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INTERNATIONAL CONGRESS ON NATURAL, HEALTH SCIENCES AND TECHNOLOGY

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7th International Balkan Conference in Sport Sciences

6th International Scientific Conference of Applied Sciences

5th International Scientific Conference of the Faculty of Medical Sciences

4th International Conference of Natural Sciences and Mathematics

2nd International Conference of Food Technology and Nutrition

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- **4th International Conference of Natural Sciences and Mathematics**
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PHARMACY

SPORTS IMPACTS ON THE IMPROVEMENT OF QUALITY OF LIFE

Blerina ALIAJ, Mirjeta CENAJ

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Abstract

Quality of life is a broad concept that encompasses all aspects of a person's existence. It is defined as the individual perceptions of their life positioning, in the cultural context and in relation to the values of their society, as well as from the viewpoint of personal goals, expectations, standards and concerns. The purpose of this study is to inspect how sports / physical activity affect the quality of human life. The target group of the study were the students of Sports University of Tirana and the respondents of this questionnaire were (n = 106) students in total.
In order to distinguish how sports affected the students‘ lives we included a question to differentiate between students engaging regularly in sports/physical activity (n = 53) and students who are not doing any sports or physical activity (n = 53). The instrument used is the Quality of Life Scale - WHOQOL - BREF (University of Washington Seattle, U.S.A, 1997) which is divided into 4 main areas: quality of life in general, physical health, psychological health and interpersonal relationships.
The results of the study showed that students who regularly engage in sports / physical activity in all four areas of the questionnaire had better results confirming the hypothesis that sports/physical activity significantly improves the quality of life.

Keywords: quality of life, sports, physical activity, physical health, psychological health.

DRAŽEN PETROVIĆ AND VLADE DIVAC: ONCE BROTHERS OF DIFFERENT RACE DURING THE SHINING SPORT AND DECLINING OF SELF-MANAGEMENT ECONOMICS

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Abstract

The primary motivation in this paper is inspired by the notion ―brothers" from two perspectives: first, the official and popular motto of Yugoslavia was ―brotherhood and unity"; and second, ―Once Brothers" sports documentary film released on 12 October, 2010 featuring the relationship between the basketball stars Dražen Petrović and Vlade Divac. The secondary motivation derived from my research interest in the Yugoslav economic system of self-management socialism. Although the causes of Yugoslavia's collapse are relatively well established in the mainstream theory, this paper aims at investigating another aspect which was thriving and becoming some kind of a golden age at the time when economic performance had taken an unstoppable downward turn. This paradox in the deepening of economic crisis and political tensions culminating in the civil wars, made many former Yugoslav sportsmen and most of their fans even today to hold politics responsible for their separation. Current sport generation or those who had not experienced the Yugoslav golden age of 1980s, seem to regret and rumor that, had Yugoslavia not broken apart, her national teams apart from basketball were on the way of dominating the international sport in many competitions. But did sport, basketball in particular, by which Yugoslavia was increasing her international reputation, played any or supporting role in rising nationalism and outbreak of the civil wars? This paper will go into broader and

deeper causes of a small incident between two famous —Once Brothers", with spillover subsequent effects and consequences.

Keywords: Yugoslavia, national identity, self-management, basketball, –Once Brothers".

ANALYSIS OF SOME MOTOR TESTS WITH STUDENTS OF UNIVERSITY OF TETOVA

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Abstract

The analysis of some motor tests in students Current curricula of the Faculty of Physical Education, University of Tetova is accredited and approved programe, and it is inline with the Bologna ECTS. As elaborated below, during the programe the students take three practical courses, 2 hours per week for two semesters. The selelcted group of students, as professional athletes are engaged in training sessions 3-4 times a week as well as in competitive activities once a week. With the changes of curricula there was reised the idea of detecting and controlling the mtor space of this homogenious group of students. The validity and reliability of results will be valuable tool in the professional field.

Methodology: The aim of this research is to prove the impact of study programe on transformation of motor space during an academic year amongthe second year students of the Faculty of Physical Education.

Sample: This study has realised in male population student in second year students of the Faculty of Physical Education, aged 19 - 20 months.

Instruments: The instruments used in this study were 13 test for maesuring the motor space. The standard varible in this research were 7 standardized Eurofit tests as well as 6 tests used in our ernvironment. Measurenments were performed during the Psychomotorics classes, both at the beginning of academic year, October, and at the end, May. The results from the following variables were investigated: MNH-pull-ups, MMB-sit-ups, MNP -

push-up in paralle, MMSH – exercises for back controlle, MV100M – 100 meteres sprint, MVQ 1500 M – endurance running 1500 meters, MEE – balance test, MV5X10M – agylity test, FBT – beep test to contrll VO2 max, MQVH – static force with time controll, MKZV- Long jump from static position, MPT – flexibility, MMB1M – sit-ups in given time. The first six ones are standard tests that are trditionally used by us and the 7 others are Eurofit tests.

Keywords: programes, motor space, analysis, athlets.

CARDIOVASCULAR AND METABOLIC EFFECTS OF WATER EXERCISE

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Abstract

One of the exercise applications that has been widely used recently and recommended due to the numerous benefits it provides to the human body is water exercises. Water exercises, which are an effective type of exercise for all age groups, are a method used as an alternative to land exercises and are the exercise program preferred by the elderly, patients and athletes in physical medicine and rehabilitation. It provides numerous benefits, such as reducing the risk of many chronic diseases, improving health for people with diabetes and heart disease, and improving physical fitness. With the lifting force of the water, the load on the spine and joints is reduced, providing ease of movement for the exerciser. The turbulence and hydrostatic pressure in the water stimulate the sensory and balance reactions, together with the sensory stimulation caused by the water temperature, besides the pain relief effects, it increases the blood flow to the muscles, making the muscles work more effectively, relaxing the muscle spasm and activating the lymph system. At the same time, these effects of water increase the joint range of motion more; contributes to the development of muscle strength and endurance, flexibility, balance and coordination skills. Exercises against water resistance also increase energy consumption without creating any impact force, resulting in higher calorie expenditure. In the studies in the literature, water-based exercises and land-based exercises were compared using various exercise protocols, and statistically significant results were found in favor of water-based

exercises compared to land-based exercises in terms of cardiovascular and metabolic. It is seen that these significant changes seen in water exercises can be effective in increasing the efficiency of the cardiovascular and metabolic system and in the approaches to be used in improving aerobic capacity.

Keywords: Water exercises, metabolic effect, cardiovascular effect.

ACUTE AND CHRONIC LBP IN PHYSIOTHERAPISTS AND HEALTH CARE WORKERS AND THEIR ASSOCIATION WITH RISK FACTORS

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Abstract

Introduction: Low back pain is very common in developed countries, especially in adults of working age. Each year, between 15% and 45% of adults suffer low back pain. For physiotherapists and healthcare workers acute and chronic LBP it the most leading causes of disease burden and the most disabling factor in the workplace. The study aimed is to determine the prevalence of acute and chronic LBP and associated factors of among professions of health care workers.

Methods: A total of 234 participants (75.2%female, 24.8% male) among Physiotherapists and healthcare workers were involved to evaluate LBP for one year (from September 2020 until to August 2021). Nordic standardized questionnaire was used to collect information from our study participants regarding the LBP symptoms and epidemiological risk factor data.

Results: Prevalence of acute and chronic LBP among participants of this study was determined to be 79.5 % (186/234), and from them 70.4% (131/186) resulted with acute LBP and others with chronic LBP (29.6% (55/186). Female resulted to be 2.3 times in risk to have LBP compared to male for CI 95% [0.95-5.71] p value < 0.003. The average age resulted to be 29±8.9, where the minimum and maximum age were 24 and 50 years old respectively. The participants more than ≥35 years old were 9 times in high risk for

chronic LBP compared to other age groups for CI 95% [4.21-15.78] p value=0.002. Regarding the profession, physiotherapists and nurses presented the higher percentage compared to other profession p value =0.031 and 0.042 respectively. There were found a significant association related to low back pain and some of risk factor such as job position, working condition, long standing and long sitting at desk, health status and also the physical activity. In all those factors were demonstrated an association and p value resulted less than 0.05.

Conclusion: The finding of this study demonstrated a high prevalence of acute LBP among participants. Physiotherapists and nurses are the two most affected professions. Female were the most predominant gender. More of risk factors demonstrated a high risk of low back pain among the health care workers.

Keywords: Prevalence, LBP, health care workers, risk factors.

BUILDING EVIDENCE-BASED INDICATORS TO VERIFY THE EFFICACY AND SUITABILITY OF PROPOSED PHYSIO-THERAPEUTIC TREATMENTS FOR GONARTHROSIS

Ilvi BEGOLLI

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Abstract

The purpose of the study is to identify a possible methodology for assessing the effectiveness of rehabilitation that meets the ethical, professional, scientific and economic criteria. In the National Health Plan 2003/05 in relation to arthritis it is written: "Priority actions (for arthrosis) to extend the early diagnosis of illness and improve physiotherapy and rehabilitation services ..... ".

Objective: To encourage the use of internationally validated Guidelines and Protocols in the fields of rehabilitation and rehabilitation

The chronicle characteristic of this disease, the lack of therapies leading to favorable clinical picture resolution, the inability to cause, with a gradual reduction of functionality, especially in the musculoskeletal system and the consequent reduction of work capacity and the degree of autonomy of the affected persons, as well as the high number of affected individuals, present critical critical points today.

The idea of the study is to investigate the effectiveness and appropriateness of physiotherapy in relation to a specific rheumatic pathology, Gonarthrosis, as data from international literature on the efficacy and suitability of physiotherapeutic interventions are scarce, especially when referring to Ultrasound, Ionophoresis, TENS, and so on. The first step in this direction is, in my opinion, to identify the effectiveness indicators and build a form of evaluation through the use of valid studies, indexed bibliographies and available guidelines on the subject.

Materials and Methods

We received a sample of 40 patients (9 males and 31 females) aged 56-91 with gonarthrosis (bilateral and biased); each patient was treated for 10 days (one cycle) according to the described treatment plan. Diadinamic waves (waves) ionophoresis, ultra-ultrasound, laser, magnetotherapy, electrotherapy, kinesiotherapy

Differently formulated treatment plans are described: At the entrance and at the end of the physiotherapeutic cycle (10 sessions) were evaluated:

Pain: The intensity of the pain symptoms is measured by the numerical value of the pain assessment (NRS);

Limitation of joints: the functional and passive functional reduction rate is marked with a goniometer;

Rate of joint payment, Scale of reduction of muscle capacity Degree of impairment of standing ability

Results/Outcome

The physiokinesis therapeutic treatments performed in our clinics in gonarthrosis patients have shown greater efficacy in pain; with regard to other indicators, improvements were negligible, even if they were of epidemiological importance. The treatment plans proposed by specialists and doctors' groups are completely non-homogeneous and do not reflect the use of any treatment protocol.

Physical therapies described are not in line with recent reviews: paradoxically, physical therapies that are most effective in the pathology in question are less described. Kinesiotherapy or physical exercise for which all authors agree on the effectiveness of gonarthrosis only one patient is prescribed.

Conclusions

As already mentioned, the EBM thesis is that neither the recognition of scientific evidence nor experience is sufficient to ensure that the patient obtains the best possible treatment.

Keywords: Gonarthrosis, Questionnaire, Efficiency Evaluation, FKT, Electrotherapy.

EVALUATION OF THE SOLDIER'S PHYSICAL FITNESS TEST RESULTS (STRENGTH ENDURANCE) IN RELATION TO GENOTYPE: LONGITUDINAL STUDY

Mesut CERIT

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Abstract

The aim of this research are to see if variations in gene mutations impacted by various influences and lifestyle choices play a part in the growth of external load, as well as to analyze the impacts of genetic variants on the parameters studied (push-up and sit-up) in a long-term study. 59 male army officers made up the research team. A follow-up study of strength endurance (push-up and sit-up) test was conducted in the athletic field. The exam took two minutes to complete, and each application was tested separately. In both 2004 and 2019, persons with genotype ID had the best mean sit-up and push-up outcomes, followed by participants with genotype DD, and finally participants with genotype II (P 0.05). Compared to the original rates in 2004, all genotype groups showed a significant reduction in push-up and sit-up scores in the test. The findings of this study may reveal if strength training and lifestyle choices affect the metabolic implications of the genetic polymorphism in the body. Particular varieties actuated by qualities, on either hand, don't result in significant improvements without any changes in individuals' practices or ways of living, as per the conclusions.

Keywords: polymorphism, quality continuance, way of life.

THE UNKNOWN HUMAN METABOLISM

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Abstract

Metabolic diseases appear commonly in all countries of the world with advancing age. Approximately one in ten people around the world have diabetes (Type II) and others have a risk of diabetes. It is a known fact that regular physical activity not only provides a healthy and quality life, it also reduces the risk of getting chronic diseases such as metabolic and cardiovascular diseases. Many studies have been conducted in recent years, suggesting that being active or passive can also be caused by genetic factors with a comprehensive literature base that considers the effects of environmental factors and lifestyle on physical activity levels. Scientists are trying to reveal the effects of the fatty acid binding protein (fatty acid binding protein, FABP)-4, which controls the intracellular fatty rate and triggers the shift of metabolism from balance to imbalance as a result of overnutrition, and (nuclear respiratory factor, NRF)-1 gene, which ensures the preservation of intracellular harmony. The only alternative method that triggers the transition from imbalance to stability (stable) is to increase the activity level and make exercise a part of life. Some genetic structures can arise with many genes and many factors. Genetic infrastructure is susceptible to risk and this can be observed at a high rate in some people. Physical activities are the most effective application and protection method that allows the effects of NRF1 gene to increase by reducing the effect of the FABP4 gene. A newly discovered hormone named fabkin helps regulate metabolism and may play an important role in the development of both type I and type II diabetes. In the case of diabetes, fabkin controls the function of beta cells in the pancreas that are responsible for insulin production. Regular exercises reduce the risk of getting metabolic

and chronic diseases such as cancer, blood pressure and diabetes triggered by genetics and lifestyle by affecting the condition of genetic codes in the body.

Keywords: Fabkın hormone, FABP4, NRF1.

MOTIVATION FOR PRACTICING RECREATIONAL SPORTS ACTIVITY AMONG YOUNG PEOPLE AGED 17-18 IN TIRANA

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Abstract

In youth sport, the theme of motivation takes on a strong relevance, because in particular in the adolescent period, important foundations are laid to develop positive personality characteristics such as autonomy, awareness of personal limits and cooperation. Sport can be approached at any time with needs and motivational pressures that change in relation to the age range, therefore it is very important that the sports environment in which young people are inserted, respects the needs of development. The objective of this research is the identification of motivational factors in the practice of recreational sports for young people 17-18 years old, based on gender. The purpose of the research is the elaboration and analysis of motivational impulses in the practice of recreational sports for young people 17-18 years old, with the focus on gender differences. The scientific tool used is a standardized questionnaire for measuring motivation regarding recreational sports: ATPA-D, Steffgen, et.al 2000. This model is based on 6 dimensions, which also represent the social dimensions included in sports practice: social experience, health/fitness, risk/emotions, aesthetics/movement, physical-mental/relaxation and performance/competitiveness. The sample is made up of 156 pupils, aged 17-18, including 83 girls and 73 boys; recruited from two high schools of Tirana (Albania):''Qemal Stafa'' and _'Petro Nini Luarasi''. The results of this research are important in the light of two relevant problems related to young people, such as sedentary and abandonment of sport at a young age.

Keywords: sport motives, youth, gender differences, motivational factors

PHYSICAL EDUCATION IN PRIMARY SCHOOLS OF THE MUNICIPALITY OF TETOVO COMPARED TO EUROPEAN PRIMARY SCHOOLS

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Abstract

Purpose: The research was conducted mainly in the Municipality of Tetovo based on the Ministry of Education and Science of the Republic of North Macedonia, the Bureau for Development of Education, and the leading staff of all primary schools.
Method of work: The questionnaire was implemented.
Conclusion and recommendations: In the subject of Physical Education and Health, some topics are similar to European schools. Meanwhile, there are some topics that are not realized at all in the subject of PEH. From topics similar to European countries, the teaching units are also approximately similar. In the conditions of the realization of the courses between RNM and European countries, that there is a big difference. Compared to European countries, RNM doesn‘t have much difference in the number of weekly hours. According to Eurodyce data the RNM ranks third for the lowest payment. Therefore, our recommendation is that above mentioned institutions, form a strategy which would bring changes and reforms in the physical aspect of the implementation of the process, as well as in the curricula which would be welcomed by the Physical education teachers. One of the recommendations which should be primary is the change of teachers' salaries.

Keywords: Physical Education, Primary School, European Primary Schools, Comparation!

RETURN TO THE NORMAL EDUCATIONAL PROCESS AND INTERNATIONAL COOPERATION THROUGH ERASMUS + PROJECTS

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Abstract

The purpose of the Cooperation was the realization of an international 5 days project Erasmus+ at a ski resort between three universities of different countries Bulgaria, Romania and Macedonia.

Project Subject: Skiing and sport animations/game activities for children. The aim of the training program was for students to organize and implement sports animation programs for children and to teach them skiing, games and other physical indoors and outdoors activities. The number of students who participated in this project was 20. In the project with multiethnic composition participated students from 7 countries. While the staff and expertise numbered 8 professors from the three aforementioned universities. Practical lessons in outdoor/indoor contained sport animation activities for children: games, skiing and exercising, animations and traditional dances off different Balkan Ethnicities. The program allows for presentation and integration as well as exchange of good practices and experience from different participating countries.

Results: professional development of the students for sports animation for children, social and communication competences, recognition of intercultural values through traditional games and

dances, learning through observation using workshop and video recording on methods of training etc.

Keywords: International cooperation, Skiing and game activities for children

PHYSICAL EDUCATION TEACHING PLANNING

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Abstract

Introduction; Planning is a typical management activity, both at the level of the educational system and in the activity of these educational institutions. Planning at school level is expressed in its classical form which is that of teaching, and is undertaken by teachers specilised in each of their respective subject‘s. Just as in any other subject, planning teaching carries the same importance and value towards the quality of teaching in the field physical education as well.

