerbated these challenges, placing unprecedented strain on healthcare systems worldwide. Lai et al. (2019) found that the pandemic has intensified stress and burnout due to increased patient loads, extended working hours, and heightened emotional distress. This situation is particularly severe in Kosovo, where Jusufovic et al. (2023) identifies additional stressors such as high patient-to-staff ratios, limited resources, and regional instability.

The impact of these stressors is evident in recent studies of healthcare workers in Kosovo. Research by Blerim et al. (2023) reveals that burnout rates among nurses and physicians in Kosovo are alarmingly high, with over 35% of nurses and 30% of physicians reporting severe symptoms. This aligns with global trends and highlights the urgent need for targeted interventions in the Kosovo healthcare context.

Further research by Vuković et al. (2023) indicates that approximately 40% of medical staff at the University Clinical Center of Kosovo (UCCK) experience significant levels of burnout. This finding is consistent with global data showing that burnout is a pervasive issue affecting a substantial proportion of healthcare workers (Green et al., 2023). Ali et al. (2024) also reports that nearly 50% of healthcare professionals in the Balkans, including Kosovo, experience moderate to severe stress, reflecting similar trends observed at UCCK.

The implications of burnout and stress extend beyond individual well-being to affect job satisfaction and retention. Vuković et al. (2023) found that high burnout levels correlate with decreased job satisfaction and increased turnover intentions, a trend also noted by Aliu and Shala (2024), who attribute higher staff turnover rates in Kosovo's healthcare sector to burnout. Addressing these issues is crucial for improving staff well-being and maintaining quality patient care.

Recent studies offer evidence that targeted organizational interventions can mitigate burnout and stress. Shanafelt et al. (2020) highlight that improving working conditions, providing mental health resources, and fostering a supportive work environment are effective strategies for reducing burnout and enhancing job satisfaction. This study aims to explore the current state of occupational burnout and stress among healthcare workers at the Clinical University Center of Kosovo (UCCK), assess the implications for organizational support, and propose actionable recommendations for improving staff well-being. By integrating recent literature and contextualizing it within the challenges faced by UCCK, this research seeks to develop effective strategies for addressing burnout and stress in this critical healthcare setting.

Methodology

This study employed a cross-sectional design to examine burnout and stress among healthcare workers at the University Clinical Center of Kosovo (UCCK). The setting was selected due to its significant role in Kosovo's healthcare system and the substantial impact of the pandemic on its operations.

The study targeted healthcare workers at UCCK, including physicians, nurses, and non-medical staff who were actively involved in patient care during the pandemic. A total of 220 participants were included in the study, selected through convenience sampling. Inclusion criteria required participants to be employed at UCCK and involved in patient care activities during the COVID-19 pandemic. Exclusion criteria included temporary staff not involved in patient care during the COVID-19 pandemic.

Burnout was measured using the Burnout Assessment Tool (BAT-12) scale, developed by Dr. Eugenie R. Schaufeli and Dr. Wilmar B. Schaufeli (2019), a validated tool designed to assess burnout across various domains. The BAT-12 evaluates three dimensions of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. Each dimension is rated on a Likert scale (1-never to 5-always), with higher scores indicating greater levels of burnout.

Stress levels were assessed using the PSS-4 scale. The PSS-4 (Perceived Stress Scale-4) is a shorter version of the original Perceived Stress Scale (PSS), which was developed by Dr. Sheldon Cohen et al. (1988), which measures perceived stress over the past month. The PSS-4 consists of five items rated on a Likert scale (0-never, to 4-very often), capturing the frequency of stress-related thoughts and feelings. Higher scores on the PSS-4 indicate greater perceived stress.

Data were collected in person surveys to all eligible healthcare workers at UCCK. The survey included the BAT-12 and PSS-4 scales, as well as demographic questions to gather information on participants' roles, work hours, and other relevant

factors. The survey was conducted between January-March 2024, ensuring a time frame that captured the heightened stress levels due to the ongoing pandemic.

Descriptive statistics were used to summarize demographic characteristics, burnout, and stress levels. Prevalence rates of burnout and stress were calculated for each group (physicians, nurses, and non-medical staff). Comparative analyses were performed using t-tests and ANOVA to examine differences in burnout and stress levels between groups. Correlation analyses were conducted to explore relationships between burnout, stress, and demographic factors such as work hours and role.

Informed consent was obtained from all participants, who were assured of the confidentiality of their responses and the voluntary nature of their participation.

The study's cross-sectional design limits the ability to infer causality between burnout, stress, and organizational factors. The use of convenience sampling may also affect the generalizability of the findings. Additionally, the reliance on self-reported measures introduces potential biases related to participant perception and response style.

Results

Statistical analyses were conducted by the Statistical Package for Social Science 2023, version 28.0 (IBM Corporation). Descriptive statistics, analysis of normality of the score distributions were computed on all variables. Differences between health providers for each group (physicians, nurses, and non-medical staff) for burnout score and stress scores and executive functions were compared through ANOVA test. To investigate whether burnout was related to stress, and demographic factors such as work hours and role, a correlation with Spearman and regression analyses were conducted. All variables were normally distributed.

The demographic characteristics of the sample are summarized in Table 1. The sample consisted of 220 participants, of which 58.2% were women. The dominant age group among participants was 31-50 years, comprising 46.8% of the total. By them 34.1%, were doctors, 57.7%, were nurses, and 8.2%, were non-medical staff. Participants' work hours were divided into 12-hour shifts (40%) and 24-hour shifts (60%).

In terms of stress levels, 17.2% reported low stress, 46.8% reported moderate, and 36% reported high stress. Regarding burnout levels, 15.5% experienced low burnout, 47.7% reported average, 24.1% reported high, and 12.7% experienced very high burnout. Most participants 81.4%, receiving support highlights the importance of management involvement in fostering a supportive work environment, which may be associated with enhanced well-being.

These results indicate a predominantly middle-aged female workforce in healthcare settings, with a significant proportion working extended shifts. Stress and burnout are prevalent issues among the participants, with moderate stress being the most reported level and a substantial number experiencing high or very high levels of burnout.

Table 1.

Descriptive statistics of the participants' demographic characteristics, professional, and variables of stress, burnout and management support.

		N(%)
N		220
Age 18-30		48 (21.8)
31-50		103 (46.8)
≥51		69 (31.4)
Gender M		92 (41.8)
Gander F		128 (58.2)
Doctor		75 (34.1)
Nurse		127 (57.7)
Non- medical staff		18 (8.2)
Work hours	12hrs	88 (40)
	24hrs	132 (60)

Stress	Low	38 (17.2)
	Moderate	103 (46.8)
	High	79 (36)
Burnout	Low	34 (15.5)
	Average	105 (47.7)
	High	53 (24.1)
	Very high	28 (12.7)
Management support	Yes	179 (81.4)
	No	41 (18.6)

This underscores the need for effective interventions to manage stress and mitigate burnout, especially for those engaged in longer work shifts.

Table 2.

Means and standard deviations of Stress, Burnout, Organizational Support, Average grade scores, and P value.

N= 220	Range	M(SD)	*P*-value
Stress	0.3-3.9	3.1 (±0.8)	<0.001
Burnout	1.5-4.7	3.8 (±0.9)	<0.005
Organizational Support	1.2-2.8	1.8 (±0.4)	<0.001

The analysis of the 220 participants revealed that stress had a mean score of 3.1 (±0.8) with a range from 0.3 to 3.9, and a p-value of <0.001, indicating a statistically significant level of stress. Burnout had a mean score of 3.8 (±0.9), ranging from 1.5 to 4.7, with a p-value of <0.005, also reflecting a statistically significant level of burnout. Moreover, organizational support had a mean score of 1.8 (±0.4), within a range of 1.2 to 2.8, and a p-value of <0.001, indicating that organizational support is also statistically significant. This highlights that both stress and burnout levels, as well as organizational support, are statistically significant in this sample.

Table 3.

Amount of stress and burnout (exhaustion, depersonalization and reduced personal accomplishment) experienced by different healthcare professionals.

Profession	Stress		Emotional exhaustion		Depersonalization		Reduced personal accomplishment	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Doctor	33.2	7.2	4.1	0.5	2.1	0.4	3.8	0.4
Nurse	37.5	6.7	4.5	0.8	2.5	0.7	4.2	0.3
Non-medical staff	31.7	5.3	3.9	0.3	2.0	0.5	2.9	0.4
ANOVA	F(2, 217) = 4.45		F(2, 217) = 6.24		F(2, 217) = 1.62		F(2, 217) = 14.29,	

p-value	0.011	0.005	0.23	0.001

Means for the stress and burnout (exhaustion, depersonalization and reduced personal accomplishment) scales for the healthcare professionals are presented in Table 3, along with results of ANOVA analyses. As shown in this table, stress and burnout levels differ significantly across different professional groups. The analysis of stress and burnout dimensions across different healthcare professionals reveals that nurses experience the highest levels of stress (mean = 37.5, SD = 6.7) and emotional exhaustion (mean = 4.5, SD = 0.8) compared to doctors and non-medical staff. Non-medical staff report the lowest levels of stress (mean = 31.7, SD = 5.3). Depersonalization scores did not differ significantly across professions ($F(2, 217) = 1.62$, $p = 0.23$). However, significant differences were found in stress ($F(2, 217) = 4.45$, $p = 0.011$), emotional exhaustion ($F(2, 217) = 6.24$, $p = 0.005$), and reduced personal accomplishment ($F(2, 217) = 14.29$, $p = 0.001$), with nurses reporting the highest levels of reduced personal accomplishment (mean = 4.2, SD = 0.3).

Discussion

The findings from this study reveal significant variations in stress and burnout dimensions among different healthcare professionals, with nurses generally experiencing higher levels of emotional exhaustion and reduced personal accomplishment compared to doctors and non-medical staff. These results are consistent with previous research conducted in Kosovo and the broader Balkan region.

Nurses reported the highest levels of emotional exhaustion (mean = 4.5, SD = 0.8) and reduced personal accomplishment (mean = 4.2, SD = 0.3). This finding aligns with studies in Kosovo that highlight the severe burnout experienced by nurses due to high workloads and inadequate support. Elevated levels of emotional exhaustion among nurses in Kosovo, attributing this to the intense demands of patient care and insufficient institutional resources (*Dervishi et al., 2020*). Similarly, *Saliu et al. (2021)* found that reduced personal accomplishment is a significant issue among healthcare workers in Kosovo, driven by chronic stress and job dissatisfaction (*Saliu et al., 2021*).

The significant stress levels reported by nurses (mean = 37.5, SD = 6.7) compared to doctors and non-medical staff are in line with findings from *Hoxha et al. (2019)*, which emphasize the high stress levels among healthcare professionals in Kosovo, particularly nurses, due to their demanding roles and high patient loads (*Hoxha et al., 2019*). This study also supports the observation that non-medical staff experience lower levels of stress and burnout, which may be attributed to their different roles and less direct patient interaction.

No significant variation was found in depersonalization scores across professions ($F(2, 217) = 1.62$, $p = 0.23$), which contrasts with some literature suggesting that depersonalization is a common issue among healthcare workers. *Naziri et al. (2018)* observed that depersonalization, characterized by emotional detachment from patients, is prevalent but varies based on professional roles and workplace conditions in Kosovo (*Naziri et al., 2018*). The lack of significant differences in this study might reflect the uniform challenges faced by healthcare professionals in managing patient interactions.

These findings underscore the need for targeted interventions to address the high levels of emotional exhaustion and reduced personal accomplishment, particularly among nurses. In Kosovo, efforts should focus on improving organizational support, enhancing working conditions, and providing mental health resources to mitigate these issues. The study reinforces the necessity for continuous support and tailored interventions for healthcare professionals in Kosovo to effectively manage stress and burnout, thereby improving their well-being and patient care quality.

Conclusion

This study highlights significant differences in stress and burnout levels among healthcare professionals in Kosovo, with nurses experiencing higher levels of emotional exhaustion and reduced personal accomplishment compared to doctors and non-medical staff. These findings underscore the need for targeted organizational interventions to mitigate burnout and stress and emphasize the importance of enhancing support systems to promote employee well-being and retention.

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CURRENT PROBLEM IN SLEEP DISORDERS; CIRCADIAN RHYTHM DISORDERS AND CHRONOTYPE

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Abstract

Circadian rhythm is regulated by the activity of the suprachiasmatic nucleus (SCN) and pineal gland in the cerebrum according to light-dark conditions within a 24-hour period. The circadian rhythm, which works with a negative feedback mechanism, can contribute to various metabolic and genetic functions through oscillations in the cerebrum. The light-dark cycle is the most important environmental determinant of chronotype, which reflects inter-individual differences in sleep-wake cycles.

Circadian rhythm sleep-wake disorders are classified according to ICSD-3 as 1-Delayed sleep-wake phase disorder, 2-Advanced sleep-wake phase disorder, 3-Irregular sleep-wake rhythm disorder, 4-Non-24-hour sleep-wake rhythm disorder, 5-Shift work, 6-Jet-lag, 7-Unspecified circadian rhythm disorders. Chronotype is usually classified into morning and evening type according to the physiological and genetic characteristics of the human being.

The SCN is the upper center for the control of circadian rhythm and controls the internal synchronization of peripheral cycles. In this framework, the circadian rhythm of all cell-organ-tissue systems is formed and when this cycle is disrupted, many negative consequences arise for the organism. In another aspect, local circadian cycles

Keywords: circadian rhythm, suprachiasmatic nucleus, pineal gland, chronotype.

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Introduction

1. Circadian Rhythm

Circadian rhythm is essentially the daily oscillations in various biological and physiological processes regulated by transcription-translation of circadian clock genes and proteins. Sleep-wake cycle, cognitive functions and intrinsic clock functions are almost all realised in accordance with the circadian rhythm. Many pathologies may occur due to some disruptions in circadian processes. Therefore, understanding the molecular mechanism of circadian rhythm may help to eliminate many pathologies. In addition, the molecular mechanism is encoded by the twenty-four hour autoregulatory cycle in the cerebrum and forms a time-determining network in almost all body tissues (1).

2. Suprachiasmatic Nucleus

The suprachiasmatic nucleus (SCN), containing approximately 20,000 neurons, glia and pacemaker neurons, realises the circadian rhythm through changes in the day-night cycle, spontaneous firing and changes in the membrane resting potential (1). Impulses generated by light rays reaching the retinal ganglion cells stimulate the SCN via the retinohypothalamic pathway. Then, the impulse generated by the entry and exit of sodium and potassium ions through the membrane membrane in the pacemaker neurons in the SCN reaches the paraventricular nucleus and from there to the superior cervical ganglion (SCG) through the intermediolateral column of the medulla spinalis. Postganlionic fibres from the SCG reach the pineal gland and inhibition of melatonin synthesis occurs (2).

In the dark environment, the signals from the SCG stimulate the pineal gland, whereas light (recently especially blue light) inhibits the pineal gland and decreases melatonin synthesis, and the appropriate physiological conditions required for the circadian rhythm are removed. (3). The SCN is stimulated by the first light and then throughout the day; cortisol, body temperature and the work of hormonal mechanisms are initiated (4). Impulses from the SCN direct the functioning of the liver, pancreas, skeletal muscle and many other peripheral tissues. It is believed that each of these tissues has its own intrinsic clock and this clock is regulated by impulses generated as a result of reactions in the SCN according to the presence or absence of light. (5). Circadian rhythm may vary according to individual differences and SCN activity may

be altered by external signals called zeitgebers, which affect many endogenous factors as well as genetic factors. External signals, called zeitgebers, help the circadian rhythm and the perception of the light/dark cycle (6).

3. Pacemaker Neurons

Groups of neurons in the SCN in the hypothalamus that act as the basic node in the initiation and regulation of circadian rhythm. Pacemaker neurones are the site where molecular mechanisms are active for the initiation of intrinsic clocks and circadian rhythm in tissues (7). Oscillatory movements are synchronised by pacemaker neurons. Recent studies have shown that the regulation of cellular multiple oscillatory movements is also provided by pacemaker neuron groups. These groups of neurons output signals in different phases and each of these signals plays a role in the realisation of different multi oscillatory movements in different tissues. (8). Any lesion or idiopathic dysfunction of pacemaker neurons leads to circadian rhythm disturbances. In circadian rhythm disorders, SCN astrocytes and neurons may be responsible for the behaviour of SCN astrocytes and neurons as separate branches of the network formed by pacemaker neurons. When light rays reach the pacemaker neurons in the SCN, the pituitary gland, autonomic nervous system and brain contribute to the circadian rhythm of oscillatory movements. (9).

4. Melatonin

It is a hormone secreted by the pineal gland that regulates seasonal and diurnal rhythms and the sleep-wake cycle. It is mainly secreted from pinealocytes with lobulated and irregularly sided nuclei due to SCN activation in the dark. There are numerous synaptic bodies near the pinealocytes and these bodies are involved in axo-dendritic synaptic communication (10). Melatonin is synthesised from serotonin and two important enzymes act as catalysts in this synthesis process. These enzymes are N-acetyl transferase (NAT) and hydroxyindole-O-methyltransferase (HIOMT). Norepinephrine, one of the important transmitters in the pineal gland, binds to β1 and α1 receptors on the pinealocyte membrane; 85% of melatonin hormone is secreted by stimulation of β1 receptors and approximately 15% of melatonin hormone is secreted by binding to α1 receptors (11). When norepinephrine binds to the relevant receptors, the concentration of cyclic adenosine monophosphate (cAMP) and NAT enzyme increases by activation of adenylate cyclase in the pinealocyte cell membrane and melatonin release is stimulated. The released melatonin is not stored, but is released directly into the blood (6).

In the neural mechanism of melatonin synthesis, the signals coming from the retinohypothalamic pathway to the hypothalamus, which are formed and transformed as a result of a series of chemical reactions in the SCN and paraventricular nucleus (PVN), are transmitted to the medial forebrain bundle (MFB). From there, norepinephrine is secreted via postganglionic fibres from the SCG passing to the medulla spinalis and enzymatic reactions begin (12).

There are many models created by chemical induction. In general, after memory and learning dysfunction is induced by using chemicals such as ethanol, thinner, okadaic acid, D-galactose, isoflurane and its derivatives, experimental studies are carried out with melatonin administration. There are two important points here; the first is the observation of the effect of melatonin with different chemicals given in combination with melatonin, and the second is the route of administration. In many experimental modelling, the results obtained with chemicals given as intra cerebro ventricular and intra peritoneal can be very different. (13).

5. Per1 and Per2 Proteins

From a genetic point of view, the Per1 gene is an important clock factor in the regulation of circadian rhythms. Critical physiological pathways followed in cellular divisions are regulated by circadian rhythm. The link between these circadian pathways and cellular division cycles is provided by the Per1 gene (14). The Per2 gene is known as a tumour suppressor gene. Up-regulation and down-regulation of genes that lead to the formation of cancer cells are caused by disruption of the circadian rhythm (2). The Per1 gene links the circadian rhythm to the cell cycle via proteins such as brain and muscle ARNT-like protein (BMAL1) and Wee1, which originates from CLOCK complexes (5).

Activation of BMA1 and CLOCK genes leads to transcription of Per and CRY genes. Per and CRY bind to each other and form a complex. The Per-CRY complex inhibits the genes they transcribe and then this complex degrades and the twenty-four hour cycle is completed.

6. Circadian Rhythm Sleep Wakefulness Disorders

Circadian rhythm sleep disorders are considered as a separate disease group due to chronophysiological interaction. The main characteristic of these disorders is that the patient's sleep pattern differs continuously or repetitively from what is considered normal. The problem in these disorders is that the patient cannot fall asleep and wake up when he/she wants

or needs to and consequently complains of insomnia or excessive sleepiness. In most of these disorders, if the patient can initiate sleep, the duration and stages of sleep are normal (15).

6.1. Delayed Sleep-Wake Phase: The disorder is the postponement of the main sleep in relation to the desired or habitual sleep and waking time (15). In this disorder, which often begins in adolescence, people have difficulty falling asleep and wake up late in the morning or after noon, which may result in academic and social failure. The person who wants to regulate his/her sleep due to his/her work or school life complains of inability to sleep at night and marked sleepiness in the morning hours. Psychophysiological insomnia should be excluded for diagnosis by following up with sleep diary and actigraph. The etiology is unknown, some researchers have suggested that the intrinsic circadian period being longer than the average or anomalies in the light phase response curve lead to this disorder. Although there are no controlled studies, morning light therapy, chronotherapy and timed melatonin administration may be used. Sleep hygiene training and if there is a secondary cause, treatment for the cause should be given (15,16).

6.2. Early Sleep-Wake Phase: It is characterised by sleep-wake hours that are shifted earlier than usual or desired, inability to stay awake later and early awakening (15). Causes that may lead to insomnia such as depression should be excluded before diagnosis. It is more common at older ages. It is rarer than delayed sleep-wake phase disorder, which may be related to the fact that early sleep-wake phase disorder causes fewer social problems. The mechanisms leading to this disorder are unknown (16). In addition to the homeostatic regulation of sleep, it is thought that sleeping later or earlier for behavioural, social or occupational reasons may also play a role in the development of these disorders. (15). Although conflicting results have been obtained in a limited number of small-scale studies, phototherapy, chronotherapy, exposure to light and darkness, and hypnotics may be tried in treatment.

6.3. Irregular Sleep Wakefulness Rhythm Disorder: It is a wakefulness disorder in which the timing of sleeping and waking changes within a 24-hour period, insomnia during the night sleep period, increased daytime sleepiness, or both. (17) . Total sleep time may be normal in this disorder. In healthy individuals this may be due to poor sleep hygiene, but it is often associated with neurological diseases such as mental retardation in children and dementia in adults. It is also seen at older ages. Treatment includes environmental and behavioural changes, as well as prolonged bright light therapy. (16).

6.4. Non-24-Hour Sleep-Wake Disorder: It is characterised by a constant shifting of sleeping and waking times every day. This disorder, which is very rare in normal individuals, is very common in people with total blindness (16). It begins in the twenties in people with normal vision and with loss of vision in those with total blindness. In treatment, timed melatonin dose, light exposure and regular sleep-wake programming are recommended to be applied together. Jet Lag Sleep Disorder It occurs with rapid transition to different time zones (15). The severity and duration of symptoms are related to the number of time zones crossed, the direction of travel, the ability to sleep while travelling, the presence and availability of local circadian time cues, and individual differences in phase tolerance (16).

6.5. Jet Lag Sleep Disorder: Usually benign and self-limiting (16). In shift work sleep disorder, insomnia during the main sleep phase and sleepiness during the main wake phase due to working hours. As with other circadian rhythm sleep-wake disorders, patient-specific treatment consists of exposure to light or darkness and pharmacological agents such as melatonin. Medical or neurological diseases, mental disorders and other sleep disorders can also lead to 24-hour sleep-wake disorders. Secondary causes should also be considered in diagnosis and treatment (15).

7. Chronotype

Individual differences in physiological and psychological processes under the influence of circadian rhythms are called chronotypes (18, 19). Individuals are classified as morningness, eveningness and neutral/ intermediate according to their biological and genetically based chronotypes. Morningness and eveningness types differ from each other in terms of both biological and psychological characteristics and daily life routines. Morning types go to bed early, get up early and show better cognitive performance in the morning. Evening types go to bed late, get up late and show better cognitive performance in the evening hours. Intermediate types are more adaptable to a one-day time period in terms of changes in physiological values (rise/fall), sleep-wake cycle, physical and cognitive performance compared to morning and evening types. Therefore, they can adapt to social and environmental conditions more easily (19, 20, 21). In a study conducted with 2,135 people aged 18-30 years, 15.54% were morning people, 59.62% were neither morning people nor evening people (intermediate type) and 24.54% were evening people. (22). In another recent study, 183 students were included (11 female, 72 male). The chronotype distribution was as follows: intermediate type 54.6% (n=100), morning type 29.5% (n=54) and evening type 15.9% (n=29). (23). According to the data of these studies, it is seen that aratypes have a higher proportion. However, nowadays, this ratio shows a tendency to shift in favour of the evening species, which may result in the presence of a larger population of evening species in the future.

The shift in individuals' preferred sleep hours, which are regulated by their circadian rhythms and also depend on their chronotypes, as a result of some social obligations such as work life or school, leads to a mismatch between biological and social clock and is defined as social jet lag. Social jet lag is calculated by the difference between the midpoints of the start and end times of sleep on work and holiday days (21).

Having a different chronotype can affect many physical and psychological functions such as sleep-wake cycle, activity time, arousal, body temperature, mood, eating habits, sleep disorders, health-damaging behaviours, prevalence of metabolic and immune system diseases such as cardiovascular, diabetes, hypertension, asthma and fibromyalgia. (24, 25, 26). The relationship between chronotype differences and psychiatric variables has been shown in different studies. In this context, it has been reported that the use of stimulants (such as alcohol, nicotine, coffee) and symptoms of anxiety and depression cause more academic and behavioural problems in adolescents and adults in the evening chronotype than in other chronotypes. (27, 28, 29). In studies examining the relationship between chronotype and psychosocial adjustment, it is argued that social jet lag, which is accepted as an indicator of the mismatch between biological and social clock, should be considered as an important factor in terms of psychosocial adjustment. (21). Evening chronotypers have been shown to be more prone to social jet lag than morning people (30). Like chronotype, social jet lag negatively affects psychological and physiological health due to its association with depressive symptoms, cognitive functioning, cardiovascular health, obesity and smoking (21, 30, 31).

8. Conclusion

In today's modern age, lifestyle changes have become very fast. Therefore, the rhythm of human life cannot keep up with this speed. Especially after the pandemic, it is observed that circadian rhythm disorders have increased in almost every segment of the society. This condition progresses more silently than other sleep disorders and individuals may not even be aware of such a sleep disorder. This situation, which emerges as a result of the rapid change in lifestyle change, will reach dimensions that threaten the health of individuals and society in the long term. In this regard, it is necessary to first determine the chronotypes of individuals and then lifestyle changes should be revealed and analysed with individual behavioural approaches. At the community level, awareness-raising activities on this issue should be addressed rapidly, including different communication tools and activities. Necessary individual and social studies on circadian rhythm disorders should be carried out for the younger generation for work and social life activity, and for older individuals for the prevention of chronic diseases and quality of life.

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INVESTIGATION OF THE EFFECTS OF FEEDING TIME AND OMEGA-3 SUPPLEMENTATION ON LUNG TISSUE IN AN EXPERIMENTAL CIRCADIAN RHYTHM MODEL

Mustafa Saygin[1*]

Abstract: Today, with the impact of modern life, there is an increasing number of problems in our physiological, biochemical and behavioral states as a result of the disruption of the synchronization between our body's internal clock and external factors. Recent research has highlighted the beneficial effects of omega-3 supplementation on general health. In this study, we investigated the effects on lung tissue in young rats with disrupted circadian rhythm and the protective effect of omega-3 supplementation. Spraque Dawley female 8-week-old rats were randomly divided into 4 groups: 6 in the control group, 7 in the Circadian rhythm (SR) group, 8 in the Fish oil (FO) and 8 in the Flaxseed Oil (FSO) groups. Each group was adapted to a 12/12 light/dark cycle for 10 days. Then, all groups except the control group were subjected to 12/12 light and dark for 3 days, light for the next 24 hours, and 12/12 light and dark for the next 3 days to create circadian rhythm disturbance method with regular cycles during the experiment. Rats in the control and SR groups were subjected to gavage stress with saline physiolic for 25 days. The rats in the BM group received 400 mg/kg/day fish oil by oral gavage for 25 days. Rats in the CT group were given 1000 mg/kg/day flaxseed oil by oral gavage for 25 days. The rats were sacrificed under anesthesia and the lung tissue was removed. The CON group's lung histology revealed normal tissue architecture. Hyperemia, oedema, emphysema, increased thickness of septal tissue, and slight inflammatory cell infiltrations were observed in the SR group. FO and FSO therapies were effective for to lessen the pathological findings in the lungs. But amelioration in FO group was marked than KT group (Fig. 1). The immunohistochemically stained slides from the control group showed slight SP-A, SP-B and SP-D expression. In the SR group, the expressions of SP-A and SP-B substantially increased while SP-B expressions was decreased. CT and BY therapies normalized the expressions (Fig. 1). Expressions were frequently found in alveolar and brochiolar epithelial cells. Histopathological and immunohistochemical analysis showed that circadian rhythm disturbance in lung tissue causes pathologies and omega-3 administration normalized these pathologies, demonstrating the effect of omega-3 administration.

Keywords: circadian rhythm, lung, omega-3, fish oil, flaxseed oil

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Introduction

The 24-hour light and dark cycles caused by the rotation of the Earth serve as the dominant environmental factor affecting living organisms. Temporal organization within an organism is critical for maintaining homeostasis and adapting to changing external conditions. The term "circadian rhythms" describes endogenously generated rhythms that occur approximately every 24 hours and play a fundamental role in the survival and evolution of life by ensuring that an organism's internal physiology remains synchronized with the external environment (1). In mammals, the suprachiasmatic nucleus (SCN) is the structure that plays a role in the onset-termination cycle of rhythm at specific time intervals, provides the formation of circadian behavioral rhythms and acts as a central clock (2,3). In addition to the SCN, the human body is also governed by peripheral timers located in peripheral tissues (such as pancreas, liver, intestine, adipose tissue and skeletal muscle). Peripheral clocks regulate their function according to their own rhythms in response to stimulation from the SCN (2). External factors affecting the rhythm of peripheral clocks include untimely nutrition, shift work, physical activity and night eating syndrome (2,4,5). Disruptions in the circadian system and especially the loss of the synchronized working relationship between circadian rhythms are thought to predispose to the development of chronic diseases (6).