Objectives; The presentation aims to highlight that the planning of physical education teaching in pre-univerity schooling in Albania and Kosovo, is based only on the field of Psycho Motor development and does not include the Cognitive and Affective field of student development.The presentation also aims to present some theoretical and methodological recommendations in order to improve the planned teaching experience designed to touch on all areas of student development.

Interest of the topic; Physical education and sports are widely accepted for their impact on the development and well-being of the individual. The school curriculas of this subject are considered to be the most suitable instrument for transmitting to students the cognitive, educational and formative potentials of this field. In this approach, the topic is of interest to the learning process, teachers, and specialists of this field and especially for students.

Methodology: the article relies on the qualitative method of analysis and reflection of theoretical studies of the topic by local and foreign authors. In the analysis of the planning of the methodology

of teaching physical education applied in pre-university education in Kosovo and Albania.

Results: The planning of teaching in all aspects of individual development, will enable the improvement of the quality of teaching, and will as well transfer to students and citizens the development potential of this subject fully.

Keywords: Planning, Education, Quality of teaching.

SYNERGETIC APPROACHES AS NEW MODERN INNOVATIONS IN PHYSICAL CULTURE AND SPORTS

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Abstract

Recently, great importance has been paid to synergetic approach as new and effective innovation in sport. The purpose of this literature review is to give concise overviews about synergetic approach that will develop another way of thinking about sport and physical education and provide a summary of synergetic approach in physical culture and sport. Synergetic approaches as a new initiative increase the result and improve the performance of the team. Our literature search included the electronic databases Pubmed, SportDiscus and Web of Science, google scholar (from 2000 to 2021). In total, 30 studies met the inclusionary criteria for review. On July 2021 has started the electronic search and it has finished in the end of the September 2021. Studies argue that synergetic approaches enhance the final score of the team. For instance, synergetic approaches are used to capture and analyses the behaviors of athletes. Synergistic approaches are seen from the psychological, social, motor behavior perspectives as modern methods to make the performance better. Physical educators and specialists must have good knowledge in the principles of tactical, strategic organization and improvement of thinking by using modern approach as a way to enhance the performance.

Keywords: Synergetic, physical culture, sports, studies.

MONITORING OF TRAINING PROCESS OVER HORMONAL (ACTH, CORTISOL TESTOSTERONE. TESTOSTERONE/CORTISOL) LEVELS AND PERFORMANCE TESTING INDICATORS IN PROFESSIONAL FOOTBALL PLAYERS AFTER A PREPARATION PERIOD OF SIX WEEKS

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Abstract

The purpose of this research is to monitor the training process of professional elite football players from the national league of N. Macedonia. From the physiological point of view, the changes in testosterone and cortisol are a physiological indicator of the training influence but do not necessarily indicate overtraining. Accordingly, deep inside this axis could explain a lot about the training process and its effects. 25 elite professional soccer players (age 21.7 ± 3.32) from a soccer club of our national soccer league were recruited for this study. In two periods before preparation and before the competition period the hormonal levels of ACTH were measured, cortisol, testosterone, t/c ratio and anaerobic threshold after the maximal incremental performance test. Differences between testosterone serum levels before and after the preparation period of 6 weeks, and before and after maximal exercise test in professional football players of a national team ($p<0.05$)., Cortisol ($p< 0.05$), ACTH ($p<0.05$)., T/C ratio ($p< 0.05$)., No significant founding changes the induced answer of ACTH, cortisol and testosterone before and after preparation periods. Also, no significant increase in AnT (km/h), and Max (km/h) after preparation periods of six

weeks. The findings of this study show that, through monitoring the changes in stress hormones and testosterone levels, the structure, volume and intensity of the training process of a professional football team could be more scientifically and fundamentally assessed. The professionals in a football club usually plan and monitor the training process through well-established sports performance characteristics (VO2 max, AnT, speed tests, power test, strength test etc), very often without the true deep insight into the structure of the training process, individual adaptations and further consequences.

Keywords: Soccer, Hormones, Monitoring, Training indicators.

DETERMINATION OF THE DIFFERENCES IN THE ANTHROPOMETRIC CHARACTERISTICS, GENERAL MOTOR, AND SPECIFIC MOTOR ABILITY ON YOUNG N. MACEDONIAN SOCCER PLAYERS FROM U - 12 TO U - 14 YEARS OLD BOYS

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Abstract

The aim of our research is to determine the differences in anthropometric characteristics. Motor and specific football motor skills in young football players from 12 to 14 years with different gender maturity in R.N Macedonia. The sample of athletes was subjected to transversal examination in anthropometric, motor and specific motor abilities of young football players from Polog region of North Macedonia. Based on MANOVA and ANOVA. It can be noticed that the athletes with different chronological ages 12, 13, and 14 years who do not belong to the same population are statistically significantly different (p= .00)., In the anthropometrical space we found differences in six parameters; Height (p=.00).;length of left leg (p=.00); diameter of pelvis bitrochanter (p=.00); diameter of the knee joint (p=.00); diameter if ankle joint (p=.03); We found differences on boys with different chronological ages 12.13 and 14 statistically significant differences (p = .01). Based on the univariate analysis for each variable. It can be noticed that a statistically significant intergroup difference in present in five variable foot taping (p=.05);long jump (p=.00); number of 20 meters starting from standstill (p=.00); raising the torso for 30 seconds from lying on its back (p=.02); deep inclination from sitting (P=.04); 10X5 Shuttle run (p=.00); Illinois test without ball

(p=0.001); zig zag test (p=0.001); Agility training (p= .00); Compass drill or agility cone started for right side (p= .00); Compass drill or agility drill started with left side (p = .00); Home made agility test (p= .00); and Agility training (p = .00).

Conclusion: The organization of the competition system according to the gender maturation will bring an advantage in several segments in the youth football in N.Macedonia and they are: the competitions will more realistic, will be possible for children with the same anthropometric characteristic to compete, it will be possible to compete with children with almost the same motor skills, it will be possible for children with almost the same specific motor skills to compete, will bring a much more realistic picture of the current qualities of the players, designing realistic programs for talent development, real achieved results at the moment.

Keywords: Maturation, Motor Skills, Soccer, Competetion.

FOLLOWING OF TRAINING PROCESS OVER CREATINE KINASE, POTASSIUM AND ANAEROBIC THRESHOLDS LEVELS AND PERFORMANCE TESTING INDICATORS IN PROFESSIONAL FOOTBALL PLAYERS AFTER A PREPARATION PERIOD OF SIX WEEKS

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Abstract

The purpose of this research is the following of the training process of professional elite football players from the national league of N. Macedonia. Some studies suggest that plasma activity of CK (creatine kinase) is a better indicator of training and physical performance than blood lactates and LDH. Increased levels of plasma K+ could be estimated as insufficiency of Na+-K+ pump and a sign of fatigue, or this is only a positive correlation with an increased intensity of training.

Accordingly, deep inside this axis could explain a lot about the training process and its effects. 25 elite professional soccer players (age 21.7 ± 3.32) from a soccer club of our national soccer league were recruited for this study. In two periods before preparation and before the competition period was measured plasma levels of CK and plasma levels of K+ and anaerobic threshold after the maximal incremental performance test. Differences between CK plasma levels before and after the preparation period of 6 weeks, and before and after maximal exercise test in professional football players of a national team ($p<0.05$)., K+ ($p< 0.05$), There were

significant changes in exercise answers of stress CK and K+ ($p<0.05$)., no significant increase of Ant (km/h) and Max (km/h), Correlations between AnT (km/h) and Max (km/h), on one side, and CK and K+ and their exercise-induced answers ($r = 0.48$); ($p = <0.05$) on another side, before and after preparation period of 6 weeks in professional football players from a national team. The significant increase in K+ plasma levels after the preparation period and only after the maximal exercise test suggests that there is maybe an insufficiency of Na+ - K+ and a sign of fatigue due to the increased volume and intensity of training. The negative significant correlation between K+ plasma levels and AnT (km/h) before the preparation period may be confirmed in the previous finding.

Keywords: Soccer, Hormones, Monitoring, Training indicators.

WAYS OF EXERCISE DURING COVID-19 TIME OR LOCKDOWN PERIOD

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Abstract

This research was based on the situation caused by the coronavirus pandemic (COVID-19) globally in North Macedonia as well, which has transformed the daily lives of people and athletes. In the sports calendar in our country, the recreational and professional one was in total chaos and it was not known how to train in such conditions. During the lockdown time athletes did not have the opportunity to enter the training facilities, to even leave their homes (to run, to ride a bicycle, etc.) there were strict limitations, if not completely banned. Through a survey we investigated how the lockdown [or Movement Control Order (MCO)] has influenced sports exercise practices and how athletes have reacted or responded to the pandemic.

The sample used in this paper consist of 73 athletes of all sports, elite athletes or amateurs of both genders from several cities of our country that experienced the restriction period of MCO during the COVID-19 pandemic.

The achieved results will be treated through all the answers where they will be identified and professionally processed through the mathematical program SPSS version 25.0 for windows, and on anonymous terms (by ensuring complete anonymity). This research will confirm what has happened in general, throughout our country, during the MCO regarding athletes and their training practices. Such research confirms the need to develop special and adequate models for all athletes who have passed the lockdown time from COVID -

19 in our country and to validate the relationships between them and their coaches and the creativity of athletes to manage time, the space and the way of training.

Keywords: COVID -19, Athletes, Women, Man, North Macedonia.

PRELIMINARY ANALYSIS ON GENDER REPRESENTATION AT THE SPORTS UNIVERSITY OF TIRANA WITHIN GEP (GENDER EQUALITY PLAN)

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Abstract

In all higher education and research institutions in Europe, gender imbalances still exist and is widely tolerated:
Although women have some of the leading positions in academia, women still experience a slower career advancement compared to man, this is also evident in the field of sports where due to the nature and specifics sports disciplines, academic careers have been made mostly by male.
To address these issues, it is important to set concrete objectives and use measures at the individual, cultural and structural levels.
Structural changes in particular provide lasting effects. A powerful tool for this kind of change is the Gender Equality Plan (GEP), which can play a key role in achieving gender equality in higher education and research organizations.
This plan of Gender Equality was accepted by the University of Sports of Tirana in February 2022 with a special decision of the Academic Senate, to start the first process of situation analysis.
In this article will be presented the first data for the assessment of the situation in gender equality as the first step of GEP at the University of Sports, referring to the current analysis of the number of representation of women in all study programs, in the academic staff, in collegial bodies and in the research process at the University.

Keywords: gender equality plan, sport disciplines, research, woman.

DEVELOPMENT OF COORDINATION IN THROUGH GAMES IN CHILDREN OF 7-11 YEARS OLD

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Abstract

Balance and coordination are two of the most important gross motor skills in a child‘s physical development. It allows children to participate in sports and physical activities; it reduces their risk of injury and improves their ability to perform everyday tasks. The purpose of the study is; to measure, record, study and compare the state of coordinate quality since the age of starting school education. Also, this study will serve to better understand the state and scoring of sports talent. Methodology: We have tested 100 children of which 50 were girls and 50 were boys. The intervention was done for 10weeks. We have used 6- games. Tested: The Plate – Hezagone Agility est. Discussion: The results show Hezagone Agility test that the experimental group made an improvement for the boys, second classes ≤ 0.19 and third classes ≤0.13. Improvement for girls‘ second classes≤ 0.15 and third classes ≤0.09. The results show the plate-tapping that the experimental group has made an improvement for boy‘s first grade ≤0.30, second grade ≤ 0.20 and third grade ≤0.30. Improvement for girl‘s first classes ≤0.30, second classes ≤ 0.30, third classes ≤ 0.30. Conclusion: The use of movement games during the lesson increases the degree of effective participation, develops attention and the level of interaction between students, which represents another component of the general competencies of the primary school level.

Keywords: coordination, development, games, agility.

KNOWLEDGE OF BODY POSTURE AND POSTURAL BEHAVIORS AMONG STUDENTS

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Abstract

Being aware of proper posture and applying it particularly during daily activities is very important since it can prevent the occurrence of improper posture and low back pain. The purpose of our study was to evaluate how informed students are about proper posture and to evaluate their awareness about sitting posture position during their daily life. In order to realize all of these measurements we used a closed questionnaire delivered via Microsoft Teams program (on March 2021) during the pandemic period, among 330 students (aged 22±3 years old) from Sports University of Tirana, Albania and Albanian University.We used IBM SPSS Statistics 20 to analyze the collected data, focusing more on the descriptive technique. As a conclusion, our findings showed that the majority of our students showed to have adequate information regarding some of daily life posture positions, but inadequate information regarding sleeping position. These findings had clearly shown the necessity for future studies in this context, with bigger study sample in order to generalize if students are or not enough informed and aware about the proper body posture.

Keywords: Posture information, self-perception of posture, proprioception, proper posture, body awareness.

DIFFERENT METHODS OF WORK IN DEVELOPING DYNAMIC AND STATIC FORCE IN STUDENTS

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Abstract

The main purpose of this research is to confirm the contribution of methodological forms of work for the development of dynamic force and static force in students, as well as to determine the effects of the demonstration method on the level of mastery in the practical part.

The sample selected in this research was a total of 242 students, from the Gymnasium "Sami Frashëri" technical school "NaceBugioni", economic school "PeroNakov" from Kumanovo and Gymnasium "IsmetJashari" Lipkovo. The sample was divided into three groups: in the control group 1 (n = 84), in the experimental group 1 (n = 77) and in the experimental group 2 (n = 82).

Measuring instruments for this research for the evaluation of dynamic force motor skills between the control group and the experimental groups were used eight variables of explosive force, six variables of repetitive force and six other variables of static force.

Characteristic results between groups were processed through the SPSS mathematical program for windows version 16, the evaluation of the achieved results and the discussion were realized by the basic statistical analysis, the difference between the initial and final measurements through the T-test for dependent groups, and to prove importance of statistical differences, the assessment was made by multivariate analysis of variance (MANOVA) and univariate analysis of variance (ANOVA), in which case the differences between the initial and final measurement groups in experimental

group 1 and experimental group 2 and the control group were confirmed.
In conclusion we can say that the programmed training process and the methods used have influenced and have been positive in the development of dynamic and static motor force skills in students, based on the results achieved we estimate that such research is needed in the whole country.

Keywords: Static Force, Dynamic Force, student, Manova, Anoval.

CONNECTION OF PHYSICAL ACTIVITY WITH FITNESS AND HEALTH TO STUDENTS

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Abstract

The trend in physical fitness assessment during the past 35 years instead of stress motor performance and athletic fitness evaluation (i.e. speed, agility, power, and balance) focuses on assessment of functional capacities related to overall good health and disease prevention. Thus, a term of health-related physical fitness became topical with four its components: aerobic and/or cardiovascular fitness, body composition, abdominal muscle strength and endurance, and lower back and hamstring flexibility. This study was undertaken to evaluate physical activity relation to health related physical fitness in students. All participants filled in physical activity questionnaire about duration of their daily activities of slow walking, fast walking, sport exercises at university and additional sport exercises. Health-related physical testing included several core components: 1) body composition evaluation (body weight, body mass index, waist-to-hip ratio, body fat, muscle mass), 2) abdominal muscles 3) dynamometry, 4) elasticity evaluation tests, 5) balance test, 6) bicycle ergometer test. There were significant differences between physical activity level of Physical Education students and Recreation students, and between men and women. Physical activity positively correlates with waist-to hip-ratio, muscle mass, grip strength and cardiorespiratory fitness parameters, and negatively with body fat. Physical activity significantly affects body composition, grip strength and aerobic capacity.

Keywords: Health-Related, Physical Fitness, Physical Activity, Students.

SPORTS INJURIES DURING A FOOTBALL GAME

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Abstract

Introduction: Injuries are possible when playing sports if you are a professional athlete or playing for fun. You can avoid common sports injuries by taking precautions like using the right equipment and techniques for each sport.

The main purpose of this study is to rehabilitate sports trauma as soon as possible during a football game. The main objectives that we managed to achieve through this study are:

• Be able to identify the type of trauma that occurred
• Rehabilitate the athlete as soon as possible
• Get the footballer back in the game as soon as possible

Methodology: This study is of descriptive-analytical type. The study included 4 teams (U13, U15, U17, U19) each with 20 individuals. The footballers were followed for a period of two months October-December 2021. The traumas that were taken into the study are the traumas that occurred during the sports game. Traumas were divided into three main categories: Mild, moderate, and severe trauma. The ambulance bag contains are: refreshing spray. Warming cream, anti-pain cream, intramuscular pain medication, simple compresses, elastic bandages, diazepam, adrenaline IM / IV

Results: Mild traumas cover 50% of cases and include: shoe blows, minor injuries (skin scratching, nosebleeds) / Moderate traumas cover 30% of cases and are muscle pulls, muscle contractures, patellofemoral syndrome muscular hematomas, while severe traumas involve 20% of cases and are: meniscus rupture, blows to the head, protrusion of the ankle. Rehabilitation consists of: acute phase refreshing spray, ice, immobilizations with bandages, while

later massage break, stretching passive movements, active, closed, open chain exercises, stability exercises, cup therapy
Conclusions: After analyzing and discussing the collected data it was found that mild traumas are easier to treat and rehabilitate, moderate ones require more time to rehabilitate, while severe traumas are rehabilitated longer but can cost the athlete's career, but above all they are very stressful and for the medical staff.

Keywords: trauma, exercises, massage, football.

BLOOD LACTATE MEASUREMENT BY MONITORING THE INCREASED LACTATE LEVEL AND ITS RECOVERY BETWEEN TWO MATCHES PLAYED IN A TIME INTERVAL OF 48 HOURS

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Abstract

The participants of this study are 10 (ten) football players of Struga Trim Lum F.C. Four tests were carried out in order to monitor the increased lactate level and its recovery between two matches played in a time interval of 48 hours.