Fatty acids that cannot be produced in the human body and must be taken from outside through food are called essential fatty acids (EFA). One of these fatty acids, omega-3, belongs to the class of polyunsaturated fatty acids (PUFA). Omega-3 fatty acid consists of alpha-linolenic acid (ALA, 18:3), which has 18 carbons and three double bonds. The metabolites of alpha-linolenic acid, eicosapentaenoic acid (EPA, 20:5, omega-3) and docosahexaenoic acid (DHA, 22:6, omega-3) are essential nutrients for growth, development and normal cellular functions (7,8). It has been suggested that the amount

of conversion of ALA to EPA and DHA is low and DHA synthesis is very low or absent. Therefore, it is essential to include EPA and DHA in the diet (9). Flaxseed, chia seeds and green leafy vegetables are rich in ALA. Tuna, herring, salmon and other seafood are rich omega-3 providers in terms of DHA and EPA (10).

In this study, we aimed to elucidate the effect of circadian clock and body rhythm on the parameters of lung tissue architecture from the perspective of lifestyle, diet composition and time, sleep time, plant and animal omega-3 fatty acids.

Materials and Methods

Experimental desing

This study was initiated with the approval of the ethics committee of Mehmet Akif Ersoy University (MAKU) Animal Experiments Local Ethics Committee with decision number 29 March 2023/1062. In this study, 8-week-old female Spraque Dawley 29 rats (average 200-300 g) were used. The rats were obtained from Mehmet Akif Ersoy University Experimental Animal Production and Experimental Research Laboratory (MAKÜ-HÜDAL). All rats were provided with ad libitum access to feed and water during the experiment. Animals were kept at 21-23˚C and 55-60% humidity. The 31-day period was programmed as adaptation period for the first 10 days and experimental period for 21 days. Rats were randomly divided into 4 groups. Except for the control group, the other groups were placed in special cages with adjustable light/dark cycles (Table 1). Animals were subjected to standard food and drink during the 10-day adaptation period and to flaxseed oil and fish oil intake in addition to the standard diet except for the control and SR groups during the 21-day experimental period. Except for the control group, the experimental groups whose circadian rhythm was planned to be disrupted by applying light/dark time change were placed in special cages with adjustable light/dark times after 10 days of normal light/dark 12/12 cycles. The program in Figure 3.1. was applied in the special cage for 25 days to create circadian rhythm disturbance. Circadian rhythm disturbance was induced with light/dark cycles for the first 3 days, continuous light for the next 24 hours, and 12/12 dark/light cycles for the next 3 days (106). For 25 days, flaxseed oil and fish oil were used (11,12).

Control group (n=6)

The gavage stress applied to the other groups was also applied to this group. Rats were given saline by gavage for 25 days. They were kept in normal light/dark cycle throughout the experiment.

SR Group (n=7)

They were placed in special cages with adjustable light/dark cycle throughout the experiment (13). Saline was given by oral gavage for 25 days.

SR + FSO Group (n=8)

They were housed in special cages with adjustable light/dark cycles throughout the experiment (13). Flaxseed oil was administered by oral gavage at 1000 mg/kg/day during the experiment (11).

SR + FO Group (n=8)

They were kept in special cages with adjustable light-dark cycle throughout the experiment (13). Fish oil was administered by oral gavage at 400 mg/kg/day throughout the experiment (12).

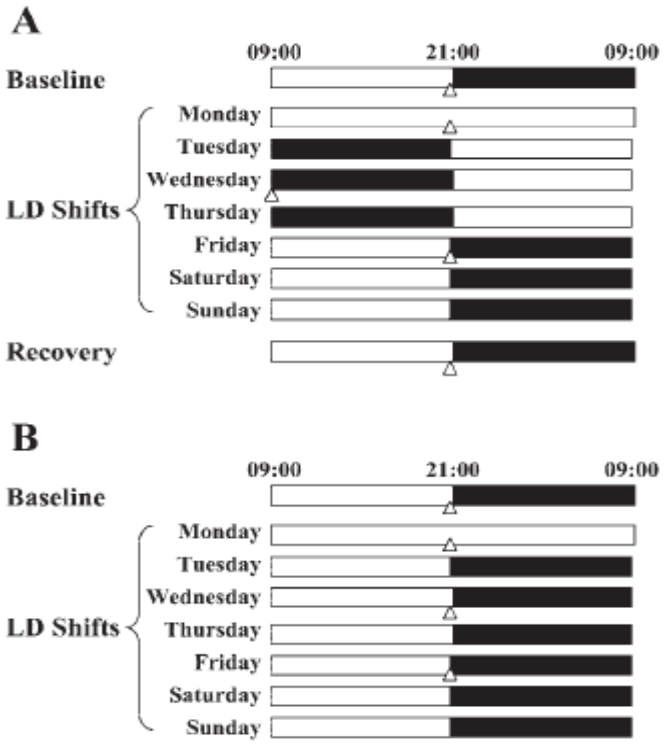

Fig. 1. Schematic representation of lighting schedule for experimental (LS) rats (*A*) and control (LC) rats (*B*). Blank horizontal rectangles indicate lights-on periods, and filled rectangles represent lights-off periods. The baseline period lasted at 10 days, the light-dark (LD) shift period 3 wk,. Open triangles indicate the time when routine husbandry work was performed (13).

Histopathological evaluation:

At the end of the study, all of the rats were humanely killed. During the necropsy, lung tissue samples were taken and fixed in 10% buffered formalin solution. Tissue samples were routinely processed using a fully automated tissue processor (Leica ASP300S; Leica Microsystem, Nussloch, Germany) after a two-day fixation period and they were embedded in paraffin wax. Using a fully automated Leica RM 2155 rotary microtome (Leica Microsystem, Nussloch, Germany), five-micron sections of paraffin blocks were cut. Hematoxylin-Eosin (HE) staining was employed, a coverslip was used, and a light microscope was used to analyze the sections.

Pulmonary oedema, vascular and alveolar features, and bronchiole pathology was graded: 0 (normal), 1 (mild), 2 (moderate) and 3 (severe). Features examined included pulmonary congestion, inflammatory cell infiltration, thickening of the alveolar septal tissue, and detachment of the bronchiole epithelium modified by Passmore et al., 2018 (Table 1) (14.

Table 1. Lung histopathology scoring system

Score	Vascular features	Extravascular alveolar involvement	Bronchiole features
0	Normal	None	None
1	Slight hyperemia	Mild edema and inflammatory reaction	Mild infiltration of inflammatory cells
2	Moderate hyperemia	Moderate inflammatory reaction and areas of moderate alveolar thickening (25–50% visualized lung)	Moderate infiltration of inflammatory cells; detachment of lining in some bronchioles
3	Severe hyperemia	Moderate-severe inflammatory exudate and severe alveolar thickening (> 50% visualized lung)	Complete loss of bronchiole structure; detachment of lining; cellular debris and inflammatory cell exudate

Immunohistochemical examination:

Additionally, three series of sections cut from each paraffin block and drawn on poly-L-lysine coated slides were stained immunohistochemically for the expression of surfactant protein A (Anti-Surfactant Protein A/PSAP antibody (ab115791); surfactant protein B Anti-Surfactant Protein B (Mature) antibody [RM370] (ab271345)) and surfactant protein D ((Recombinant Anti-Surfactant protein D/SP-D antibody [EPR21774-153] (ab220422)) using the streptavidin-biotin technique by the manufacturer's instructions. After the primary antibody steps, the sections were incubated overnight, and immunohistochemistry was performed using streptavidin-alkaline phosphatase conjugate and a biotinylated secondary antibody. As a secondary antibody, we used the Mouse and Rabbit Specific HRP/DAB IHC Detection Kit - Micro-polymer (ab236466) from Abcam in Cambridge, UK. Diaminobenzidine (DAB) was used as the chromogen. Antigen dilution solution was used as negative control rather than primary antibodies. Each test was performed on blinded samples by a qualified pathologist from a different university.

At an objective magnification of X40, the percentage of cells that were positively immunostained for each marker in 10 different fields for each rat for all groups was determined. Using the ImageJ application (National Institutes of Health, Bethesda, MD, version 1.48), counting was done on the output of the image analyzer. Before counting, the images were cropped, divided into color channels, and any artifacts were removed. After being chosen using a selection tool, cells inside the regions of interest were counted using the software's counting tool. Only cells with a strong brown stain were considered positive, and the brown color was used to identify positive staining. The Database Manual Cell Sens Life Science Imaging Software System (Olympus Co., Tokyo, Japan) was used to capture microphotographs.

Statistical Analysis

The Oneway ANOVA Duncan test from the SPSS-22.00 package program was used for statistical analysis to compare the groups' immunohistochemical results. The $P<0.05$ significance cutoff was used.

Results

Histopathological Findings

The CON group’s lung histology revealed normal tissue architecture. Hyperemia, edema, emphysema, increased thickened of septal tissue, and slight inflammatory cell infiltrations were observed in the SR group. FO and FSO therapies were effective for to lessen the pathological findings in the lungs. But amelioration in FO group was marked than FSO group (Fig. 1). Statistical analysis of histopathological scoring results shown in table 2.

The immunohistochemically stained slides from the control group showed slight SP-A, SP-B and SP-D expression. In the SR group, the expressions of SP-A and SP-B substantially increased while SP-B expressions was decreased. FSO and FO therapies normalized the expressions (Fig. 1). Expressions were frequently found in alveolar and brochiolar epithelial cells. Table 2 displays the findings of a statistical analysis of immunohistochemically positive cell percentage.

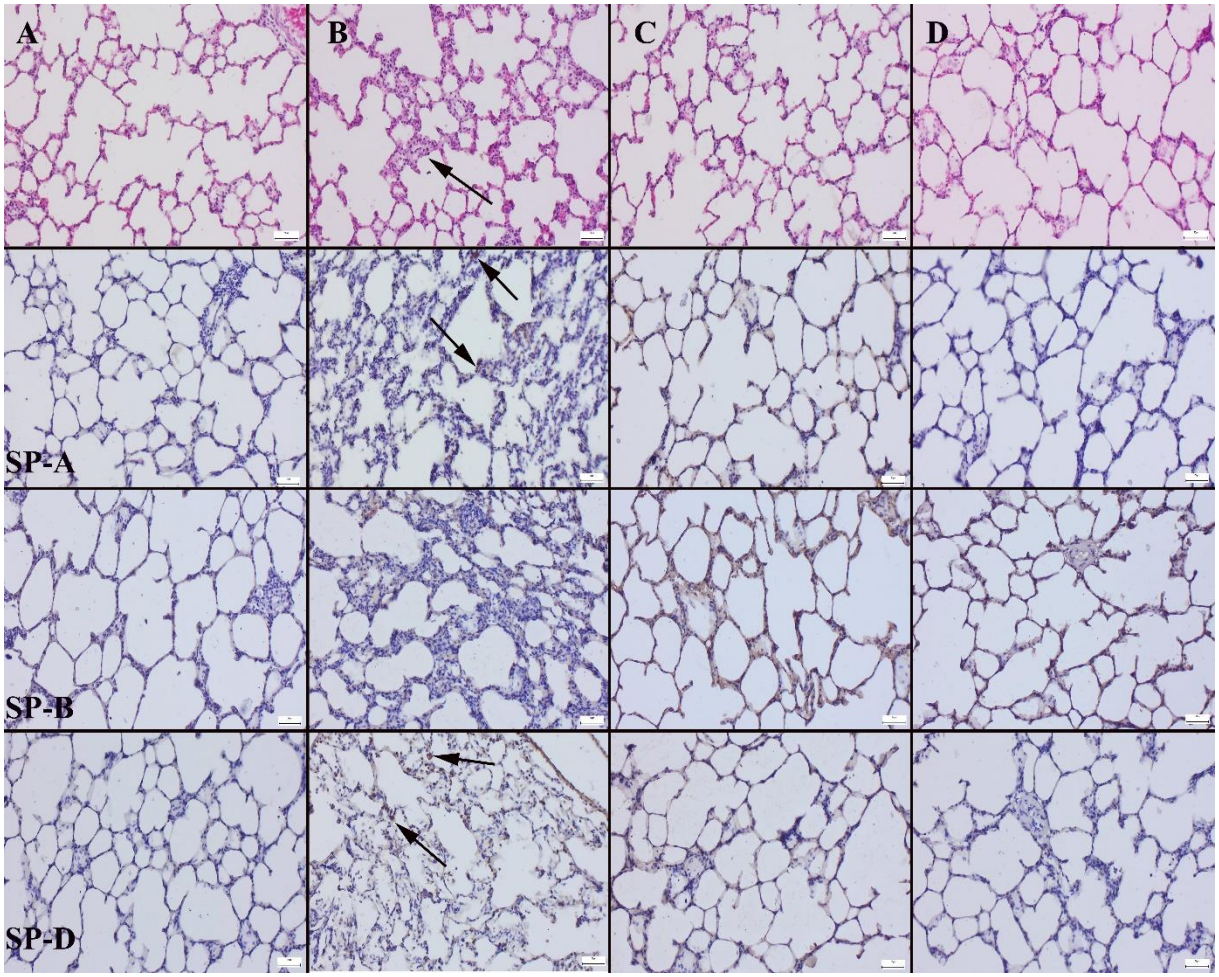

Figure 1. *Histopathological appearance of lungs among the groups (First row).* (A) Normal lung histology in the control group. (B) Increased septal tissue thickness (arrows) in lungs in the S group. (C) Almost normal tissue architecture the B group (D) Decreased pathological findings in the KT group, HE, scale bars=50µm. *SP-A immunohistochemistry findings between the groups (second row).* (A) Slight expression in control group. (B) Marked increase (arrows) in S group. (C) Decreased expression in B group. (D) Markedly decreased immunoexpression in KT group. *SP-B immunohistochemical results in the groups (second row).* (A) Slight expression in control group. (B) Marked decrease in S group. (C) Markedly increased expression in B group. (D) Increased immunoexpression in KT group. *SP-C immunohistochemistry findings between the groups (third row).* (A) Slight expression in control group. (B) Marked increase (arrows) in S group. (C) Decreased expression in B group. (D) Markedly decreased immunoexpression in KT group. Streptavidin biotin peroxidase method, scale bars=50µm.

Table 2. Statistical analysis of histopathological scores and immunohistochemically positive cell percentage

	Histopathology score	SP-A positive cell percentage	SP-B positive cell percentage	SP-D positive cell percentage
Con	0.12±012[a]	15.12±4.38[a]	13.87±2.85[a]	12.75±2.65[a]
SR	1.87±0.64[b]	31.50±1.19[b]	8.87±1.24[b]	23.50±2.92[b]
FSO	0.75±0.70[c]	15.75±3.80[a]	19.37±1.76[a]	14.87±1.80[a]
FO	0.50±0.18[ac]	14.12±2.90[a]	13.50±1.06[a]	13.87±2.03[a]
P value	<0.001	<0.001	<0.001	<0.001

*: The differences between the means of groups carrying different letters between the groups are statistically significant, P<0.001.

**: Data expressed mean ± standard deviation (SD). One-way ANOVA Duncan test.

The results of this investigation showed that circadian rhythm disruption caused lung damage in rats. B and KT has positive effects against lung damage caused by circadian rhythm disruption in the lungs.

Discussion

In this study, circadian rhythm disturbance was shown to have a degenerative effect on the lung, a vital organ of the body. The use of fish oil and flaxseed oil was found to have a therapeutic effect on this degeneration. However, fish oil had a more significant therapeutic effect than flaxseed oil.

Aquino-Santos et al., performed chronic alteration of circadian rhythm is related to impaired lung function and immune response. They showed that chronic alteration of circadian rhythm in shiftwork scale policemen results in impaired lung function, beyond to impair pulmonary and systemic immune function (15). Naik et al., showed that lung organoids have a functional circadian clock and the disruption of this clock impairs regenerative capacity. They found that the circadian clock acts through distinct pathways in mediating lung regeneration — in tracheal cells via the Wnt/β-catenin pathway and through IL-1β in alveolar epithelial cells. They speculate that adding a circadian dimension to the critical process of lung repair and regeneration will lead to novel therapies and improve outcomes (16).

Truong et al., criticized review of the literature supports the association between circadian misalignment and adverse health consequences in sepsis, obstructive lung disease, obstructive sleep apnea, and malignancy. Circadian misalignment plays an important role in these disease processes and can affect disease severity, treatment response, and survivorship. Normal inflammatory response to acute infections, airway resistance, upper airway collapsibility, and mitosis regulation follows a robust circadian pattern. Disruption of normal circadian rhythm at the molecular level affects severity of inflammation in sepsis, contributes to inflammatory responses in obstructive lung diseases, affects apnea length in obstructive sleep apnea, and increases risk for cancer. Chronotherapy is an underused practice of delivering therapy at optimal times to maximize efficacy and minimize toxicity. This approach has been shown to be advantageous in asthma and cancer management. In asthma, appropriate timing of medication administration improves treatment effectiveness. Properly timed chemotherapy may reduce treatment toxicities and maximize efficacy. Future research should focus on circadian rhythm disorders, role of circadian rhythm in other diseases, and modalities to restore and prevent circadian disruption. (17).

Kim et al., investigated the diurnal variation of surfactant protein A, B and C mRNA accumulation in rats. They found that, the accumulation of SP-A mRNA at 4 p.m. was significantly decreased by 23.5% compared to the value at 9 a.m. ($p < 0.05$). The accumulation of SP-B mRNA at 4 p.m. and 11 p.m. was decreased by 15.1% and 5.7%, respectively, compared to the value at 9 a.m. ($p = 0.07$, $p = 0.69$). The accumulation of SP-C mRNA at 4 p.m. and 11 p.m. was decreased by 6.8% and 7.7%, respectively, compared to the value at 9 a.m. ($p = 0.38$, $p = 0.57$). Total lung SP-A content at 4 p.m. and 11 p.m. was increased by 5.3% and 15.9%, respectively, compared to the value at 9 a.m. ($p = 0.64$, $p = 0.47$). These results indicated that the diurnal variation of significant gene expression is observed in hydrophilic surfactant protein rather than in hydrophobic surfactant proteins (18). In our study, the expression of SP-A, SP-B, SP-D, which are surfactant proteins, decreased in the SR group. The expression of surfactant proteins increased in the flaxseed oil and fish oil treated groups. This suggests that circadian rhythm causes changes in the amount of surfactant proteins in lung tissue, leading to inflammation and impaired gas exchange in lung tissue. Our study showed that fish oil was particularly successful in reducing this effect.

Our study demonstrated that circadian rhythm disturbance leads to negative changes in the rhythm of the peripheral clock in the lung, causing metabolic damage, and that supplementation with flaxseed oil and fish oil omega-3 acids contributes to the health of lung tissue with protective and therapeutic effects. The results will help us understand the effects of circadian rhythm disruptions on our bodies and the importance of omega-3 fatty acids.

Conclusions

Circadian rhythm plays a very important role in the regulation of physiological, biochemical and behavioral functioning of the body through both central and peripheral clocks. Due to the bidirectional relationship between the internal clock and external factors, problems in any of these factors are known to increase the risk of metabolic and chronic diseases by disrupting the synchronization between them, but the pathways involved have not been fully elucidated. There is growing evidence that omega-3 fatty acids have a general health-promoting effect. The effects of omega-3 fatty acids on circadian rhythm disturbance have not yet been clearly and fully elucidated.

Today, the conditions of modern life can cause shifts in circadian rhythm, and the studies conducted and to be conducted to minimize the consequences of this and the damages it may cause will contribute to the literature.

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AGORAPHOBIA AND NURSING CARE

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Agoraphobia is a form of anxiety that some people experience in places or situations in which they feel that they cannot leave or that they cannot get help. Many people develop Agoraphobia after experiencing one or more panic attacks. They fear that the panic attack will happen again, so avoidance occurs. The most common symptoms of Agoraphobia are; fear of standing in crowds or queues, fear of closed spaces (elevators, theatres), fear of open spaces (parking lots or shopping centres) and fear of using public transport.

Most people who have agoraphobia develop it after having one or more panic attacks, causing them to worry about having another attack. Then they avoid places where it could happen again.

Agoraphobia often leads to difficulty feeling safe in any public place, especially in crowded and unfamiliar places. A family member or friend is needed to accompany the individual in public places. The fear can be so overwhelming that the patient may feel unable to leave the house. Since there are many patients who suffer from Agoraphobia, the role of the nurse in their treatment is a key role, so follow-up and health education are the main focus of the treatment. The objectives of this material are mainly to improve and increase the quality of nursing interventions associated with psychotherapeutic treatment.

PANIC DISORDER

Panic disorder is a type of anxiety disorder characterized by severe, repeated, and sudden panic attacks.

Fear and anxiety can be normal reactions to specific situations and stressful events. Panic disorder differs from this normal fear and anxiety because it is often extreme.

Panic disorder can lead to serious disruptions in daily functioning and make it difficult to cope with normal situations that can cause feelings of panic and intense anxiety.

The nursing role in the treatment of these patients is very important in the step-by-step follow-up of the progress and the unstable condition they may have. Undoubtedly, the creation of a treatment plan and nursing intervention has high efficiency in the continuous improvement of these patients. Family members also have a key role, through which they manage to receive effective health education in the follow-up of patients in home conditions.

ETIOLOGY

Panic disorder can lead to serious disruptions in daily functioning and make it difficult to cope with normal situations that can cause feelings of panic and intense anxiety.

Hyperventilation Theory:

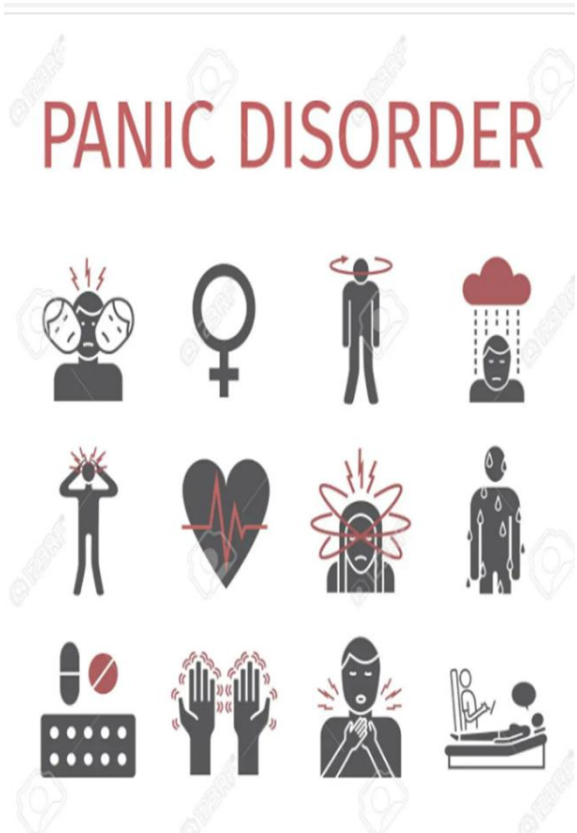
Panic attacks are said to be caused by frequent breathing. Although some patients with panic attacks hyperventilate, measuring the pressure of carbon dioxide (PCO2) during the attacks shows that hyperventilation does not occur in every patient.

Cognitive theory:

It begins with observing patients as their fears are greater than their physical symptoms. These fears are thought to trigger panic attacks, initiating the spiral where anxiety causes physical symptoms that activate the fear of physical illness.

Approximately six million American adults experience the symptoms of panic disorder in a given year, while panic disorder can strike at any point in life.

Symptoms most often begin during late adolescence or early adulthood and affect twice as many women as men. Many people living with panic disorder describe feeling like they are having a heart attack or feeling like they are about to die.



Symptoms

• Chest pain,

• Vertigo,

• Tachycardia,

• Tacipne,

• Sweat,

• Vibration,

• Tightness in the throat,

• Nausea,

• Feeling of unreality (derealization) or detachment (depersonalization),

• Sensation of heat,

• Fear of losing control,

• Fear of death,

Although the exact causes of panic disorder are not clearly understood, many mental health experts believe that a combination of environmental, biological, and psychological factors play an important role:

• Age: Panic disorder usually develops between the ages of 18 and 35.

• Gender: According to the National Institute of Mental Health, women have more than twice the risk of panic disorder than men.

• Genetics: If you have a close biological family member with panic disorder, you are much more likely to develop the condition. Although nearly half or more people with panic disorder do not have a close relative with the condition.

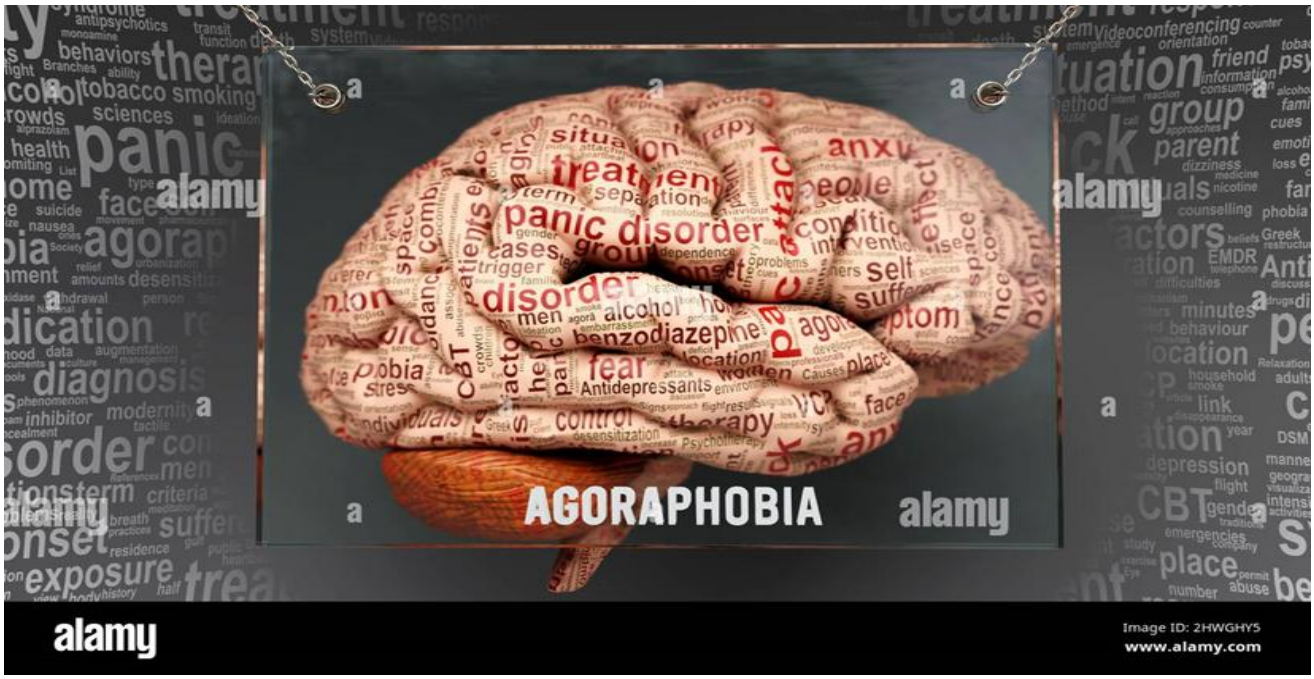
• Trauma: Experiencing a traumatic event, such as being the victim of physical or sexual abuse, can also increase the risk of panic disorder.

• Life transition: Risk can also increase when you experience a difficult life event, including the death of a loved one, divorce, marriage, having a child, or losing a job.

There are two main types of panic attacks unexpected and expected. People with panic disorder most often experience sudden panic attacks, but some experience both types.

• Sudden panic attacks occur without any external or internal traces. In other words, they seem to occur when patients feel relaxed.

• Anticipatory panic attacks occur when someone is exposed to a situation they fear. For example, having a panic attack while flying on an airplane.



NURSING CARE

Providing safety and comfort:

A quiet place reduces anxiety and provides comfort to the patient.

The nurse stays with the patient helping them to calm down and assessing their behavior and concerns. After gaining the patient's attention, the nurse uses a soft, calm voice to reassure him that he is in a safe environment.

Use of therapeutic communication:

Patients with anxiety disorders can collaborate with the nurse in assessing and planning their care by emphasizing the nurse-patient relationship. Communication should be simple and calm as the patient cannot maintain attention to long sentences. The nurse must assess whether or not to use touch, as the patient may interpret it as a threat and may react aggressively.

When the anxiety is reduced, the nurse uses open-ended communication techniques. At this point the patient can discuss his emotional burden and try to regain a sense of control.