1. (first) test was carried out before the first match.
2. (second) test was carried out after the first match.
3. (third) test was carried out before the second match.
4. (fourth) test was carried out after the second match.

Based on the results of the tests, the following 5 (five) values of lactation curve motion were obtained:

1. Increased lactate level after the first match
2. Increased lactate level after the second match
3. Lactate recovery between the two matches
4. Lactate difference at the beginning of the first and second match
5. Lactate difference at the end of the first and second match

It has been concluded that complete lactate recovery under our conditions is difficult to achieve in a period of 48 hours. This study indicates that if additional sports scientific and technical methods are applied, there may be a better lactation recovery, and this will be a challenge for our next research.

Keywords: Lactate, monitoring, recovery, lactation curve, time interval.

THE PROFILE OF SPORTS PSYCHOLOGIST IN ALBANIA

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Abstract

Sports psychologists investigate how participating in sports can improve health and well-being, help athletes utilize psychology to improve their athletic performance and mental wellness. The sports psychologist has granted a license for individual practice of his profession, but in Albania, based on the Law on Regulated Professions and the Order of Psychologist, yet there is no such professional profile to obtain this license. Sports Psychology is an elective subject in Albanian university curricula, graduated students in the field of Psychology. Only at the Sports University of Tirana, the University of Elbasan "Alexander Xhuvani", and the University of Shkoder "Luigj Gurakuqi", has the status of a required academic subject. The study's goal is to provide an overview of sports students' knowledge on the profile of a sports psychologist while also assessing their need for a sports psychologist in sports teams. SUT students who are also athletes are the subjects of study. The methodology has based on a survey with categorical questions, multiple-choice questions, and a Likert scale, all of which highlight the study's purpose. SPSS, version 26, has used for statistical data interpretation. The data confirmed that the subjects were aware of the role and profile of the sports psychologist in the sports federations/teams, that a sports psychologist actually required a license to practice his profession. They were uninformed if there was a sports psychologist practicing their profession in these Albanian sports federations/teams, and that role of a sports psychologist could be performed by a counseling or clinical

psychologist. They claimed that they felt the need for a sports psychologist on their sports teams because they turned to the coach for advice and assistance when they had physical and psychological concerns. In conclusion, we would confirm that sports students appreciated the significance of the profession of sports psychologist in our country. Recommended that to license the profile of sports psychologist, universities and faculties that offer study programs in the field of Psychology must also offer study programs in the field of Sports Psychology.

Keywords: sports psychologist, psychology, curriculum, athletes, sports federation.

CONTEMPORARY METHODS OF SOCCER MATCH ANALYSIS PRACTICAL APPLICATION OF MATCH PREPARATION IN ELITE NORTH MACEDONIAN SOCCER CLUB

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Abstract

Football is already an industrial sector where huge financial resources are flowing, and the big companies already recognize it as a sector for which it is expanding in the business world. Professional clubs invest huge sums of money to achieve the success which results in high financial benefits and as a result very well invested scientific research departments in the professional football clubs themselves in order to be as successful as possible. Great attention is also paid to the departments for competition analysis. With the development of technologies in the market, there are a number of analysis programs. The department uses video data obtained from its own organization and from companies that receive the rights to broadcast matches. Optical tracking software for players where special programs and GPS systems are used to analyze the movements, technical, tactical, physical, and psychological evaluation of the game and the players themselves during matches and training. The wide range of techniques used for this has ranged from observation and annotation in real-time, to computerized video analysis carried out after the end of the game. Although manual recording systems have proven to be practical and accessible, their validity and reliability depend on certain factors, such as the number

and accumulated experience of the observers used or the perspective from which they make their observations (Barris and Button, 2008; De la Vega-Marcos, Del Valle-Díaz, Maldonado-Rico and Moreno-Hernández, 2008), and requiring a long time to collect and analyze the data (Di Salvo, Collins, McNeill and Cardinale, 2006). Among the studies that analyze the indicators of the player's performance during the game, there are works on the technical-tactical component of the game, while others have focused on the assessment of the physical and/or physiological effort, as well as the social and psychological aspect (Reina-Gómez and Hernández-Mendo, 2012). Following the world trends of competition analysis in this presentation, our goal is to review the research so far and to present a practical overview of competition preparation and planning a weekly training process as a contribution to closing the gap between theory and practice.

Keywords: Soccer, Match Analysis, Monitoring, Practical application.

ASSESSMENT OF HEALTH-RELATED INDICATORS IN PHYSICALLY ACTIVE 18-19 YEARS OLD STUDENTS; PRELIMINARY DATA

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Abstract

The aim was to assess core health-related indicators in a group of students from the Sports University of Tirana, and eventually figure out health and cardiac risk factors such as obesity, high blood pressure, hyperglycemia, and others, considered as significant predictors for future health problems in general, including sport persons. The study was conducted in a group of 106 Individuals, 52 females and 54 males, aged 18-19 years, all students of two sport faculties of Sports University of Tirana. Physical and anthropometric data and measurements were taken and measured a set of obesity/cardiac risk indicators.

The results of indicators such as body weight and BMI show that only 79% of the subjects present values within physiological ranges of the respective gender. The average value for body fat percentage is 25.5%, but in males, this is higher (20%) than the higher healthy limit (19%), even taking as reference the normal population range. Interesting to highlight the healthy visceral fat percentage values (4.14%) for both genders, despite high values of BF. In addition, normal average values were estimated for cardio-respiratory data as HR (75.6bpm), pO2 (97%), glycaemia (97mmol/dl) and blood pressure (110/75mmHg). Although these results are initial and in a limited number of subjects, they highlight the importance of evaluating health indicators even in physically active subjects, where health status and risks needs to be seriously assessed, at both group and individual level.

Keywords: Physical Activity, health indicators, students, BMI, BF, HR.

RELATION BETWEEN UPPER LIMBS STRENGTH AND RUNNING SPEED IN AMPUTEE FOOTBALL PLAYERS

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Abstract

Amputee football is gaining popularity worldwide among individuals with disabilities. It has differences compared to normal football, such as, number of players in the field, smaller field dimensions and the usage of crutches while running. Dispite the differences with normal football, amputee football requires high levels of flexibility, endurance, power, speed and agility. Running with crutches is divided into 4 stages and within these 4 stages, an amputee player uses crutches 33% of the time, while 67% of the time uses their foot. Hereby, this study aims to show the relationship between strengthening the upper body to increase the speed of running with crutches during the game of amputee football.

A rigorous literature research was conducted based on training and sports performance. The considered databases were PubMed, Research Gate and MEDLINE, where the keywords used were ~~-a~~mputation" ~~—d~~otball" ~~-s~~trength" ~~—s~~p~~e~~ed" ~~-e~~rutches". The criteria of the selected studies was the relevance of the article on the selected topic and the time of publication.

Studies conducted in this topic conclude that there is a great relation between upper strength and activities performed on amputee football match, such as running. Studies state the usage of latissimus dorsi muscle and shoulder extension movement.

This study will be useful to give a clear sighting of the importance of upper limbs training in amputee football players to increase their running speed with crutches.

Keywords: Amputation, Football, Strength, Speed, Crutches.

SOME EMOTIONAL, PSYCHOLOGICAL AND PHYSICAL ASPECTS OF SPORTS INJURIES BY THE INJURED THEMSELVES

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Abstract

This research aimed a deeper knowledge of a phenomenon that surrounds us at all times, not only athletes but also people who do not do sports. The results of this paper will show the reasons for causing the injuries, the athletes‘ point of view for the stage they went through, a period which also gives its lesson.
This part of the research will be a wider part as the athletes' answers will be analyzed and compared, and we will see if there is any correlation between the different questions of the questionnaire. The research was conducted through a questionnaire which was completed online through "Google Forms".
The questionnaire was completed by 97 people, out of which 71 women and 29 men active participants in several different sports. The questions of the questionnaire were calculated into percentage of the answers given by the respondents.
Based on the analysis of data, we found the following: athletes in Kosovo lack the level of physical training, injuries have negatively affected the adequate return to sports activities, most athletes have expressed dissatisfaction during treatment and rehabilitation phase, and injuries have affected the increasing of the emotional and decision-making state by lowering the level of performance after injury.

Keywords: injuries, rehabilitation, athletes, questionnaire.

A LONGITUDINAL STUDY OF AGILITY AS A PART OF THE PHYSICAL CONDITIONING OF U17-U19 FOOTBALL TEAM OF VLLAZNIA, FOR THE PERIOD 2020-2022

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Abstract

Agility is an undivided part of a sportsman's physical conditioning. Like many studies, they focuse on this element of the condition. We're trying to contribute to our study of the perceptiveness of this component.
The Illinois Agility Test (Getchell, 1979) is a commonly used test of agility in sports. It measures the ability to change position and direction. The length of the course is 10 meters and the width (distance between the start and finish points) is 5 meters. Four cones are used to mark the start, finish and the two turning points. Another four cones are placed down the center an equal distance apart. Each cone in the center is spaced 3.3 meters apart. On the 'Go' command the stopwatch is started, and the athlete gets up as quickly as possible and runs around the course in the direction indicated, without knocking the cones over, to the finish line, at which the timing is stopped.
Results: the average group in 2020 was 15.25 sec, and the average of the same group for 2022 is 15.46 sec. The best time of the pre-escation was 14.17 secand the best time after two years of the same group is 14.59 sec. While the time with the weak was 16.89 sec and after two years this time is 16.70 sek.
As a result, there is a deterioration in the time of the execution of and that it has not been worked enough in this direction.

Keywords: football, conditioning, agility, longitudinal.

THE IMPACT OF UNILATERAL STRENGTH AND POWER EXERCISES ON ACCELERATION AND CHANGE-OF-DIRECTION SPEED

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Abstract

The physical performance of basketball athletes and not only is greatly influenced by the quality of the training process. Basketball match-play necessitates players to participate in multiple high-intensity actions, such as running, leaping, changing directions, or shuffling. The impact of unilateral strength and power training interventions on youth basketball players' acceleration skills and change-of-Direction Speed will be the purpose of the study. Sixteen youth basketball players (age: 15.5 ± 0.73 years), completed a strength and power intervention, twice per week for 6 weeks. The training program for unilateral intervention performed split leg press, single-leg high jump, single-leg drop jump, single-leg countermovement jump, single-leg broad jump, and single-leg lateral jump. Acceleration ability and change-of-direction speed were assessed using 10- and 20-meter sprint tests, as well as the 505 Change-of-Direction Speed Test. Brower Timing Systems were utilized for testing. Significant (p 0.05) gains were seen in the unilateral training group in the 10-m sprint (Std. Dev = 0.14; %Δ = 9.35), 20-m sprint (Std. Dev = 0.17; %Δ = 4.16), and 505 Change-of-Direction Speed Test (Std. Dev = 0.18; %Δ =6.83). The current study demonstrates that unilateral strength and power training interventions improve physical performance measures such as acceleration and change of direction speed. Strength and power have always been skills that have positively influenced the athlete's

performance, but the choice of their application with unilateral movements would have a greater impact on the movement pattern of the sport performed.

Keywords: sprint velocity, basketball, acceleration, performance, unilateral exercise.

DIFFERENCES IN MOTOR ABILITIES WITH KARATE ATHLETES AND NON ATHLETES AT THE AGE OF 16 - 18 YEARS

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Abstract

The main objective of the study was to determine and compare the indicators for assessment of the motor abilities, with respondents dealing with karate and non athletes at the age of 16-18 years. The sample of respondents was defined with 85 respondents from the population athletes and non athletes males divided into three subsamples of which: the first included 25 respondents karate athletes who have trained at least 1 (one) year, the second subsample covered 30 respondents non athletes from rural environment and the third subsample covered 30 respondents from urban environment - or entities who are not engaged even in recreational sports activities. Total of 9 variables were applied. To determine and compare the indicators for assessment of the motor abilities among respondents dealing with karate and non athletes were used multi variant and uni variant analysis of variance. Based on the statistical analysis of the data it can be concluded that there is statistically significant differences in the motor abilities between the applied variables and groups.

Keywords: motor abilities, karate athletes, non athletes, anova, manova.

GENDER COMPARISON FOR FLEXIBILITY AND JUMPING PERFORMANCE IN BASKETBALL AND VOLLEYBALL IN YOUTH

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Abstract

Introduction: This study aims to compare flexibility and jumping performance between young male basketball players and young female volleyball players. Flexibility and jumping performance are two important motor abilities that depend mostly on age and anatomical characteristics of the subject. These two motor abilities vary between individuals and between genders as well. Exercising also plays an important role to the improvements of these qualities.
Methods: A total of (19) male basketball players and (18) female volleyball players all belonging to the Under-16 age group, took part in the study. They were tested for high jumping performance through the high jump and high jump run up tests and also through the sit and reach test for flexibility. Data were statistically analyzed using independent t-test.
Results: Descriptive statistics revealed that male basketball players averaged (M=21.7, SD= 6.9) in the seat and reach test, opposed to female volleyball players (M=29.8, SD= 6.6). Also for the high jump performance males statistics were (M=39.5, SD=11.4) and high jump with run up (M=48.5,SD=9.8), while female volleyball players (M=30.4, SD=5.2) for the high jump and (M=33.4, SD=4.6) for the high jump run up. T-test showed significant difference in favor of girls regarding flexibility and significant difference regarding high jump performance in relation to boys.
Conclusion: To conclude with, the comparison of flexibility and high jump performance in male basketball players and female volleyball players suggests that volleyball players are significantly

more flexible than boys, while basketball players have higher scores in high jump performance. This difference might be due to the specific training the children engage in the sport they practice, or due to the different physical predispositions that male and female develop at this age.

Keywords: flexibility, high jump performance, gender comparison.

EVALUATION OF MIDFIELDERS IN TERMS OF TECHNIQUE AND TACTICS IN THE GAME OF MODERN FOOTBALL

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Abstract

In the modern football has been and still remains a concern for specialists and coaches working in the youth sector the tactical deployment in the midfield. Superiority and the control of the game in the midfield is considered by most of the technicians as a priority for achieving positive results. Common principles such as: –Midfield is a landmark for the team game", –Need to potentiate the midfield", –Shouldn´t be left to the opponent the possession of the midfield" (Leali.G, 2008).

Through the survey method and comparing the participating teams in the European Championship U-19 held in Belgium from 13-19 November (Belgium, Island, Greece, Albania) give us a clear picture of the game systems and the role of midfield player (front screen defense).

In order to achieve the objectives of the study, we are based on the statistics of all the matches in the technical-tactical plan, analyzing the DVD of the group matches, comparing with those of the other groups organized in the same period in other countries.

Based on the characteristics of our footballers of this age for many years and the European experience, we would suggest tactical deployment with two midfielders (system 4-2-3-1). Coaches must give a shape to the technical-tactical situations associated with contemporary elements such as pressure, pressing, convinced that the players present in today´s football a profound influence in the personality of the team.

The tournament showed that the development of the young footballers throughout U-19 evolutionary system, should be prepared to play in different roles and structures in order to make the

team work. Today´s trend goes towards establishing creative players within this department.

Keywords: Game, modern football, tactics in football.

EFFECTS OF DANCE/MOVEMENT THERAPY ON TRAUMA REHABILITATION AND PHYSICAL RESILIENCE

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Abstract

Bacground: This paper explores the use of dance/movement therapy as an approach of an entire population to work with trauma and build resilience. The art of dance is particularly a effective way for people who cannot expressed verbally to find symbolic and embodied expressions of their sufferings and hopes for the future. Dance/movement therapy can be relied on dance and special cultural forms to address universal themes.
Methodology: One hundred people with chronic pain participated in a 12-Week group DMT intervention. Quantitative assessments of elasticity, body awareness, pain, humor, stress and relaxation were performed. Qualitative data were collected and analyzed according to the method of theory based and compared with quantitative findings.
Results: DMT resulted statistically significant improvements in elasticity ($p < 0.001$), body awareness ($p = 0.03$), and pain intensity ($p = 0.02$) over time. Seventy eight percent of people
felt "average to much better" after the intervention. We found significant changes within the session in mood, stress, relaxation and pain ($p < 0.001$).
Conclusion: DMT is a promising treatment for chronic pain through dynamic mind-body pathways. Quantitative findings should be interpreted with caution due to the small sample size and lack of control group.

Keywords: DMT, trauma, building resilience

THE EFFECT OF THE PLYOMETRIC PROGRAM ON JUMPING PERFORMANCE

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Abstract

The aim of this research is to prove the effect of plyometric program for the development of explosive force on the performance of jumping in students. The research was conducted on a sample of 220 male testers‘ aged 15 years ± 6 months, students at high schools "Sami Frashëri" and "Ismet Jashari" - Kumanovo. In this research, were used a total of 3 specific-motor variables for the evaluation of long jumps: 1) long jump from the place (SMLJP), 2) triple jump from the place (SMTJP) and 3) high jump from the place (SMHJP). The research had a longitidunal character, and lasted a total of 12 weeks, with 36 hours of training. In order to confirm the differences between the control and experimental groups, in the initial and final measurements, were used univariate and multivariate analysis of variance and covariance. From this research we can conclude that the variables for the assessment of specific motor skills do not have statistically significant differences between the control and experimental group in the initial measurements, while after applying the experimental model in the final measurements, we can see that the three specific-motor variables have statistically significant differences with probabilities 0.047, 0.026 and 0.019 between the control and experimental group, which can prove that this training model has a significant impact on the development of explosive force in the performance of jumping, and the same model can be used on elite athletes.

Keywords: plyometric model, specific motor skills, training process, jumping, students.