Anxiety relief

The nurse suggests that the patient use deep breathing.

Using guided imagination which consists of imagining a safe and pleasant place to hang out. The use of progressive relaxation which consists in holding

tensing and releasing some muscle groups progressively, while letting the tension flow through rhythmic breathing. Cognitive restructuring techniques which consist in teaching the patient to change his behavior by making him aware of his thinking patterns.

Patient and family education

The patient becomes the main person in the treatment of anxiety disorders by being given education on the effectiveness of the combination of psychotherapy and medication.

Such treatment along with stress-reducing techniques can help the patient control these reactions and gain a sense of control.

The nurse helps the patient understand that these therapies and drugs do not "cure" the disorder.

Patient and family education about medications consists of discussing recommended dosages, dosage regimens, and expected effects.

The nurse encourages the patient to exercise regularly as it helps him metabolize adrenaline and decrease panic reactions.

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FACTORS ASSOCIATED WITH DIABETIC RETINOPATHY AMONG DIABETIC PATIENTS IN ALBANIA

Marsida Krasniqi*[1], Rezarta Kalaja[1], Genta Nallbani[2]

Abstract: This study aimed to identify factors associated with the presence of DR among diabetic patients using logistic regression analysis. A logistic regression analysis was conducted using data from diabetic patients to examine the association between various factors and the presence of DR. The factors examined included duration of diabetes, glycemic control, hypertension, smoking status, physical activity level, medication adherence, education level, employment status, and income level. The logistic regression analysis revealed significant associations between several factors and the presence of DR among diabetic patients. Specifically, longer duration of diabetes, poorly controlled glycemic levels, presence of hypertension, and smoking status were found to be significantly associated with an increased risk of DR ($p < 0.05$). However, physical activity level, medication adherence, education level, employment status, and income level did not show significant associations with DR. Our findings highlight the importance of effective diabetes management, including glycemic control and hypertension management, as well as smoking cessation, in reducing the risk of DR among diabetic patients. Healthcare professionals should prioritize screening and intervention strategies targeting high-risk individuals, such as those with longer duration of diabetes and poor glycemic control, to prevent the development and progression of DR and preserve vision in diabetic patients. Further research is needed to explore the underlying mechanisms and interactions between these factors in the pathogenesis of DR.

Keywords: Diabetic retinopathy, cross sectional study, risk factors, Albania

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1. INTRODUCTION

Diabetic retinopathy (DR) is a significant microvascular complication of diabetes mellitus and remains a leading cause of vision loss and blindness globally [1]. The prevalence of diabetes is steadily increasing worldwide, with an estimated 463 million adults aged 20-79 years living with diabetes in 2019, and this number is projected to rise to 700 million by 2045 [2]. With the rising burden of diabetes, the incidence and prevalence of DR are also expected to escalate, posing substantial public health challenges.

Albania, like many other countries, is facing the repercussions of this diabetes epidemic [3]. However, comprehensive data on the prevalence of DR among diabetic patients in Albania are scarce. Understanding the epidemiology of DR in Albanian diabetic patients is crucial for developing effective preventive and management strategies to mitigate its impact on vision-related outcomes and overall healthcare burden.

This cross-sectional study aimed to fill this gap by determining the prevalence of DR and its associated risk factors among diabetic patients in Albania. By assessing the burden of DR and identifying factors contributing to its development and progression, this study seeks to inform healthcare policies, improve clinical practices, and enhance patient care in the management of diabetes and its complications in Albania

2. MATERIAL AND METHODS

This study employed a retrospective observational design utilizing logistic regression analysis to investigate the factors associated with the presence of diabetic retinopathy (DR) among diabetic patients. Data for this study were obtained from electronic health records (EHRs) of diabetic patients who received care at healthcare centers in Albania between January 2018 and December 2022. The study cohort comprised adult patients (aged 18 years and older) with a documented diagnosis of diabetes mellitus.

Inclusion Criteria: Patients aged 18 years and older with a documented diagnosis of diabetes mellitus. Patients with available data on relevant variables of interest, including duration of diabetes, glycemic control, hypertension status, smoking status, physical activity level, medication adherence, education level, employment status, income level, and presence or absence of diabetic retinopathy.

Variables included in the study:

- Dependent Variable: Presence or absence of diabetic retinopathy (DR).

- Independent Variables: a. Duration of diabetes (years), b. Glycemic control (well-controlled vs. poorly controlled), c. Hypertension status (yes vs. no), d. Smoking status (smoker vs. non-smoker), e. Physical activity level (sedentary vs. moderate/active), f. Medication adherence (high vs. moderate/low), g. Education level (high school or below vs. college/university), h. Employment status (employed vs. unemployed), i. Income level (low income vs. middle/high income).

Statistical Analysis: Logistic regression analysis was performed to assess the association between the independent variables and the presence of diabetic retinopathy while controlling for potential confounding factors. Odds ratios (ORs), 95% confidence intervals (CIs), and p-values were calculated to determine the strength and significance of associations. Variables with p-values less than 0.05 were considered statistically significant.

3. RESULTS

Table 1: Demographic Characteristics of Study Participants

Characteristic	**Number (%)**
Total Participants	1124
Age (years)	
Mean ± SD	55.2 ± 9.8
Range	30 - 75
Gender	
Male	567 (50.4%)
Female	557 (49.6%)
Residence	
Urban	768 (68.4%)
Rural	356 (31.6%)

Table 1 provides the demographic characteristics of the study participants. The mean age of participants was 55.2 years, ranging from 30 to 75 years. There was a relatively equal distribution of genders, with slightly more males (50.4%) than females (49.6%). The majority of participants resided in urban areas, comprising 68.4% of the total sample.

Table 2: Clinical Characteristics and Prevalence of Diabetic Retinopathy

Characteristic	**Number (%)**
Duration of Diabetes (years)	
< 5	298 (26.5%)
5-10	452 (40.2%)
> 10	374 (33.3%)
Glycemic Control	
Well controlled (HbA1c < 7%)	632 (56.2%)
Poorly controlled (HbA1c ≥ 7%)	492 (43.8%)
Hypertension	
Yes	689 (61.3%)
No	435 (38.7%)
Diabetic Retinopathy	
Present	214 (19.0%)
Absent	910 (81.0%)

Table 2 illustrates the clinical characteristics of the study participants and the prevalence of diabetic retinopathy (DR). The majority of participants had a duration of diabetes between 5 to 10 years (40.2%), followed by those with diabetes for more than 10 years (33.3%) and less than 5 years (26.5%). Approximately 56.2% of participants had well-controlled

diabetes (HbA1c < 7%), while 43.8% had poorly controlled diabetes (HbA1c ≥ 7%). Hypertension was prevalent in 61.3% of participants. The prevalence of diabetic retinopathy was 19.0%, indicating a considerable burden of retinal complications among diabetic patients in the study population.

These findings emphasize the importance of comprehensive diabetes management, including glycemic control and hypertension management, to mitigate the risk of diabetic retinopathy and associated vision impairment. Regular screening for diabetic retinopathy is crucial for early detection and timely intervention to preserve vision in diabetic patients.

Table 3: Lifestyle Factors and Prevalence of Diabetic Retinopathy

Characteristic	**Number (%)**
Smoking Status	
Non-Smoker	846 (75.3%)
Smoker	278 (24.7%)
Physical Activity	
Sedentary	502 (44.7%)
Moderate	312 (27.8%)
Active	310 (27.5%)
Diet	
Healthy	598 (53.2%)
Unhealthy	526 (46.8%)
Diabetic Retinopathy	
Present	214 (19.0%)
Absent	910 (81.0%)

Table 3 presents lifestyle factors among study participants and their association with the prevalence of diabetic retinopathy. The majority of participants were non-smokers (75.3%) and reported following a healthy diet (53.2%). Approximately 44.7% of participants were sedentary, while 27.8% were moderately active and 27.5% were physically active. The prevalence of diabetic retinopathy was 19.0%, with no significant differences observed based on smoking status, physical activity level, or dietary habits.

Table 4: Diabetes Management and Prevalence of Diabetic Retinopathy

Characteristic	**Number (%)**
Diabetes Management	
Diet and Exercise	302 (26.9%)
Oral Medications	498 (44.3%)
Insulin	324 (28.8%)
Medication Adherence	
High	618 (55.0%)
Moderate	306 (27.2%)
Low	200 (17.8%)
Diabetic Retinopathy	
Present	214 (19.0%)
Absent	910 (81.0%)

Table 4 outlines diabetes management strategies and medication adherence among study participants, along with their association with the prevalence of diabetic retinopathy. The majority of participants managed their diabetes with oral medications (44.3%), followed by diet and exercise (26.9%) and insulin (28.8%). Medication adherence was high in 55.0% of participants, moderate in 27.2%, and low in 17.8%. No significant differences in the prevalence of diabetic retinopathy were observed based on diabetes management strategies or medication adherence levels.

These additional tables provide insights into lifestyle factors and diabetes management strategies among diabetic patients and their potential impact on the prevalence of diabetic retinopathy. However, further research is warranted to elucidate the complex interactions between these factors and the development of diabetic retinopathy in this population.

Table 5. Logistic Regression Analysis of Factors Associated with Diabetic Retinopathy Among Diabetic Patients

Variable	Odds Ratio (OR)	95% CI	p-value
Duration of Diabetes	1.25	1.10 - 1.43	<0.001
Glycemic Control (Poorly controlled)	1.78	1.32 - 2.41	<0.001
Hypertension (Yes)	1.42	1.12 - 1.81	0.004
Smoking Status (Smoker)	1.34	1.02 - 1.76	0.037
Physical Activity (Sedentary)	1.21	0.97 - 1.51	0.091
Medication Adherence (Moderate)	1.19	0.93 - 1.52	0.177
Education Level (High school or below)	1.08	0.86 - 1.35	0.520
Employment Status (Unemployed)	0.97	0.76 - 1.24	0.823
Income Level (Low income)	1.15	0.93 - 1.42	0.211

The logistic regression analysis revealed several significant associations between independent variables and the presence of diabetic retinopathy. Duration of diabetes, poorly controlled glycemic levels, hypertension, and smoking status were found to be significantly associated with an increased odds of diabetic retinopathy ($p < 0.05$). Other factors such as physical activity, medication adherence, education level, employment status, and income level did not show significant associations with diabetic retinopathy at the 0.05 significance level.

These results highlight the importance of controlling diabetes duration, maintaining glycemic control, managing hypertension, and addressing smoking habits to reduce the risk of diabetic retinopathy among diabetic patients. However, further research is warranted to explore the complex interplay of various factors in the development and progression of diabetic retinopathy.

4. DISCUSSION AND CONCLUSIONS

The findings of this study provide valuable insights into the prevalence of diabetic retinopathy (DR) among diabetic patients in Albania and the factors associated with its occurrence. Understanding the epidemiology of DR and its determinants is essential for guiding preventive strategies, improving patient care, and reducing the burden of vision loss in this population.

The prevalence of DR among diabetic patients in Albania was found to be 19.0%, highlighting the significant burden of this microvascular complication. This prevalence is consistent with findings from other studies conducted in similar populations [4] [5] [6] [7]. The relatively high prevalence of DR underscores the importance of early detection and effective management of diabetes to prevent the development and progression of retinal complications.

Our study identified several factors associated with an increased risk of diabetic retinopathy. Duration of diabetes was strongly associated with the presence of DR, with each additional year of diabetes increasing the odds of developing DR by 25%. This finding is consistent with previous research demonstrating the cumulative effect of diabetes duration on the development of microvascular complications, including DR [8] [9] [10].

Poorly controlled glycemic levels were also significantly associated with an increased risk of diabetic retinopathy. Patients with poorly controlled diabetes ($HbA1c \geq 7\%$) had nearly twice the odds of developing DR compared to those with well-controlled diabetes. These findings emphasize the critical role of glycemic control in preventing the onset and progression of DR, as supported by evidence from clinical trials and observational studies [6].

Hypertension emerged as another significant risk factor for diabetic retinopathy in our study. Patients with hypertension had a 42% higher odds of developing DR compared to those without hypertension. Hypertension is known to exacerbate microvascular damage in diabetic patients, leading to increased vascular permeability, retinal ischemia, and ultimately, the development of DR [11] [12].

Smoking status was also identified as a significant predictor of diabetic retinopathy, with smokers having a 34% higher odds of developing DR compared to non-smokers. Smoking is a well-established risk factor for diabetic retinopathy, contributing to endothelial dysfunction, oxidative stress, and inflammation, which can accelerate the progression of retinal microvascular complications [13].

In contrast, other factors such as physical activity, medication adherence, education level, employment status, and income level did not show significant associations with diabetic retinopathy in our study. While these factors may influence overall health and well-being, their impact on the development of DR may be less pronounced or require further investigation in larger cohorts.

Overall, our findings underscore the multifactorial nature of diabetic retinopathy and highlight the importance of comprehensive diabetes management strategies that address glycemic control, hypertension, and lifestyle modifications such as smoking cessation. Screening programs targeting high-risk individuals, including those with longer duration of diabetes and poor glycemic control, are crucial for early detection and timely intervention to prevent vision loss due to DR.

Limitations of this study include its cross-sectional design, which precludes the establishment of causal relationships between variables. Additionally, the reliance on self-reported data and the potential for selection bias may have influenced the results. Further longitudinal studies are needed to validate these findings and elucidate the complex interactions between various risk factors and the development of diabetic retinopathy in Albanian diabetic patients.

In conclusion, our study provides important insights into the prevalence and risk factors of diabetic retinopathy among diabetic patients in Albania. By identifying modifiable risk factors and high-risk groups, healthcare professionals can implement targeted interventions to prevent and manage diabetic retinopathy, ultimately improving visual outcomes and quality of life for diabetic patients in Albania and beyond.

Ethics Committee Approval

Patients written approved

Author Contributions / Yazar Katkıları

M.K: Methodology and results. R.K: Discussion. G.N: Introduction. All authors have read and agreed to the published version of manuscript.

Conflict of Interest / Çıkar Çatışması

The authors have no conflicts of interest to declare.

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FACTORS ASSOCIATED WITH PATIENTS' SATISFACTION WITH HOSPITAL NURSING CARE IN TWO DISTRICTS IN ALBANIA

Daniela Bimi[1*]

Abstract: Patient satisfaction is a crucial indicator of healthcare quality, significantly influenced by nursing care. This study aimed to examine the factors associated with patient satisfaction with nursing care in two districts in Albania. A quantitative cross-sectional design was employed, surveying 520 hospitalized patients from June to November 2024 across various departments, including medical, surgical, and maternity. Participants were aged 18 years or older, hospitalized for at least 48 hours, and assessed using the Albanian version of the Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ). Sociodemographic factors such as gender, age, marital status, previous hospitalizations, and accommodation type were analyzed for their association with satisfaction. **:** No significant gender differences in satisfaction were observed ($p = 0.601$). Satisfaction declined with age ($p = 0.014$), with younger patients reporting higher satisfaction. Marital status influenced satisfaction ($p = 0.002$), with married and divorced/widowed patients reporting greater satisfaction than single individuals. Fewer previous hospitalizations were associated with higher satisfaction ($p < 0.001$). Shared room accommodations resulted in significantly higher satisfaction than single rooms ($p < 0.001$). **:** Sociodemographic factors significantly influence patient satisfaction with nursing care. Interventions targeting older patients, single individuals, and those with repeated hospitalizations, alongside leveraging shared accommodations, may enhance satisfaction.

Keywords: Patient satisfaction, nursing care, sociodemographic factors, hospital accommodation, Albania

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Introduction

Patient satisfaction is a critical indicator of healthcare quality, with nursing care being a fundamental component influencing overall hospital experience. The assessment of satisfaction with nursing care provides insights into the effectiveness of care delivery, the interpersonal skills of nurses, and the adequacy of hospital resources. Numerous studies have highlighted that patient satisfaction correlates with improved clinical outcomes, greater adherence to treatment regimens, and enhanced patient safety (Aiken et al., 2018; McFarland et al., 2019).

Factors associated with patients' satisfaction with hospital nursing care are multifaceted, encompassing interpersonal communication, responsiveness, and technical competence. Effective communication between nurses and patients fosters trust, clarity, and emotional support, directly influencing patients' perceptions of care quality (Wolf et al., 2017). Responsiveness to patients' needs, including timely assistance with pain management, hygiene, and mobility, is also a significant determinant of satisfaction (Schmidt & Taylor, 2020). Moreover, technical competence, reflected in the nurses' ability to provide accurate treatments and procedures, reassures patients and builds confidence in the care provided.

Organizational factors such as nurse-to-patient ratios, work environment, and leadership also play pivotal roles. Hospitals with supportive nursing environments and adequate staffing are more likely to deliver high-quality care, leading to greater patient satisfaction (Kutney-Lee et al., 2016). Additionally, demographic factors, including age, gender, and cultural background, can influence satisfaction levels, with older patients generally reporting higher satisfaction compared to younger individuals (Zhu et al., 2021).

Understanding the factors that contribute to patients' satisfaction with nursing care is essential for healthcare administrators and policymakers. By identifying and addressing these factors, hospitals can implement targeted interventions to enhance the quality of care and foster a patient-centered approach, ultimately leading to better healthcare outcomes and improved hospital reputation. The aim of the study was to assess the factors associated with patients' satisfaction with hospital nursing care in two districts in Albania

Methods

Study design; A quantitative cross-sectional, descriptive design examined patients' satisfaction with the quality of nursing care provided to them during their hospitalization.

Setting: The study was conducted in two District in Albania: in Vlora which is the biggest city in south part and Lezha in the north part of the country.

Sampling and data collection: A convenience sampling method was used to survey hospitalized patients at multiple hospitals.

Sample size: The sample size was determined using the single proportion formula, assuming an expected prevalence of satisfaction of 50%, a 95% confidence level, and a margin of error (precision) of ±0.05. A total of 520 questionnaires were were completed. The data collection phase took place between June and November 2024. Data were collected from inpatients at multiple departments, including medical, surgical, dialysis, pediatric, maternity, and rehabilitation, in two hospitals of the respective districts. The inclusion criteria for this study were inpatients who were hospitalized for at least 48 h, aged 18 years or older, who were oriented, not too ill to understand and complete the survey, and could read and understand Albanian.

Measurements

Patients' satisfaction with nursing care was measured using the validated Albanian version of the Patients' Satisfaction with Nursing Care Quality Questionnaire. This questionnaire was adapted and translated from the PSNCQQ (Laschinger et al., 2005). Psychometric properties: The PSNCQQ-Al is self-administered and includes 21 items as resulted from factor analysis to measure PSNCQ during a hospitalization, based on their perceptions. The PSNCQQ-Al also had adequate internal consistency reliability, with a Cronbach's alpha $\alpha = 0.98$. The questionnaire uses a 5-point Likert scale varying from “poor” to “excellent.”

Results

Table 1 highlights how various sociodemographic variables are associated with satisfaction with nursing care, as measured by mean scores.

There is no statistically significant difference in satisfaction with nursing care between genders (p=0.601). Both females and males report similar levels of satisfaction. Satisfaction with nursing care significantly decreases with increasing age (p=0.014). Younger patients ≤50 years report the highest satisfaction, while patients aged >70 report the lowest.

Marital status significantly influences satisfaction (p=0.002). Married and divorced/widowed patients report higher satisfaction compared to single patients, who report the lowest satisfaction.

Previous hospitalization experience significantly impacts satisfaction with nursing care (p<0.001). Patients hospitalized 1–2 times report the highest satisfaction, while those hospitalized 3–4 times report the lowest. Satisfaction slightly increases for patients hospitalized >4 times but remains lower compared to those with fewer hospitalizations. Hospital accommodation has a significant effect on satisfaction (p<0.001). Patients sharing rooms with others report significantly higher satisfaction compared to those in single rooms.

Table 1. Satisfaction with nursing care item score according to sociodemographic variables

Variables	Mean	SD	t/F	p
Gender			-0.52	0.601
Female	3.37	1.12		
Male	3.43	1.18		
Age			4.31	0.014
≤50	3.52	1.12		
51-70	3.24	1.13		
>70	3.18	1.23		
Marital status			6.17	0.002
Single	2.98	1.21		
Married	3.44	1.11		
Divorced or widowed	3.44	1.11		
Previous hospitalization			14.29	<0.001
1-2 times	3.56	1.11		
3-4 times	2.94	1.07		
>4 times	3.08	1.25		

Hospital accommodation			-4.93	<0.001
Single room	3.26	1.13		
Shared with others	3.81	1.09		

Discussion

The findings of this study align with and expand upon existing literature on factors influencing patient satisfaction with nursing care. Gender differences were not significant in this study, corroborating results from prior research indicating no notable disparity in satisfaction levels between males and females (Arslan et al., 2021). This consistency suggests that both genders perceive nursing care similarly when considering quality and responsiveness, though cultural or contextual factors may influence satisfaction in specific settings.

The significant decline in satisfaction with age, observed in this study, aligns with findings by Zhu et al. (2021), who reported that older adults often express lower satisfaction levels due to factors such as increased health complexities and higher expectations for care. However, younger patients' higher satisfaction may be attributed to their relatively straightforward healthcare needs and better communication rapport with nursing staff. To address this disparity, age-specific strategies, such as improved communication techniques and personalized care for elderly patients, are crucial (McFarland et al., 2019).

Marital status emerged as a significant factor, with married and divorced/widowed individuals reporting higher satisfaction compared to single patients. Similar findings by Schmidt and Taylor (2020) suggested that social support from partners or family may positively influence patients' perception of care. Single individuals may lack the same level of external emotional and physical support, potentially heightening their sensitivity to perceived shortcomings in nursing care.

The relationship between previous hospitalizations and satisfaction also echoes findings in the literature. Patients with fewer hospitalizations reported higher satisfaction, likely due to fewer encounters with healthcare settings and less exposure to potential shortcomings (Wolf et al., 2017). Conversely, those with repeated hospitalizations may develop higher expectations or encounter inconsistencies in care, leading to diminished satisfaction. These results emphasize the need for consistent, high-quality care across multiple hospitalizations to maintain patient trust and satisfaction.

Interestingly, patients in shared rooms reported higher satisfaction compared to those in single accommodations, contrasting with traditional assumptions that privacy improves satisfaction. Similar results were reported by Aiken et al. (2018), who suggested that shared rooms might facilitate social interactions among patients, fostering a sense of community and reducing feelings of isolation. This finding highlights the importance of considering psychosocial factors in room assignment to optimize patient satisfaction.

Overall, the study highlights several factors that influence satisfaction with nursing care, many of which are supported by existing literature. Tailored interventions targeting age-related needs, enhancing consistency across hospitalizations, and leveraging the benefits of shared accommodations may further improve patient experiences in hospital settings.

Conclusion

The findings of this study reveal several important insights into the factors influencing patient satisfaction with nursing care. Gender appears to have no significant impact on satisfaction levels, suggesting that both males and females perceive the quality of nursing care similarly. This consistency indicates that satisfaction is more likely influenced by other sociodemographic or situational factors rather than gender differences.

Age, however, plays a notable role, with satisfaction levels decreasing as patients grow older. Younger patients tend to report higher satisfaction, possibly due to simpler healthcare needs and more effective communication with nursing staff. In contrast, older patients may have more complex health issues and heightened expectations, which could contribute to their lower satisfaction levels.

Marital status also emerged as a significant factor, with married and divorced or widowed patients reporting greater satisfaction compared to single individuals. This finding highlights the potential impact of social support, as patients with family or a close network may feel more emotionally supported, positively influencing their perception of care. Single patients, on the other hand, might experience a lack of external support, making them more sensitive to perceived inadequacies in nursing care.

These findings suggest that interpersonal interactions (e.g., shared rooms) and lower hospitalization frequencies positively influence satisfaction. Tailored strategies to address the needs of older patients and those with extensive hospitalization histories could improve satisfaction levels.

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PATIENTS' SATISFACTIONS WITH HOSPITAL NURSING CARE IN TWO DISTRICTS IN ALBANIA

Daniela Bimi[1*]

Abstract: Access to quality nursing care is a fundamental human right and critical for patient well-being. This study assessed patients' satisfaction with nursing care in two districts of Albania—Vlora in the south and Lezha in the north. A quantitative cross-sectional design was employed, surveying 520 inpatients using the Albanian version of the Patients' Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ-Al). Data were collected from June to November 2024 in multiple departments, including surgical, medical, pediatric, and maternity units. The overall satisfaction score was 3.40 ± 1.31 on a 5-point Likert scale, with the highest-rated aspect being nurses' skills and competence (M = 3.53 ± 1.32). However, involving family or friends in care was the least satisfactory aspect (M = 3.28 ± 1.26). Sociodemographic analysis showed that 59% of participants were male, and 66.7% were married, with most aged ≤50 years. Results indicate moderate satisfaction, with key areas for improvement including family engagement, communication, and discharge instructions. These findings emphasize the need for patient-centered approaches to enhance satisfaction and improve care outcomes. Hospitals can benefit from targeted interventions to address identified gaps, ensuring better patient experiences and fostering loyalty.

Keywords: Patient satisfaction, nursing care, Albania, PSNCQQ, healthcare quality

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Introduction

Access to quality nursing care is an essential human right and is considered a significant factor in patients' well-being. Delivering nursing care that satisfies quality standards is crucial for providing patients with high-quality care (Karaca & Durna, 2019). The quality of nursing care can be measured by assessing patients' level of satisfaction (Gishu et al., 2019), and patient satisfaction can be increased through proper nursing care (Aiken et al., 2021). Measuring patients' satisfaction helps in gaining important information regarding hospitals' performance as well as assessing the quality management of health organizations (Hepsiba & Bhattacharjee, 2021). Patients' satisfaction with their care can lead to patient loyalty and trust (Liu et al., 2021): satisfied patients are loyal and more inclined to return to the same hospital or health care provider in the future and may suggest them to other relatives and friends (Setyawan et al., 2020). Patient satisfaction captures different aspects of health care, such as professionalism, the technology used, and the overall quality and level of care received (Hepsiba & Bhattacharjee, 2021). Patient satisfaction with nursing care is important in maintaining health care costs and preventing their increase. Patients have expressed dissatisfaction with nursing care due to leaving necessary care incomplete (White et al., 2019). This led to the deterioration of patients' health conditions and increased their hospital stay for extended periods, which eventually increased the cost of health care (Brooks Carthon et al., 2021). The aim of the study was to assess the patients' satisfactions with hospital nursing care in two districts in Albania.

Methods

Study design; A quantitative cross-sectional, descriptive design examined patients' satisfaction with the quality of nursing care provided to them during their hospitalization.

Setting: The study was conducted in two District in Albania: in Vlora which is the biggest city in south part and Lezha in the north part of the country.

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Results

A total of 520 participants completed the questionnaire. The average (±SD) age of participants was 49.5 ± 16.2 years. According to gender 59% of the participants were male, and 41% were female. The majority of patients belong to ageroup ≤50 years (57.2%). Most of patients were married (66.7%), 16% were divorced, 14.2% were single and 3.1% widower/ed. More than 49% of patientes were addmited to emergency department. Almost 85% of the sample had previously been hospitalized from 1–3 times, and more than 75% of the participants shared a hospital room with others. Over 58% of the participants were hospitalized in the surgical department. Around 58% referred they had agood health before this most recent hospital stay

Patients' satisfaction

The overall patient satisfaction with nursing care was good ($M = 3.40 \pm 1.31$). This demonstrated that nursing care received was generally well-received (Table 1).

Table 1. Satisfaction with nursing care item score

Item	Mean	SD	Min	Max
INFORMATION YOU WERE GIVEN: How clear and complete the nurses’ explanations were about tests, treatments, and what to expect.	3.28	1.39	1	5
INSTRUCTIONS: How well nurses explained how to prepare for tests and operations.	3.35	1.32	1	5
EASE OF GETTING INFORMATION: Willingness of nurses to answer your questions.	3.33	1.31	1	5
INFORMATION GIVEN BY NURSES: How well nurses communicated with patients, families, and doctors.	3.35	1.35	1	5
INFORMING FAMILY OR FRIENDS: How well the nurses kept them informed about your condition and needs.	3.31	1.27	1	5
INVOLVING FAMILY OR FRIENDS IN YOUR CARE: How much they were allowed to help in your care.	3.28	1.26	1	5
CONCERN AND CARING BY NURSES: Courtesy and respect you were given; friendliness and kindness.	3.36	1.27	1	5
ATTENTION OF NURSES TO YOUR CONDITION: How often nurses checked on you and how well they kept track of how you were doing.	3.38	1.27	1	5
RECOGNITION OF YOUR OPINIONS: How much nurses ask you what you think is important and give you choices.	3.30	1.30	1	5
CONSIDERATION OF YOUR NEEDS: Willingness of the nurses to be flexible in meeting your needs.	3.44	1.30	1	5

THE DAILY ROUTINE OF THE NURSES: How well they adjusted their schedules to your needs.	3.44	1.28	1	5
HELPFULNESS: Ability of the nurses to make you comfortable and reassure you.	3.44	1.32	1	5
NURSING STAFF RESPONSE TO YOUR CALLS: How quick they were to help.	3.49	1.32	1	5
SKILL AND COMPETENCE OF NURSES: How well things were done, like giving medicine and handling IVs.	3.53	1.32	1	5
COORDINATION OF CARE: The teamwork between nurses and other hospital staff who took care of you.	3.48	1.32	1	5
RESTFUL ATMOSPHERE PROVIDED BY NURSES: Amount of peace and quiet.	3.46	1.33	1	5
PRIVACY: Provisions for your privacy by nurses.	3.45	1.27	1	5
DISCHARGE INSTRUCTIONS: how clearly and completely the nurses told you what to do and what to expect when you left the hospital.	3.44	1.28	1	5
COORDINATION OF CARE AFTER DISCHARGE: Nurses' efforts to provide for your needs after you left the hospital.	3.41	1.31	1	5

According to an analysis of questionnaire scores, the item with the highest satisfaction levels (mean 3.53 SD 1.32) was Skill and Competence of Nurses: How well things were done, like giving medicine and handling IVs. And lowest satisfaction level was Involving Family or Friends in Your Care: by nurses (mean 3.28 SD 1.26). Based on the participant's responses to the questions 63% of patients were satisfied with nursin quality of care. Also, based on the participant's responses to the questions about perception I "Quality of the care and service provided during your stay at the hospital" and perception II "Quality of the nursing care provided during your stay at the hospital," respectively, 47 % and 47 % of them were "good".

Discussion

Patient satisfaction with nursing care is a cornerstone of healthcare quality and has a profound impact on hospital performance and patient outcomes. The findings of this study underscore the overall satisfaction levels of hospitalized patients in two districts of Albania, focusing on their perceptions of nursing care quality. The general patient satisfaction score of 3.40 ± 1.31 on a 5-point Likert scale reflects moderate satisfaction, with notable strengths and weaknesses identified in specific areas of nursing care.

The highest satisfaction was observed in "Skill and Competence of Nurses" (M = 3.53 ± 1.32), suggesting strong confidence in the technical proficiency of nurses in administering medications and handling intravenous treatments. This aspect of care plays a critical role in fostering trust and reassurance among patients, which is essential for positive health outcomes. Conversely, satisfaction was lowest in "Involving Family or Friends in Care" (M = 3.28 ± 1.26), indicating an area requiring significant improvement. This finding aligns with contemporary healthcare standards emphasizing family-centered care, which has been shown to enhance recovery and overall patient well-being. Efforts to involve family members more actively in care processes, through improved communication and engagement, could address this gap and elevate patient satisfaction.

The demographic profile of participants provides further context to these findings. The predominance of males (59%) and married individuals (66.7%), with a majority aged ≤50 years (57.2%), suggests that socio-cultural factors, such as family roles and expectations, may influence satisfaction levels. Additionally, the high percentage of participants with previous hospitalization experiences and shared room arrangements points to structural factors, such as privacy and comfort, as potential influences on their perceptions. These factors should be considered when designing targeted interventions to improve the hospital experience.

Overall, 63% of patients reported being satisfied with nursing care, with nearly half rating the quality of care as "good." While these results are encouraging, they highlight the need for continuous improvement to address areas of dissatisfaction. Previous research, such as that by White et al. (2019), has shown that incomplete or inadequate nursing

care can lead to prolonged hospital stays and increased healthcare costs. Addressing these issues requires a multifaceted approach, including enhanced communication strategies, consistent follow-up on patient needs, and the provision of clear discharge instructions.

Future efforts should also focus on developing training programs for nurses to strengthen their interpersonal and communication skills. These programs can empower nurses to engage more effectively with patients and their families, fostering a culture of patient-centered care. Additionally, structural changes, such as ensuring adequate staffing levels and creating a more restful and private hospital environment, could further enhance the patient experience.

Conclusion

In conclusion, while the study demonstrates generally positive perceptions of nursing care, it underscores the importance of addressing specific areas for improvement. Hospitals in Albania have an opportunity to build on these findings by implementing targeted strategies that prioritize patient-centered care, family engagement, and effective communication. These efforts can ultimately improve patient satisfaction, enhance trust and loyalty, and lead to better clinical outcomes across the healthcare system.

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TECHNICAL DIMENSIONS OF JOB SATISFACTION OF NURSES IN REGIONAL HOSPITALS IN ALBANIA. THE CASE OF REGIONAL HOSPITAL OF LEZHA

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Abstract: The district of Lezha is in the North of Albania and has 114181 inhabitants and is covered by the Regional Hospital of Lezha, District Hospital of Mirdita, and other health units. Job satisfaction has social and technical dimensions and other aspects (Castaneda & Scanlan, 2014). In this paper were included professional growth, distributive justice, professional leadership, resources, workload, scheduling, and autonomy. Are to determine the level of job satisfaction among Lezha Hospital nurses in terms of technical aspects like autonomy, distributive justice, leadership in the workplace and nursing professional development. The scientific research is qualitative and cross-sectional. Almost 1/2 (n = 74) of the nurses of the Regional Hospital of Lezha were interviewed. Data collection was conducted through a questionnaire containing 24 main questions/issues and with sub-questions for each main question/issue. Mostly the answers from q20 show the results not positive. The answers from q13 are negative because the salaries in Albania are lower, despite the fact that salaries have increased these years. Other answers to other questions are positive. Mostly the answers from q20 show the results not positive. The answers from q13 are negative because the salaries in Albania are lower, despite the fact that salaries have increased these years. Other answers to other questions are positive. This directs us that in Albania has problems related to resources and salaries, creating a work environment undesirable for nurses and to avoid shortage and turnover of them needs to intervent.

Keywords: Regional hospital, dimensions, nurse, job satisfaction

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Introduction

The district of Lezha is in the North of Albania and has 114181 inhabitants and is covered by the Regional Hospital of Lezha, District Hospital of Mirdita, and other health units (*Popullsia Sipas Qarku, Gjinia, Variabla Dhe Viti-PxWeb*, n.d.-b). Hospital Regional of Lezha was founded in April of 1968 and has approximately 167 nurses. This hospital covers the District of Lezha and has 122.700. Regional hospital cover several services like emergency, pediatrics, maternity, etc (*SRLezhë – Spitali Rajonal Lezhe*, n.d.-b). Job satisfaction has social and technical dimensions and other aspects (Castaneda & Scanlan, 2014). In this paper were included professional growth, distributive justice, professional leadership, and autonomy.

Purpose of the paper

The study aims to determine the level of job satisfaction among Lezha Hospital nurses in terms of technical aspects like autonomy, distributive justice, leadership in the workplace and nursing professional development.

Materials and methodology

The scientific research is qualitative and cross-sectional. Almost 1/2 (n = 74) of the nurses of the Regional Hospital of Lezha were interviewed. Data collection was conducted through a questionnaire containing 24 main questions/issues and with sub-questions for each main question/issue. The questionnaire used is the Healthcare Environment Survey (HES)(Nelson, 2013). The data collection process was conducted during the period of January-August 2024. The answers range from 1-7, where 1 is "Strongly disagree", 2 is "Disagree", 3 is "Slightly disagree", 4 is "Neutral", 5 is "Slightly agree", 6 is "Agree", 7 is "Strongly agree"

The study includes these questions:

q11- How satisfied are you with the workload at your workplace?

q12-How satisfied are you with the autonomy at your workplace?

q13-How satisfied are you with the distributive justice at your workplace?

q16- How satisfied are you with the professional growth at your workplace?

q17- How satisfied are you with the executive leadership at your workplace?

q19- How satisfied are you with the scheduling at your workplace?

q20- How satisfied are you with the resources at your workplace?

Results and Discussions

1- How satisfied are you with the workload at your workplace?

TABLE 1: *q11- How satisfied are you with the workload at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q11.1 I am satisfied with the types of activities that I do on my job.	74	1	7	5.76	1.39
q11.2 I am satisfied with the amount of time and opportunity I have to discuss job related problems with other staff members in my unit or department when I need to.	74	1	7	5.43	1.38
q11.3 I am satisfied with the amount of time I have to complete the tasks required of me.	74	1	7	5.66	1.47

Following the Table 1:

- Distinguishes the answer q11.1_ = 5.76 ± 1.39 . Nurses that are working at Lezha Hospital to question q11.1 are Agree= 26/35.1%, Disagree= 6/ 8.1%, Slightly agree=16 / 21.6%, Slightly disagree=1 /1.4%, Strongly agree=25/ 33.8%, Strongly diasgree=0/0%, Neutral=0/0%.

- Distinguishes the answer q11.2_ = 5.43 ± 1.38 . Question 11.2 that is related with the time that nurses need to discuss work with other part members of team are Agree=31/41.9%, Disagree=5/6.8%, Neutral=4/5.4%, Slightly agree=16/21.6%, Slightly disagree=4/ 5.4%, Strongly agree=14/18.9%, Strongly Disagree=0/0%.

- Distinguishes the answer q11.3_ = 5.66 ± 1.47 . Thıs question is related with availability of time to accomplish the tasks. Results show Agree=30/40.5%, Disagree=1/1.4%,Neutral= 4/ 5.4%,Slightly agree=11/ 14.9%,Slightly disagree=3/ 4.1%,Strongly agree=22/ 29.7%, Strongly disagree= 3/ 4.1%.

Mostly the answers from *q11* are positively related to satisfaction in workload. Only a small group slightly agree. Related to workload results show that most agree with types of activities, except the group Slightly agree=16 / 21.6%.

Other studies shows other aspects like the amount of time to complete the task and discussing the problems show the same results as the first subquestion. Based on Phillips (2020), in his study offers fresh perspectives on the connections between nurses' perceptions of their workload, burnout, and intention to quit. The results show that nurses are more inclined to quit their current position if they perceive their workload to be higher. When creating plans to enhance the workplace and nurse retention, nurse managers ought to take these findings into account(Phillips, 2020).

2-How satisfied are you with the autonomy at your workplace?

TABLE 2: *q12-How satisfied are you with the autonomy at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q12.1 I am satisfied with the level of authority I have in my job when I consider the amount of responsibility I have.	74	1	7	5.73	1.24
q12.2 I am satisfied with how much control I have over my own work. My supervisors do not make all the decisions for me.	74	1	7	5.85	1.19
q12.3 I am satisfied with the level of independence I have within my work.	74	1	7	5.77	1.18
q12.4 I am satisfied with the amount of flexibility I have in my unit/department for me to get the job done the way I feel it should be done.	74	1	7	5.78	1.29

Following the Table 2:

- Distinguishes the answer q12.1_ = 5.73 ± 1.24 . This question is related to the authority and responsibility of the nurses. Results show Agree= 36/ 48.6%, Disagree= 3/ 4.1%, Neutral= 1/ 1.4%, Slightly agree= 15/ 20.3%, Slightly disagree= 1/ 1.4%, Strongly agree= 17/ 23.0%, Strongly disagree=1/ 1.4%

- Distinguishes the answer q12.2_ = 5.85 ± 1.19 . This question is related to the control and decision-making of nurses. Results show Agree= 33/ 44.6%, Disagree= 3/ 4.1%, Neutral= 1/ 1.4%, Slightly agree= 13/ 17.6%, Slightly disagree= 2/ 2.7%, Strongly agree= 22/ 29.7%,

- Distinguishes the answer q12.3_ = 5.77 ± 1.18 . This question is related to the independence of nurses. Results show Agree= 34/ 45.9%, Disagree= 2/ 2.7%, Neutral= 1/ 1.4%, Slightly agree= 17/ 23.0% ,Slightly disagree=1/ 1.4%, Strongly agree=18/ 24.3%, Strongly disagree= 1/ 1.4%

- Distinguishes the answer q12.4_ = 5.78 ± 1.29 , This question os related to the flexibility on doing the job. Results show Agree= 23/ 31.1%, Disagree= 2/ 2.7%, Neutral= 1/ 1.4%, Slightly agree= 20/ 27.0%, Slightly disagree= 2/ 2.7%, Strongly agree= 25/ 33.8%, Strongly disagree= 1/ 1.4%.

Mostly the answers: *q12-* are positively related to satisfaction in professional growth. Only a small group slightly agree.

Other studies show different results, according to Finn (2001) finding nursing models that provide RNs with the greatest autonomy is necessary, as autonomy was found to be the most crucial aspect of the work. Based on Şahan and Özdemir (2023) the study's findings showed a strong relationship between nurses' views on professional autonomy and their level of job satisfaction. Nurses' job satisfaction rises in tandem with their attitudes toward autonomy. Results show that mostly agree, but there is a group of nurses that Slightly agree. The perception of contentment with independence rises in proportion to the level of satisfaction in the control area (Tomaszewska et al, 2024). According to (Carmel et al., 1988) close supervision and control by physicians structurally limits the autonomy of nurses. Due to a protracted doctors' strike in 1983, nurses were forced to offer primary healthcare services for three months without the presence of doctors. Most nurses say they are generally happy with their jobs and think they have a lot of autonomy in them. It was discovered that during the strike, a rise in routine and self-initiated activities was favorably but weakly connected with an increase in job satisfaction and role autonomy perception (Carmel et al., 1988).

3-How satisfied are you with the distributive justice at your workplace?

TABLE 3: *q13-How satisfied are you with the distributive justice at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q13.1- I am satisfied with how the organization rewards me when I consider the responsibility I have.	74	1	7	3.60	2.18
q13.2- I am satisfied with how the organization rewards me in terms of the pay I receive.	74	1	7	3.66	2.12
q13.3- I am satisfied with how the organization rewards me when I consider the amount of education and training I have had.	74	1	7	3.68	2.14

q13.4- I am satisfied with how the organization rewards me in view of the amount of experience I have had.	74	1	7	3.68	2.13
q13.5- I am satisfied with how the organization rewards me when I consider the effort I put forth.	74	1	7	3.82	2.17
q13.6- I am satisfied with how the organization rewards me when I consider the work I have done well.	74	1	7	3.73	2.12
q13.7- I am satisfied with how the organization rewards me when I consider the stresses and strains of my job.	74	1	7	3.55	2.31
q13.8- I am satisfied with how the organization rewards me when I consider the contribution I make toward the hospital/facility operation.	74	1	7	3.62	2.17

Following the Table 3:

- Distinguishes the answer q13.1_ = 3.60 ± 2.18. This question is about rewards considering the responsibility of the job. Results show Agree= 20/ 27.0%, Disagree= 14/ 18.9%, Neutral= 2/ 2.7%, Slightly agree= 12/ 16.2%, Slightly disagree= 3/ 4.1%, Strongly agree= 3/ 4.1%, Strongly disagree= 20/ 27.0%.

- Distinguishes the answer q13.2_ = 3.66 ± 2.12. This question is about the salary/payment that nurses receive. Results show Agree=18/ 24.3%, Disagree= 14/ 18.9%, Neutral= 1/ 1.4%, Slightly agree=13/ 17.6%, Slightly disagree= 7/ 9.5%, Strongly agree= 4/ 5.4%, Strongly disagree= 17/ 23.0%.

- Distinguishes the answer q13.3_ = 3.68 ± 2.14. This question is related to the payment considering the education and training of nurses. Results show Agree= 14/ 18.9%, Disagree= 7/ 9.5%, Neutral= 3/ 4.1%, Slightly agree= 17/ 23.0%, Slightly disagree= 7/ 9.5%, Strongly agree= 56.8%Strongly disagree= 21/ 28.4%

- Distinguishes the answer q13.4_ = 3.68 ± 2.13 This question is related to the payment considering the experience. Results show Agree= 17/ 23.0%, Disagree= 11/ 14.9%, Neutral= 4/ 5.4%, Slightly agree= 11/ 14.9% , Slightly disagree= 8/ 10.8%, Strongly agree= 5/ 6.8%, Strongly disagree= 18/ 24.3%.

- Distinguishes the answer q13.5_ = 3.82 ± 2.17. This question is related to the payment considering the effort of nurses. Results show Agree= 17/ 23.0%, Disagree= 9/ 12.2%, Neutral= 5/ 6.8%, Slightly agree= 11/ 14.9%, Slightly disagree= 7/ 9.5%, Strongly agree= 7/ 9.5%, Strongly disagree= 18/ 24.3%.

- Distinguishes the answer q13.6_ = 3.73 ± 2.12. This question is related to payment and job well done. Results show Agree= 17/ 23.0%, Disagree= 6/ 8.1%, Neutral= 3/ 4.1%, Slightly agree= 15/ 20.3%, Slightly disagree= 9/ 12.2%, Strongly agree= 4/ 5.4%, Strongly disagree= 20/ 27.0%.

- Distinguishes the answer q13.7_ = 3.55 ± 2.31. This question is related to the payment considering stresses and strains of nurses. Results show Agree= 13/ 17.6%, Disagree= 10/ 13.5%, Neutral= 4/ 5.4%, Slightly agree= 10/ 13.5%, Slightly disagree= 4/ 5.4%, Strongly agree= 9/ 12.2%, Strongly disagree= 24/ 32.4%.

- Distinguishes the answer q13.8_ = 3.62 ± 2.17. This question is related to the payment considering contribution to the hospital. Results show Agree= 8/ 10.8%, Disagree= 7/ 9.5%, Neutral= 5/ 6.8%, Slightly agree= 18/ 24.3%, Slightly disagree= 6/ 8.1%, Strongly agree= 8/ 10.8%, Strongly disagree= 22/ 29.7%.

Mostly the answers from q13 are negative because the salaries in Albania are lower, despite the fact that salaries have increased these years. Other studies show different results, according to the study of Chin et al. (2017), one protective factor against nurses quitting their current career is workplace fairness. Based on Afzali et al. (2017) eliminating nurses' perceived feelings of injustice and establishing justice and fairness in organizations appears to be the greatest strategy for preventing and correcting disruptive behaviors. According to Tomaszewska et al. (2024) the degree of satisfaction rises in tandem with the respondents' feeling of fairness, control, rewards, and values, among other aspects of their work lives.

4- How satisfied are you with the professional growth at your workplace?

TABLE 4- *q16- How satisfied are you with the professional growth at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q16.1- I am satisfied with the opportunities I am given to improve my skills.	74	1	7	5.31	1.57
q16.2- I am satisfied with my opportunities for growth and development within this organization.	74	1	7	5.30	1.58
q16.3- I am satisfied with the amount of personal growth and development I get in doing my job.	74	1	7	5.26	1.73
q16.4- I am satisfied with programs made available to assist me with my development at this organization.	74	1	7	5.03	1.87

Following table 4:

- Distinguishes the answer q16.1_ = 5.31 ± 1.57. This question is related to opportunities regarding skills improvement. Results show Agree= 33/ 44.6%, Disagree= 4/ 5.4%, Neutral= 6/ 8.1%, Slightly agree= 12/ 16.2%, Slightly disagree= 3/ 4.1%, Strongly agree= 13/ 17.6%, Strongly disagree= 3/ 4.1%

- Distinguishes the answer q16.2_ = 5.30 ± 1.58. This question is related to opportunities for development in the organization. Results show Agree= 31/ 41.9%, Disagree= 5/ 6.8%, Neutral= 4/ 5.4%, Slightly agree= 16/ 21.6%, Slightly disagree= 2/ 2.7%, Strongly agree= 13/ 17.6%, Strongly disagree= 3/ 4.1%

- Distinguishes the answer q16.3_ = 5.26 ± 1.73. This question is related to the amount of personal growth and development within the organization. Results show Agree= 31/ 41.9%, Disagree= 2/ 2.7%, Neutral= 6/ 8.1%, Slightly agree= 11/ 14.9%, Slightly disagree= 3/ 4.1%, Strongly agree= 15/ 20.3%, Strongly disagree= 6/ 8.1%

- Distinguishes the answer q16.4_ = 5.03 ± 1.87. This question is related with programs that are involved in the organization. Results show Agree= 26/ 35.1%, Disagree= 5/ 6.8%, Neutral= 3/ 4.1%, Slightly agree= 16/ 21.6%, Slightly disagree= 3/ 4.1%, Strongly agree= 14/ 18.9%, Strongly disagree= 7/ 9.5%

Mostly the answers from q16 are positively related to satisfaction in professional growth. Only a small group slightly agree. Other studies shows different approaches. For example, Perry (2008) asserts that a manager's role in putting in place a career ladder system should be at its best since nurses' happiness is expected to influence their output, quality, and patient safety. Clarifying nurse competencies will require a defined professional path, competency regulations, and job-appropriate recognition. According to Nancarrow (2007), staff rotations between acute, community, and intermediate care could enhance professional development prospects in the field by raising staff members' awareness of the responsibilities of intermediate care personnel. prospects for management career development are limited by non-hierarchical management systems; instead, consultant positions and expertise in intermediate care should be used to increase professional growth prospects(Nancarrow, 2007). Some studies suggests that training has a significant impact on nurses' level of satisfaction (Suprapto et al., 2023). Nurses must maximize their skills and capabilities as healthcare providers in hospitals in order to improve nursing care standards. Nursing directors have a crucial role in developing, hiring, and assessing nurse competence.

5- How satisfied are you with the executive leadership at your workplace?

TABLE 5*: q17- How satisfied are you with the executive leadership at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q17.1- I am not sure what executive team member is responsible for my profession within this facility.	74	1	7	4.82	2.00
q17.2- I am satisfied with the level of respect other professions in this facility show to the chief executive of my profession (e.g. the Chief Nurse Officer is well respected by other disciplines such as medicine, pharmacy, etc.).	74	1	7	5.64	1.41

q17.3- I am satisfied with the level of respect staff within my profession shown to the chief executive of my profession (e.g., the Chief Medical Officer is well respected by physicians, or the Chief Nursing Officer is well respected by nurses, etc.).	74	1	7	5.62	1.65
q17.4- I am satisfied with how much I feel the executive leader in my profession cares for those in my profession (e.g. the Chief Nurse Officer cares about nursing staff).	74	1	7	5.62	1.57

Following table 5:

- Distinguishes the answer q17.1_ =4.82±2.00. This question is related to the person responsible for the nursing profession. Results show Agree= 23/ 31.1%, Disagree= 9/ 12.2%, Neutral= 3/ 4.1%, Slightly agree= 13/ 17.6%, Slightly disagree= 4/ 5.4%, Strongly agree= 15/ 20.3%, Strongly disagree= 7/ 9.5%

- Distinguishes the answer q17.2_=5.64±1.41. This question is related to the respect of other professions for the executive leader of nurses. Results show Agree= 28/ 37.8%, Disagree= 4/ 5.4%, Neutral= 3/ 4.1%, Slightly agree= 15/ 20.3%, Slightly disagree= 2/ 2.7%, Strongly agree= 21/ 28.4%, Strongly disagree= 1/ 1.4%

- Distinguishes the answer q17.3_ =5.62±1.65. This question is related to the respect given from executive leader of nurses. Results show Agree= 22/ 29.7%, Disagree= 1/ 1.4%, Neutral= 5/ 6.8%, Slightly agree= 10/ 13.5%, Slightly disagree= 4/ 5.4%, Strongly agree= 28/ 37.8%, Strongly disagree= 4/ 5.4%

- Distinguishes the answer q17.4_ = 5.62±1.57. This question is related to the feeling of how executive leader take care of nurses. Results show Agree= 28/ 37.8%, Disagree= 1/ 1.4%, Neutral= 3/ 4.1%, Slightly agree= 12/ 16.2%, Slightly disagree= 3/ 4.1%, Strongly agree= 23/ 31.1%, Strongly disagree= 4/ 5.4%

Mostly the answers from q17 are positive. But other studies show different approach. Based on Rizzo et al. (2024) to improve nurses' job happiness and maintain high-quality care environments, transformative leaders must possess key competencies including listening, support, and the ability to advocate for justice and recognition. Healthcare administrators must safeguard the caliber of work performed by employees by putting policies in place that might enhance the working circumstances for nurses (Rizzo et al., 2024).

6-How satisfied are you with the scheduling at your workplace?

TABLE 6: *q19- How satisfied are you with the scheduling at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q19.1- I am satisfied with the amount of advance notice I have prior to my new shift roster starting.	74	1	7	5.68	1.39
q19.2- I am satisfied with the shift rotation I am assigned.	74	1	7	5.68	1.36
q19.3- I am satisfied with the input I have into my final schedule prior to the roster being posted.	74	1	7	5.65	1.57
q19.4- I am satisfied with my ability to change my schedule after the schedule roster is posted, if I need to change it.	74	1	7	5.66	1.52

Following table 6

- Distinguishes the answer q19.1_ = 5.68 ± 1.39. This question is related to being informed before starting the shift. Results show Agree= 27/ 36.5%, Disagree= 4/ 5.4%, Neutral= 3/ 4.1%, Slightly agree= 13/ 17.6%, Slightly disagree= 4/ 5.4%, Strongly agree= 23/ 31.1%

- Distinguishes the answer q19.2_ = 5.68 ± 1.36 . This question is related to the shift rotation. Results show Agree= 25/ 33.8%, Disagree= 4/ 5.4%, Neutral= 3/ 4.1%, Slightly agree= 16/ 21.6%, Slightly disagree= 3/ 4.1%, Strongly agree= 23/ 31.1%

- Distinguishes the answer q19.3_ = 5.65 ± 1.57. This question is related to the final schedule declaring. Results show Agree= 26/ 35.1%, Disagree= 1/ 1.4%, Neutral= 5/ 6.8%, Slightly agree= 11/ 14.9%, Slightly disagree= 2/ 2.7%, Strongly agree= 25/ 33.8%, Strongly disagree= 4/ 5.4%

- Distinguishes the answer q19.4_ = 5.66 ± 1.52. This is question is related to the flexibility to change the shift

after the roster is posted. Results show Agree= 27/ 36.5%, Disagree= 2/ 2.7%, Neutral= 4/ 5.4%, Slightly agree= 12/ 16.2%, Slightly disagree= 2/ 2.7%, Strongly agree= 24/ 32.4%, Strongly disagree= 3/ 4.1%

Mostly the answers from q19 are positive. But other studies show different approach. According to the findings of Rizany et al. (2019), there was a significant association (p =.0001–.014) between the degree of job satisfaction among nurses and the implementation of nurse scheduling management with all management roles. The primary elements influencing nurses' job satisfaction were scheduling and organization. The authors came to the conclusion that there was a statistical correlation between the degree of job satisfaction among nurses and the management of their schedule. By optimizing scheduling, particularly in the areas of organization and control, a nurse manager should be able to increase nurse satisfaction.

7- How satisfied are you with the resources at your workplace?

TABLE 7: *q20- How satisfied are you with the resources at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q20.1- I am satisfied with the availability of supplies required to do my job.	74	1	7	4.42	1.82
q20.2- I am satisfied with the availability of equipment needed to do my job.	74	1	7	4.51	2.06
q20.3- I am satisfied with my access to clinical experts/specialists to do my job (may include physicians, pharmacists, nurses specialists, etc.).	74	1	7	4.74	1.78

Followıng table 7:

- Distinguishes the answer q20.1_ = 4.42 ± 1.82. This question is related to the supplies' availability. Results show Agree= 18/ 24.3%, Disagree= 9/ 12.2%, Neutral= 4/ 5.4%, Slightly agree= 23/ 31.1%, Slightly disagree= 7/ 9.5%, Strongly agree= 6/ 8.1%, Strongly disagree= 7/ 9.5%.

- Distinguishes the answer q20.2_ = 4.51 ± 2.06. This question is related to the equipment availability. Results show Agree= 16/ 21.6%, Disagree= 12/ 16.2%, Neutral= 6/ 8.1%, Slightly agree= 12/ 16.2%, Slightly disagree= 6/ 8.1%, Strongly agree= 15/ 20.3%, Strongly disagree= 7/ 9.5%

- Distinguishes the answer q20.3_ = 4.74 ± 1.78. This question is related to the availability of specialist experts. Results show Agree= 25/ 33.8%, Disagree= 4/ 5.4%, Neutral= 8/ 10.8%, Slightly agree= 13/ 17.6%, Slightly disagree= 9/ 12.2%, Strongly agree= 9/ 12.2%, Strongly disagree= 6/ 8.1%.

Mostly the answers from q20 show the results negative. But other studies shows different approach. For example, Zaydan et al. (2021) claim that it pinpoints particular elements that have a major impact on nurses' job happiness and chance of quitting, providing organizations with strategies to enhance their workplace and foster job satisfaction, which in turn improves patient care. Numerous demands, both subjectively felt and objectively measured in terms of work organization, may jeopardize home care nurses' job satisfaction and well-being, according to Kaihlanen et al. (2023). The reality of home care involves a scarcity of nurses and an increasing number of customers, which raises employee turnover and burnout risk. There is an urgent need to devise strategies to guarantee that there is enough staff for home care. For instance, funds should be allocated to chances for independent work planning and the encouragement of productive teamwork (Kaihlanen et al., 2023)

Conclusion

Mostly the answers from q20 show the results not positive. The answers from q13 are negative because the salaries in Albania are lower, despite the fact that salaries have increased these years. Other answers to other questions are positive. This directs us that in Albania has problems related to resources and salaries, creating a work environment undesirable for nurses and to avoid shortage and turnover of them needs to intervent.