RELATIONSHIP AND INFLUENCE OF BODY COMPOSITION AND SOME SKIN FOLDS ON SPEED AND AGILITY PERFORMANCE

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Abstract

Purpose: In this paper, the correlation and influence of the body composition and some skin folds in the success of speed and agility performance have been investigated. The purpose of this paper is to establish the correlation and influence between body composition and skin folds as a predictive system and speed and agility performance as a criterion system. Methods: The survey was conducted in a sample of 170 male entities aged 14 years ± 6 months, primary school students at "Bajram Shabani" and "Naim Frasheri" – Kumanovo. A total of 10 variables were used in the research, including 4 variables for evaluating body composition, 4 variables for evaluating skin folds and 2 variables for assessing speed and agility performance. Variables for evalution of body composition are 4 as follows: 1) body height (BH), 2) body weight (BW), 3) body mass index (BMI) and 4) body fat (BF), variables for evalution of skin folds are 4 as follows: 5) Arm skin folds (ASF), 6) thigh skin folds (THSF), 7) pulp skin folds (PSK), and abdominal skin folds (ABSF), and variables for evalution speed and agility performance are 2 as follows: 9) running 100 meters (RU100m) and 10) Agility 10x5 Shuttle run (A10X5Sh). Results: Based on the results obtained from the correlation analysis we can conclude that, we have significant level correlations between the variables: RU100m and ASF, with a positive value of .445 ** and A10X5Sh

and PSF, with a positive value of .314 **, while we have low level correlations between the variables: RU100m and BF, with positive value .221 ** and A10X5Sh and BH, with negative value -.165 *. Based on the results obtained from the regression analysis, we can conclude that: between the predictive system and the criterion variables RU100m and A10X5Sh, there is a linkage of statistical significance, at a confidence level of 0,000. From the whole predictor system, the individual impact on criterion variable RU100m has the variables: BH, with a beta coefficient of -.893 and a confidence level of 0,02, and BF, with a beta coefficient of -.280 and confidence level of 0,043. While from the whole predictive system, individual variables in the criterion variable A10X5Sh have the variables: PY, with beta coefficient values of -.453 and confidence level of 0.005 and LT, with beta coefficient values of -.918 and confidence level 0.042.

Conclusion: Based on the results obtained in this study, we can conclude that in order to have good results in speed and agility performance we need to have the lowest possible fat percentage in the body and also lower or average body height.

Keywords: body composition, skin folds, speed, agility, correlation, regression, students.

ADIPOSITY, PHYSICAL ACTIVITY AND PHYSICAL FITNESS AMONG ADOLESCENTS FROM TIRANA

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Abstract

Objective: The main purpose of this study was to determine the relationship between physical activity (PA) levels and adiposity. The secondary purpose was to assess the effect of physical fitness and living area on adiposity.

Research Methods and Procedures: A cross-sectional study was carried out in a regional representative sample of 250 adolescents from 13 to 17 years of age, in 2019. Anthropometric and physical fitness values (including BMI, aerobic capacity, strength levels, velocity assessment, and flexibility) were measured in all adolescents.

Results: Similar overweight prevalence was founded in boys (40%) and girls (45%) whereas significant differences were found in the corresponding obesity rates (15% vs. 12%, $p < 0.05$, boys and girls, respectively). 127 boys and girls were considered the physically active group, while the other 123 were considered non-physically active. When active and sedentary adolescents were compared, physically active boys showed a trend toward a slightly higher overweight and obesity prevalence than the non-physically active boys (35% vs. 29% and 9% vs. 4%, both p ³ 0.09 to 0.10). Conversely, physically active girls had lower obesity rates than

nonphysically active girls (8% vs. 11%, $p < 0.05$). Adolescents from the rural area showed similar overweight (34% vs. 28% and 36% vs. 32%, boys and girls, respectively) and obesity rates (6% vs. 8% and 10% vs. 9%, boys and girls, respectively) compared with their urban counterparts.

Discussion: Regular participation in at least 2 hours per week of sports activities on top of the compulsory education program is associated with better physical fitness and lower whole body adiposity. In the adolescents included in our study, among all physical fitness variables, VO2max showed the strongest relationship with BMI and fat mass assessed by means of skinfold measurements.

Keywords: body composition, childhood obesity, exercise, health education.

ASSESSMENT OF THE RELATIONSHIP BETWEEN BALANCE PERFORMANCE AND SOME ANTHROPOMETRIC CHARACTERISTICS OF CHILDREN AGED 7-10 YEARS OLD

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Abstract

Keeping the body in balance, in a static and dynamic environment is a complex psychomotor ability.
The abilities responsible for motor balance are related to the general abilities of the nervous system. Skills to lead balance control in a static and dynamic environment determine the level of achievement in Sports and Physical Education.
Equilibrium skills, both in static and dynamic environments, are essential for performing daily life activities. These skills, although largely innate, can be developed largely through special motor programming treatments.
Based on the role and importance of balance skills in a static and dynamic environment, this research was conducted on a sample of 146 children aged 7-10 years.
To assess the level of development of static and dynamic balance in children aged 7-10 years, standardized tests from (Pearson Clinic) have been applied. The tests were done with students from the village and from the city, with both genders‘ comparison.
The results obtained from these balance tests were compared with the height and weight of children to understand the impact of these two anthropometric factors on the ability to balance in static and dynamic environments.

The research was done on a sample with normal intellectual development.
The purpose of this research is to evaluate the correlation between developmental factors of balance in static and dynamic environment with anthropometric factors, height and weight in children aged 7-10 years.
The data from the collection of results lead us to the conclusion that there is an important correlation between static and dynamic equilibrium as well as their correlation with weight and height.
Differences are also evident between ages and gender, but less pronounced.

Keywords: Balance, dynamic, static, weight, height, children.

THE IMPACT OF THE PANDEMIC PERIOD ON THE PSYCHO-PHYSICAL AND HEALTH IMBALANCE IN HUMANS

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Abstract

The situation that has passed and is going through all of humanity due to the pandemic, in the last three years all over the world, has had a very negative impact on various aspects of human life. Economic growth has slowed down, industrial production has declined, and poverty has increased across the globe, but the most problematic consequences are appearing in physical, physiological, and psycho-social terms in humans. This study aims to highlight the consequences of this situation among the residents of the city of Shkodra. For this reason, 115 randomly selected persons were interviewed in different settings and places in the city. Persons aged around + 50 years regardless of gender were preferred. They were asked a battery of 10 questions, the answers to which were processed and data were extracted, which showed large differences in physical condition, physiological, psychological, sociological, and health before and after recovery from infection, but also in those who are not ill with Covid 19. From the results of the answers, the problems that have emerged are dedicated to the quarantine period, the use of the mask, the inability to move freely in the part most of the day, breaking the daily routine, stopping meeting with friends and colleagues for a long time, prolonged use of mobile phone or computer, etc. Comparing data and consulting with other scientific research done on this has shown that these problems need to find a solution both for the present and for the future. We think that the modest results of this study may be of interest not only to specialists who deal with the physical treatment of people but also to psychologists, sociologists, doctors, etc.

Keywords: pandemic, physical condition, quarantine, psycho-social.

PHYSICAL ACTIVITY AND PSYCHO-SOCIAL GAMES IMPROVE THE MOOD AND COGNITIVE-BEHAVIORAL SKILLS OF PRESCHOOL CHILDREN

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Abstract

A school psychologist who is in constant contact with preschool children should understandably convey to both children and educators and the parent group the importance of sport in the physical and psychological well-being of children. In this paper, the impact of psycho-social games on the children of the third group of kindergarten, aged 5-6 years, is examined. This paper highlights the positive factors brought by engaging in sports and the use of psycho-social games in classroom settings and facilities frequented in leisure time by preschool children.

The hypothesis raised in this paper is: Psycho-social games and sports have positive effects on the rehabilitation and capacity development of children.

Objectives of the paper

- Improving the psycho-social well-being of children.
- Improving the quality of intervention with children by developing personal and social skills.
- Shaping the skills of educators to use games and sports as a psycho-social tool
- Strengthening the self-confidence and social life of children away from closed environments

Methodology

The design of this paper is an interweaving of qualitative and quantitative methods. The children of the third group of 15 private and public kindergartens in the city of Shkodra and its surroundings were observed. Children were observed during their daily activity, behaviors were recorded and interpreted by a specialist, semi-structured interviews with educators and questionnaires for parents of children were implemented. Results were processed with SPSS while interviews and observations were interpreted Observations helped to interpret the results. At the end of the data processing, conclusions were drafted and then I came up with recommendations
In conclusion, it is noted that games, sports and creative activities help to develop skills in a terrestrial way in children such as: - mental, psycho-social and physical abilities. The goal is to change attitudes and behaviors and achieve long-term goals such as better self-confidence and self-esteem, a sense of security and unity in a group.

Keywords: physical activity, social games, sports, holistic development.

A THEORICAL OVERVIEW OF THE RELATIONSHIP BETWEEN THE PHYSICAL ACTIVITY AND THE REDUCTION OF THE LEVEL OF ANXIETY AND STRESS

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Abstract

The bibliographical analysis of scientific studies on pathologies such as: anxiety, stress or depression, shows that these kinds of pathologies intervene in the decision-making in everyday life and may cause obstacles with irreparable consequences. The negative impact of these pathologies on the human behaviour may also increase the consumption rates of psychoactive substances as an inducement to promote physiological changes in the human body. These situations associated with the psychological problems in the individual's life can be reduced through the application of therapies related to sports practice. The correlation between physical activity and mental health of an individual shows that physical exercises do increase the feeling of self-confidence and well-being, as well as improve the functioning of their cognitive activity. This relationship helps individuals to improve their physical and psychological quality of the life, and this also serves to improve the emotional state and reduce levels of anxiety, depression and stress. The methodology used in this article is based on the bibliographic method and a qualitative approach has been so applied at the descriptive level of the scientific literature focusing on the analysis of the correlation between the physical activity and the mental health of an individual. The scientific studies and articles of various authors in this field show that the effect deriving from the physical activity are beneficial for the individual's physical, mental and psychological health, regardless of gender or age differences.

Keywords: physical activity, mental health, stress, anxiety, physiological benefits, psychological benefits.

THE IMPORTANCE OF REHABILITATION TO FITNESS CONTINUUM IN SPORTS TRAUMA

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Abstract

Aim: From the beginning of the establishment of rehabilitation there has been a gap between the field of clinical rehabilitation and professional fitness. This gap should begin to be narrowed and possibly the rehabilitation and fitness profession should be considered a continuation of rehabilitation. The basic principles of rehabilitation and fitness are the creation of a specific program for the individual after a trauma, the establishment of a training regime that is more intense than the individual is used to, so he can achieve the desired result and finally the evaluation of progress by increasing the intensity of treatment or training.
Methods: We performed a systematic electronic search for articles in MedLine via PubMed, EMBASE, Web of Science, Cochrane Central Register of Controlled Trials, CINAHL, and SPORTSDiscus up to April 15, 2022.
Results: It is understood that rehabilitation and fitness are based on the same principles, so why not be a continuation of each other? Continuity of treatment should be based on 6 stages; acute management, improvement of mobility, improvement of motor control, improvement of strength with functional integration, kinetics, and finally fundamental capacity, which is considered a complete return to sports. It should not be forgotten that the principles of rehabilitation and fitness are the same, the difference is the beginning of work. Our advice, mainly in the clinical field, is that the focus should not only be on improving function, as it currently is, but our goal should be to optimize the individual's motor skills, control the body, and produce more force during selected movements.

Keywords: rehabilitation, fitness, sport, trauma, physiotherapy, training program.

USING RESEARCH TO CREATE AN EDUCATION PACK ON HOW SPORT HELPS AGAINST BULLYING

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Abstract

All kind of violence are painful; the victim of a bullying abuse is unable to protect itself, whether this could be a child, adolescent or adult; whether bullying is verbal, physical or social or cyber, the last typology is gaining ground on our reality. Bullying consists in two basic typologies, direct and indirect. There is a strong asymmetric power imbalance that prevails, in a pyramidal model; at the top we found the bully and at the bottom the bullied and in the background secondary actors of violence; bartenders, supporters and passive players. This phenomenon can take place in different social contexts such as schools, social groups, sports clubs, or social networks. In recent years, european studies have revealed that sport is a connecting element between cultures, languages and peoples and a winning edge in terms of increasing self-confidence and protection from the first signs of depression in the young and adolescent age group.

The study which is expected to take place will have as an element of observation the variety and typologies of bullying in university facilities and environments where sports activity takes place. The theoretical part will refer to the methodology of researching of european bullying and the observation will be made thanks to an anonymous questionnaire, against different age groups of students enrolled in random groups during the academic year.

Keywords: youth, bullying, sport, prevention.

THE NEED FOR SOFT SKILLS IN ACTIVE TOURISM - A CASE STUDY OF SPORTS AND TOURISM GRADUATES

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Abstract

Active or adventure tourism is a term used to refer to a number of outdoor activities which usually suggest a level of challenge, and as such also involve physical danger. Employees in the sector need to possess the technical skills necessary to help clients participate in a thrilling experience. Such skills are usually classified as hard skills. Hard skills are tangible and measureable, therefore the need for such skills can be easily tackled by higher education curricula. However, as facilitators of adventure activities, employees in this sector need also possess a number of interpersonal skills. Soft skills are critical for talented professionals, and are becoming more common in job descriptions, suggesting that employers are increasingly recognizing their importance not only as employability criteria, but also for the performance and competitiveness of their businesses. Despite the acknowledged importance, it appears that there is a discrepancy between what the market needs and what HEIs with Tourism degrees actually provide. This study aims to find out the requirement for soft skills among tourism management students. Primary source of information has been used and data was collected via structured questionnaire using a 5-point Likert scale to record the responses. Results highlight the need for a greater focus on soft skills and the need to adopt innovative teaching methodologies.

Keywords: Active tourism, soft skills, market needs, educational methodologies.

AEROBICS EXERCISES AND PHYSICAL PARAMETERS FOR OVERWEIGHT STUDENTS AGED 14-16 YEARS

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Abstract

Today, it is known that adult overweight is a result of child and teenager obesity. For this reason, to prevent overweight in adulthood and must be controlled through organizing exercise habits of teenagers in addition to organizing other habits. Taking the importance of physical beauty in psychology of puberty period into consideration, the effects of aerobics exercise on the obese, and fighting against obesity through exercise form the basis for our study to fight against obesity through the habit of exercise. Our study was conducted on 23 male, 29 female of middle school level pupils through 12 weeks aerobics exercise programs, 3 days a week at least, approximately 60 minutes, interval training model. This study focuses on measurements of age, weight, gender characteristics, physical composition as anthropometric measurement (subcutaneous fat, peripheral and diametric measurement), stretching test (sit-reach test), strength test (hand dynamometer), standing long jump, vertical jump, shuttle and push-up. Sustainable and comprehensive programs to increase physical activity among all school individuals need to be developed and implemented to bring about positive changes to improve health, especially overweight to reduce cardiovascular disease.

Keywords: Overweight, Exercise, Body Composition, Students, High School.

THE IMPACT OF MOTIVATION ON STUDENT PERFORMANCE IN PHYSICAL EDUCATION

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Abstract

It is already known that Physical Education has a special importance as a school subject. It achieves many formative aspects that are important and cannot be achieved by other subjects. The motivation of students has a very important role in achieving the objectives of Physical Education. In this context, it is clear that students‘ motivation has a primary role. One of the most important accomplishments of a teacher is his/her ability to motivate students. It is known that every activity is conditioned by the motivation of the individual and it is the one that leads and supports human behavior. Motivation is represented by some forces that operate on or within a person forcing him to behave in a certain way because people are not similar and cannot be motivated in the same way as others do. Therefore, the teacher's job is to know how to motivate his/her students as effectively as possible. The teacher of Physical Education should have it clear that his/her role is not just in performing the lesson, but his/her work should be focused on giving importance to the way the student should be as active as possible and increasing his/her skills in a natural way. In this context, it is clear that students‘ motivation has a primary role. Teachers of the Physical Education need to build their work using various techniques that increase motivation, that will improve and enhance students‘ performance. Therefore, we can say that motivation is among the determinative factors for the successful accomplishmentof Physical Education‘s objectives and for increasing the performance of sports.

Keywords: Motivation, physical education, teacher, student.

EFFECTS OF AEROBIC EXERCISES ON ANXIETY REDUCTION

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Abstract

Recent studies have shown the effectiveness of aerobic exercises in anxiety reduction. The aim of this study was to provide information on several research results related to therapeutic effects of aerobic exercise on anxiety reduction. Recent experimental studies have found aerobic exercise to be effective in the treatment of anxiety. Two main sources investigated this research were systematic reviews and meta-analyses related to effects of Aerobic Exercises on Anxiety Reduction. Systematic reviews (used as a source in this study) which used healthy subjects or subjects with raised anxiety levels found that aerobic exercise was effective in reducing anxiety symptoms among this groups of participants. Meta-analysis (used as a source in this study) of healthy subjects or subjects with raised anxiety levels also found exercise to be beneficial in this groups of participants. This review results demonstrated a decrease in anxiety levels after aerobic exercise. In this study both physiological and psychological pathways have been proposed. The data analyzed in this review outlined those alternative therapies like aerobic exercises are effective in controlling and reducing symptoms of anxiety disorders. Results of this review promoted beneficial effects of aerobic exercises on anxiety levels. This study concludes that aerobic exercise can definitely help in reducing anxiety.

Keywords: Aerobic Exercise, Anxiety disorders, Anxiety Reduction, Anxiety Symptoms.

INFLUENCE OF MORPHOLOGICAL CHARACTERISTICS AND MOTOR ABILITIES ON THE SITUATIONAL EFFICIENCY OF JUDOKA

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Abstract

The basic goal of this research is to determine the level of significance of the influence of the predictor system of variables (morphological characteristics and motor abilities) on the criterion variables (situational movement structures of judokas). The research was performed on a sample of 92 respondents aged 16 - 18 years who were in the training process for at least three years. Eleven (11) variables of morphological characteristics, fourteen (14) variables of motor abilities and five (5) variables of situational movement structures in judo were applied in this research. The variables used in this study were determined by standard descriptive procedures, where the basic central and dispersion parameters were calculated to determine the functions of their distributions and the basic parameters of the functions, thus determining that none of the applied variables statistically significantly deviated from the normal distribution. Based on the results of regression analyzes, the influence of the predictor system of variables (morphological characteristics and motor abilities) on the criterion variables (situational movement structures in judo) was confirmed. This research found that special technical preparation (situational

movement structures in judo) is largely conditioned by certain motor skills and morphological characteristics, which judo trainers must keep in mind when training and applying situational movement structures in judo.