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SOCIAL DIMENSIONS OF JOB SATISFACTION OF NURSES IN REGIONAL HOSPITALS IN ALBANIA. THE CASE OF REGIONAL HOSPITAL OF LEZHA

Indrit Bimi[1], Daniela Bimi [2]

Abstract: Nurses form the largest workforce in healthcare facilities worldwide, making their job satisfaction a subject of extensive research and shortage. This is crucial as it directly impacts the overall quality of healthcare. Studying social dimensions, including relationships with hospital management, colleagues, patients, and their families, is a significant aspect of this research. The aim of study is to identify job satisfaction among nurses in Lezha Hospital in terms of social dimensions like patient care, teamwork, and cooperation with colleagues**.** The scientific research is qualitative and cross-sectional. Almost 1/2 (n = 74) of the nurses of the Regional Hospital of Lezha were interviewed. Data collection was conducted through a questionnaire containing 24 main questions/issues and with sub-questions for each main question/issue. Show mostly positive means and a high average level of satisfaction in the nursing work environment. Based on the results of the study, most of the nurses in Lezha Regional Hospital are satisfied with the social dimensions. Some subquestions have Slightly agreed shown, and in low percentage are others answer. Having positive results in aspects of social dimensions of job satisfaction is well correlated with the quality of care, shortening shortages, and reducing turnover.

Keywords: subject, research, nurse, job satisfaction, dimension

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Introduction

Nurses form the largest workforce in healthcare facilities worldwide, making their job satisfaction a subject of extensive research and shortage (Lu et al., 2019) (Morgan & Lynn, 2008). This is crucial as it directly impacts the overall quality of healthcare. Studying social dimensions, including relationships with hospital management, colleagues, patients, and their families, is a significant aspect of this research (Sheingold et al., 2012) (Prosen & Piskar, 2013). Based on information regarding the Hospital of Lezha (*SRLezhë – Spitali Rajonal Lezhe*, n.d.) there are n=167 nurses working in different departments with different levels of education. The hospital of Lezha includes different departments like emergency, pediatric, surgery, maternity, palliative care, ICU, etc.

The study aims to identify job satisfaction among nurses in Lezha Hospital in terms of social dimensions like patient care, teamwork, and cooperation with colleagues.

Materials and methodology

The scientific research is qualitative and cross-sectional. Almost 1/2 (n = 74) of the nurses of the Regional Hospital of Lezha were interviewed. Data collection was conducted through a questionnaire containing 24 main questions/issues and with sub-questions for each main question/issue.
The questionnaire used is the Healthcare Environment Survey (HES)(Nelson, 2013). The data collection process was conducted during the period of January-August 2024. The answers range from 1-7, where 1 is "Strongly disagree", 2 is "Disagree", 3 is "Slightly disagree", 4 is "Neutral", 5 is "Slightly agree", 6 is "Agree", 7 is "Strongly agree"
The study includes these questions:

- ***q9-How satisfied are you with your coworkers?***
- ***q10- How satisfied are you with the physicians at your workplace?***
- ***q14- How satisfied are you with the patient care at your workplace?***
- ***q15-How satisfied are you with the unit manager at your workplace?***

The other part has not been included in the study from HES.

Results and discussions

1. ***How satisfied are you with your coworkers?***

TABLE 1: *q9-How satisfied are you with your coworkers?*	*N*	*Min*	*Max*	*Mean*	*SD*
q9.1- I am satisfied with how easy it is for new employees to feel welcome in my unit or department.	**74**	**1**	**7**	**5.73**	**1.35**
q9.2- I am satisfied with the teamwork and cooperation in the unit/department I work in.	**74**	**1**	**7**	**5.84**	**1.33**
q9.3- I am satisfied with how friendly and outgoing the people on my unit or department are.	**74**	**1**	**7**	**5.72**	**1.35**
q9.4- I am satisfied with how people I work with on my unit or department get along, no matter what the level of their education and experience is.	**74**	**1**	**7**	**5.73**	**1.39**
q9.5- I am satisfied with how people I work with in my unit/department help me out when I get really busy and need help.	**74**	**1**	**7**	**5.91**	**1.37**
q9.6- I am satisfied with how nurses at this hospital/facility show respect for other staff members	**74**	**1**	**7**	**5.69**	**1.54**
q9.7- I am satisfied with how nurses in general cooperate with other staff in my unit or department.	**74**	**1**	**7**	**5.64**	**1.59**
q9.8- I am satisfied with how well nurses and staff in my unit/department work together as a team.	**74**	**1**	**7**	**5.77**	**1.48**
q9.9- I am satisfied with how nurses I work with are respectful of the skill and knowledge of all the staff in my unit/department.	**74**	**1**	**7**	**5.80**	**1.39**
q9.10- I am satisfied with how nurses at this hospital/facility generally understand and appreciate what all other staff members do.	**74**	**1**	**7**	**5.65**	**1.40**

Based on Table 1 results:

- Distinguishes the answer q9.1_ = 5.73 ± 1.35. Results show Agree= 25/ 33.8%, Disagree= 5/ 6.8%, Neutral= 2/ 2.7%, Slightly agree= 17/ 23.0%, Slightly disagree= 1/ 1.4%, Strongly agree= 24/ 32.4%.
- Distinguishes the answer q9.2_ = 5.84 ± 1.33. Results show Agree= 31/ 41.9%, Disagree= 5/ 6.8%, Neutral= 2/ 2.7%, Slightly agree= 10/ 13.5%, Slightly disagree= 1/ 1.4%, Strongly agree= 25/ 33.8%.
- Distinguishes the answer q9.3_ = 5.72 ± 1.35. Results show Agree= 25/ 33.8%, Disagree= 1/ 1.4%, Neutral= 1/ 1.4%, Slightly agree= 19/ 25.7%, Slightly disagree= 3/ 4.1%, Strongly agree= 23/ 31.1%, Strongly disagree= 2/ 2.7%.
- Distinguishes the answer q9.4_ = 5.73 ± 1.39. Results show Agree= 28/ 37.8%, Disagree= 2/ 2.7%, Neutral= 2/ 2.7%, Slightly agree= 15/ 20.3%,Slightly disagree= 2/ 2.7%, Strongly agree= 23/ 31.1%, Strongly disagree= 2/ 2.7%.
- Distinguishes the answer q9.5_ = 5.91 ± 1.37. Results show Agree= 26/ 35.1%, Disagree= 5/ 6.8%, Neutral= 2/ 2.7%, Slightly agree= 10/ 13.5%, Slightly disagree= 1/ 1.4%, Strongly agree= 30/ 40.5%.
- Distinguishes the answer q9.6_ = 5.69 ± 1.54. Results show Agree= 31/ 41.9%, Disagree= 4/ 5.4%, Neutral= 2/ 2.7%, Slightly agree= 11/ 14.9%, Strongly agree= 23/ 31.1%, Strongly disagree= 3/ 4.1%.
- Distinguishes the answer q9.7_ = 5.64 ± 1.59. Results show Agree= 18/ 24.3%, Disagree= 3/ 4.1%, Neutral= 2/ 2.7%, Slightly agree= 18/ 24.3%, Slightly disagree= 2/ 2.7%, Strongly agree= 28/ 37.8%, Strongly disagree= 3/ 4.1%.
- Distinguishes the answer q9.8_ = 5.77 ± 1.48. Results show Agree= 23/ 31.1%, Disagree= 3/ 4.1%, Neutral= 1/ 1.4%, Slightly agree= 15/ 20.3%,Slightly disagree= 2/2.7%, Strongly agree= 28/ 37.8%, Strongly disagree= 2/ 2.7%

- Distinguishes the answer q9.9_ = 5.80 ± 1.39. Results show Agree= 24/ 32.4%, Disagree= 1/ 1.4%, Slightly agree= 16/ 21.6%,Slightly disagree= 4/ 5.4%, Strongly agree= 27/ 36.5%, Strongly disagree= 2/ 2.7%
- Distinguishes the answer q9.10_ = 5.65 ± 1.40. Results show Agree= 34/ 45.9%, Disagree= 3/ 4.1%, Neutral= 1/ 1.4%, Slightly agree= 14/ 18.9%, Slightly disagree= 2/ 2.7%, Strongly agree= 18/ 24.3%, Strongly disagree= 2/ 2.7%.

Based on q9.1 question regarding new employee hospitation shows that mostly agree, but there are some slightly agree. This means that this work environment is good, but is different in other countries (Eckerson, 2018) (Powers et al., 2019).

Regarding teamwork mostly agree and strongly agree. The results of the study indicate a strong correlation between job satisfaction and nurse collaboration. (Bragadóttir et al., 2023).

Based on Orgambídez et al. (2022) in the context of nursing work, social support is an essential resource that improves job satisfaction and well-being (e.g., by lowering role stress). The question q9.2 shows mostly agree with job satisfaction.

Based on Bragadóttir et al. (2023) enhancing nursing teamwork must be a top priority for all parties involved, including teachers, administrators, and clinical nurse leaders. Nurse shortages and attrition are predicted to worsen during and after the COVID-19 pandemic, although they may be avoided with good collaboration and higher job satisfaction. Every nursing leader should prioritize encouraging effective teamwork. In this question shows that means is positive.

Other questions are mostly agreed and have positive feedback regarding job satisfaction.

2. How satisfied are you with the physicians at your workplace?

TABLE 2: *q10- How satisfied are you with the physicians at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q10.1- I am satisfied with how physicians in general cooperate with staff in my unit or department.	**74**	**1**	**7**	**5.22**	**1.57**
q10.2- I am satisfied with how physicians and staff in my unit/department work together as a team.	**74**	**1**	**7**	**5.39**	**1.56**
q10.3- I am satisfied with how physicians I work with are respectful of the skill and knowledge of all the staff in my unit/department.	**74**	**1**	**7**	**5.47**	**1.57**
q10.4- I am satisfied with how physicians at this hospital/facility generally understand and appreciate what all the staff members do.	**74**	**1**	**7**	**5.27**	**1.57**
q10.5- I am satisfied with how physicians at this hospital/facility show respect for staff members.	**74**	**1**	**7**	**5.39**	**1.72**

Based on Table 2:

- Distinguishes the answer q10.1_ = 5.22 ± 1.57. Results show Agree= 28/ 37.8%, Disagree= 5/ 6.8%, Neutral= 3/ 4.1%, Slightly agree= 23/ 31.1%, Strongly agree= 11/ 14.9%, Strongly disagree= 4/ 5.4%.
- Distinguishes the answer q10.2_ = 5.39 ± 1.56. Results show Agree= 38/ 51.4%, Disagree= 5/ 6.8%, Neutral= 2/ 2.7%, Slightly agree= 12/ 16.2%,Slightly disagree= 2/ 2.7%, Strongly agree= 12/ 16.2%, Strongly disagree= 3/ 4.1%.
- Distinguishes the answer q10.3_ = 5.47 ± 1.57. Results show Agree= 28/ 37.8%, Disagree= 1/ 1.4%, Neutral= 4/ 5.4%, Slightly agree= 14/ 18.9%,Slightly disagree= 4/ 5.4%, Strongly agree= 19/ 25.7%, Strongly disagree= 4/ 5.4%
- Distinguishes the answer q10.4_ = 5.27 ± 1.57. Results show Agree= 23/ 31.1%, Disagree= 3/ 4.1%, Neutral= 4/ 5.4%, Slightly agree= 23/ 31.1%,Slightly disagree= 2/ 2.7%, Strongly agree= 15/ 20.3%, Strongly disagree= 4/ 5.4%
- Distinguishes the answer q10.5_ = 5.39 ± 1.72. Results show Agree= 26/ 35.1%, Disagree= 4/ 5.4%, Neutral= 5/ 6.8%, Slightly agree= 14/ 18.9%, Strongly agree= 20/ 27.0%, Strongly disagree= 5/ 6.8%.

Related physicians are terms of cooperation, working together, respect related to the nurse's knowledge, and appreciation of other staff. Most nurses in the Regional Hospital of Lezha are satisfied with their physicians. Other studies like Ashagere et al. (2023) show that 45% of nurses are unsatisfied related to working with physicians.

Regarding Galletta et al. (2016) at the group level, effective work collaboration with physicians is crucial in fostering nurses' affective identification with the team, while at the individual level, job happiness and team affective commitment are significant variables for staff retention.

3. How satisfied are you with the patient care at your workplace?

TABLE 3: *q14- How satisfied are you with the patient care at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q14.1- I am satisfied with my ability to daily establish a relationship with the patient and his/her family in order to understand and communicate the patient's story and actively involve them in decision making.	**74**	**1**	**7**	**5.76**	**1.28**
q14.2- I am satisfied in my daily work how I am able to build trust with the patient and family by utilizing processes of caring/advocacy.	**74**	**1**	**7**	**5.89**	**1.19**
q14.3- I am satisfied in my daily work how I am able to build trust with the patient and family by utilizing demonstration of clinical skills and knowledge.	**74**	**1**	**7**	**5.78**	**1.35**
q14.4- I am satisfied in my daily work how I am able to build trust with the patient and family by utilizing effective communication.	**74**	**1**	**7**	**6.00**	**1.31**
q14.5- I am satisfied in my daily work how I am able to build trust with the patient and family by utilizing consistent relationships and continuity of plan of care.	**74**	**1**	**7**	**5.85**	**1.22**
q14.6- I am satisfied in my daily work how I am able to build trust with the patient and family by utilizing follow through of a mutually determined plan of care.	**74**	**1**	**7**	**5.97**	**1.27**
q14.7- I am satisfied with my ability to daily develop, communicate and facilitate the plan of care from admission of the patient through discharge to aid smooth patient transitions.	**74**	**1**	**7**	**5.92**	**1.24**
q14.8- I am satisfied with my ability to daily collaborate with the multidisciplinary team to assure coordinated care.	**74**	**1**	**7**	**5.82**	**1.35**

Based on Table 3

- Distinguishes the answer q14.1_ = 5.76 ± 1.28. Results show Agree= 33/ 44.6%, Disagree= 5/ 6.8%, Slightly agree= 15/ 20.3%, Slightly disagree= 1/ 1.4%, Strongly agree= 20/ 27.0%.
- Distinguishes the answer q14.2_ = 5.89 ± 1.19. Results show Agree= 44/ 59.5%, Disagree= 4/ 5.4%, Neutral= 2/ 2.7%, Slightly agree= 4/ 5.4%,Slightly disagree= 1/ 1.4%, Strongly agree= 19/ 25.7%
- Distinguishes the answer q14.3_ = 5.78 ± 1.35. Results show Agree= 33/ 44.6%/ Disagree= 1/ 1.4%/ Slightly agree= 12/ 16.2%, Slightly disagree= 4/ 5.4%/ Strongly agree= 22/ 29.7%/ Strongly disagree= 2/ 2.7%.
- Distinguishes the answer q14.4_ = 6.00 ± 1.31. Results show Agree= 30/ 40.5%, Disagree= 1/ 1.4%, Neutral= 1/ 1.4%, Slightly agree= 8/ 10.8%, Slightly disagree= 2/ 2.7%, Strongly agree= 30/ 40.5%, Strongly disagree= 2/ 2.7%
- Distinguishes the answer q14.5_ = 5.85± 1.22. Results show Agree= 36/ 48.6%, Disagree= 2/ 2.7%, Neutral= 1/ 1.4%, Slightly agree= 11/ 14.9%, Slightly disagree= 2/ 2.7%, Strongly agree= 21/ 28.4%, Strongly disagree= 1/ 1.4%.

- Distinguishes the answer q14.6_ = 5.97 ± 1.27. Results show Agree= 27/ 36.5%, Disagree= 4/ 5.4%, Neutral= 1/ 1.4%, Slightly agree= 11/ 14.9%, Slightly disagree= 1/ 1.4%, Strongly agree= 30/ 40.5%.
- Distinguishes the answer q14.7_ = 5.92 ± 1.24. Results show Agree= 33/ 44.6%, Disagree= 4/ 5.4%, Neutral= 1/ 1.4%, Slightly agree= 10/ 13.5%, Slightly disagree= 1/ 1.4%, Strongly agree= 25/ 33.8%.
- Distinguishes the answer q14.8_ = 5.82 ± 1.35. Results show Agree= 32/ 43.2%, Disagree= 3/ 4.1%, Slightly agree= 11/ 14.9%, Slightly disagree= 3/ 4.1%, Strongly agree= 24/ 32.4%, Strongly disagree= 1/ 1.4%.

This question shows the level of satisfaction regarding patient care in components of family involvement in nursing care, trust with patient and family, the ability to develop the continuity of nursing plan, and collaboration with the multidisciplinary team to assure coordinated care. All this component shows positive only some sub-questions are slightly agreed approximately. Other studies like Hadrawi (2017) mentioned that the institutional setting in which nurses carry out their responsibilities may have a detrimental effect on both patient health outcomes and nurse satisfaction. Hadrawi (2017) mentioned that patient satisfaction, nurse shortage, and nurse satisfaction are all correlated; a staff nurse's insufficiency results in a high level of nursing burden, which has a big impact on patient satisfaction.

4. ***How satisfied are you with the unit manager at your workplace?***

TABLE 4: *q15-How satisfied are you with the unit manager at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q15.1- I am satisfied with how my unit/ward manager takes an interest in me as a person as well as how competently I do my job.	**74**	**1**	**7**	**5.81**	**1.51**
q15.2- I am satisfied with how the manager of my unit/department gives me adequate and meaningful consideration when I ask him or her a question about my work.	**74**	**1**	**7**	**5.88**	**1.51**
q15.3- I am satisfied with how the manager of my unit/department gives me adequate opportunity to present problems, complaints, or suggestions to him/her.	**74**	**1**	**7**	**5.76**	**1.46**
q15.4- I am satisfied with how the manager of my unit/department is interested in my ideas and suggestions.	**74**	**1**	**7**	**5.91**	**1.62**
q15.5- I am satisfied with how the manager of my unit/department gives me recognition for work well done.	**74**	**1**	**7**	**5.91**	**1.44**

Based on Table 4:

- Distinguishes the answer q15.1_ = 5.81 ± 1.51. Results show Agree= 24/ 32.4%, Disagree= 3/ 4.1%, Neutral= 1/ 1.4%, Slightly agree= 11/ 14.9%, Slightly disagree= 3/ 4.1%, Strongly agree= 30/ 40.5%, Strongly disagree= 2/ 2.7%.
- distinguishes the answer q15.2_ = 5.88 ± 1.51. Results show Agree= 24/ 32.4%, Disagree= 3/ 4.1%, Slightly agree= 10/ 13.5%,Slightly disagree= 3/ 4.1%, Strongly agree= 32/ 43.2%, Strongly disagree= 2/ 2.7%
- distinguishes the answer q15.3_ = 5.76 ± 1.46. Results show Agree= 27/ 36.5%, Disagree= 2/ 2.7%, Neutral= 1/ 1.4%, Slightly agree= 12/ 16.2%,Slightly disagree= 4/ 5.4%, Strongly agree= 26/ 35.1%, Strongly disagree= 2/ 2.7%
- Distinguishes the answer q15.4_ = 5.91 ± 1.62. Results show Agree= 18/ 24.3%, Disagree= 5/ 6.8%, Neutral= 2/ 2.7%, Slightly agree= 8/ 10.8%, Slightly disagree= 1/ 1.4%, Strongly agree= 38/ 51.4%, Strongly disagree= 2/ 2.7%.
- Distinguishes the answer q15.5_ = 5.91 ± 1.44. Results show Agree= 27/ 36.5%, Disagree= 3/ 4.1%, Neutral= 1/ 1.4%, Slightly agree= 7/ 9.5%, Slightly disagree= 4/ 5.4%, Strongly agree= 31/ 41.9%, Strongly disagree= 1/ 1.4%.

This question is related to the satisfaction of nurses based on the unit manager in the components of taking care of nurses, giving opportunities, being interested in the ideas, and giving recognition for work well done. Mostly they agree and only some sub-questions show slightly agree. Based on Niskala et al. (2020) managers and healthcare organizations should think about putting in place efficient interventions to raise nurses' job satisfaction and lower turnover. According to the

study's findings, nurse managers ought to concentrate on organizational tactics that would increase staff members' intrinsic motivation (Niskala et al., 2020).

Conclusions

Based on the results of the study, most of the nurses in Lezha Regional Hospital are satisfied with the social dimensions. Some subquestions have Slightly agreed shown, and in low percentage are others answer.

Having positive results in aspects of social dimensions of job satisfaction is well correlated with the quality of care, shortening shortages, and reducing turnover.

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SOCIAL DIMENSIONS OF JOB SATISFACTION OF NURSES IN REGIONAL HOSPITALS IN ALBANIA. THE CASE OF REGIONAL HOSPITAL OF VLORA

Indrit Bimi[1], Daniela Bimi [2]

Abstract: Relationships with colleagues, such as nurses, physicians, and other professionals, are associated with social components of job satisfaction (Pakpour et al., 2019) (Brofidi et al., 2019) (Teruya et al., 2019). Participation in hospital administration is a significant social component of job satisfaction and varies depending on national facility regulations. The interaction with the patient, who requires compassion and consideration, is another facet of social dimensions. The study aims is to identify job satisfaction among nurses in Vlora Hospital in terms of social dimensions like patient care, teamwork, and cooperation with colleagues. The scientific research is qualitative and cross-sectional. Almost 1/2 (n = 109) of the nurses of the Regional Hospital of Vlora were interviewed. Data collection was conducted through a questionnaire containing 24 main questions/issues and with sub-questions for each main question/issue. Nurses are not happy with all social aspects of the workplace, according to the mean of all the questions' answers, however, other research takes a different tack. The average response to every question indicates that nurses are dissatisfied with the social components of job satisfaction in the workplace.

Keywords: social dimensions, nurse, management, patient

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Introduction

Relationships with colleagues, such as nurses, physicians, and other professionals, are associated with social components of job satisfaction (Pakpour et al., 2019) (Brofidi et al., 2019) (Teruya et al., 2019). Participation in hospital administration is a significant social component of job satisfaction and varies depending on national facility regulations. The interaction with the patient, who requires compassion and consideration, is another facet of social dimensions.

The study aims to identify job satisfaction among nurses in Vlora Hospital in terms of social dimensions like patient care, teamwork, and cooperation with colleagues.

Materials and methodology

The scientific research is qualitative and cross-sectional. Approximately 1/2 (n = 109) of the nurses of the Regional Hospital of Vlora were interviewed. Data collection was conducted through a questionnaire containing 24 main questions/issues and with sub-questions for each main question/issue.

The questionnaire used is the Healthcare Environment Survey (HES)(Nelson, 2013). The data collection process was conducted during the period of January-August 2024. The answers range from 1-7, where 1 is "Strongly disagree", 2 is "Disagree", 3 is "Slightly disagree", 4 is "Neutral", 5 is "Slightly agree", 6 is "Agree", 7 is "Strongly agree"

The study includes these questions:

- ***q9-How satisfied are you with your coworkers?***
- ***q10- How satisfied are you with the physicians at your workplace?***
- ***q14- How satisfied are you with the patient care at your workplace?***
- ***q15-How satisfied are you with the unit manager at your workplace?***

The other part has not been included in the study from HES.

Results and Discussions

1-How satisfied are you with your coworkers?

TABLE 1: *q9- How satisfied are you with your coworkers?*	*N*	*Min*	*Max*	*Mean*	*SD*
q9.1- I am satisfied with how easy it is for new employees to feel welcome in my unit or department.	109	1	7	4.78	1.39
q9.2- I am satisfied with the teamwork and cooperation in the unit/department I work in.	109	1	7	4.81	1.40
q9.3- I am satisfied with how friendly and outgoing the people on my unit or department are.	109	1	7	4.72	1.36
q9.4- I am satisfied with how people I work with on my unit or department get along, no matter what the level of their education and experience is.	109	1	7	4.81	1.27
q9.5- I am satisfied with how people I work with in my unit/department help me out when I get really busy and need help.	109	1	7	4.98	1.35
q9.6- I am satisfied with how nurses at this hospital/facility show respect for other staff members	109	1	7	4.92	1.35
q9.7- I am satisfied with how nurses in general cooperate with other staff in my unit or department.	109	1	7	5.01	1.37
q9.8- I am satisfied with how well nurses and staff in my unit/department work together as a team.	109	1	7	4.86	1.36
q9.9- I am satisfied with how nurses I work with are respectful of the skill and knowledge of all the staff in my unit/department.	109	1	7	4.83	1.34
q9.10- I am satisfied with how nurses at this hospital/facility generally understand and appreciate what all other staff members do.	109	1	7	4.87	1.41

Following table 1:

- Distinguishes the answer q9.1_ = 4.78 ± 1.39. Results show Agree= 25/ 22.9%, Disagree= 4/ 3.7%, Neutral= 9/ 8.3%, Slightly agree= 44/ 40.4%, Slightly disagree= 16/ 14.7%, Strongly agree= 8/ 7.3%, Strongly disagree= 3/ 2.8%.

- Distinguishes the answer q9.2_ = 4.81 ± 1.40. Results show Agree= 26/ 23.9%, Disagree= 6/ 5.5%, Neutral= 9/ 8.3%, Slightly agree= 42/ 38.5%, Slightly disagree= 15/ 13.8%, Strongly agree= 9/ 8.3%, Strongly disagree= 2/ 1.8%.

- Distinguishes the answer q9.3_ = 4.72 ± 1.36. Results show Agree= 22/ 20.2%, Disagree= 6/ 5.5%, Neutral= 9/ 8.3%, Slightly agree= 47/ 43.1%, Slightly disagree= 16/ 14.7%, Strongly agree= 7/ 6.4%, Strongly disagree= 2/ 1.8%.

- Distinguishes the answer q9.4_ = 4.81 ± 1.27. Results show Agree= 28/ 25.7%, Disagree= 4/ 3.7%, Neutral= 9/ 8.3%, Slightly agree= 48/ 44.0%, Slightly disagree= 14/ 12.8%, Strongly agree= 4/ 3.7%, Strongly disagree= 2/ 1.8%.

- Distinguishes the answer q9.5_ = 4.98 ± 1.35. Results show Agree= 26/ 23.9%, Disagree= 3/ 2.8%, Neutral= 5/ 4.6%, Slightly agree= 46/ 42.2%, Slightly disagree= 15/ 13.8%, Strongly agree= 12/ 11.0%, Strongly disagree= 2/ 1.8%.

- Distinguishes the answer q9.6_ = 4.92 ± 1.35. Results show Agree= 25/ 22.9%, Disagree= 3/ 2.8%, Neutral= 9/ 8.3%, Slightly agree= 44/ 40.4%, Slightly disagree= 15/ 13.8%, Strongly agree= 11/ 10.1%, Strongly disagree= 2/ 1.8%.

- Distinguishes the answer q9.7_ = 5.01 ± 1.37. Results show Agree= 31/ 28.4%, Disagree= 4/ 3.7%, Neutral= 4/ 3.7%, Slightly agree= 43/ 39.4%, Slightly disagree= 14/ 12.8%, Strongly agree= 11/ 10.1%, Strongly disagree= 2/ 1.8%.

- Distinguishes the answer q9.8_ = 4.86 ± 1.36. Results show Agree= 24/ 22.0%, Disagree= 5/ 4.6%, Neutral= 4/ 3.7%, Slightly agree= 50/ 45.9%, Slightly disagree= 15/ 13.8%, Strongly agree= 9/ 8.3%, Strongly disagree= 2/ 1.8%.

- Distinguishes the answer q9.9_ = 4.83 ± 1.34. Results show Agree= 26/ 23.9%, Disagree= 5/ 4.6%, Neutral= 6/ 5.5%, Slightly agree= 48/ 44.0%, Slightly disagree= 15/ 13.8%, Strongly agree= 7/ 6.4%, Strongly disagree= 2/ 1.8%.

- Distinguishes the answer q9.10_ = 4.87 ± 1.41. Results show Agree= 27/ 24.8%, Disagree= 6/ 5.5%, Neutral= 7/ 6.4%, Slightly agree= 43/ 39.4%, Slightly disagree= 14/ 12.8%, Strongly agree= 10/ 9.2%, Strongly disagree= 2/ 1.8%.

Answers to the q9 have the mean that shows more negative and nurses are not satisfied with coworkers in the work environment. Other studies show different approaches, for example: According to PubMed search shows n=113 results (Relationship With Coworkers Nursing Job Satisfaction - Search Results - PubMed, n.d.). Following that, other studies have other approaches, for example: Teruya et al. (2019) found that time spent at the unit and at the institution was correlated with the domains of pay, contingent rewards, and supervision, and that the intention to stay in the job was correlated with most of the Job Satisfaction Survey domains, with the exception of coworkers and operating procedures. Although 68% of workers reported receiving formal training, a significant percentage (65%) thought this was unsuccessful, according to Pardo-Garcia et al. (2021).The components that lead to satisfaction, according to their factor research, include decision-making, working conditions (such as schedule), and the work environment (such as connections with coworkers). Working with highly dependent people and length of service are negatively correlated with these factors. Social health care job is negatively correlated with decision-making and working conditions. However, there is a positive correlation between training and these factors. The care sector requires the proper training and preparation in order to provide high-quality care and guarantee the wellbeing of staff (Pardo-Garcia et al., 2021). According to Orgambídez et al. (2022), social support is a crucial tool for enhancing job satisfaction and wellbeing in the nursing profession (e.g., by minimizing role stress). Teachers, administrators, and clinical nurse leaders should all prioritize improving nursing cooperation, according to Bragadóttir et al. (2023). Although they can be prevented with effective teamwork and increased job satisfaction, nurse shortages and attrition are expected to grow during and after the COVID-19 pandemic. Promoting efficient teamwork should be a top priority for all nursing leaders.