Keywords: judo, morphological characteristics, motor skills, influence, situational movement structure.

LEVELS OF ORGANIZATIONAL SATISFACTION OF HUMAN RESOURCES IN BASKETBALL CLUBS DEPENDING ON THE RANK OF THE COMPETITION

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Abstract

The clubs on which the research was conducted are basketball clubs in Bosnia and Herzegovina. The sample of respondents were management staff and work staff. The battery of tests used in this research are questionnaires that provide an answer to the level of organizational satisfaction of human resources in basketball clubs. Satisfaction factors that show the difference in the quality of the organization are presented. Basketball sport carries a segment of rapid reaction and change in the sphere of the management manifesto, based on which the degree of satisfaction affects the realization and ability to manage and lead, which in the science of sports management is the starting point and structure of action. The value of this paper is reflected in the segment of theoretical values obtained in the paper, based on which we can have the principle of making an organization system based on the principles of satisfaction, as a crucial factor in the effectiveness of a sports organization.

Keywords: management, satisfaction, club, basketball.

THE IMPACT OF EXTRACURRICULAR PHYSICAL ACTIVITIES ON THE DEVELOPMENT OF MOTOR SKILLS

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Abstract

Purpose: This research aims to establish the differences between some anthropometric characteristics and basic motor skills in children who are actively involved in sports beside the regular learning process and those who are not active.
Methods: The research included 100 male children aged 12 years, 50 of them are actively involved in some sport and the other 50 are not active. The methods applied in order to accomplish the tasks set out in this paper are: descriptive statistical methods (parameters of central tendency, distribution and correlations), as well as the method of T-test to confirm differences between schools. The results are processed in SPSS 20.0 software.
Results: In the anthropometric space significant statistical changes are presented in all variables except the thigh perimeter variable, and these changes are in favor of active children. There are also statistically significant changes in the moving space in all variables, except in the variable of jumping from place to place, and these changes are in favor of active children.
Conclusion: Based on the values obtained in anthropometric parameters, it can be said that the biological development and growth of these young people is normal for their age.

The distribution of the results obtained in the anthropometric and kinetic variables is normal, with little asymmetry and mostly positive.
Based on the above results, it can be seen that the arithmetic means of the anthropometric and moving variables of the groups differ from each other, and this difference is in almost all variables in favor of active children.

Keywords: Activities, Anthropometry, Motion, T-test, Connectivity.

THE ROLE OF ADVENTURE TOURIST GUIDE IN SUSTAINABLE TOURISM IN ALBANIA

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Abstract

Recent studies have highlighted the role of adventure tourist guide by its potential to manage tourist experiences, enhance destination image and implement the goals of sustainable tourism. The goal of this qualitative study was to define main aspects and themes that Sports University of Tirana should use in its tourist guide qualification program in Winter Mountain Sports: Skiing, Ski Touring, Snowboarding. This study aims to provide the necessary knowledge about the techniques, safety and leadership of tourist groups engaged in mountain sports. Participants of this study were 9 experts in the Sport Tourism and Educational field. Focus group was used to define main aspects of the curricula for the tourist guide qualification program in Winter Mountain Sports. Focus group results outlined the following themes: Group dynamics, decision making and risk management; Signaling and communication; Environment - Knowledge of the terrain; Navigation: Maps and tools, compass orientation and GPS; Tour planning and logistics; Food planning; Equipment and their maintenance; Weather, snow and avalanches; First aid on a snowy mountain; Risk management and communication; Use of shovel and probe; Ascent and descent techniques; Ski and equipment maintenance; Knowledge of ski types; Knowledge of snow rockets. Further studies should investigate the impact of this qualification program in the Adventure Tourism sector in Albania.

Keywords: tourist guide, adventure tourism, ski touring, sustainable tourism.

ADVANTAGES AND DISADVANTAGES OF ONLINE LEARNING DURING THE PANDEMICS; IMPRESSIONS ON THIS EXPERIENCE OF SUT STUDENTS

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Abstract

The pandemics forced the adaptation of teaching and learning in all educational institutions by shifting this process from auditoriums / physical classes to online platforms. Given that online learning was hardly used in Albania, the academic staff and students were unprepared to adapt to the apt technology in order to fulfill their mission.

This study, through a tailored online questionnaire sent through the Teams platform to Bachelor and Professional Master students at SUT / FMS, aimed to identify students' perception and opinions on online learning during this period on several aspects , such as: general feeling about online learning and its effectiveness; comparing physical learning with online learning; difficulties and advantages of online learning; evaluation of some effective elements used; acquiring knowledge / knowledge assessment; professor-student and student-student interaction and socio-health status, effects on everyday life and the level of motivation and stress. Moreover, it required from students to express their opinions on the advantages and disadvantages of online learning.

The answers received mainly indicate that students have a positive impression of online learning and appreciate the support they have had from professors and the institution. Teaching materials have been clear and helpful, accessible and sufficient in most cases. The problems encountered were mainly technical, appropriate equipment and internet connection, as well as psychological issues increased level of stress and lower motivation and lack of direct contact with

the professors and students. Students admit that online learning has been a good solution and that some of its elements can be used alongside traditional teaching-learning process with some adaptations.

Keywords: quality of life, sports, physical activity, physical health, psychological health.

PREVALENCE OF SMOKING AND INFLUENCING FACTORS IN 19-20 AGED STUDENTS OF SPORTS UNIVERSITY OF TIRANA: A COHORT COMPARATIVE STUDY

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Abstract

Cigarette smoking has negative effects on health, particularly in the respiratory system and sport performance. This study aimed to determine smoking prevalence and the influencing factors in a sample of sport students, compared to a control group. A self-administered, standardized and anonymous questionnaire was used for this purpose. The data were collected for 3 consecutive years (2020-2021-2022) and included 168, 19-20 years old subjects (101 sport and 67 control respectively).

The prevalence of cigarette smoking in sport students was 80%, against 67% in the control, where males show a higher percentage in both. Most sport students (65%) smoke less than 5 cigarettes/day, compared to 43% in controls. The non-sport students initiate smoking in a lower age (31% before 13 years), against 44% in sport subjects. Among influencing factors for smoking initiation in sport and control groups, the beginning itself predominates (44% and 57% respectively) and influence of friends in second place (35 and 37% respectively).

In conclusion, smoking prevalence among our university students, compared to non-sport subjects was relatively high, although at low smoking levels. At the same time, was noticed a high use of smoking by female students, an increase of smoking levels in both groups and genders over time (2020-2021-2022). Therefore, it is essential to ensure a close cooperation between Health and Sport authorities, Universities, Federations and sporting societies, to

prevent this phenomenon and to develop informing activities for sport and non-sport students, about the health risks associated to smoking.

Keywords: Exercise, smoking, prevalence, sport students, initiation factors, health education.

SELECTION AND ORIENTATION OF ALBANIAN ATHLETES AGAINST THE RESPECTIVE COMPETITIONS

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Abstract

Introduction: The anthropometry, body composition and structure of the elite Albanian athletes vary according to the type of discipline they undertake. The selection criteria for the respective disciplines are crucial. Training hours but also the specific physiological sport requirements of the competition can explain the observed differences.
Material and Method: Data for the study were obtained from 45 athletes of different disciplines. The age group of the object in the study are female and males aged 14-27 years. We measured 14 anthropometric parameters and compared these parameters of athletes by disciplines and trying to understand if the selection according to disciplines was done properly by the trainer.
Results: The results showed that anthropometric measurements of professional athletes of different disciplines differ between them. The best selection according to the respective races, compared to the contemporary data of elite athletes has been done correctly but results better in obstacle runs where 100% of them are valid, followed by short runs where it turns out that 5% of them are not valid, 14% are slightly valid, 38% moderately valid and 43% valid. These values help us to conclude that most athletes of the discipline 100-200 m were correctly selected by the coach and allowed them to move forward in the results. The data for the thrower athletes were analyzed according to the disciplines in which they compete: shotput, javelin, hammer and disc. According to the results, 50% of them are valid, 37% moderately valid, 13% slightly valid, 0% not

valid. And finally for the jumpers that do not present a high validity, results are 0% valid, 40% moderately valid, 60% slightly valid and 0% non-valid.
Conclusion: According to this study, athletic disciplines have different requirements regarding body data. The selection and proper orientation of the athlete in the respective discipline by the coach is very important and decisive for the results and career of the athlete. It was proved that more than 70% of athletes by different age groups and genders that were part of this study had the same physical parameters with references, mainly this in the discipline of jumping and running. While throwing athletes, with a figure of 60% of measured athletes, are not suitable for this respective discipline. These results show us that the coaching orientation is done correctly according to the disciplines but there is room for improvement. There is still a lot of work to be done by them for the selection of athletes and the correct orientation of athletes for high results.

Keywords: orientation, selection, athlete, racing.

EFFECTS OF PHYSICAL ACTIVITY IN SENIOR ADULTS - A CASE STUDY OF NOBIS FITNESS CENTRE

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Abstract

This case study aim was to investigate the benefits of Physical Activity - Fitness Exercises in senior adults. Participants of this study were 29 (16 males and 13 females) senior adults (60+) which undertook a 3-month personalized fitness training program in Nobis Wellness Center in Tirana, Albania during September - November 2021. Their personalized training program was mainly focused on: cardio exercises (using dread mill, step, bicycle, aqua gym, jogging etc.). The frequency of the training sessions ranged from two-times/week to five-times/week. Indoor training sessions were combined with outdoor sessions (walking/jogging/exercising in the park). Results of this study identified four major aspects with significant improvements for senior adults who engaged in regular fitness training: 1) social interaction (valuing interaction with their peers, social awkwardness, encouragement from others); 2) physical improvement (strength, balance and flexibility), 3) mental well - being (self-confidence, independence); and 4) motivation and beliefs (maintaining habits). This case study highlights the need for further studies using representative random samples of senior adults and elderly people in Albania. Further studies should employ validated measurement methods of PA - Fitness Exercises to enable comparison of different variables over time and between groups.

Keywords: senior adults, physical activity, fitness, cardio exercises, benefits of PA.

RELATIONS BETWEEN MORPHOLOGICAL PARAMETERS AND COORDINATION ON SKI LEARNING IN 13-YEAR-OLD PUPILS

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Abstract

The aim of the research was to verify the relationships between anthropometric parameters and motor coordination in ski learning in students with a mean age of 13.41 years with standard deviation ± 0.45. Samples of 241 students (118 boys and 123 girls), attending the ski course in the project "towards the mountain" were tested in anthropometric parameters body mass and height by calculating the Body Mass Index (IMT), movement coordination through hexagonal test and level of skiing learning initial level after the implementation of the basic skiing curriculum. From the results of descriptive parameters it is observed that the sample has normal morphological development. Based on the normative data of the hexagonal test, heterogeneity is observed, respectively coordination below average in girls and poor in boys. The correlation analysis projected a statistically significant correlation between motor coordination and the level of skiing learning, more pronounced in boys (-.373 **) than in girls (-0.216 *). Through the analysis of differences (T test for independent samples) between groups by gender, a statistically significant change in the IMT variable (0.01) in favor of boys was confirmed, while through regression analysis, a significant impact of the Hexagon variable on learning to ski only was confirmed. To girls with a level of statistical significance (0.00).

Keywords: pupils, relations, anthropometric characteristics, coordination, differences, regression, skiing.

STABILIZATION OF THE SPINE BY MEANS OF THE NEURODYNAMIC STABILIZATION METHOD

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Abstract

The neurodynamic stabilization method is widely used as an integrated part of the most widely used methods in the field of physiotherapy, for the improvement of postural, neurological and orthopedic problems related to the spine. Neurodynamic stabilization is a method which is based on the principles of motor development during ontogeny.
This method is based on the fact that motor schemes constructed during the first year of human life (0-1 years) are essential on the construction and coordination of all subsequent motor skills. We rely on these motor schemes to create muscular chains that help stabilize and improve the posture of the spine. The most essential chain to be created is the coagulation of the muscles that create the deep stabilization of the spine such as the diaphragm, the abdominal muscles, the erector spinae muscles and the muscles that create the pelvic diaphragm. The goal is the active activation of this muscle chain, in different positions, aiming to create balanced activation of the muscles that stabilize the spine. Various exercises based on ontogenesis are given to the patient to achieve this goal.
By using the neurodynamic stabilization method, by activating the stabilizing muscles of the spine, very satisfactory results have been obtained in patients with especially postural problems, where a significant improvement of the spinal axis and postural correction has been observed from a global point of view.

Keywords: neurodynamic stabilization, spine, posture, physiotherapy.

BIOMECHANICAL ASPECTS OF THE BODY POSITION OF THE WEIGHTLIFTER AND BARBELL DURING THE PERFORMANCE OF THE DEADLIFT TECHNIQUE IN COMPETITIVE CONDITIONS

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Abstract

The Deadlift technique is a discipline of powerlifting as a strength sport, and is also used as an exercise for the development of more main muscles of the body. The purpose of this study was the biomechanical view of determining the position of the weightlifter's body in relation to the barbell, during the performance of the Deadlift technique with maximum strain, under competitive conditions. The study included 12 weightlifters - 10 men and 2 women, from the Republic of Albania and the Republic of Kosova, competitors in the National Championship in Powerlifting Disciplines, held in 2019 in Prizren. Male weightlifters (n = 10) have body mass of 86.8kg and their result (mean) in lifting the barbell in deadlift is 228.5kg. The two female athletes (n = 2) have body mass of 67kg and their result (mean) in lifting the barbell in deadlift is 125kg. The analysis of the deadlift technique was done with the Kinematic Analysis System - APAS (Ariel Performance Analysis System). The main kinematic indicators are defined by the respective modules of the system. The distance between feet of the weightlifters is (39.08 ± 12.71) cm, while the distance of gripping the barbell is (62.75 ± 7.79) cm. The total height of the barbell lift from the ground is (52.83 ± 6.14) cm, while expressed in relation to the body height of the weightlifters is (30.33 ± 3.09)%. The height of the barbell at the moment of reaching the maximal velocity is (27.66 ± 3.82) cm, while expressed in relation to the total height of the lift is (52.61 ± 6.86)%. The height of the barbell at the moment

of minimal velocity (sticking period) is (43.75 ± 6.82) cm, while expressed in relation to the total height of the lift is (81.36 ± 13.65) %. The total barbell lifting time is (2.37 ± 0.91) s. The appropriate position of the weightlifter in relation to the barbell affects the result of the deadlift.

Keywords: Deadlift, kinematic analysis, barbell position, time.

EFFECTIVENESS OF AN 8 WEEK PHYSIOTHERAPEUTIC EXERCISE PROTOCOL IN POLY-TRAUMAS OF THE KNEE REGION. CASE STUDY

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Abstract

Introduction: case study: Polytrauma of the knee region resulting in simultaneous damage to several intra and extra-articular structures (horizontal rupture of the quadriceps muscle, patellar fracture, and damage to the cartilage, menisci and ligaments) after a motorcycle accident resulting in limited mobility and decreased function of the affected limb.
Aim: To highlight the efficacy of an 8 week exercise-based physiotherapy program in rehabilitating and restoring the lost functions of the knee joint following surgery for multitrauma.
Method: A 21-year-old footballer who was involved in a motorcycle accident where he suffered a polytrauma of the knee region was recruited for this study and underwent an 8- week rehabilitation program, 5 times a week, combining strengthening, resistance, balance and coordination, proprioceptive and plyometric exercises. The following measurements were performed at the beginning, during and at the end of the program: active and passive Range of Motion (ROM) of the knee measured by goniometer, anthropometric measurement of the quadriceps muscle, Numeric Rating Scale for the pain level and Hop Tests to assess coordination and balance.
Results: Significant improvements were observed in the patient's altered functions seeing positive changes in the angle of knee flexion, muscular control of the injured leg, and in the increase of the patient‘s dexterity and coordination.

Conclusions: The 8-week rehabilitation program with combined strength, endurance, balance and plyometric exercises is effective in improving knee function in patients with polytrauma.

Keywords: knee polytrauma, exercise program, functional improvement.

THE IMPACT OF COVID 19 ON HEALTHY EATING HABITS, TO THE STUDENTS OF OUR FACULTY

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Abstract

Like all developed countries in Europe, Albania after the democratic changes of the 1990s has undergone major transformations in lifestyle, diet, physical activity, obesity and consumption of tobacco, alcohol or various drugs.

Exactly these big changes that are reflected in the increase of overweight and obesity as well as in the increase of passive life and bad habits, are the object of this study which takes place almost every beginning of the academic year with first year bachelor students at the Faculty of Physical Activity and Recreation.

The study is based on an internationally standardized questionnaire. It contains 11 questions mainly on students' behaviour‘s about food, breakfast, meals, consumption of vegetables, fruits, fried foods, frequency of eating with family, alcohol, tobacco, drugs, etc. The main purpose of the study was how the Covid 19 pandemic affected lifestyle changes, physical activity and addictions that stimulated the lockdown and isolation.

A total of 140 students (82 males and 58 females) with an average age of 18.69 years, average length 1.71 m, average weight 66.07 kg participated in the study. After calculating the BMI, it results that 75% of students are in normal weight, 20% overweight, 2.9% underweight and 2.1% obese with an average BMI of 22.43.

Very important data were where the students live: in the dormitory, rented apartment, or with the family. The level of parent education: primary, high school or university. Number of family members and

income per person. Have they ever tried narcotics and passed Covid 19? All these data have created a very interesting database with scientific interpretations and arguments of the concrete post-covid situation in our students.

Keywords: Nutrition behaviours, BMI, Covid 19, addictions, education, accommodation.