2- How satisfied are you with the physicians at your workplace?

TABLE 2*: q10- How satisfied are you with the physicians at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q10.1- I am satisfied with how physicians in general cooperate with staff in my unit or department.	109	1	7	4.53	1.56
q10.2- I am satisfied with how physicians and staff in my unit/department work together as a team.	109	1	7	4.68	1.46
q10.3- I am satisfied with how physicians I work with are respectful of the skill and knowledge of all the staff in my unit/department.	109	1	7	4.59	1.46
q10.4 - I am satisfied with how physicians at this hospital/facility generally understand and appreciate what all the staff members do.	109	1	7	4.55	1.49
q10.5- I am satisfied with how physicians at this hospital/facility show respect for staff members.	109	1	7	4.55	1.60

Following Table 2:

- Distinguishes the answer q10.1_ = 4.53 ± 1.56. Results show Agree= 12/ 11.0%, Disagree= 4/ 3.7%, Neutral= 7/ 6.4%, Slightly agree= 55/ 50.5%, Slightly disagree= 13/ 11.9%, Strongly agree= 9/ 8.3%, Strongly disagree= 9/ 8.3%.

- Distinguishes the answer q10.2_ = 4.68 ± 1.46. Results show Agree= 19/ 17.4%, Disagree= 5/ 4.6%, Neutral= 5/ 4.6%, Slightly agree= 55/ 50.5%, Slightly disagree= 12/ 11.0%, Strongly agree= 7/ 6.4%, Strongly disagree= 6/ 5.5%

- Distinguishes the answer q10.3_ = 4.59 ± 1.46. Results show Agree= 14/ 12.8%, Disagree= 4/ 3.7%, Neutral= 7/ 6.4%, Slightly agree= 57/ 52.3%, Slightly disagree= 13/ 11.9%, Strongly agree= 7/ 6.4%, Strongly disagree= 7/ 6.4%.

- Distinguishes the answer q10.4_ = 4.55 ± 1.49. Results show Agree= 16/ 14.7%, Disagree= 9/ 8.3%, Neutral= 8/ 7.3%, Slightly agree= 55/ 50.5%, Slightly disagree= 9/ 8.3%, Strongly agree= 6/ 5.5%, Strongly disagree= 6/ 5.5%.

- Distinguishes the answer q10.5_ = 4.55 ± 1.60. Results show Agree= 16/ 14.7%, Disagree= 6/ 5.5%, Neutral= 11/ 10.1%, Slightly agree= 49/ 45.0%, Slightly disagree= 9/ 8.3%, Strongly agree= 9/ 8.3%, Strongly disagree= 9/ 8.3%.

Answers to the q10 have the mean that shows more negative and nurses are not satisfied with physicians in the work environment. Other studies show different approaches, for example: According to PubMed search of " relationship with physician nursing job satisfaction" shows n=262 results (*Relationship With Physician Nursing Job Satisfaction - Search Results - PubMed*, n.d.). Following that, other studies have other approaches, for example: Galletta et al. (2016) state that while job satisfaction and team affective commitment are important factors for staff retention at the individual level, good work cooperation with physicians is essential for developing nurses' emotional identification with the team at the group level. Pakpour et al. (2019) found that nurses' job satisfaction and their opinions regarding physician-nurse collaboration were significantly positively correlated (r=0.59, P≤0.001). The findings showed that nurses working in clinical settings are more satisfied with their jobs when they collaborate with doctors. Therefore, with the shared objective of providing patients with high-quality care, nurses and doctors should create a new culture of cooperation. Additionally, health care administrators want to put into practice the tactics that support the growth of physician-nurse teamwork (Pakpour et al., 2019). According to Brofidi et al. (2019), nurses in all five institutions felt that their work environments were unfavorable, with the only good aspect being the collegial nurse-physician relationships. The results showed that surgical departments were marginally more pleasant places to work than medical wards. According to Brofidi et al. (2019), despite the work department, their judgments of management, poor care quality, restricted nurse involvement in hospital matters, and nursing shortage were sometimes influenced by their educational and experience levels.

3- How satisfied are you with the patient care at your workplace?

TABLE 3: *q14- How satisfied are you with the patient care at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q14.1- I am satisfied with my ability to daily establish a relationship with the patient and his/her family in order to understand and communicate the patient's story and actively involve them in decision making.	109	1	7	4.80	1.57
q14.2- I am satisfied in my daily work how I am able to build trust with the patient and family by utilizing processes of caring/advocacy.	109	1	7	4.93	1.40
q14.3- I am satisfied in my daily work how I am able to build trust with the patient and family by utilizing demonstration of clinical skills and knowledge.	109	1	7	5.03	1.36
q14.4- I am satisfied in my daily work how I am able to build trust with the patient and family by utilizing effective communication.	109	1	7	5.10	1.35
q14.5- I am satisfied in my daily work how I am able to build trust with the patient and family by utilizing consistent relationships and continuity of plan of care.	109	1	7	5.02	1.37
q14.6- I am satisfied in my daily work how I am able to build trust with the patient and family by utilizing follow through of a mutually determined plan of care.	109	1	7	5.04	1.40
q14.7- I am satisfied with my ability to daily develop, communicate and facilitate the plan of care from admission of the patient through discharge to aid smooth patient transitions.	109	1	7	5.02	1.41
q14.8- I am satisfied with my ability to daily collaborate with the multidisciplinary team to assure coordinated care.	109	1	7	5.06	1.43

Following Table 3:

- Distinguishes the answer q14.1_ = 4.80 ± 1.57. Results show Agree= 26/ 23.9%, Disagree= 5/ 4.6%, Neutral= 9/ 8.3%, Slightly agree= 42/ 38.5%, Slightly disagree= 9/ 8.3%, Strongly agree= 11/ 10.1%, Strongly disagree= 7/ 6.4%.

- Distinguishes the answer q14.2_ = 4.93 ± 1.40. Results show Agree= 27/ 24.8%, Disagree= 5/ 4.6%, Neutral= 4/ 3.7%, Slightly agree= 48/ 44.0%, Slightly disagree= 12/ 11.0%, Strongly agree= 10/ 9.2%, Strongly disagree= 3/ 2.8%.

- Distinguishes the answer q14.3_ = 5.03 ± 1.36. Results show Agree= 24/ 22.0%, Disagree= 3/ 2.8%, Neutral= 4/ 3.7%, Slightly agree= 51/ 46.8%, Slightly disagree= 11/ 10.1%, Strongly agree= 13/ 11.9%, Strongly disagree= 3/ 2.8%.

- Distinguishes the answer q14.4_ = 5.10 ± 1.35. Results show Agree= 32/ 29.4%, Disagree= 2/ 1.8%, Neutral= 3/ 2.8%, Slightly agree= 45/ 41.3%, Slightly disagree= 12/ 11.0%, Strongly agree= 12/ 11.0%, Strongly disagree= 3/ 2.8%.

- Distinguishes the answer q14.5_ = 5.02 ± 1.37. Results show Agree= 25/ 22.9%, Disagree= 2/ 1.8%, Neutral= 3/ 2.8%, Slightly agree= 49/ 45.0%, Slightly disagree= 14/ 12.8%, Strongly agree= 13/ 11.9%, Strongly disagree= 3/ 2.8%.

- Distinguishes the answer q14.6_ = 5.04 ± 1.40. Results show Agree= 24/ 22.0%, Disagree= 3/ 2.8%, Neutral= 5/ 4.6%, Slightly agree= 47/ 43.1%, Slightly disagree= 12/ 11.0%, Strongly agree= 15/ 13.8%, Strongly disagree= 3/ 2.8%.

- Distinguishes the answer q14.7_ = 5.02 ± 1.41. Results show Agree= 25/ 22.9%, Disagree= 4/ 3.7%, Neutral= 3/ 2.8%, Slightly agree= 48/ 44.0%, Slightly disagree= 12/ 11.0%, Strongly agree= 14/ 12.8%, Strongly disagree= 3/ 2.8%.

- Distinguishes the answer q14.8_ = 5.06 ± 1.43. Results show Agree= 25/ 22.9%, Disagree= 4/ 3.7%, Neutral= 4/ 3.7%, Slightly agree= 46/ 42.2%, Slightly disagree= 11/ 10.1%, Strongly agree= 16/ 14.7%, Strongly disagree= 3/ 2.8%.

Answers to the q19 have the mean that shows more negative and nurses are not satisfied with patient care in the work environment. Other studies show different approaches, for example:

According to a search in Pubmed " relationship with patient care and nursing job satisfaction" were found n=990 results (*Relationship With Patient Care and Nursing Job Satisfaction - Search Results - PubMed*, n.d.). Following that, other studies have other approaches, for example: According to Al-Hamdan et al. (2019), the nurses' perceived CONP (control over nursing practice) was modest. Their impression of the caliber of patient care they provided and their level of job satisfaction were positively connected with this control. Patient satisfaction, nurse shortage, and nurse satisfaction are all related, according to Hadrawi (2017). A staff nurse's inadequacy leads to a high degree of nursing load, which significantly affects patient satisfaction. According to Tzeng et al. (2002), it was discovered that the strength of the organizational culture was a strong predictor of job satisfaction, that job satisfaction was a significant predictor of inpatient satisfaction, and that inpatient satisfaction was a strong predictor of general inpatient satisfaction. Kvist et al. (2014) found a favorable correlation between nursing staff members' general job satisfaction and patients' opinions of the overall quality of care. The factor that seemed to have the biggest impact on care quality was having enough employees. Compared to younger patients, older patients were happier with the number of staff members. Patients in wards reported greater care for fundamental requirements (e.g., food, hygiene) than patients in outpatient departments, whereas patients in outpatient departments felt more respected (Kvist et al., 2014).

4--How satisfied are you with the unit manager at your workplace?

TABLE 4: *q15- How satisfied are you with the unit manager at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q15.1- I am satisfied with how my unit/ward manager takes an interest in me as a person as well as how competently I do my job.	109	1	7	4.97	1.37
q15.2- I am satisfied with how the manager of my unit/department gives me adequate and meaningful consideration when I ask him or her a question about my work.	109	1	7	5.10	1.33
q15.3- I am satisfied with how the manager of my unit/department gives me adequate opportunity to present problems, complaints, or suggestions to him/her.	109	1	7	5.10	1.29
q15.4- I am satisfied with how the manager of my unit/department is interested in my ideas and suggestions.	109	1	7	5.09	1.27
q15.5- I am satisfied with how the manager of my unit/department gives me recognition for work well done.	109	1	7	5.16	1.31

Followıng Table 4:

- Distinguishes the answer q15.1_ = 4.97 ± 1.37. Results show Agree= 18/ 16.5%, Disagree= 4/ 3.7%, Neutral= 13/ 11.9%, Slightly agree= 49/ 45.0%, Slightly disagree= 7/ 6.4%, Strongly agree= 15/ 13.8%, Strongly disagree= 3/ 2.8%.

- Distinguishes the answer q15.2_ = 5.10 ± 1.33. Results show Agree= 17/ 15.6%, Disagree= 6/ 5.5%, Neutral= 8/ 7.3%, Slightly agree= 53/ 48.6%, Slightly disagree= 6/ 5.5%, Strongly agree= 18/ 16.5%, Strongly disagree= 1/ 0.9%.

- Distinguishes the answer q15.3_ = 5.10 ± 1.29. Results show Agree= 22/ 20.2%, Disagree= 5/ 4.6%, Neutral= 6/ 5.5%, Slightly agree= 52/ 47.7%, Slightly disagree= 8/ 7.3%, Strongly agree= 15/ 13.8%, Strongly disagree= 1/ 0.9%.

- Distinguishes the answer q15.4_ = 5.09 ± 1.27. Results show Agree= 23/ 21.1%, Disagree= 5/ 4.6%, Neutral= 8/ 7.3%, Slightly agree= 51/ 46.8%, Slightly disagree= 7/ 6.4%, Strongly agree= 14/ 12.8%, Strongly disagree= 1/ 0.9%.

- Distinguishes the answer q15.5_ = 5.16 ± 1.31. Results show Agree= 19/ 17.4%, Disagree= 4/ 3.7%, Neutral= 6/ 5.5%, Slightly agree= 51/ 46.8%, Slightly disagree= 9/ 8.3%, Strongly agree= 19/ 17.4%, Strongly disagree= 1/ 0.9%.

Answers to the q15 has the mean that shows more negative and nurses are not satisfied with unit manager in the work environment. Other studies show different approaches, for example: According to Pubmed search were found n=313 results (*Relationship With Unit Manager and Nursing Job Satisfaction - Search Results - PubMed*, n.d.). Following that, other studies have other approaches, for example: Out of all the kinds, transformational leadership—one of the relational forms—was the most researched. Patient outcomes were less frequently recorded than staff outcomes, which included work satisfaction. Relational leadership styles and staff and patient outcomes were also found to be mediated by certain elements (Hult et al., 2023). Relationships between nurse managers' work activities and the other factors under study were both favorable and negative. According to Nurmeksela et al. (2021), the variables most strongly impacted by other factors were medication mistakes ($p < .001$), overall patient satisfaction ($p < .001$), and the Requiring elements of work ($p < .001$) subarea of nurses' job satisfaction. The variables of NM (nurse manager) leadership competence, conflict management, and team backup were found to be positively correlated. Conflict resolution and team backup were significantly predicted by staff nurses' opinions of NM leadership skills (Grubaugh & Flynn, 2018). Nurse managers should focus on organizational strategies that would boost employees' intrinsic motivation, according to the study's findings (Niskala et al., 2020).

Conclusions:

The average response to every question indicates that nurses are dissatisfied with the social components of job satisfaction in the workplace.

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TECHNICAL DIMENSIONS OF JOB SATISFACTION OF NURSES IN REGIONAL HOSPITALS IN ALBANIA. THE CASE OF REGIONAL HOSPITAL OF VLORA

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Abstract: Vlora is a city in the South of Albania and has 146681 inhabitants (INSTAT, 2023). Hospital Regional of Vlora was founded by the first government of Albania in 1912 and has approximately 246 nurses. Regional hospital cover several services like emergency, pediatrics, maternity, internal disease, etc. The study aims are to determine the level of job satisfaction among Vlora Hospital nurses in terms of technical aspects like autonomy, distributive justice, leadership in the workplace, and nursing professional development, etc. The scientific research is qualitative and cross-sectional. Almost 1/2 (n = 109) of the nurses of the Regional Hospital of Vlora were interviewed. Data collection was conducted through a questionnaire containing 24 main questions/issues and with sub-questions for each main question/issue. Answers to all questions have the mean that shows more negative and nurses are not satisfied with the technical aspects of the work environment, especially with salaries and resources. It has been demonstrated that the responses from this study are more unfavorable than good. The technical aspects of job satisfaction do not satisfy nurses. This will have a detrimental effect on the staff at Regional Hospital Vlora and encourage nurses to leave Albania.

Keywords: questionnaire, dimensions, nurse, job satisfaction

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Introduction

Vlora is a city in the South of Albania and has 146681 inhabitants (INSTAT, 2023). Hospital Regional of Vlora has approximately 246 nurses. Regional hospital cover several services like emergency, pediatrics, maternity, internal disease, etc.

The study's aims are to determine the level of job satisfaction among Vlora Hospital nurses in terms of technical aspects like autonomy, distributive justice, leadership in the workplace, scheduling, resources, and nursing professional development.

Materials and methodology

The scientific research is qualitative and cross-sectional. Approxamitely1/2 (n = 109) of the nurses of the Regional Hospital of Vlora were interviewed. Data collection was conducted through a questionnaire containing 24 main questions/issues and with sub-questions for each main question/issue.

The questionnaire used is the Healthcare Environment Survey (HES)(Nelson, 2013). The data collection process was conducted during the period of January-August 2024. The answers range from 1-7, where 1 is "Strongly disagree", 2 is "Disagree", 3 is "Slightly disagree", 4 is "Neutral", 5 is "Slightly agree", 6 is "Agree", 7 is "Strongly agree"

The study includes these questions:

q11- How satisfied are you with the workload at your workplace?

q12-How satisfied are you with the autonomy at your workplace?

q13-How satisfied are you with the distributive justice at your workplace?

q16- How satisfied are you with the professional growth at your workplace?

q17- How satisfied are you with the executive leadership at your workplace?

q19- How satisfied are you with the scheduling at your workplace?

q20- How satisfied are you with the resources at your workplace?

Results and discussions

1- How satisfied are you with the workload at your workplace?

TABLE 1: *q11- How satisfied are you with the workload at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q11.1- I am satisfied with the types of activities that I do on my job.	109	1	7	4.62	1.45
q11.2- I am satisfied with the amount of time and opportunity I have to discuss job related problems with other staff members in my unit or department when I need to.	109	1	7	4.50	1.31
q11.3- I am satisfied with the amount of time I have to complete the tasks required of me.	109	1	7	4.52	1.33

Followıng Table 1:

- Distinguishes the answer q11.1_ = 4.62 ± 1.45. Results show Agree= 19/ 17.4%, Disagree= 8/ 7.3%, Neutral= 9/ 8.3%, Slighlty agree= 46/ 42.2%, Slighlty disagree= 16/ 14.7%, Strongly agree= 8/ 7.3%, Strongly disagree= 3/ 2.8%

- Distinguishes the answer q11.2_ = 4.50 ± 1.31. Question 11.2, concerns the amount of time nurses must spend discussing their job with other team members. Results show Agree= 14/ 12.8%, Disagree= 9/ 8.3%, Neutral= 6/ 5.5%, Slighlty agree= 52/ 47.7%, Slighlty disagree= 23/ 21.1%, Strongly agree= 5/ 4.6%

- Distinguishes the answer q11.3_ = 4.52 ± 1.33. This question has to do with how much time is available to complete the job. Results show Agree= 15/ 13.8%, Disagree= 11/ 10.1%, Neutral= 14/ 12.8%, Slighlty agree= 47/ 43.1%, Slighlty disagree= 16/ 14.7%, Strongly agree= 6/ 5.5%.

Answers to the q11 has the mean that shows more negative and nurses are not satisfied with the workload in the work environment. Based on Pubmed search were found n= 1567 results (*Workload and Nursing Job Satisfaction - Search Results - PubMed*, n.d.). Following that, other studies have other approaches, for example: Phillips (2020) provides new insights into the relationships among nurses' attitudes toward their workload, burnout, and intention to leave. According to the other findings, nurses who believe their workload is increasing are more likely to leave their current post. In developing strategies to improve the work environment and nurse retention, nurse managers should consider these findings (Phillips, 2020). According to (Serra et al., 2023), given the dearth of research aimed at comprehending the complexity of care, it becomes necessary to adjust nursing presence and organizational paradigms in different settings in order to protect organizational well-being and to adapt to the type of care needs. This will have a positive impact on the quality of care that staff and patients perceive. Maghsoud et al. (2022) found that all of the variables had statistically significant relationships ($P < 0.05$), with the exception of the direct and reciprocal association between workload and nursing care quality ($P > 0.05$). In the relationship between workload and nursing care quality, the hypothesized model fit the empirical data and validated the mediating role of emotional exhaustion, job satisfaction, and implicit rationing of nursing care (TLI, CFI > 0.9, RMSEA < 0.08, and $\chi 2/df < 3$) (Maghsoud et al., 2022). Al-Hakim et al. (2022) discovered a strong direct impact of psychological meaningfulness on the link between workload and satisfaction. This implies that the interaction is mediated by psychological meaningfulness. Additionally, it demonstrates how perceived organizational support moderates the relationship and, as a result, outlines the circumstances in which job satisfaction and workload can be linked (Al-Hakim et al., 2022). But when psychological meaningfulness was present, the association between workload and psychological meaningfulness was reduced by perceived organizational support, and its direct impact on the relationship between workload and job satisfaction was no longer significant (Al-Hakim et al., 2022). In every country,

there is some correlation between patient burden and job happiness and desire to quit; that is, the higher the patient workload, the lower the job satisfaction, and the higher the intention to leave (Lindqvist et al., 2014).

2-How satisfied are you with the autonomy at your workplace?

TABLE 2: *q12-How satisfied are you with the autonomy at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q12.1- I am satisfied with the level of authority I have in my job when I consider the amount of responsibility I have.	109	1	7	4.70	1.32
q12.2- I am satisfied with how much control I have over my own work. My supervisors do not make all the decisions for me.	109	1	7	4.72	1.27
q12.3- I am satisfied with the level of independence I have within my work.	109	1	7	4.73	1.26
q12.4- I am satisfied with the amount of flexibility I have in my unit/department for me to get the job done the way I feel it should be done.	109	1	7	4.74	1.29

Followıng Table 2:

- Distinguishes the answer q12.1_ = 4.70 ± 1.32. This question has to do with the nurses' power and accountability. Results show Agree= 20/ 18.3%, Disagree= 5/ 4.6%, Neutral= 8/ 7.3%, Slighlty agree= 48/ 44.0%, Slighlty disagree= 20/ 18.3%, Strongly agree= 7/ 6.4%, Strongly disagree= 1/ 0.9%

- Distinguishes the answer q12.2_ = 4.72 ± 1.27. This question has to do with nurses' decision-making and control. Results show Agree= 21/ 19.3%, Disagree= 5/ 4.6%, Neutral= 13/ 11.9%, Slighlty agree= 47/ 43.1%, Slighlty disagree= 16/ 14.7%, Strongly agree= 6/ 5.5%, Strongly disagree= 1/ 0.9%.

- Distinguishes the answer q12.3_ = 4.73 ± 1.26 This question is related to the independence of nurses in the organization. Results show Agree= 18/ 16.5%, Disagree= 5/ 4.6%, Neutral= 13/ 11.9%, Slighlty agree= 50/ 45.9%, Slighlty disagree= 15/ 13.8%, Strongly agree= 7/ 6.4%, Strongly disagree= 1/ 0.9%

- Distinguishes the answer q12.4_ = 4.74 ± 1.29. The flexibility in performing the task is the subject of this question. Results show Agree= 18/ 16.5%, Disagree= 5/ 4.6%, Neutral= 9/ 8.3%, Slighlty agree= 51/ 46.8%, Slighlty disagree= 17/ 15.6%, Strongly agree= 8/ 7.3%, Strongly disagree= 1/ 0.9%.

Answers to the q12 has the mean that shows more negative and nurses are not satisfied with the autonomy in the work environment. Based on Pubmed search were found n=1024 results (*Autonomy and Nursing Job Satisfaction - Search Results - PubMed*, n.d.). Following that, other studies have other approaches, for example: According to Zurmehly's (2008) research, perceived autonomy, critical thinking, educational preparedness, and job satisfiers all showed substantial positive connections with overall job satisfaction. There were also notable inverse relationships between job dissatisfiers and overall job satisfaction. Close physician supervision and control structurally restricts nurses' autonomy, claim Carmel et al. (1988). Nurses were compelled to provide primary healthcare services for three months without the presence of doctors in 1983 due to a lengthy doctors' strike. The majority of nurses report that they are typically content with their employment and believe they have a lot of freedom in them. During the strike, it was shown that an increase in self-initiated and routine tasks was positively but weakly associated with an increase in job satisfaction and the impression of role autonomy (Carmel et al., 1988). To improve their job satisfaction, nurses serving as physician assistants need more professional autonomy (Kim et al., 2022).

3-How satisfied are you with the distributive justice at your workplace?

TABLE 3: q13-How satisfied are you with the distributive justice at your workplace?	N	Min	Max	Mean	SD
q13.1- I am satisfied with how the organization rewards me when I consider the responsibility I have.	109	1	7	3.82	1.59
q13.2- I am satisfied with how the organization rewards me in terms of the pay I receive.	109	1	7	3.82	1.57

q13.3- I am satisfied with how the organization rewards me when I consider the amount of education and training I have had.	109	1	7	3.91	1.57
q13.4- I am satisfied with how the organization rewards me in view of the amount of experience I have had.	109	1	7	3.91	1.59
q13.5- I am satisfied with how the organization rewards me when I consider the effort I put forth.	109	1	7	3.89	1.58
q13.6- I am satisfied with how the organization rewards me when I consider the work I have done well.	109	1	7	3.90	1.55
q13.7- I am satisfied with how the organization rewards me when I consider the stresses and strains of my job.	109	1	7	3.89	1.55
q13.8- I am satisfied with how the organization rewards me when I consider the contribution I make toward the hospital/facility operation.	109	1	7	3.87	1.61

Following Table 3:

- Distinguishes the answer q13.1_ = 3.82 ± 1.59. Results show Agree= 5/ 4.6%, Disagree= 18/ 16.5%, Neutral= 6/ 5.5%, Slighlty agree= 47/ 43.1%, Slighlty disagree= 20/ 18.3%, Strongly agree= 3/ 2.8%, Strongly disagree= 10/ 9.2%

- Distinguishes the answer q13.2_ = 3.82 ± 1.57. Results show Agree= 6/ 5.5%, Disagree= 17/ 15.6%, Neutral= 4/ 3.7%, Slighlty agree= 48/ 44.0%, Slighlty disagree= 22/ 20.2%, Strongly agree= 2/ 1.8%, Strongly disagree= 10/ 9.2%.

- Distinguishes the answer q13.3_ = 3.91 ± 1.57. Results show Agree= 8/ 7.3%, Disagree= 14/ 12.8%, Neutral= 3/ 2.8%, Slighlty agree= 46/ 42.2%, Slighlty disagree= 26/ 23.9%, Strongly agree= 3/ 2.8%, Strongly disagree= 9/ 8.3%.

- Distinguishes the answer q13.4_ = 3.91 ± 1.59. Results show Agree= 8/ 7.3%, Disagree= 17/ 15.6%, Neutral= 6/ 5.5%, Slighlty agree= 43/ 39.4%, Slighlty disagree= 23/ 21.1%, Strongly agree= 4/ 3.7%, Strongly disagree= 8/ 7.3%

- Distinguishes the answer q13.5_ = 3.89 ± 1.58. Results show Agree= 7/ 6.4%, Disagree= 14/ 12.8%, Neutral= 4/ 3.7%, Slighlty agree= 44/ 40.4%, Slighlty disagree= 27/ 24.8%, Strongly agree= 4/ 3.7%, Strongly disagree= 9/ 8.3%

- Distinguishes the answer q13.6_ = 3.90 ± 1.55. Results show Agree= 6/ 5.5%, Disagree= 17/ 15.6%, Neutral= 7/ 6.4%, Slighlty agree= 44/ 40.4%, Slighlty disagree= 24/ 22.0%, Strongly agree= 4/ 3.7%, Strongly disagree= 7/ 6.4%

- Distinguishes the answer q13.7_ = 3.89 ± 1.55. Results show Agree= 5/ 4.6%, Disagree= 16/ 14.7%, Neutral= 8/ 7.3%, Slighlty agree= 45/ 41.3%, Slighlty disagree= 23/ 21.1%, Strongly agree= 4/ 3.7%, Strongly disagree= 8/ 7.3%.

- Distinguishes the answer q13.8_ = 3.87 ± 1.61. Results show Agree= 4/ 3.7%, Disagree= 17/ 15.6%, Neutral= 4/ 3.7%, Slighlty agree= 47/ 43.1%, Slighlty disagree= 23/ 21.1%, Strongly agree= 5/ 4.6%, Strongly disagree= 9/ 8.3%

Answers to the q13 have the mean that shows negative results. Nurses are not satisfied with distributive justice and SD is less than 4. This means that nurses are not satisfied with salaries and other components of distributive justice. Based on PubMed search were found n=24 results (*Distributive Justice and Nursing Job Satisfaction - Search Results - PubMed*, n.d.). Following that, other studies have other approaches, for example: The degree of satisfaction increases in proportion to the respondents' perceptions of fairness, control, rewards, and values, among other aspects of their work lives, according to Tomaszewska et al. (2024). According to Zahednezhad et al. (2020), job satisfaction had a significant negative impact on nurses' intention to leave the nursing profession ($p < .001$; $\beta = -0.71$), while distributive justice ($p < .001$; $\beta = 0.24$) and interactional justice ($p < .001$; $\beta = 0.44$) could indirectly affect nurses' intention to leave the nursing profession via the direct impact on job satisfaction. Furthermore, Yang et al. (2021) found a substantial inverse relationship between distributive justice and turnover intention as well as between the two forms of occupational stress and distributive justice. The relationship between distributive justice and turnover intention was moderated by regional role (Yang et al., 2021).

4- How satisfied are you with the professional growth at your workplace?