A COMPARISON STUDY FOR SPEED AND AGILITY IN FOOTBALL U13 AND U15 TEAMS

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Abstract

During youth the performance of footballers with regard to speed and agility plays a crucial role in the training and games performance.
Purpose: The aim of this study to compare speed and agility in football U15 and U17 teams.
Methods: Data were gathered in two teams in Tirana city for U13 and U15 age groups (N = 61). Data for field test for measurement in this age groups for speed using 10m sprint test and agility using 10x5m test.
Results: Data comparison for speed between U13 (average= 2.189 seconds) and U15 (average= 2.153 seconds) show no statistically significant difference (F=0.056; Sig= 0.815). Data results for agility performance 10x5m test for comparison between U13 (average= 20.05 seconds) and U15 (average= 19.65 seconds) show significant difference (F=5.468; Sig= 0.025) in favor of U15 teams.
Conclusion: The findings showed that in U13 and U15 there are no statistical significant difference for speed and statistical difference with regards to agility.

Keywords: agility, speed, football, youth.

KNEE SANGUINE EFFUSIONS IN SPORTS TRAUMA (HAEMARTHROSIS)

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Abstract

Increased effusions or accumulations of fluid in the knee joint can be the result of trauma, excessive overload of the knee (overuse) or a consequence of systemic diseases. From the point of view of linking intra-articular effusions, especially hematic ones, with competitive or amateur sports activity, this phenomenon is more common than diagnosed. The fact that many athletes suffer from a lack of performance of their knee joints, talks about untreated injuries in accidents and previously suffered in sports activities or not at all. The other side of the problem is related to the purpose of presenting this material, the first in the Albanian professional literature, even as an obligation and scientific reflection of this common phenomenon in sports activities, which should be evaluated very seriously after hematic accumulation, or haemarthrosis, is just the tip of the iceberg while others are hidden and need to be identified and treated.

Keywords: Trauma, Haemarthrosis, Sanguine effusions, Anatomo-pathological.

JUMPING PERFORMANCE COMPARISON IN YOUTH MALE BASKETBALL AND VOLLEYBALL PLAYERS

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Abstract

Jumping performance is crucial in team games with regards to basketball and volleyball.
Purpose: The aim of this study was to compare jumping performance in youth basketball and volleyball players.
Methods: In total 61 male youth players (16.5 years) with regards to volleyball (N=28) and basketball (N=33) did assessment with regard to anthropometric and jumping performance (standing long jump and high jump).
Results: Results for body height show (volleyball mean body height 177.8 cm and basketball 174.7 cm) and body weight (volleyball mean body weight 72.1 kg and basketball 67.2 kg). Standing long jump performance were for volleyball 222.3 cm and basketball 178.0 cm while for high jump the performance in volleyball were 289.7 cm and basketball 272.8 cm. Comparison statistical data analysis between disciplines for standing long jump show statistical significance difference in favor of volleyball players (p= 0.000). Also the same jumping performance with regards to high jump in favor of volleyball players were found (p= 0.000).
Conclusion: In conclusion data analysis of this study found that volleyball youth players have higher jumping performance comparing to basketball players.

Keywords: basketball, volleyball, jumping, players.

A COMPARISON STUDY ON ANTHROPOMETRICS BETWEEN BODYBUILDERS GENERATIONS IN ALBANIA CHAMPIONSHIP

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Abstract

Purpose: The purpose of this study was to compare anthropometrics between bodybuilders generations in Albania championship during years 2017, 2018, 2019 and 2021.
Methods: Assessment were done in Tirana during the championship for bodybuilders category during years as mentions at the aim of the study. Assessment for shoulder, chest circumference and waist circumference were done in Tirana using usual tape measurement.
Results: Average results for shoulder circumference (2017= 123.6cm; 2018= 123.7cm, 2019= 133 cm and 2021= 126.5cm), chest circumference (2017= 109.3 cm; 2018= 108.3 cm, 2019= 107 cm and 2021= 114 cm), waist circumference (2017= 80.9 cm; 2018= 81.65 cm, 2019= 81.25 cm and 2021= 82 cm).
Conclusion: Data obtain on this study showed that for three anthropometric parameters assessed bodybuilders had the highest circumference during year 2021.

Keywords: bodybuilders, anthropometric, chest, waist.

USE OF VIRTUAL REALITY GAMES AS AN AUXILIARY REHABILITATION METHOD IN MEDICAL PATHOLOGIES AND SPORTS

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Abstract

Aim. Understanding the role of virtual reality games as an auxiliary rehabilitation method in various medical pathologies and sports trauma. Putting the focus specifically on pain management and the effectiveness of VR games in rehabilitation
Methodology. To conduct this review during the search there were used keywords like virtual games and physiotherapy (140 results), virtual games and sports from which 41 results were identified. As a result of the search, 30 articles were selected, of which only 18 of them matched in response to our goal. Studies have been obtained from official sources such as PubMed Central, XRHealth Web and high impacted journals such as: Journal of Neuro Engineering & Rehabilitation, Journal of Healthcare Engineering, JMIR Mental Health etc. Included in this review are all studies which considered rehabilitation through virtual games in patients with knee injuries or post stroke. Also, excluded were studies that focused on the effectiveness of virtual games on cognitive problems or pain management in cancer patients.
Results. Virtual games affect the management of acute and subacute pain by enabling its reduction. VR games with a low to high stimulation provide stimuli in the direction of motor and sensory boost of the upper extremity. Combination with conventional therapy is more effective than using them alone. Also, VR rehabilitation of the upper limb is effective through the virtual

system HTC VIVE indicating its effectiveness in traumatic sports injuries of the upper extremities.
Conclusions. The use of virtual reality games enables effectiveness in medical & sports rehabilitation, as well as pain management especially in combination with conventional therapy. They influence the increase of interest and full involvement of patients during rehabilitation sessions, thus being a promising form of contemporary long-term rehabilitation in the future.

Keywords: VR games, virtual reality, rehabilitation, sports, physiotherapy.

ASPECTS OF DEVELOPMENT OF MANAGERIAL POLICIES ACCORDING TO THE PRINCIPLES OF INTERNATIONAL SPORTS LAW

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Abstract

The right to sport can be considered as one of the most important rights for the human beings, regarding the fact that sport is one of the most effective ways for the free exercise of all affirmative activities for his individuality and personality. Many states, law enforcement agencies and various organizations are committed to addressing and unifying all aspects of sport around the world in order to protect, secure capacity and coordinate certain managerial policies for the development of an international sporting law.

Nowadays, the international law of sports through the drafting and adoption of legal acts with binding value, has made it possible to sanction the entire legal basis in the framework of the development of sports and the agreements that derive from it. In order to avoid abuse, protection of young talents, protection of parties participating in sports contracts, law and practice refer to a comprehensive legal framework, which takes value in drafting models and defining principles from which legal acts come to life. National in the framework of managerial policy making.

Based on this prediction, we can say that the right to sport is based on the principles of international sports law and is then developed by the state, which through its mechanisms plays an essential role in determining long-term policies aimed at promoting and protecting effective for all sports activities in a given place. One of the main mechanisms that the state uses in the promotion of sport is through the drafting and improvement of a regulatory legal framework,

which aims to cover and regulate in a wide area all aspects that address sport according to the principles of international law.

Keywords: Sports, athlete, sports dispute, sports arbitration, contract, sponsorship, international acts, legal framework, abuses, court.

THE PRACTICAL POTASSIUM REMINERALIZATION IN IMPROVING THE GLYCOLIC RESYNTHESIS AFTER PHYSICAL ACTIVITY

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Abstract

The main goal of our research is to make adequate planning of sports nutrition in order to improve the glycogen resythensis after physical activity which directly depends on the presence and the intake of potassium through the diet or the potassium remineralization process and the intake of carbohydrates with high to medium glycemic index in the process called reenergization.

The planned nutrition was implemented during 4 months (competitice seasons) at the athletes of football club –Struga Trim and Lum", competing in the first football league of Northern Macedonia

From the practical view we showed that the process of remineralization and reenergization can be implemented in the same time with the first meal after physical activity that we did in the first hour after physical activity.

The needed daily dose of potassium is 3500 mg, which here is introduced with nutritive products with potassium but also with products which contain carbohydrates from high to medium glycemic index in quantity of 300-400 gr.

From this four-month regime, a positive psychophysical-conditional result has been noticed, in the process of training and competition, in the players.

Following the rules of the biochemical basis of proper nutrition in athletes it has been possible to make a diet menu after physical activity that contains adequate balance of nutrient intake of products

who contain adequate level of potassium but also of carbohydrates, so with that is possible adequate glycogen resythensis after physical activity.

Keywords: remineralization, reenergization, glycemic index.

"IN VIVO" MODELS AND TECHNIQUES FOR BODY COMPOSITION MEASUREMENT

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Abstract

Obesity is a complex disease, caused by genetic, environmental and individual factors. In many industrialized countries this disease affects up to one third of the adult population with a tendency to spread even to pediatric age: thus undoubtedly presenting the largest epidemic of this third millennium and at the same time, the most common chronic pathology of the world mainly in the western countries. This is why it has prompted various researchers to study the phenomenon of overweight / obesity, as well as to develop sophisticated methods and techniques for measurement the fat % in body composition. Some of the earliest information on the composition of the human body has been based on chemical analysis of specific organs, and occasionally for the whole body. But all these techniques require the realization of measurements in laboratory conditions, making it difficult to use them in other conditions especially in quantitative studies with a large number of subjects. Using anthropometric measurements to assess body composition is a simple and reliable method. Through anthropometry, body size and body proportions can be determined by measuring the length, width, perimeter and fat of the skin folds. Recent studies show that not only total body fat but also the fat in certain areas and in skeletal muscle can be estimated through anthropometric measurements, which makes anthropometric methods, mainly the skin folds measurement, to be one of the most recommended methods for use in estimating the percentage of fat in

body composition, in quantitative studies for determining the prevalence of the phenomenon.

Keywords: adipose tissue, body composition, body composition models, compartment model, air replacement plethysmography, dilution method, bioelectric resistance analysis (BIA), bioelectric resistance spectroscopy, total body electrical conductivity (TOBEC), "Dual-energy", "triple-energy", X-ray Absorptiometry (DXA and TXA), magnetic resonance imaging (MRI), computed tomography (CT), anthropometric measurement, Body Mass Index (BMI), skin folds.

A DESCRIPTIVE STUDY ON THE LEVEL OF KNOWLEDGE OF MODERN EDUCATION, BASED ON ENTREPRENEURIAL SKILLS IN TEACHERS OF THE PRE-UNIVERSITY SYSTEM

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Abstract

Introduction. The main purpose of this study is to research whether entrepreneurship competence is developed in higher education curricula which are training the future teachers. Also, to identify level of knowledge of modern education, based on entrepreneurial skills in teachers of the pre-university system.
Methods. In this study participated a total of 117 of teachers and researcher using a standardized questionnaire. All the data were statistically processed and evaluated with the SPSS 20 program.
Results According to this study, we found out that students are little or not involved in entrepreneurial activities (66.7%, from the Social Science and 40% of the teachers from the Humanities). Based on the data we collected, many teachers think that they can help their students through counseling, supporting, motivating them and setting a personal example in entrepreneurship, but only a few support the idea of being a barnstormer. The ones who were not sure if they could be of any help, stated that they lack experience, training and information, or they need more technological support and feasibility. We can say that this levels of negative evaluation could be explained with their insufficient involvement in university entrepreneurial activities.
Conclusion. Regarding to information about" Entrepreneurial activities happening at your current institution", results showed that a considerable number of the respondents do not seem to be aware

of entrepreneurial activities taking place in the institution. This could be due to insufficient promotion of such activities on the part of universities, and the interviewee‘s low involvement levels in the university activities in general.

Keywords: Entral, entrepreneurial skills, pre-university system, students, modern education

EFFECTS OF PHYSICAL ACTIVITY AND SPORT IN CHILDREN WITH AUTISTIC SYNDROME DISORDERS (A REVIEW)

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Abstract

Introduction: ASDs are a set of neurodevelopmental problems with distinct cognitive-behavioral characteristics and common comorbidities (such as epilepsy, depression, and attention deficit hyperactivity disorder). Autism spectrum disorder (ASD) is one of the most prevalent developmental impairments in the United States, affecting one out of every 54 children. Core features of autism spectrum disorder (ASD) include deficiencies in social and linguistic abilities, movement stereotypy, limited interests, and hyper- and hyposensitivity to sensory inputs.
Objectives: Main objective of this paper was to identify the latest literature regarding the effects of physical activity and sport in children with Autistic Syndrome Disorders
Methodology: We searched in PubMed using these filters: Free full text, last 10 years studies. Using key words; Physical activity, sport, children with ASD.

Results: 59 studies were identified for the primary selection. Subject‘s age varied from 5-20 years old and intervention exercise programs varied from 3 weeks to 6 months.
Discussion: The majority of studies have included organised physical exercise or sport activities focusing in the improvement of psychological and physical characteristics of ASD children. Different multiple exercise programs were created to give ASD children the skills they need to improve their daily life and to participate in long-term physical activity and sport training.
Conclusion: Further research has to be conducted focusing on the effectiveness of physical activity and sport in children with ASD.

Keywords: Physical Activity, Sport, children, ASD.

IMPORTANCE OF TRAFFIC MANAGEMENT PLAN FOR TRAFFIC SAFETY

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Abstract

The paper presents the traffic management plan during the execution of works from the aspect of traffic safety. All necessary elements that need to be done in the form of study documentation will be presented, which will include elements of public traffic regulation during the works, elements of movement within the construction site, elements of access to the construction site, and procedures and checklists for daily verification of all plan elements, traffic management.

Keywords: Traffic Management Plan, Safety.

THE IMPLICATION OF CULTURE IN THE ARCHITECTURE OF HISTORICAL BUILDINGS IN THE CITY OF TETOVO

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Abstract

The existing culture of the country often influences the architecture of buildings and especially those of public interest. The multidimensional forms of culture and the chronology of cultural developments are implicated in the deeper studies of the architecture of a country.
This scientific paper will try to highlight the architectural culture of the city of Tetova, by studying important aspects of the architecture of buildings in the city of Tetovo, Republic of Northern Macedonia. Through the method of analysis of the current state of historic buildings, in architectural terms, we will provide alternatives for their revitalization while preserving its cultural values, which normally testify to historical values. The scientific work was carried out with field measurements of existing spaces, on the basis of which the result of revitalization of these spaces was given to keep pace with modern contemporary architecture.
The scientific work will be used to acquaint the reader with the architectural culture of an important historical object in the city of Tetova and the possibilities of its revitalization, and also on the basis of this the creation of the perception of study opportunities of this type by other scholars also for other objects of public character, which have a significant value for cities in general, and universal.

Keywords: architecture, cultural development, cultural institution, historical development, art.

"VILLA MOISSI"-ITS INFLUENCE IN MODERNIST AND POSTMODERNIST ARCHITECTURE-A MEDITERRANIAN CIRCLE

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Abstract

The design of Adolf Loos, Villa Moissi comes in an important time 1923. It is the time where Europe is changing. The ~~r~~oaring 20s" just 10 years before the rise in power of Nazi Germany, 5 years after ~~W~~orld War I". The generation of those idealists and artists that formed the Viennese artistic milieux was still there. Adolf Loos was a friend of Ludwig Wittgenstein, and Viennese intellectuals of the time, including the international renown actor Alexander Moissi.
The Avant guard work of Villa Moissi in Venice, seemed really revolutionary. Not only it moved through modernism and that can be analyzed through its plan and facades and consequently its three-dimensional look, but one can say that even it opens the path for postmodernism, for a kind of architecture that we find later in Hasan Fatih works. It would become and inspiration for postmodernist Aldo Rossi. The house demonstrates a volume that is cubic and without a classical element. This is completely new compare to other works of Adolf Loos such as Rufer House in Vienna where he uses a big freeze with ornamentation that was taken from Ancient Rome. The plan distribution is the same where living room and services are placed in the ground floor, and sleeping rooms in the first floor
Also, some element of the house reminds of the Mediterranean character, the simple cubic volume, the finishing with a rustic touch, the positioning of the terrace, the pergola, the external stairs that come around.

What is characteristic for this house is that is typically Mediterranean and looks as a blueprint of the memorized houses that Adolf Loos may have seen in his early trip in the Greek Island of Skyros.
The paper will provide more information about the influence of Villa Moissi in other architects of modernist and postmodernist movement, and its roots embedded in the Mediterranean culture.

Keywords: Adolf Loos, Villa Moissi, Aldo Rossi, transition from modernism to postmodernism, Greek and Mediterranean architecture, closed circle.

KINEMATICS ANALYSIS OF 7 DOFS LIGHTWEIGHT ROBOTIC ARM

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Abstract

The vast usage of robotic arms in the industry makes them particularly important. They are used for various applications where human work can be replaced and automated e.g., painting, carpentry, and other industrial applications. Precise motion and obstacle avoidance are important issues that are being studied by many researchers. The use of redundant manipulators can solve a lot of limitations with standard 6 DoFs robotic arms. The kinematics study for a lightweight manipulator with 7 degrees of freedom is addressed in this paper. Forward kinematics is the basis of differential kinematics analysis and dynamics modelling, therefore, using Denavit-Hartenberg convention we obtained the forward kinematics of the 7 DoFs robotic systems. In many applications, depending on the task that needs to be carried out by the robot, the inverse kinematics is important. In this paper we show a method for analytic solution of the inverse kinematics for the robot when one of the joints is considered as fixed. However, to fully calculate the inverse kinematics of the redundant robot and to consider the redundant degree for obstacle avoidance the numerical method is implemented. Through simulations using robotics toolbox in Matlab and Gazebo the results have been verified.

Keywords: Robot; Direct kinematics; Inverse kinematics; Simulation.