TABLE 4: *q16-How satisfied are you with the professional growth at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q16.1- I am satisfied with the opportunities I am given to improve my skills.	109	1	7	4.68	1.35
q16.2- I am satisfied with my opportunities for growth and development within this organization.	109	1	7	4.78	1.24
q16.3- I am satisfied with the amount of personal growth and development I get in doing my job.	109	1	7	4.80	1.25
q16.4- I am satisfied with programs made available to assist me with my development at this organization.	109	1	7	4.76	1.24

Following Table 4:

- Distinguishes the answer q16.1_ = 4.68 ± 1.35. Results show Agree= 16/ 14.7%, Disagree= 4/ 3.7%, Neutral= 11/ 10.1%, Slighlty agree= 54/ 49.5%, Slighlty disagree= 13/ 11.9%, Strongly agree= 7/ 6.4%, Strongly disagree= 4/ 3.7%

- Distinguishes the answer q16.2_ = 4.78 ± 1.24. Results show Agree= 14/ 12.8%, Disagree= 4/ 3.7%, Neutral= 12/ 11.0%, Slighlty agree= 55/ 50.5%, Slighlty disagree= 14/ 12.8%, Strongly agree= 9/ 8.3%, Strongly disagree= 1/ 0.9%.

- Distinguishes the answer q16.3_ = 4.80 ± 1.25. Results show Agree= 14/ 12.8%, Disagree= 5/ 4.6%, Neutral= 9/ 8.3%, Slighlty agree= 61/ 56.0%, Slighlty disagree= 10/ 9.2%, Strongly agree= 8/ 7.3%, Strongly disagree= 2/ 1.8%.

- Distinguishes the answer q16.4_ = 4.76 ± 1.24. Results show Agree= 14/ 12.8%, Disagree= 3/ 2.8%, Neutral= 11/ 10.1%, Slighlty agree= 57/ 52.3%, Slighlty disagree= 14/ 12.8%, Strongly agree= 8/ 7.3%, Strongly disagree= 2/ 1.8%.

Answers to the q16 has the mean that shows more negative and nurses are not satisfied with the professional growth in the work environment. Based on PubMed search were found n=186 (*Professional Growth and Nursing Job Satisfaction - Search Results - PubMed*, n.d.). Following that, other studies have other approaches, for example: In order to develop nurse resilience, Wei et al. (2018) proposed seven strategies: establishing social connections, encouraging positivism, leveraging nurses' strengths, nurturing their growth, encouraging self-care, cultivating mindfulness practice, and communicating altruism. Costa and Smith (2023) identified personal and professional growth, retention, missed opportunities, isolation, and multilayered mentoring as themes of career advancement and happiness associated with mentorship. By increasing staff members' awareness of the duties of intermediate care personnel, staff rotations between acute, community, and intermediate care could improve opportunities for professional growth in the sector (Nancarrow, 2007). Non-hierarchical management systems limit management career development opportunities; instead, intermediate care experience and consultant roles should be utilized to boost professional growth opportunities (Nancarrow, 2007).

5- How satisfied are you with the executive leadership at your workplace?

TABLE 5: *q17- How satisfied are you with the executive leadership at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q17.1- I am not sure what executive team member is responsible for my profession within this facility.	109	1	7	3.87	1.64
q17.2- I am satisfied with the level of respect other professions in this facility show to the chief executive of my profession (e.g. the Chief Nurse Officer is well respected by other disciplines such as medicine, pharmacy, etc.).	109	1	7	4.62	1.62
q17.3- I am satisfied with the level of respect staff within my profession shown to the chief executive of my profession (e.g., the Chief Medical Officer is well respected by physicians, or the Chief Nursing Officer is well respected by nurses, etc.).	109	1	7	4.68	1.59
q17.4- I am satisfied with how much I feel the executive leader in my profession cares for those in my profession (e.g. the Chief Nurse Officer cares about nursing staff).	109	1	7	4.70	1.66

Followıng Table 5

- Distinguishes the answer q17.1_ = 3.87 ± 1.64. Results show Agree= 7/ 6.4%, Disagree= 18/ 16.5%, Neutral= 12/ 11.0%, Slighlty agree= 49/ 45.0%, Slighlty disagree= 8/ 7.3%, Strongly agree= 2/ 1.8%, Strongly disagree= 13/ 11.9%

- Distinguishes the answer q17.2_ = 4.62 ± 1.62. Results show Agree= 21/ 19.3%, Disagree= 7/ 6.4%, Neutral= 6/ 5.5%, Slighlty agree= 53/ 48.6%, Slighlty disagree= 5/ 4.6%, Strongly agree= 7/ 6.4%, Strongly disagree= 10/ 9.2%.

- Distinguishes the answer q17.3_ = 4.68 ± 1.59. Results show Agree= 21/ 19.3%, Disagree= 4/ 3.7%, Neutral= 4/ 3.7%, Slighlty agree= 54/ 49.5%, Slighlty disagree= 8/ 7.3%, Strongly agree= 8/ 7.3%, Strongly disagree= 10/ 9.2%.

- Distinguishes the answer q17.4_ = 4.70 ± 1.66. Results show Agree= 21/ 19.3%, Disagree= 6/ 5.5%, Neutral= 8/ 7.3%, Slighlty agree= 48/ 44.0%, Slighlty disagree= 5/ 4.6%, Strongly agree= 11/ 10.1%, Strongly disagree= 10/ 9.2%.

Answers to the q17 has the mean that shows more negative and nurses are not satisfied with the executive leadership in the work environment. Based on pubmed search were found n=91 results (*Executive Leadership and Nursing Job Satisfaction - Search Results - PubMed*, n.d.). Following that, other studies have other approaches, for example: Transformational leadership traits continued to be the most commonly perceived. Positive leadership traits were reported more often by nurse directors and executives than by charge nurses and personnel (Fowler & Robbins, 2022). By implementing rules that could improve the working conditions for nurses, healthcare administrators can protect the quality of work done by staff members (Rizzo et al., 2024).

6- How satisfied are you with the scheduling at your workplace?

TABLE 6: *q19- How satisfied are you with the scheduling at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q19.1- I am satisfied with the amount of advance notice I have prior to my new shift roster starting.	109	1	7	4.94	1.22
q19.2- I am satisfied with the shift rotation I am assigned.	109	1	7	4.98	1.15
q19.3- I am satisfied with the input I have into my final schedule prior to the roster being posted.	109	1	7	5.03	1.12
q19.4- I am satisfied with my ability to change my schedule after the schedule roster is posted, if I need to change it.	109	1	7	4.94	1.26

Followıng Table 6

- Distinguishes the answer q19.1_ = 4.94 ± 1.22. Results show Agree= 20/18.3%, Disagree= 1/0.9%, Neutral= 4/ 3.7%, Slighlty agree= 61/ 56.0%, Slighlty disagree= 12/ 11.0%, Strongly agree= 8/ 7.3%, Strongly disagree= 3/ 2.8%.

- Distinguishes the answer q19.2_ = 4.98 ± 1.15. Results show Agree= 18/ 16.5%, Disagree= 2/ 1.8%, Neutral= 8/ 7.3%, Slighlty agree= 62/ 56.9%, Slighlty disagree= 8/ 7.3%, Strongly agree= 9/ 8.3%, Strongly disagree= 2/ 1.8%

- Distinguishes the answer q19.3_ = 5.03 ± 1.12. Results show Agree= 21/ 19.3%, Neutral= 10/ 9.2%, Slighlty agree= 58/ 53.2%, Slighlty disagree= 9/ 8.3%, Strongly agree= 9/ 8.3%, Strongly disagree= 2/ 1.8%.

- Distinguishes the answer q19.4_ = 4.94 ± 1.26. Results show Agree= 23/ 21.1%, Disagree= 4/ 3.7%, Neutral= 4/ 3.7%, Slighlty agree= 57/ 52.3%, Slighlty disagree= 11/ 10.1%, Strongly agree= 8/ 7.3%, Strongly disagree= 2/ 1.8%.

Answers to the q19 has the mean that shows more negative and nurses are not satisfied with scheduling in the work environment. Based on Pubmed search were found n=1092 (*Scheduling and Nursing Job Satisfaction - Search Results - PubMed*, n.d.). Following that, other studies have other approaches, for example: According to Rizany et al. (2019), there was a statistically significant relationship between nurses' schedule management and their level of job satisfaction. A nurse manager should be able to raise nurse satisfaction through scheduling optimization, especially in the areas of control and organization. Additionally, the review discovered that self-scheduling programs can help nurses and their organizations and support more flexible work schedules (Koning, 2014).

7- How satisfied are you with the resources at your workplace?

TABLE 7: *q20- How satisfied are you with the resources at your workplace?*	*N*	*Min*	*Max*	*Mean*	*SD*
q20.1- I am satisfied with the availability of supplies required to do my job.	109	1	7	4.45	1.44
q20.2- I am satisfied with the availability of equipment needed to do my job.	109	1	7	4.40	1.38
q20.3- I am satisfied with my access to clinical experts/specialists to do my job (may include physicians, pharmacists, nurses specialists, etc.).	109	1	7	4.58	1.35

Followıng Table 7

- Distinguishes the answer q20.1_ = 4.45 ± 1.44. Results show Agree= 17/ 15.6%, Disagree= 4/ 3.7%, Neutral= 5/ 4.6%, Slighlty agree= 48/ 44.0%, Slighlty disagree= 25/ 22.9%, Strongly agree= 5/ 4.6%, Strongly disagree= 5/ 4.6%.

- Distinguishes the answer q20.2_ = 4.40 ± 1.38. Results show Agree= 16/ 14.7%, Disagree= 9/ 8.3%, Neutral= 8/ 7.3%, Slighlty agree= 50/ 45.9%, Slighlty disagree= 20/ 18.3%, Strongly agree= 3/ 2.8%, Strongly disagree= 3/ 2.8%.

- Distinguishes the answer q20.3_ = 4.58 ± 1.35. Results show Agree= 15/ 13.8%, Disagree= 2/ 1.8%, Neutral= 7/ 6.4%, Slighlty agree= 53/ 48.6%, Slighlty disagree= 22/ 20.2%, Strongly agree= 6/ 5.5%, Strongly disagree= 4/ 3.7%.

Answers to the q20 has the mean that shows more negative and nurses are not satisfied with the resources in the work environment. Based on Pubmed search were found n= 1319 (*Resources and Nursing Job Satisfaction - Search Results - PubMed*, n.d.). Following that, other studies have other approaches, for example: Active problem-solving coping techniques were found to be associated with higher job satisfaction, whereas avoidance strategies resulted in lower job satisfaction (Formentin et al., 2010). All things considered, the research cited in this editorial offers significant supporting data regarding the particular work requirements, available resources, and results associated with the emergency nursing specialty (Castner, 2019). It identifies specific factors that significantly affect nurses' job satisfaction and likelihood of leaving, according to Zaydan et al. (2021), giving organizations options to improve their environment and promote job satisfaction, which in turn enhances patient care.

Conclusions

It has been demonstrated that the responses from this study are more unfavorable than good. The technical aspects of job satisfaction do not satisfy nurses. This will have a detrimental effect on the staff at Regional Hospital Vlora and encourage nurses to leave Albania.

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HEALTH CARE MANAGEMENT

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Abstract: In order to achieve the triple aim, health care delivery systems throughout the country are working to effectively treat patient populations, while at the same time decreasing health risks and health care costs. Care management has emerged as a primary means of managing the health of a defined population. Unlike case management, which tends to be disease-centric and administered by health plans, CM is organized around the precept that appropriate interventions for individuals within a given population will reduce health risks and decrease the cost of care. Care management is a promising team-based, patient-centered approach "designed to assist patients and their support systems in managing medical conditions more effectively."3 It also encompasses those care coordination activities needed to help manage chronic illness. The CM recommendations presented in this brief emerged from recent research funded by AHRQ on primary care practice transformation. In 2010, AHRQ funded 14 Transforming Primary Care grants and supported four additional Delivery System Research grants through American Recovery and Reinvestment Act funding. These 18 projects explored ways to more effectively and efficiently deliver primary care in various practice contexts (e.g., urban/rural and large/small practices).

Key words. Health care, management, chronic illness, medical conditions.

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Introduction

Aims among these funded grants included the investigation of successful strategies for the implementation and practice of CM. A subgroup of 12 investigators conducted a narrative synthesis of experiences developing CM programs within different clinical, geographical, and administrative contexts.[4] Participants provided a brief summary of the study context, available data sources, and lessons learned. They also identified shared themes and provided case studies. Findings confirmed the importance of establishing CM services appropriate to the clinic context as well as the population served.

This issue brief was informed by the experience of the AHRQ grantees, our own process of primary care practice transformation, and the CM literature more broadly. It presents practice and policy recommendations for the provision of CM services and highlights three key strategies to enhance CM for target populations: (1) identify population(s) with modifiable risks; (2) align CM services to the needs of the population(s); and (3) identify, prepare, and integrate appropriate personnel to deliver the needed services.

Despite the rapid and widespread adoption of CM, questions remain about the best way to optimize and pay for the mix of staff and services involved in its delivery. The current fee-for-service payment model does not generally reimburse practices for the CM and coordination services required to oversee panels of heterogeneous patients, many of whom have increasingly complex and comorbid conditions.

The historical context of misaligned incentives notwithstanding, recent payment reform initiatives are well suited to CM. For example, transitional care management billing codes (99495, 99496) incentivize appropriate outpatient practices for patients moving from the hospital back into primary care settings, and the Centers for Medicare & Medicaid Services (CMS) implemented a new chronic care management billing code (99490) in 2015. Both CMS and private payors are starting to support the provision of CM services by either paying for the services directly or paying for the processes and outcomes associated with effective CM. Currently, the CMS Comprehensive Primary Care initiative includes risk-stratified approaches to CM among five comprehensive primary care functions designed to achieve the triple aim. In addition, the Patient-Centered Primary Care Collaborative considers CM components such as population management and risk stratification to be essential aspects of the medical home, and important across the continuum of care.

The Exhibit below presents practice, policy, and research recommendations intended to support and guide decision making by primary care providers, practice managers, health systems administrators, payors, and governmental officials as they implement CM services and formulate policies to promote practice transformation. While we intend these strategies and recommendations to be broadly applicable, we recognize that they may not be appropriate for or relevant to all providers, administrators, and policymakers.

Key Care Management Strategies and Recommendations.

Strategy	Recommendations for Medical Practice	Recommendations for Health Policy	Recommendations for Health Services Research
Identify populations with modifiable risks	• Use multiple metrics to identify patients with modifiable risks • Develop risk-based approaches to identify patients most in need of care management (CM) services	• Consider return on investment of providing CM services to patients with a broad set of eligibility requirements • Establish metrics to identify and track CM outcomes to determine success • Implement value-based payment methodologies through State and Federal tax incentives to practices for achieving the triple aim	• Determine the benefits to different patient segments from CM services • Investigate the understanding of and parameters affecting modifiable risks. • Develop/refine tools for risk stratification • Develop predictive models to support risk stratification
Align CM services to the needs of the population	• Tailor CM services, with input from patients, to meet specific needs of populations with different modifiable risks • Use EMR to facilitate care coordination and effective communication with patients and outreach to them	• Incentivize CM services through CMS transitional CM and chronic care coordination billing codes • Provide variety of financial and non-financial supports to develop, implement and sustain CM • Reward CM programs that achieve the triple aim	• Evaluate initiatives seeking to foster care alignment across providers • Create a framework for aligning CM services across the medical neighborhood to reduce potentially harmful duplication of these services[22] • Determine how best to implement CM services across the spectrum of long term services and supports [22]
Identify and train personnel appropriate to the needed CM services	• Determine who should provide CM services given population needs and practice context • Identify needed skills, appropriate training, and licensure requirements • Implement interprofessional teambased approaches to care[23]	• Incentivize care manager training through loans or tuition subsidies • Develop CM certification programs that recognize functional expertise	• Determine what teambuilding activities best support delivery of CM services • Design protocols for workflow that accommodate CM services in different contexts • Develop models for interprofessional education that bridge trainees at all levels and practicing health care

Strategy.

Modifiable risk factors are those that an individual has control over and, if minimized, will increase the probability that a person will live a long and productive life. Providers must be able to identify populations with modifiable risks if they are to manage and coordinate care in ways that help achieve the goals of cost savings, improved quality, and enhanced patient experience. While all patients are likely to benefit from basic elements of care coordination such as effective communication and the efficient exchange of information among care providers, it is critical that providers understand which patients are likely to benefit from more intensive CM. This requirement is particularly important for high-risk and/or high-cost populations. There may be other patients for whom CM interventions would have little impact.

To manage resources sustainably, practices must accurately identify individuals and entire populations that can control risk factors, and by doing so improve their health. Careful management of select populations may increase the quality of care (e.g., improving the delivery of appropriate clinical preventive services), safety (e.g., medication reconciliation to avoid duplication and prescription errors), and efficiency (e.g., reducing unnecessary utilization). Consider, for example, a population of patients who have not yet developed one or more chronic diseases such as diabetes mellitus, but are at risk of doing so. The risk of progression from glucose intolerance to diabetes mellitus can be influenced by diet and exercise. Individuals within this "rising risk" population are at different stages of readiness to change, and consequently at different stages of modifiable risk. This insight allows providers to offer services at the appropriate level and time.

It is well understood that poorly executed transitions of care between different locations (e.g., from hospital to primary care) are associated with increased risks of adverse medication events, hospital readmissions, and higher health care costs. Determining which transitions present the greatest risks and targeting CM services to patients undergoing those transitions should conserve resources and lead to better cost and quality outcomes.

In the broadest terms, modifying risk includes improving health outcomes, positively influencing psychosocial concerns, as well as helping patients achieve goals that produce better health outcomes. Patient characteristics such as ethnicity, age, metabolic risk factors, smoking status, and chronic disease burden, as well as psychosocial issues, such as availability of caregiver support, help practices and payors identify individuals and populations that might benefit from CM services. An understanding of these variables may be helpful in designing supports to assist patients in achieving their individual goals. When risks do not appear to be modifiable, coordination of services can often benefit patients and their families. Coordination helps clarify roles and eliminate duplication of services.

The need for CM can also be identified through gaps in evidence-based care or by a triggering event, such as hospitalization. Appropriate identification of the need for CM services should be followed by engagement of patients and caregivers in shared decisionmaking to determine which CM services would be most appropriate to address patients' modifiable risks and optimize their health.

As medical practices focus on identifying populations with modifiable risks, their work could be supported by health policies that consider a broad set of eligibility criteria for patients receiving CM. Different CM services could be supported for patients with different needs. Policies should establish metrics by which needs for and outcomes from CM can be assessed. With these in mind, value-based payment methodologies could reward successful CM with State and Federal tax incentives for practices that achieve the triple aim.

Future research is needed to determine the benefits to different patient segments of CM strategies. For some patient segments, emergency department admissions and hospital readmissions may be reduced. For others, medication errors may be decreased. For yet others, individual engagement in self-management may be enhanced. There are also segments where all of these strategies will need to be employed. More work is needed to explore what constitutes modifiable risks. Beyond changing unhealthy behaviors, other types of risks may be modified with the targeted application of specific resources, such as patient education or addressing psychosocial needs. Although much progress has been made in the area of risk stratification tools, more work is needed to develop new tools and refine existing tools. Developing predictive models that support risk stratification will be especially significant.

Coordination of Care.

Several CM services are intended to improve coordination of care. Although basic processes of care coordination should be an integral part of routine primary care, specific care coordination requirements vary among populations and among individuals. For high-risk and/or high-cost populations, personalized care plans play a critical role in coordinating care among various providers. Other services, such as coordination of specialty referrals, assistance with ancillary services, and referrals to and coordination with community services, also support high-risk and/or high-cost populations.

Self-Management Support.

Self-management support is particularly important for patients dealing with chronic diseases and those with emerging modifiable risks. Understanding an individual's readiness to change, or his or her activation level, can help care managers employ motivational interviewing to set goals, track progress towards these goals, and foster individuals' self-management of their medical conditions.

Outreach.

Outreach to patients is a critical service for managing patients with chronic conditions and those experiencing transitions of care. Contact with patients on disease registries facilitates ongoing outreach and the delivery of follow up services. Phone calls to patients transitioning to lower levels of care, such as from the inpatient hospital setting to home, can support reconnection with their primary care providers and reduce the risk of hospital readmission. Informed by Coleman's "Four Pillars"® of effective transitional care, outreach calls during transitions of care can address patients':

- Understanding of medication changes
- Awareness of signs for which they should seek medical attention
- Unanswered questions regarding their hospitalization
- Appropriate follow up with primary care and/or specialty providers

Within each of these CM functions, clinical care such as medication reconciliation, assessment of adherence to treatment plans, and identification of adverse events can facilitate intensified treatment and/or mobilize clinic supports.

Financial incentives to perform the aforementioned care coordination, self-management support, and outreach activities are needed. For example, private payors could adopt incentives to perform CM and chronic care management activities similar to those implemented by CMS. Both public and private payors might also consider deploying additional financial incentives with respect to promoting self-management support. Policies that reward practices for achieving the triple aim could help support the development and implementation of CM programs and ensure their sustainability. In addition, payors can provide nonmonetary support for practice transformation via coaching, learning collaboratives, and coordination of CM provided by payors with that provided by practices.

In concert with these health policy goals involving alignment of CM services with population needs, research is needed regarding the development and implementation of CM services across the medical neighborhood, including the spectrum of long-term care services and supports.[28] For example, there is often considerable overlap of CM services across long-term care, leading to redundancy, role confusion, and potential for error. Research is needed to evaluate initiatives, both individually and also from a systems perspective, that seek to foster care alignment across providers.

Conclusions.

1.The development and implementation of CM parallels the rapid transformation of health care delivery and payment systems over the last decade.

2.CM is a team-based, patient-centered approach designed to address the increasing complexity of care in outpatient settings. It is both a process innovation, with a new model of care and new care services, and a workforce innovation, involving new members of the care team.

3.This issue brief suggests that CM is a key tool for managing the health of populations. It presents three strategies for implementing CM: identifying populations with modifiable risk, aligning CM services to population needs, and identifying and training personnel appropriate to the needed CM functions.

4.It further provides medical practice, health policy, and health services research recommendations. There is still much to learn about the effective implementation of CM.

5.Research is needed to discover which CM services are most effective, the contexts in which they are ideally deployed, and how they are best executed.

6.By practices working diligently to implement CM and policymakers supporting their efforts through changes in payment models and incentives for achieving the triple aim, improved management of the health of populations will be possible.

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TECHNOLOGY AND BRICOLOGY IN INTENSIVE CARE NURSES

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Abstract: Intensive care nursing is a field where technology and information integration is important in critically ill patient care. In this article, the role of technology use in intensive care nurses and the concept of bricolage in this field are examined. In this article, it will be discussed how nurses' adoption of technology and application of the bricolage approach affects the quality and efficiency of patient care. Bricolage is the process of solving problems and producing innovative solutions by bringing together information and resources obtained from different fields. In the field of healthcare, bricolage is used in various fields such as medical research, patient care strategies and healthcare management. This article examines the applications of bricolage in healthcare and discusses the advantages and potential limitations of this approach. Intensive care units (ICU) are areas where critically ill patients require intensive and continuous care. In this environment, technology and information management are critical. Bricolage is the process of bringing together information and tools from different sources. Integration of technology and bricolage in intensive care nurses offers great potential for improving patient care and increasing the efficiency of health services. Bricolage offers great potential for creating innovative solutions and solving existing problems in healthcare. However, in order to implement this approach effectively, various challenges need to be overcome and interdisciplinary integration needs to be ensured. In the future, the health implications of bricolage may become even more evident, and wider adoption of this approach could make health systems more effective. The integration of technology and bricolage in intensive care nursing plays an important role in improving the quality of patient care. The possibilities offered by technology and the innovative approaches provided by bricolage can help nurses provide more effective and comprehensive care. However, for this integration to be successful, nurses need to receive continuous training and be careful about data security issues.

Key Words: Intensive Care, nursing, innovation, technology, bricolage

YOĞUN BAKIM HEMŞİRELERİNDE TEKNOLOJİ VE BRİKOLAJ

Özet: Yoğun bakım hemşireliği, kritik hasta bakımında teknoloji ve bilgi entegrasyonunun önemli olduğu bir alandır. Bu makale, yoğun bakım hemşirelerinde teknoloji kullanımının ve brikolaj kavramının bu alandaki rolünü incelemektedir. Hemşirelerin teknolojiyi nasıl benimsediği ve brikolaj yaklaşımını nasıl uyguladığı, hasta bakımının kalitesini ve verimliliğini nasıl etkilediğini, bu makalede ele alınacaktır. Brikolaj, farklı alanlardan elde edilen bilgilerin ve kaynakların bir araya getirilerek sorunları çözme ve yenilikçi çözümler üretme sürecidir. Sağlık alanında brikolaj, tıbbi araştırmalar, hasta bakım stratejileri ve sağlık yönetimi gibi çeşitli alanlarda kullanılmaktadır. Bu makale, brikolajın sağlık alanındaki uygulamalarını incelemekte ve bu yaklaşımın avantajlarını ve potansiyel sınırlamalarını tartışmaktadır. Yoğun bakım üniteleri (YBÜ), kritik durumdaki hastaların yoğun ve sürekli bakım gerektirdiği alanlardır. Bu ortamda, teknoloji ve bilgi yönetimi kritik öneme sahiptir. Brikolaj, farklı kaynaklardan gelen bilgilerin ve araçların bir araya getirilmesi sürecidir. Yoğun bakım hemşirelerinde teknoloji ve brikolajın entegrasyonu, hasta bakımının iyileştirilmesi ve sağlık hizmetlerinin etkinliğinin artırılması açısından büyük bir potansiyel sunmaktadır. Brikolaj, sağlık alanında yenilikçi çözümler üretme ve mevcut problemleri çözme açısından büyük bir potansiyel sunmaktadır. Ancak, bu yaklaşımın etkin bir şekilde uygulanabilmesi için çeşitli zorlukların aşılması ve disiplinler arası entegrasyonun sağlanması gerekmektedir. Gelecekte brikolajın sağlık alanındaki etkileri daha da belirgin hale gelebilir ve bu yaklaşımın daha geniş bir şekilde benimsenmesi sağlık sistemlerini daha etkili hale getirebilir. Yoğun bakım hemşireliğinde teknoloji ve brikolajın entegrasyonu, hasta bakımının kalitesini artırmakta önemli bir

rol oynamaktadır. Teknolojinin sunduğu olanaklar ve brikolajın sağladığı yenilikçi yaklaşımlar, hemşirelerin daha etkili ve kapsamlı bakım sağlamalarına yardımcı olabilir. Ancak, bu entegrasyonun başarılı olabilmesi için hemşirelerin sürekli eğitim alması ve veri güvenliği konularında dikkatli olmaları gerekmektedir.

Anahtar kelimeler: Yoğun Bakım, hemşirelik, innovasyon, teknoloji, brikolaj

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1. INTRODUCTION

The World Health Organization (WHO) defines health technology as methods, equipment, and techniques that make significant contributions to solving a health problem, in collaboration with healthcare providers (1). The use of technology in nursing, on the other hand, is a crucial source of development and change within the profession. The effective use of technology plays a major role in the methods employed by nurses to maintain and improve health, prevent diseases, cope with health conditions, and provide care (2). The Intensive Care Unit (ICU) is one of the areas where nurses use technology most intensively. The ICU is a complex unit where high technology is employed and developments must be closely monitored. Therefore, it is of great importance to understand and integrate the use of technology into nursing practices in intensive care. These technological tools assist nurses in critical tasks such as monitoring patients' conditions, implementing treatment plans, and responding rapidly to emergencies (3-4).

The ICU is a specialized department where patients with severe physical conditions are monitored through advanced monitoring systems, with life functions supported, special treatment methods applied, and complex devices (such as ventilators, infusion pumps, portable devices, feeding pumps, hemofiltration devices, monitors, etc.) utilized. In ICU patients who are managed with advanced monitoring systems, nurses perform a greater number of nursing interventions. These systems allow for more detailed and continuous monitoring of patients' hemodynamic status, enabling nurses to respond to patients' needs more quickly and specifically. For instance, interventions such as repositioning a hemodynamically unstable patient or aspirating a patient with an endotracheal tube are more effectively carried out with the support of these technological systems (3-5-6).

The literature emphasizes the adoption of innovative approaches by nurses in the healthcare field. It is highlighted that nurses must possess the necessary knowledge and skills to address the problems of the patients they care for, while also being able to provide quality care by utilizing available resources. This is a crucial point, as it contributes to nurses enhancing the quality of healthcare services by working effectively and responding more effectively to patients' needs (7).

The theme of the International Council of Nurses (ICN) in 2009 focused on innovation. By emphasizing the importance of innovation in nursing, it reflects a perspective aimed at making the roles and services of nurses more effective. Innovation is a critical factor in the delivery of quality healthcare and the advancement of nursing practices. ICN highlights the significance of nurses' innovative roles and recommends the promotion of innovative behaviors as well as the development of professional knowledge. The concept of bricolage, which is part of innovation, aims to develop more effective solutions and new ideas with limited resources, making it particularly relevant in the field of nursing. Thus, the concept of bricolage in nursing carries the goal of providing better healthcare services (8-9).

Adapting to evolving and changing technologies is particularly important for intensive care nurses. How nurses perceive these technological developments and how they utilize available resources can significantly impact their effectiveness in healthcare delivery and their ability to provide the best care to patients. Therefore, studies on nurses' ability to adapt to technological innovations and how they can use these technologies effectively are crucial for advancing nursing practice. This review aims to contribute to understanding how nurses create innovative solutions in response to resource limitations and adopt innovative approaches in healthcare. Identifying these behaviors in nurses is intended to contribute to the development of effective strategies for healthcare practices and educational programs.

2. THE ROLE OF TECHNOLOGY İN INTENSİVE CARE NURSİNG

Intensive care nursing is a specialized field focused on the care of complex and high-risk patients. Nurses in this area are experts in managing critical situations and addressing the unique needs of patients, utilizing advanced clinical skills, knowledge, and the ability to resolve ethical issues. This expertise is centered on achieving optimal health outcomes in intensive care settings (10).

The effective use of technological equipment by nurses not only helps them enhance their scientific knowledge but also enables them to apply this knowledge in their practice, drawing on the accumulated knowledge and experience in the profession. This allows nurses to provide more effective and high-quality care in all of their invasive and non-invasive procedures. Today, one of the units where nurses use technology most intensively is ICU. Given that the ICU is a complex unit where high technology is employed, the use of technology in intensive care nursing is of great importance (11).

In the ICU, the presence of advanced technological devices and the application of high-level care practices have increased patients' survival rates, which has contributed to the growing importance of the ICU over time. Due to its complex structure, it is essential for the team members working in the ICU to receive specialized training. This is particularly crucial for nurses who provide care to patients 24 hours a day because Intensive care nurses must possess skills in critical thinking, adherence to ethical principles, making critical decisions, knowledge and use of technological devices in the ICU, effective communication with patients and their families, collaboration and maintaining team coherence, and high-level organizational skills (12).

The WHO emphasizes the continuous updating of healthcare professionals to respond more effectively to changing health needs and evolving treatment strategies. The ICU is an environment where rapid interventions, such as resuscitation measures and assisted ventilation, are applied to patients with life-threatening symptoms. In this context, nurses must aim to respond effectively to crisis situations in the care of high-risk patients (13).

3. BRİCOLAGE İN INTENSİVE CARE NURSİNG

Bricolage was first defined in the social sciences by French anthropologist Claude Lévi-Strauss to explain the cultures and structures of certain societies in the Neolithic era. The term, which does not have a direct equivalent in English, is a French word. While it was originally used to refer to re-expression and reinterpretation based on mythical thinking, today it aims to creatively and efficiently utilize existing resources (14-15). In later periods, philosopher J. Derrida suggested that all the discourses we use in our daily lives are forms of bricolage, while sociologist M. de Certeau also regarded the texts we read in everyday life as a form of bricolage (16).

According to Certeau (1984), the concept of bricolage refers to individuals creating their own unique meanings and experiences by reusing what is already available. Certeau calls this process "cultural tactics"; these tactics are ways in which people navigate survival, identity creation, and voice expression within a specific context. This theoretical framework demonstrates how ordinary individuals actively engage as actors within social and cultural dynamics. Seen as a form of resistance against cultural impositions, bricolage highlights individuals' creative potential and aims to find ways to reshape existing cultural elements according to their own needs. Clarke (1976) and Hebdige (1979) insisted on the oppositional and subversive nature of bricolage. Bastide (1970) developed a "sociology of bricolage" aiming to further explore the relationships between cultural reproduction and innovation (17).

Bricolage is dependent on an individual's intelligence, skills, knowledge, and cultural level. Lévi-Strauss defined the person who engages in and applies bricolage as the "bricoleur." According to him, the bricoleur is someone who uses available resources, creates products with them, and aims to achieve maximum efficiency. The bricoleur does not focus on past uses of materials; rather, they aim to achieve goals that will benefit future plans and programs (18-19).

When examining the nursing literature, which forms an important part of the healthcare field, it has been observed that by adopting this innovative approach, nurses not only contribute to quality patient care through knowledge and experience but also reduce costs by utilizing bricolage (20).

There is a need to identify effective strategies to promote, support, and enable the process of practice change and development from the nurses' perspective. Nurses should incorporate bricolage into their current practices, which are understood in relation to factors such as their own values, professional culture, and issues in their practice environment (21).

In intensive care nursing, bricolage is used in areas such as *Knowledge and Resource Integration, Problem Solving and Innovation, and Education and Knowledge Sharing*, which are detailed below (22-23-24).

a. Knowledge and Resource Integration

Bricolage is the process of integrating knowledge from various healthcare disciplines and technologies. Intensive care nurses can combine information from different sources to create more comprehensive and personalized patient care plans.

b. Problem Solving and Innovation

Nurses can creatively use existing technologies and information sources to solve challenges they encounter. For example, they may combine available technologies and literature to develop a specialized monitoring protocol for a patient.

c. Education and Knowledge Sharing

Bricolage can assist nurses in integrating information from various sources during their ongoing education process. This ensures that nurses have access to the most up-to-date information and techniques, thereby supporting their professional development.

4. CONCLUSİON

Nurses working in ICN aim to provide effective care by balancing technology and bricolage. Technological equipment enables nurses to closely monitor and intervene in patients' health conditions, while bricolage allows them to leverage their skills, manage unexpected situations, and make the best use of available resources.

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BENEFITS OF FEIJOA PLANT IN MEDICINE

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Abstract: Feijoa sellowiana is very beneficial for human health. It regulates the digestive system and protects against infectious diseases such as dysentery. Feijoa's antiseptic, antibacterial properties reduce the symptoms of problems such as diarrhoea, intestinal gas, gastritis, stomach and duodenal ulcers and foam. It quickly prevents diarrhoea and vomiting and restores lost appetite. It helps to remove edema and prevent constipation by helping to remove excess water accumulated in the body. It regulates peristalsis in the intestines and normalises the functioning of the digestive system. Due to its iodine content, it has a positive effect on goitre treatment. Feijoa is used as an irreplaceable natural remedy in diseases associated with iodine deficiency and hypofunction of the thyroid gland. Since it is rich in iodine and calcium, it has a positive effect on memory and height growth. Eliminates signs of inflammation in various inflammation centres in the body. By accelerating the absorption of inflammation, it improves microcirculation and regeneration in these areas and accelerates healing. Regulates blood sugar. Reduces blood sugar levels. Significantly reduces blood pressure during arterial hypertension. Since it is a source of antioxidants, it removes toxins from the body. It protects the cell membrane by neutralising free radicals formed as a result of metabolism and removes the accumulated end products of metabolism and toxins from the body. In respiratory problems such as cough, relief is provided by consuming feijoa tea. The aim of this article is to reveal the antioxidant properties of feijoa plant and the health benefits of antioxidant substances found in its fruits, oils and extracts.

Keywords: Feijoa sellowiana, antioxidant , medicine, health

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1. INTRODUCTION

Feijoa sellowiana tree fruit is known to have great benefits. Feijoa fruit, also known as feijoa, has properties such as cleaning the body and blood from harmful substances and preventing cancer. The fruit of the feijoa tree, a South American fruit, is a nutritious fruit rich in vitamins B6, E, K, C, C, A and B group (Saber et al., 2021) . In Azerbaijan, it is mainly grown in the southern regions, especially in the Lankaran-Astara regions. Feijoa, which has high aromatic content, contains a mixture of banana and strawberry fruit flavours. Due to its low sugar content, this fruit contains a high amount of tannins, which helps in weight loss. Feijoa, which has a different taste and appearance from ordinary fruits, is 100 grams of 35 calories. Rich in antioxidants, this unusual fruit is rich in manganese, potassium, copper and calcium. Its high iodine content is a factor that distinguishes it from other fruits. Feijoa, which is used as a raw material in pharmacology, is also frequently used in landscaping. (Beyhan et al.,2016)

Figure1. Feijoa sellowiana plant

Feijoa sellowiana is an extremely important plant for human health. Eating Feijoa and drinking its juice is very useful for goiter patients. Feijoa sellowiana also helps in the treatment of angina pectoris. Since the fruit of the plant is rich in

vitamin C, it has a high therapeutic effect. It is the best medicine for diabetes, blood pressure, gastrointestinal diseases. The fruits of Feijoa sellowiana and the fresh juice obtained from them are important in the treatment of atherosclerosis, thyrotoxicosis and scurvy.(Beyhan etc.,2016)

Table 1. Nutritional values and chemical contents of Feijoa fruits .(Beyhan et al.,2016)

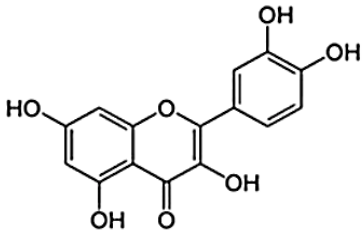
	Water (%)	**Calorie (kcal)**	**Sugar (%)**	**Vit C (mg)**	**Vit A (mg)**	**Vit B1 (mg)**	**Vit B2 (mg)**	**Vit PP (mg)**
Pyrus communis	85.2	41	9.1	4	---	0.01	0.03	0.1
Cydonia oblonga	84.3	34	6.0	14	---	0.02	0.03	0.7
Malus communis	85.6	45	10.4	5	8	0.2	0.02	0.3
Prunus domestica	87.5	42	9.9	5	16	0.08	0.05	0.5
Feijioa sellowiana	86.0	35	6.2	35	30	0.05	0.04	0.7
Ficus carica	81.9	47	10.5	7	15	0.03	0.04	0.4
Prunus armeniaca	86.3	28	6.5	13	360	0.03	0.03	0.5
Prunus cerasus	86.2	40	9.0	11	19	0.03	0.03	0.5
Actinidia deliciosa	81.8	48	10.5	140	12	0.04	0.07	0.3
Punica granatum	80.5	64	15.0	8	---	0.09	0.09	0.2
Citrus sinensis	87.2	34	7.4	50	71	0.06	0.05	0.2
Prunus persica	90.7	24	5.8	4	27	0.01	0.03	0.5
Vitis vinifera	80.3	62	14.7	6	4	0.03	0.03	0.1

The fruit of the Feijoa sellowiana plant has a very rich nutritional value. According to the study, this is reflected in the table 1 (Beyhan et al.,2016).

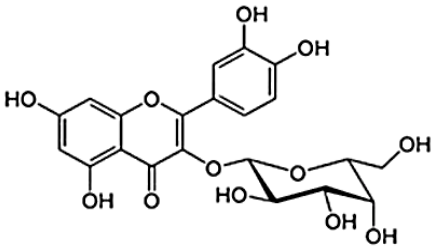
Flavonoids are one of the largest naturally occurring groups of polyphenols. Flavonoids are named after ‘Flavus’ which means yellow in Latin. They are naturally found in the stems, leaves, bark, roots and flowers of plants. The widespread presence of flavonoids in food groups such as fruits, vegetables and tea and their role in the prevention of diseases such as coronary heart disease and cancer have increased interest in these compounds. (Justesen et al., 1998)

Feijoa contains powerful antioxidants such as flavonoids. These antioxidants prevent cell damage caused by free radicals and reduce the risk of chronic diseases. Flavonoids are widely distributed in plants. Most are marigold, marigold, marigold, marigold, sedum, sedum, etc. It is seen in plants belonging to the family. Not found in primitive plants and animals. Their amounts in plants vary between 0.01% and 1-5% and in some plants this ratio reaches 20-25%. It is found mostly in flowers, fruits and leaves of plants and least in stems and subsoil parts (except liquorice root and bean root). Their amounts are high in leaves and grasses during the flowering and fresh flowering period, decrease when the flowers open en masse, but increase in flowers and fruits during this period. The amount of glycosides is high in plants during this period and free aglycones accumulate more at the end of vegetation. (Katarzyna et. al.2023)

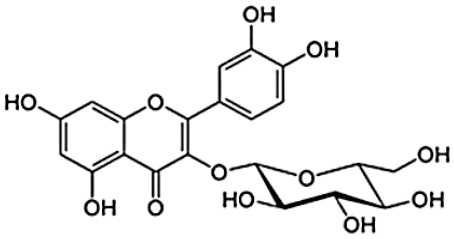
The fruit of the plant Feijoa sellowiana Berg. from the Myrtaceae family has antimicrobial and antioxidant properties (Vuotto et al., 2000). These properties are caused by flavonoids (Ielpo et al., 2000). Flavonoids are generally found in leaves, stems and fruits of plants. The general structure of flavonoids is C6-C3-C6. In the literature, the flavonoid content of the extraction of this plant grown in Italy with organic solvents has been studied, but it is known that the flavonoid compounds and their amounts vary with the growing conditions of the plant, the maturity level of the plant and the extraction parameters (Andersen et al.,2005). In plants, flavonoids are found mostly as glycosides and rarely as aglycones. The diversity of flavonoid glycosides is due to the fact that they contain a large number of sugar residues, the presence of aglycone binding sites as well as sugars of different sizes, cyclic configuration and glycosidic bonds (furan and pyran forms of monosaccharides, D- and L-isomers, α- or β-linked, etc.), as well as to the order and combination of linkages and L-isomers, (α- or β-bonded, etc.), it also depends on the order and combination of the linkages.



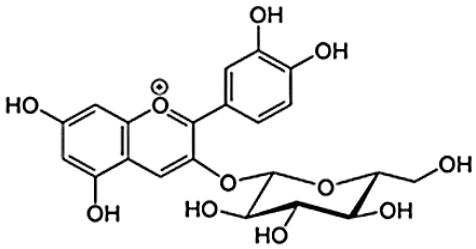
quercetin



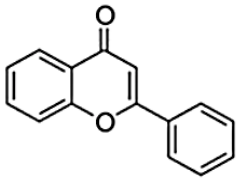
hyperoside
(quercetin 3-*O*-galactoside)



isoquercitrin
(quercetin 3-*O*-glucoside)



chrysanthemin
(cyanidin 3-*O*-glucoside)



flavone

Flavonoids are O-, S-, N- and C-glycosidic depending on the type of bond. O-glycosides are easily hydrolysed by acids and enzymes. C-glycosides are difficult to hydrolyse by acids and enzymes. Therefore, Kiliani mixture (solid hydrochloric acid and acetic anhydride) is used for their hydrolysis. In plants, flavonoids are mostly found in the form of O- and C-glycosides.(M. L. Vuotto., et al., 2000)

Flavonoids are found in plants both as O-glycosides and C-glycosides. Sugar residues in C-glycosides are attached to aglycones at the C6 or C8 position. They are divided into C-monoglycosides, C-diglycosides, C-;O-biosides, etc. C-glycosides are very stable and do not decompose under the action of acid under normal conditions. An example of this is vitexin found in hawthorn fruits. In the vitexin molecule, the sugar component (glucose) is bound to C8. It is the C8-glycoside of apigenin. (Ielpo et al.2006)

Catechin and leucoanthocyanin substances in feijoa peel have a strong antioxidant effect on the human body. Firstly, it prevents the formation of cancer cells. (Paola et al., 2007)
Feijoa, which creates a natural antibiotic effect, also prevents inflammatory processes. Prevents viruses and infections. Strengthens the immune system. For this reason, it is recommended to consume feijoa to protect against colds during the cold season. (Phan et al.,2019)

1.1. Potential Therapeutic Applications of Feijoa Plant Extracts in Modern Medicine

Recent studies have identified a number of promising therapeutic applications for feijoa plant extracts, particularly those derived from Feijoa sellowiana. These extracts have demonstrated significant anti-cancer, anti-inflammatory, and potential metabolic benefits, suggesting their potential as a valuable resource for developing alternative treatments. The following sections outline the key therapeutic applications identified in recent research.

The anti-cancer properties of feijoa extracts have been demonstrated by the observation of selective cytotoxic effects against various cancer cell lines, particularly those classified as triple-negative breast cancer cells. Viability reductions have been observed at concentrations as low as 1000 μg/mL (Pulat and Ilhan, 2023).

The presence of flavonoids and other bioactive components in Feijoa contributes to the induction of apoptosis and modulation of the cell cycle in both solid and haematologic tumours (Cimmino et al., 2022).

Anti-Inflammatory effects of Feijoa extracts have been shown to possess significant anti-inflammatory properties, with certain assays indicating superiority over traditional anti-inflammatory medications such as ibuprofen (Peng et al., 2018). The extracts have been shown to activate autophagy and inhibit TLR2 signalling, which may help manage inflammatory bowel disease (IBD) by reducing inflammation and promoting cellular health (Nasef et al., 2015).

The potential therapeutic applications of feijoa fruit extracts in the treatment of metabolic disorders, including rheumatoid arthritis and type-2 diabetes, have been highlighted (Yeap & Watson, 2013), emphasising their versatility in addressing chronic health issues.

While the therapeutic potential of Feijoa extracts is substantial, further research is necessary to fully understand their mechanisms and optimize their use in clinical settings. Furthermore, the variability in bioactive compound concentrations among different cultivars may influence their efficacy.

2. RESULT

This review study has demonstrated that feijoa plant species constitute a valuable source of natural antioxidants, vitamins, and other nutrients. The ingestion of feijoa plant species or products has been shown to exert a positive effect on health.

An analysis of Feijoa sellowiana fruit and its extracts was conducted, revealing a variety of bioactive compounds that contribute to the fruit's antioxidant, antimicrobial, and therapeutic properties. The nutritional evaluation demonstrated that Feijoa contains significant levels of vitamins, including Vitamin C (35 mg/100 g), Vitamin A (30 mg/100 g), and essential minerals like potassium and calcium, which support overall health. The fruit's low caloric value renders it a suitable dietary option for weight management.

Furthermore, chemical analysis confirmed the presence of flavonoids, catechins, and leucoanthocyanins, which exhibited strong antioxidant activity. These compounds effectively neutralised free radicals, reduced oxidative stress, and inhibited inflammatory pathways. Furthermore, the antimicrobial properties of Feijoa extracts were pronounced, as evidenced by their activity against a range of bacterial strains, thereby corroborating its traditional use in treating infectious diseases.

From a therapeutic standpoint, Feijoa extracts have demonstrated potential in addressing a range of chronic diseases, including type-2 diabetes, hypertension, and inflammatory conditions. Selective cytotoxic effects against cancer cell lines, particularly triple-negative breast cancer cells, were observed at concentrations of 1000 µg/mL. This finding underscores the potential of the fruit as a natural source of anticancer agents.

These findings underscore the Feijoa's versatility in modern medicine and its potential as a functional food. However, it is important to note that variability in bioactive compound concentrations, influenced by environmental and cultivation factors, necessitates further standardisation and research.

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A RESEARCH ON PLANTS AND HERBAL PRODUCTS SOLD IN HERBALISTS IN DENIZLI

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Abstract: Herbal medicine has been a cornerstone of traditional and complementary healthcare practices for centuries. With Denizli's rich biodiversity and ethnobotanical traditions, herbalists play a vital role in the sale and dissemination of medicinal plants and herbal products. This study examines the variety, uses, and consumer perceptions of plants and herbal products sold in 10 herbalists and some customers in the shops in Denizli, Turkiye. Drawing from field surveys, interviews with herbalists, and an analysis of consumer preferences, the research highlights the ethnobotanical and economic significance of these products. The findings aim to contribute to the sustainable use of medicinal plants and to support policies promoting safe and effective herbal practices in the region.

Keywords: Herbal medicine, ethnobotany, medicinal plants, consumer perceptions, Denizli.

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1. INTRODUCTION

Herbal medicine has played a crucial role in the healthcare systems of diverse cultures around the world, often serving as the primary means of treatment, especially in rural and indigenous communities. According to the World Health Organization (WHO, 2013), approximately 80% of the global population relies on traditional medicine for their primary healthcare needs, with medicinal plants being a significant component of this practice. This reliance on plants as therapeutic agents is deeply embedded in the cultural and historical practices of many societies, shaping not only health practices but also local economies and global trade networks. In recent decades, the increasing popularity of herbal products in the global wellness market has led to a renewed interest in traditional plant-based remedies, bridging the gap between ancient wisdom and modern health practices (Sharma et al., 2016).

Turkey, a country that straddles the crossroads of Europe and Asia, boasts a rich array of biodiversity, with diverse ecological zones that host a wide range of medicinal plants. The country's long history of herbal medicine is intertwined with cultural traditions that date back to the ancient civilizations of the Hittites, Romans, and Ottomans (Baytop, 1999). In particular, Turkey's Mediterranean and Aegean regions are known for their abundant plant species, many of which are used in the treatment of various ailments. The herbalists, or "aktarlar," who have been central figures in the preservation and transmission of this ethnobotanical knowledge, continue to play an important role in Turkish society today. These practitioners offer an array of herbal products, ranging from dried plants to essential oils, tinctures, and teas, all of which cater to the growing demand for natural health solutions (Altundağ & İnce, 2015).

Denizli, located in southwestern Turkiye, is a prime example of a city with great potential for herbal medicine. The region's geographical diversity, including Mediterranean, continental, and steppe climates, fosters a wealth of medicinal plants. Local herbalists in Denizli draw upon this rich natural resource to offer a variety of plant-based remedies. Despite its potential, however, Denizli has not yet fully leveraged these resources within the context of tourism or modern healthcare demands. The city's herbalists face challenges such as lack of formal regulation, the risk of unsustainable harvesting practices, and the need for better consumer education regarding the efficacy and safety of herbal products (Yücel & Kılıç, 2020).

Ethnobotany, the scientific study of the relationship between humans and plants, derives its name from the Greek words "ethnos" (people) and "botane" (plants) (Akgül, 2008). The term was introduced by American botanist John W. Harshberger in 1895 during his research on indigenous plant use, and his 1896 work, The Foundations of Ethnobotany, established it as a formal field of study (Tanaydın, 2021). The use of medicinal plants in treating diseases has been crucial to the development of ethnobotany, with evidence dating back thousands of years (Kendir & Güvenç, 2010). Excavations at Shanidar Cave in northern Iraq, between 1957 and 1961, revealed Neanderthal remains alongside plant artifacts, marking the earliest known evidence of plant-human interactions (Faydaoğlu & Çözümoğlu, 2011). Medicinal plants, used for treating human and animal ailments, and aromatic plants, known for their fragrance, are distinct categories in ethnobotany. The United Nations Food and Agriculture Organization defines medicinal plants as those used for preventing

diseases, maintaining health, and treating diseases (Tanrikulu, 2021). Both medicinal and aromatic plants contain bioactive compounds that are essential in both traditional and modern medicine (Avan, 2021).

This study seeks to explore the types of plants and herbal products sold by herbalists in Denizli, their therapeutic uses, and how these practices align with contemporary health trends. It also examines the challenges faced by herbalists in ensuring the sustainability and safety of herbal medicine, particularly in light of increasing consumer interest and global market trends. Additionally, it will discuss the role of education in bridging the gap between traditional knowledge and modern consumer needs, with a focus on enhancing the understanding of herbal products' effectiveness, safety, and regulatory status. Through this analysis, the study aims to highlight the potential for integrating traditional herbal medicine into modern health systems while addressing the need for responsible use and sustainable practices in the herbal market.

MATERIALS AND METHODS

A field study was carried out in ten distinct herbalist markets within the city center of Denizli. Semi-structured interviews were conducted with herbalists to gain insights into their knowledge, the plant species offered, sales dynamics, sourcing practices, and interactions with customers. The interviews aimed to explore the herbalists' expertise, the variety of medicinal plants sold, the procurement methods, and the factors influencing customer preferences and purchasing behaviors.

RESULTS AND DISCUSSION

1. Variety of Plants and Products Sold

Herbalists in Denizli provide an extensive array of products, including dried herbs, herbal teas, essential oils, tinctures, ointments, and dietary supplements. Based on both field observations and existing literature on the region's ethnobotanical wealth, commonly sold medicinal plants include:

Thyme (Thymus spp.): Widely used for respiratory and digestive ailments.
Sage (Salvia officinalis): Consumed as a tea for its antioxidant and antimicrobial properties.
Chamomile (Matricaria chamomilla): Renowned for its calming and anti-inflammatory effects.
St. John's Wort (Hypericum perforatum): Used for mild depression, wound healing, and skin disorders.
Nettle (Urtica dioica): Popular for its diuretic, anti-inflammatory, and anti-rheumatic properties.
Rosehip (Rosa canina): Rich in vitamin C, traditionally used to boost immunity and alleviate cold symptoms.
Lavender (Lavandula spp.): Valued for its soothing properties and used in teas, oils, and as an anti-anxiety remedy.
Elderflower (Sambucus nigra): Commonly used for colds, flu, and sinusitis.
Mullein (Verbascum spp.): Often used for cough relief and respiratory issues.
Liquorice Root (Glycyrrhiza glabra): Employed for digestive health and as a natural sweetener.
Yarrow (Achillea millefolium): Used for wound healing, fever reduction, and menstrual regulation.
Black Cumin (Nigella sativa): Known for its immune-boosting and anti-inflammatory properties.
Hawthorn (Crataegus spp.): Promoted for cardiovascular health.
Anise (Pimpinella anisum): Frequently consumed as a digestive aid and for its carminative effects.
Marshmallow (Althaea officinalis): Used to soothe throat and digestive irritation.
Dandelion (Taraxacum officinale): Known for its detoxifying and diuretic benefits.
These plants reflect the rich biodiversity of Denizli and the surrounding region, catering to both traditional and modern health needs. Their widespread use in local herbal markets underscores the integration of historical knowledge with contemporary health practices in Turkish ethnobotany.

2. Knowledge and Practices of Herbalists

Interviews with herbalists in Denizli revealed that their expertise is primarily rooted in traditional knowledge passed down through generations, aligning with the broader trends observed in Turkish ethnobotanical practices (Altundağ & İnce, 2015). However, only 30% of the herbalists reported having formal education or training in herbal medicine, which is consistent with findings from other regions in Türkiye, where informal knowledge transmission remains the dominant method of learning (Ergene et al., 2020; Yücel & Kılıç, 2020). This lack of standardized education and certification raises important concerns regarding the accuracy of their advice, particularly in areas such as dosage, herb-drug interactions, and contraindications. Previous studies highlight that improper use of medicinal plants may lead to adverse effects, such as toxicity or reduced efficacy of conventional medications (Ekor, 2014).

In terms of sourcing, approximately 40% of the herbalists reported obtaining their products from local suppliers within Denizli, particularly for plants such as thyme (Thymus spp.), sage (Salvia officinalis), and nettle (Urtica dioica), which are abundant in the region's natural flora. The remaining 60% relied on larger distribution networks based in cities such as Istanbul, Konya, and İzmir, reflecting the commercialization and centralization of Türkiye's herbal market (Tanrıkulu,

2021). These suppliers often provide processed or semi-processed products such as packaged herbal teas, essential oils, and powdered herbs, which cater to the growing demand for convenience among urban consumers.

Furthermore, while the herbalists demonstrated extensive practical knowledge of the therapeutic uses of commonly sold plants, their awareness of scientific studies validating these uses was limited. For example, while plants like St. John's Wort (Hypericum perforatum) and chamomile (Matricaria chamomilla) are scientifically recognized for their medicinal properties, the herbalists relied largely on anecdotal evidence for their recommendations. This gap between traditional knowledge and scientific validation underscores the need for integrative education programs that combine ethnobotanical expertise with evidence-based practices (Ekor, 2014; Altundağ & İnce, 2015).

In summary, while Denizli's herbalists play a crucial role in preserving and disseminating ethnobotanical knowledge, the reliance on informal training and unregulated practices highlights the need for improved education, certification, and regulation to ensure the safe and effective use of medicinal plants in the region.

CONCLUSION

This study highlights the ethnobotanical and economic significance of medicinal plants and herbal products sold by herbalists in Denizli. The findings reveal a rich variety of medicinal and aromatic plants offered in the region, reflecting both Denizli's biodiversity and its deep-rooted cultural traditions in herbal medicine. Commonly sold plants such as thyme (Thymus spp.), sage (Salvia officinalis), chamomile (Matricaria chamomilla), and nettle (Urtica dioica) demonstrate the continued reliance on traditional remedies for addressing health needs. However, the study also underscores critical challenges faced by herbalists, including their limited formal education in herbal medicine and reliance on anecdotal knowledge, which can lead to potential risks such as improper dosing or herb-drug interactions.

Additionally, the sourcing practices reveal a mixture of locally harvested and commercially supplied products, highlighting the need for sustainable harvesting methods and quality control measures in the herbal supply chain. To fully realize the potential of medicinal plants in Denizli, several steps are recommended. First, efforts should be made to integrate traditional knowledge with evidence-based practices through formal education and training programs for herbalists. Second, the implementation of regulatory frameworks is essential to standardize herbal product quality, ensure consumer safety, and support sustainable practices. Lastly, promoting awareness among consumers regarding the efficacy, proper use, and possible risks of herbal remedies will contribute to the safe and effective integration of medicinal plants into modern healthcare systems.

By addressing these challenges, Denizli has the potential to serve as a model for combining ethnobotanical heritage with modern practices, fostering both economic opportunities and the sustainable use of medicinal plants in the region.

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