REUSE OF INDUSTRIAL HERITAGE: WHY AND HOW IN TETOVO

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Abstract

The growing interest in reusing abandoned industrial landscapes creates a possibility to revitalize former spaces by giving them a new life. With the swift transformation of society and its needs, new and creative methods will be required to coincide with the new needs, using formal industrial sites gives us a sustainable strategy to meet those needs.
A great area of Tetovo‘s landscape is made of unused industrial landscapes. This paper is going to explore and identify the possible industrial sites of the city that have historical, architectural and cultural values, analyze and then result in a set of principles and examples of how the chosen post-industrial landscapes can be reclaimed and reused.
This paper represents a research project that aims to describe how this approach to Tetovo's industrial heritage is going to benefit the city and the possible public functions these buildings could accommodate.

Keywords: Industrial heritage, Tetovo, Industrial landscape, post-industrial landscape, reclaimed, reused

THE ACTION OF SEISMIC LOADS ON RESIDENTIAL BUILDINGS IN ROWS

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Abstract

Earthquakes have been and will be one of the most horrific natural disasters and catastrophes for humanity. When earthquake happens, man-made buildings collapse causing great economic damage, and a great number of victims.
―Row buildings" has become a daily occurrence of urbanism in the Northern Republic of Macedonia. Today our cities are long boulevards with buildings near each other. The largest category of constructed buildings have neighboring buildings on both sides, there are cases even more than two sides. Therefore, this analysis of the action of seismic loads and the displacement of the object under the action of seismic loads is a concept for consideration and modeling of structures, especially when the buildings have longitudinal front facades and are bordered by neighboring buildings on both sides. During this analysis were examined the action and the way of adapting the seismic forces in the structure and the displacement of the structure in both possible directions, especially from the neighboring buildings.

Keywords: analysis, earthquakes, seismic, structures, buildings

REPAIRING OF COLUMS OF SKI LIFT IN SKI CENTER

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Abstract

In this practical research work is described procedure for repairing of three columns of ski-lift. During long period of exploitation, more than 40 years, these columns were corroded and seriously damaged. Corrosion leads to thinning of column wall or even completely perforation of it (formation of cracks). After determination of problem, it was decided to undertake measurers in order to solve this problem and put ski-lift in normal function. It was concluded that three columns must be immediately repaired. So, it was prescribed technology for repairing by welding
The plan for repairing consisting from the following phases:
Cutting of damaged segments and embedding new segment from the same material and thickness.
Additionally strengthening of columns by two half segments of pipes screw-up and welded for columns.
Prepared segments were welded for columns using manual metal arc welding process special attention was paid to protect columns from demolition during cutting of corroded parts of columns. The same filler materials were used in this case too.
Repair was successfully performed and ski-lift was be put in exploitation.

Keywords: steel column, repairing, perforation, MMA welding, damage

THE CAPITAL PROJECTS OF JSC "ESM" AS A FACTOR FOR THE DEVELOPMENT OF THE COMPANY

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Abstract

Electricity is certainly the noblest form of energy that humanity has learned to create, control and use. Its production represents an important economic activity, as well as the most important factor for the socio-economic development of a country, while production capacities, i.e. the largest production capacity, the company JSC "ESM", represents the most important segment of the power system. Accordingly, the issue that has been elaborated is very actual due to the fact that it addresses the capital projects of JSC "ESM", which are of great economic and environmental importance, because investing in growing electricity production, especially from renewable energy sources, has a large impact on the economic development of the country as a whole, as well as on environmental protection.

In this context, the analysis in this paper is mainly focused and aims to address the importance and impact of the construction of the capital projects of JSC "ESM" in the development strategy and the creation of sustainable company competitiveness. Therefore, JSC "ESM" as a serious company, should strive and make a great contribution to the implementation of capital projects, due to the great impact, and to be the most important and leading factor in the liberalized market, especially in times of energy crisis in the country and beyond.

For this purpose, the data that are carefully selected and processed, form the basic thesis for the specificity, importance and actuality of the capital projects in relation to the development and competitiveness of the company.

Keywords: electricity, production capacity, capital projects, market liberalization, renewable energy sources, sustainable company competitiveness.

MOTORS AND CONTROL OF MECHATRONICS MOVEMENT SYSTEMS

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Abstract

The presented paper aims at elaborating and understanding the motors and control of the propulsion systems. Motion control systems are the backbone of many applications in a wide range of industries. Their use ensures greater accuracy, reliability and efficiency. Many of us already work with motion control systems. Others may encounter a motion control system in their workplace. Therefore, it is essential to understand each component of motion control.

Motion control systems are generally divided into two types: open circuit and closed circuit. Each system has its advantages and disadvantages. Open circuit systems are usually more affordable, while closed circuit systems can achieve greater accuracy and complexity.

The motion controller is the brain of the system which controls the motion path, closing the servo circuit and executing the sequence.

The controller sends a low power command signal to the motor or amplifier in digital or analog form.

Moving the motor amplifies the signal, produces torque and sets the load in motion, so that the motor drive controls the speed, torque and direction, determining the power of the motor. Finally, the response sensors record the performance and send information to the controller of any change in engine position or speed. Choosing the right motion control components in relation to the system architecture is crucial as it determines the performance of the machine or the performance of the automated system.

Keywords: motors, amplifier, motion control, reliability and efficiency, open circuit and closed circuit, sensor.

HOUSING QUALITY IN THE CITY OF BERATI: AN ANALYTICAL APPROACH OF TYPOLOGY AND CONSTRUCTION

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Abstract

The city of Berati has a long urban history rooted deep down in ancient times. Different factors indicated the formation and the development of the city itself during his existence. Berati is well known as a city that begins as a city of fortification and churches, but as time goes by, the city in its architectural layers had saved with jealousy layered a fortune of the domestic architecture. Being part of the Ottoman Empire for almost five centuries, it is obvious that traces of the previous eras will be ‗covered' with the Ottoman presence, especially in vernacular architecture.
This article offers an insight into Ottoman-era patterns appearing in the town of Berati as a marvelous example of the Ottoman-era vernacular house in the Balkans.

Keywords: Berati's Ottoman era houses, typologies, building materials, vernacular architecture

CHURCH OF ST. PETER AND THE MOSQUE IN TREPÇA

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Abstract

By identity we mean the totality of physical, moral, cultural, linguistic and civic features that a certain nation has, which distinguish it from other nations. While civilization according to different authors, especially Huntington, is based on religion, while religion is best presented and argued through cult monuments that represented different communities in terms of religion, but in the field it was mainly about the same ethnicity which after a long historical period as a Christian is already presented to us with the new religion as Islamized.
Through this paper we will present two of the oldest monuments in terms of Christian cult and Islam in the "city" of Trepça. These two monuments, already out of function only in ruins, represent civilization and the citizen since the century. XII onwards in this region and this region.

Keywords: Christianity, Islam, church, mosque, civilization, culture.

VERNACULAR DWELLING FROM ANATOLIA TO THE BALKANS; A COMPARISON BETWEEN SAFRANBOLU AND PRIZREN

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Abstract

In a certain period of time ruled by same administration, in different places but proximately the same distance from the capital, the dwelling formation as a process linked to the center developed at the periphery increases the issues of the way of building within similarities and differences. This study aims to provide data of the 19th century peripheral cities due to the center of Ottoman Empire that is the city of Istanbul, places such as in Prizren and Safranbolu. The study focuses on the general design principles of Anatolian house in Safranbolu and in city of Prizren, the characteristics of these cities is that inherits the traditional dwelling units. At the analysis of the traditional houses in Safranbolu has been selected three most eminent samples in order to have more detail description of the house. In the same manner has been done at the second part that is related to the Balkan traditional house, whereas the characteristic city has been choose the city of Prizren, with its most eminent three examples on the traditional houses. For both areas has been developed table that shows the characteristics and then has also the comprehensive tables in order to see the similarities or the differences between these traditional houses from different areas.

Keywords: Vernacular architecture, Dwelling, Typology Anatolian and Balkan dwelling.

UNCONSCIOUS VERSUS CONSCIOUS KITSCH: AN AESTHETIC PERCEPTION OF POST-SOCIALIST ARCHITECTURE IN TIRANA

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Abstract

This paper studies a controversial aesthetic phenomenon known as kitsch in the framework of the urban developments which appeared in the post-socialist period in Tirana, Albania. Kitsch often centers on debates concerning taste, consumerism, and politics. Although as a concept kitsch began in the nineteenth century and gained momentum in the twentieth century due to technological advances brought on by the Industrial Revolution, in the case of Tirana it evolved after the fall of socialist (especially after year 2000) when the country passed into democratic regime. Furthermore in this research kitsch is defined into conscious and unconscious.

The term of conscious kitsch is used to define the architectural outputs which have been the subject of a project called the ―Rebirth of the City" (an urban renewal project initiative which treated the most socialist period housing by colouful artwork and implemented by painters) and other public works conducted during the period Edi Rama was mayor of Tirana and later prime minister of Albania. On the other side unconcious kistch is used to define historicist buildings which either were luxury hotels or even other similar buildings.

The aim of the research was to measure the perception of aesthetically enculturated architects or graduated architecture students on concious and unconcious kistch in the post-socialist urban context of Tirana and their influence in the city identity. The

methodology used in the research included observation, visual documentation and finally a questionnaire which was replied from aesthetically enculturated architects or graduated architecture students.

At the end of the research it was revelated that both unconscious and conscious, was perceived negatively and furthermore the respondents perceived its influence to the city identity as negative.

Keywords: kitsch, aesthetics, perception, post-Socialist architecture, Tirana.

ORGANIZATION OF SECURITY TRAFFIC SYSTEM IN THE CITY OF GOSTIVAR

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Abstract

After the experiences of developed countries, such as America, Great Britain, Germany and other more advanced countries, analyzing their experiences, we came up with the idea to address such a topic. Where, it is about the safety in the road infrastructure and other facilities and entities that are directly or indirectly related to the traffic safety in the city in general.
In this paper we will give a brief description of the traffic safety situation in the city of Gostivar and beyond. The paper will include a brief description of how to organize the security system with some parameters that contribute to more efficient organization and implementation of the mentioned traffic safety system in the city.
Also in this paper will be processed a subsystem for traffic safety in the city of Gastivar and beyond. How to cooperate with other institutions that are within the city and are directly or indirectly related to traffic problems around the security system.
The necessary phases for the organization and realization of the security system will be perceived, as well as the factors that influence the organization of the system. During the elaboration of

this paper, the "Ten Golden Rules of Driving Safety" of the Federation "(FIA) - World Automobile Federation" will be analyzed.
Analyzing the problems in traffic in general, especially nowadays when traffic accidents are on the rise as well as the safety of other road users and especially the safety of pedestrians as road users.
At the end, a conclusion will be given where a short analysis of the work will be included and conclusions will be made for more efficient possible realization of this system of traffic safety in the city of Gostivar and beyond in the rural settlements that gravitate around the city.

Keywords: traffic, security, system, City of Gostivar.

DESIGNING THE NATIONAL ARCHITECTURE OF INTELLIGENT TRANSPORT SYSTEMS

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Abstract

The development and introduction of intelligent transport systems (ITS) services are considered to be the main steps that will stimulate the application of new information and communication technologies in the transport system. The conditions of openness, interoperability and flexibility of the system strengthen the active role of the industry in the development, construction, introduction and impact of ITS. The implementation of these systems with it brings numerous benefits: reduction of traffic congestion and travel time, reduced fuel consumption and environmental pollution, increased safety of pedestrians and cyclists.
In this paper, will be presented the methodology for designing the ITS architecture in the Republic of North Macedonia. The projected national ITS architecture and action plan set the framework for planning, analyzing, defining, deploying and integrating ITS, while providing an understanding of their business, organizational and technical implications, integrating the three main elements: required functions, system participation in logical or functional entities such as subsystems and the flow of information and data that link these functions.

Keywords: Intelligent transport systems (ITS), architecture, ITS services and subsystems.

INTERMODULAR SYSTEMS AND THE GENERATION OF CHARACTERISTIC VALUES FOR THE MANAGEMENT OF ELECTRONIC RESOURCES

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Abstract

To find relevant values with characteristic parameters of the system, there is a need to create a structure which enables continuous communication within the system, and the ability to communicate with external devices considered as objects that can be controlled. This requires the structuring of a stable environment, and the ordering of elements according to priority in command. If a system is set to regulate the flow of information then this system needs different resources, which represent the requirement to achieve the stabilization process through the inclusion of various electronic devices, auxiliary modules, etc. This paper deals with the analysis of the system which sets the structured parameters of the system based on the help of certain electronic modules. Also in the system is described in analytical and tabular form, the definition of constructive parameters which follow in detail the activation of the system according to certain conditions of control elements and software programs which control the application of the system through the so-called programmatic approach. The tabular presentation enables the construction of the working logic of the

system. This enables the control in the physical aspect, of all the elements intertwined in the system which, however, integrates devices of different formats, and interconnected through the computer platform.

Keywords: Technology, terminal, interfaces, computer, software, applications.

INSURANCE FRAUD IN MOTOR VEHICLE DAMAGES INVOLVING PERSONS FROM INSURANCE COMPANIES

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Abstract

In practice, proving insurance fraud in motor vehicle damages is relatively hard; especially when persons from insurance companies are involved in it. Most often, assessors of damage to motor vehicles are one of the first who are supposed to identify damages that are not subject to compensation, i.e. damages that would not be able to occur in the vehicles. To lower insurance fraud, through specific examples of participation of persons from insurance companies, in this paper, a few cases are examined in which it has been identified that persons from insurance companies participated, and they gave their own personal input in unfounded payments of damages.

Keywords: insurance fraud, motor vehicles, comparative analysis of evidence, participation of a person from the insurance companies.

DEVELOPMENT OF MECHATRONIC TECHNOLOGY THROUGH TRANSDISCIPLINARY KNOWLEDGE APPROACH

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Abstract

Today, products of modern technology mainly consist of both hardware and software components, integrated in monolithic entities that perform different macro functions useful for improving the quality of human life. The manufacturing of these products is enabled by the deep integration and interaction of various core technologies such as mechanical technology, electrical/electronics technology and information technology, currently termed as mechatronics technology. The trend of integration and interaction of these core technologies and processes, as a unique model of mechatronics technology, leads to furthering its development, based on the principle of the synergistic effect. Mechatronics technology is an open field in continuous development that transcends the limits of interdisciplinary knowledge. The continuous growth of interest for modern products and processes imposes the development of mechatronics technology through transdisciplinary knowledge approach, opening new development perspectives and at the same time creating benefits to fulfill human life needs. In other words, transdisciplinary knowledge approach is more successful than interdisciplinary approach in terms of generating new knowledge

from constitutive disciplines of mechatronics technology and working jointly to solve problems of the human life. The purpose of this paper is to describe the development of mechatronics technology in the context of transdisciplinary knowledge approach, based on reviewed literature data. With the research done in this paper it is concluded that the development of mechatronics technology by passing from an interdisciplinary to a transdisciplinary knowledge approach helps to meet and improve more closely human life needs that will emerge in the 21st century.

Keywords: mechatronics technology, interdisciplinary knowledge, multidisciplinary knowledge, transdisciplinary knowledge.

QUALITATIVE AND QUANTITATIVE FIRE RISK ASSESSMENT OF HIGH SCHOOL "SAMI FRASHERI"

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Abstract

A fire risk assessment of High School "Sami Frasheri" was conducted and the results are presented in this paper. The level of fire risk was defined by using qualitative and quantitative methods and depending on the defined level of risk, adequate measures for risk reduction are proposed. The elementary approach of Five Steps and the Matrix method were applied as qualitative methods for fire risk analysis and the Euroalarm method was used as a quantitative method for fire risk analysis. The analysis showed that the school does not meet the fire safety measures and this is due to a number of factors: lack of appropriate fire protection measures, lack of adequate number of fire extinguishers and hydrants, lack of alarm for fire detection, lack of trained staff, lack of fire department, lack of fire stairs, doors and lack of adequate signaling. Based on the results of the performed analysis, qualitative risk assessment method can be applied for rapid and initial fire risk assessment, but for a more detailed analysis, the use of quantitative methods is more effective and provides more specific results.

Keywords: Five step Method, Matrix Method, Euroalarm Method, hazard, risk, risk assessment.

REVITALIZATION OF THE WATER CHANNEL SYSTEM IN THE HISTORIC CENTER OF PRIZREN

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Abstract

Throughout history, water served and sustained societies, and it was considered one of the crucial factors for their development. People have shaped its flow, form, and function for the development of settlements and civilizations and have created socio-economic and cultural structures around it. Looking at the historical development of the city of Prizren, it can be seen that the city has been spread and developed around the river, which passes in the middle of it. The clean and flowing water from the river was one of the most important factors in the development of the city. The city of Prizren was also known for its sophisticated system of channels used to have that played a very important role in the urban area. They were branched from the river and scattered throughout the neighborhoods of the city. Further, these channels were branched into smaller channels, which have carried water through small public streets to each house in Prizren.
The paper deals with the revitalization method with the aim to restore these historical water channels in the Historic Center of Prizren to modern requirements, from which the greatest benefit would have the citizens of Prizren in social, economic, spatial, and environmental aspects.

Keywords: Revitalization, water channels, restoration, modern requirements.

AN OVERVIEW OF THE SPATIO-TEMPORAL DYNAMICS OF LANDSCAPE TRANSFORMATION IN THE WESTERN BALKANS

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Abstract

The aim of this study is to promote protection of natural landscapes and biodiversity, promoting forms of sustainable development. To exemplify our aim we bring a spatio-temporal analysis of landscape change comparing three metropolitan areas in the Western Balkans. First, we compare the land use land cover (LULC) change of Tirana (Albania), Skopje (North Macedonia), and Sarajevo (Bosnia-Herzegovina). The comparison was based on the Ur-ban Atlas (UA) data of 2012 and 2018. The analysis was performed in two levels, at the metropolitan and the urban spatial scale. Apart from descriptive statistics about the changes in surface area and patch counts, we used effective mesh size (Meff) as a landscape metric to quantify the LF level. Our results show that each city has face significant LULC change between 2012 and 2018, with a dominant increase in artificial surfaces. Furthermore, the reduction in surface area, is followed by an increase in landscape patches counts, indicating an increased LF at both levels. This study contributes to the enhancement of a public awareness about the landscape transformation trends on the developing metropolitan regions of WB. Respective administrative bodies at both local and central level are invited to consider our results and to take proper measurements for reducing the adverse consequences of the next spatial development decisions.

Keywords: landscape, fragmentation, urban fragmentation, connectivity.

AESTHETICS AND ENERGY EFFICIENCY OF NONINTEGRATED SOLAR SYSTEMS AT FACADE STRUCTURES

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Abstract
Nowadays it is necessary to know the basic features of solar radiation. There are many reasons for the exploitation of solar energy that can be found in the functioning of the facilities. By applying its application, it is possible to achieve energy efficient buildings. Nonintegrated photovoltaic systems can be used as fixed elements placed on constructive facade which simultaneously serve as elements for sun protection. The most important issues while designing photovoltaic systems are the optimum orientation of the buildings and tilting angle of the photovoltaic modules as well as level of transparency. In this paper an analysis is made about the optimal photovoltaic system which can be installed over constructive facade of a building. The analysis was conducted by using the adequate software analyzing angle of 00, defining the most appropriate, i.e. the most optimal photovoltaic system, which consists of opaque modules placed horizontally or at an angle of 0 . The results of this study showed a maximum contribution of photovoltaic conversion, which also fits with the aesthetic characteristics of a facility. The solar systems, contribute to preserving the environment through the use of green energy resources.

Keywords: Four to six keywords are to be provided for indexing purposes.

CHALLENGES OF DESIGNING PRIMARY SCHOOL GROUNDS IN NORTH MACEDONIA

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Abstract
In recent years we have seen a significant change in the design of educational institutions, as a result of contemporary pedagogical philosophy, attempts to create an inclusive and equal environment, or due to restrictions that appeared as a result of Covid -19. While government ministries of education have consistently provided guidance and standards for the design of school buildings, relatively little information has been provided regarding the creation of school grounds as potential spaces to enhance not only the learning process but also the well-being of pupils.
The school ground landscape in educational institutions in North Macedonia, in most cases, presents desolate and unmaintained environments, with too many hard surfaces that lead to injuries and a lack of features, objects, and plants that can contribute to children‘s physical, mental, social and spiritual well-being. For this reason, there has recently been a growing interest among young architects in designing and increasing the use of school ground greening.
This paper explores how we can transform existing school grounds into ideal landscapes that meet the educational, social, and health needs of students. To better understand what such landscapes can look like, this paper begins with analysis of 3 case studies in Europe and concludes with suggestions that can be applied to the schools in North Macedonia. Specifically, it investigates the use of green school grounds, appropriate furnishings and materials as integral part for outdoor learning to enhance children‘s relationships with nature, which will be at the same time relaxing and motivating.

Keywords: School ground, children‘s health, outdoor learning, landscape architecture.

THE SCOPE OF THE CONDUCTED FIELD INVESTIGATIONS SUFFICIENTLY DEFINES THE SOIL ENVIRONMENT WHERE THE RENOVA STADIUM FOUNDATION AND TRIBUNES WILL TAKE PLACE

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Abstract
The task is to show the calculations of statics and dimensioning strip foundations and foundation slab of the building. We also analyzed the impact of the various modules of subgradel reaction on the base plate and strip foundations of the stadium tribunes.
The methodology of the research work and laboratory tests is in accordance with the technical regulations, current standards, as well as the guidelines and recommendations from the literature that are common in practice in the country and abroad for this type of stadiums.
According to the soil failure criterion, the soil load bearing capacity is determined according to the Tercaghi formulation:
· Rectangular single spread footing: qf = 1.4cNc + γ1DfNq + 0.5γ2BNγ.
Rectangular wall footing: qf = cNc + γ1DfNq + 0.5γ2BNγ.
Slab foundation: qf = (1+0.4n)cNc + γ1DfNq + 0.4γ2BNγ For the purposes of structural analysis, in addition to the allowable load bearing capacity of the foundation, the modulus of the soil reaction was calculated according to the method of Bowles, Ks = Fs x 40 x σall (kN/m3).

Keywords: physical - chemical characteristics, geomechanical characteristics, Ks., φ, c, γ1.

FIDIC CONTRACTS: INTERNATIONAL COMPETITION ON THE NORTH MACEDONIAN INFRASTRUCTURE PROJECTS

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Abstract
Nowadays, FIDIC forms of contract are intended to be suitable for infrastructure projects carried out around the world by all types of employers, often in a civil law environment with the extensive support of large investors such as the World Bank or the European Union. The construction market in North Macedonia experiences a development of larger infrastructure projects with bigger budgets than ever before. Increasing foreign direct investment and reforming the public procurement procedure has increased competition and transparency, encouraging new participants to enter on the market.
This paper provides an overview of the current situation in the construction market in North Macedonia, addressing the following research questions: What are the biggest opportunities and challenges of operating on the construction market, and how to ensure a healthy and fair competition in infrastructure projects procurement? Furthermore, the paper aims to analyze how the FIDIC contract conditions can influence in the implementation of infrastructure projects in North Macedonia.
Public infrastructure projects financed by international institutions and executed according to FIDIC-type contracts provide a considerable value-added input to developing economies. Achieving best procurement practice depends widely on leadership and competence of the procurement stakeholders, procurement officers should understand all the procurement objectives and principles since it all encompasses the concepts of efficiency and effective

procurement, transparency, competitiveness and fairness.

Keywords: FIDIC, infrastructure projects, public procurement, construction market, North Macedonia.

THE ROLE OF THE MEDIA IN RAISING ECOLOGICAL-ENVIRONMENTAL AWARENESS IN TETOVA AND THE SURROUNDING AREA

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Abstract

Purpose of the paper. Citizen protests were started in 2013 by NGOs against air pollution which lasted for several years and initially had a small number of participants but over the years this number began to increase continuously. In this context, the purpose of this paper was to see how traditional and social media have influenced the information and awareness of the population about ecological-environmental problems.

Research methods. For the realization of this paper, a questionnaire was prepared with different questions from the field of environmental problems and the way of informing about them. Applying the theoretical methods of analysis, synthesis, induction, and deduction as well as the main survey method, we surveyed casual citizens, high school students, undergraduate students, and experts.

Results. A total of 136 respondents participated in the survey, of which 15 citizens, 32 students, 84 pupils, and 5 environmental experts. Respondents to the questions posed were able to answer according to the answers required: do not agree at all, do not agree, do not know, agree, and completely agree.

Conclusions. The survey showed that the majority of respondents to the questions posed answered with agree. This shows that the media have played a positive role in properly and objectively informing the population about environmental-ecological problems which enabled the increase in the number of protesters and forced the authorities to accept the situation and shut down one of the largest air pollutants in the city.

Keywords: pollution, social media, ecological awareness, air, survey.

SMALL-SCALE ART SPACES: A DESIGN STRATEGY FOR EMPOWERING PEOPLE'S EVERYDAY LIFE

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Abstract

Art spaces contribute to building a social network by providing sites of social revitalization and artistic development for the community. Limited studies on small-scale public art spaces show how these spaces influence human life, their interaction with society and everyday outdoor activities by stressing the impact on the physical and social context. The absence of these initiatives results in the incompatibility of the spaces for the communities making people underutilize, abandon or vandalize a space.

This study explores the factors that influence the involvement of people in small-scale art events at a neighborhood scale by referring to successful examples. This research argues that many initiatives strengthen the voices advocating for public spaces designed for people. Those spaces should be healthy, lively, sustainable, safe and democratic. They should be spaces that provide art in itself, enable people to complement different lifestyles and share their talents.

There are many local art initiatives in Tirana city, showing their impact also in a city-scale perspective. There are many simple art projects which can prosper the community, such as painting a mural, drawing a sidewalk with chalk, painting rocks, gathering bottle caps, decorating tiles, creating a photo stop, designing postcards, hosting a community art exhibition and even starting a community garden. This study concludes with some proposals in a neighborhood of

Tirana city that tend to prosper the community, based on art development programs.

Keywords: livable cities, participatory design, performing spaces, street art, Tirana Youth Capital.

ASSESSMENT OF THE SEICMIC BEHAVIOR OF REINFORCED CONCRETE FRAME STRUCTURES USING NONLINEAR STATIC PUSHOVER ANALYSIS

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Abstract

Structures designed in seismically active regions such as the Republic of North Macedonia must meet two basic requirements: First, the structure must be designed to be loaded during usage (limit state of use), and second: the structure must be durable enough to avoid collapse during an earthquake (ultimate limit state). Apart from linear-elastic calculations, nonlinear methods are also very often used.

Nonlinear static pushover analysis helps us to evaluate the performance of existing and new structures to provide adequate information on seismic demands based on the structural system and its components.

In this paper, we decided to analyze a simple concrete structure with a four-storey building with different sections of columns on the top floor, using Eurocode 8 methods (EN 1998-1:2004). The main reason for this paper is to summarize the basic concepts on which the pushover analysis can be based and evaluate the expected performance of structural systems by estimating the performance of the structural system by estimating its strength and deformation demands in design earthquakes by means of static nonelastic analsysis.

Keywords: Earthquake, Pushover, Nonlinear, Structures, Static.

MULTI-OBJECTIVE SEARCH FOR BEST MACHINING PROCESS SELECTION

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Abstract

This article presents an optimization approach of water jet machining process of sheet metal parts by searching for the best tool path that gives as the lowest cost per part. The water jet machining is non-conventional machining process in which a high –velocity jet of pure water it is used to cut and remove softer materials and in combination with abrasive materials can cats the harder ones. The mostly efficient use of water jet machining is for cutting soft and thin materials such as foils, and sheets.
Because there is no moving parts there we don‘t have operating cost and is very capable to arrange different complex shapes on the same sheet area. For the material cost minimization we have made some optimizations using the nesting mechanism of IGEMS software solutions and various simulations were performed with IGEMS and realized on CNC Resato water jet machine. Then, in order to reduce machining cost we have tried to find the shortest tool path for nested parts that offers the minimum cost path.
The selecting criteria of best manufacturing process makes the selections process as multi factor and multi objective problem. This involves more factors such as quality, cost and flexibility. Therefore, we have used optimization techniques and performed Mat Lab simulations, to find the simultaneous influence of two or more

factors. We found Pareto optimal solutions line and minimum cost by using evolutionary algorithms search.

Keywords: Waterjet process, selection criteria, optimization, multi-objective.

URBAN TACTICS FOR THE THIRD LANDSCAPE. THE CASE OF TIRANA

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Abstract

The process of continuous and unlimited growth in cities has produced negative effects, which materialize in the production of negative urban areas, abandoned spaces and waste landscapes, together with areas that appear without a proper character, as a result of informal non-designed human processes. Having such situations in Tirana, we can think of this third landscape as room for the continuous evolution future, important to biodiversity, climate, and pollution mitigation. Indeed, these third landscapes -involved and closely linked to urban metabolism- being transformed, can improve the quality of the urban environment, on the one hand, on the other also raise the current lack in quantity of urban open areas by recovering neglected spaces. But how can urban leftover spaces contribute to the total amount of open spaces within the city? The aim is to try -through a tactical approach that works on a new quality and livability of urban open areas, but especially on their relationship with third landscapes- to re-think each recovering area into a spatial and functional element of a network of urban open spaces that meets environmental, health and social needs. Also, breaking the ongoing expansion of the city's volumes with three green-blue-grey corridors east-west able to keep an ecologic continuity and to recover new pedestrian-bike mobility paths in favour of citizens.

Keywords: third landscape, urban metabolism, tactical approach, urban open space.

ENERGY EFFICIENCY ASSESSMENT AND RETROFITTING OF TWO TRADITIONAL ALBANIAN DWELLINGS

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Abstract

Most of the traditional dwellings in Albania were constructed between 1800 and 1900. Many of them present significant problems, particularly concerning their energy performance and their occupants' well-being. Due to the high heat transfer rate, the indoor thermal environment is poor in these traditional dwellings. The aim of this research is to identify the optimal parameters for the energy performance of traditional dwellings in Albania. The selected case studies are a dwelling in the Mangalem neighborhood (Berat) and the "House of Zekate" family (Gjirokastra).
The study analyzes the building envelope retrofitting via building performance simulation to generate outputs, which are compared to determine the optimal model for each context. Furthermore, observations on site and conversations with the dwellers are also recorded.
Analyzing, comparing, and evaluating the results and data provides guidelines that can be used by architects while retrofitting vernacular buildings. These computer-based evaluations outline the impact local materials have on the thermal comfort and energy efficiency of a building. Based on the simulation results, retrofitting the fabric of the building in terms of insulative materials could improve energy performance by 40% and thermal comfort by 5°C.

Key words: building envelope, indoor thermal comfort, fabric retrofitting, traditional dwelling.

STANDARDIZATION OF THE INVESTIGATION PROCESS AND PREVENTION FROM CASES OF INSURANCE FRAUD IN TRAFFIC ACCIDENTS ATTACHMENT: PROCEDURE FOR PROCESS REALIZATION

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Abstract
Insurance frauds have been existing since the insurance exists. A special and most important segment of insurance frauds are the frauds in the field of motor vehicle insurance.
Many insurance companies and many individuals have learned how to recognize and detect frauds. However, the modern tendencies of process management in the organization impose the need to take systemic actions and implement a process approach in the management of the fraud investigation process and their prevention, which will ensure reduction of uncertainty in decision making and transparent process management.
This paper presents the need of standardization of the process by establishing a specific procedure for research and prevention of insurance frauds and determination of certain elements for quality management of the process.

Keywords: frauds, insurance, process, procedure.

IMPACT OF BIOPHILIA ON BUILDING OCCUPANT'S LIFE QUALITY

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Abstract

Biophilia and regenerative design have been discussed in many aspects, especially in response to growing environmental challenges and opportunities as it is regenerative architecture. Less discussed ~~"I~~mpact of biophilia in building occupant's life quality" is main topic of this research. This qualitative research conducts a literature review to discuss impact of biophilia as a theoretical framework for identifying concepts and tools and the way they impact in building occupant's life quality. Analyze of biophilia as a hypothetical human tendency, and comparison methods are used to answer megatrend research questions (RQ) -Why biophilia design haze become important concept to achieve goals of sustainable and regenerative lifestyle; RQ-In what ways can biophilia contribute to the building occupant's life quality. The results show that biophilia as a hypothetical human tendency first and most important impact in buildings occupant's quality of life haze in social aspect. Furthermore, knowledge gaps are identified to motivate future research and critical reflections on biophilia as a practice. Biophilia is about having a significant social impact on building occupant's health, community and the environment (air, water, land) – without extra work. It's about convenience and a high quality of life.

Keywords: Biophilia, life quality, social impact, health.

PRELIMINARY ARCHITECTURAL SURVEY FOR BOTTOM-UP RURAL DEVELOPMENT. CASE STUDY PËRMET'S VILLAGES ZHEPOVA & SHELQ

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Abstract
This paper is about the early building-up methodology for bottom-up architectural survey in two traditional villages in the south of Albania. In recent years the theme of rural development was raised in the Albanian Government through a national program called ―A00+ Villages". In the attempt to reverse the ongoing trend in the de-population of rural areas. The program was proposing the establishment of building-up local associations to implement different proposals that came out of the collaboration of the Government with Universities and other public entities. After three years, not much has been done in materializing those proposals. In the real, many circumstances -the earthquake, in 2019, the COVID-19 pandemic, as well as the political elections- changed the conditions both at the national and local levels. In early 2022, a local association of inhabitants approached the authors of this paper, to share their vision for building up a new paradigm regarding the rural revival of the two villages of Zhepova & Shelq. Both Villages have suffered from the destruction of the local heritage, huge de-population, and economical disintegration. The aim is to build up a proper scientific survey methodology to evaluate material and spiritual heritage for a real bottom-up integrated tourism rural development.

Keywords: architectural survey, heritage mapping, integrated tourism offer, bottom-up rural development.

IDENTIFYING REQUIRED SOCIAL CHANGES TO AVOID GAPS IN THE DEVELOPMENT OF A REGENERATIVE BUILT ENVIRONMENT

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Abstract

The paper is arguing the need for changes in the social aspect as the main factor of development a regenerative build environment. In discussing all scales and dimensions of a regenerative environment, the social aspect is overlooked. This paper focuses on systems thinking for social change at the local and global levels, that will have impact on creating a regenerative built environment. Although climate crises occur as a result of both internal and external factors people need to think and act locally and globally to reduce the negative impact of internal factors. The assumption about overlocked social aspect and hypotheses about social changes that will change architecture to an example of the de-carbonization of our economy are confirmed thru literature review. Rapid changes and paradigms shift towards new concepts will impact social and environmental changes toward regenerative architecture solutions. Social changes impacted by new clean technologies serve as answers to the question of which rapid changes are required in process of de-carbonization.

Keywords: Environment, changes, social, regenerative.

MODEL-PROPOSAL FOR DETERMINING THE DISTANCE OF THROWING A PEDESTRIAN IN FRONTAL COLLISION WITH A VEHICLE, USING THE SOFTWARE PACKAGE PC-CRASH 9.0

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Abstract

Traffic accidents between a pedestrian and a vehicle are complex expert accidents that require analysis in determining the speed of the vehicle, the place of contact with the pedestrian, the distance of the pedestrian's throwing, etc. With the development of computer technology, the distance of pedestrian throwing in a frontal collision between a vehicle and a pedestrian now can be calculated. This paper determines the throwing distance in a frontal collision between a vehicle and a pedestrian of ten different passenger motor vehicles. By applying the software package, the throwing distance was determined, 540 simulations with ten different vehicles were simulated. It is also mentioned and analyzed that the front of the vehicle that comes in contact with the pedestrian in a traffic accident has a certain impact, as well as simulating traffic accidents with vehicles with different front shape.

Keywords: model, determining, vehicle, software, package, pc-crash 9.0

ANALYSIS TO STRATEGIES TO REDUCE THE NUMBER OF TRAFFIC ACCIDENTS ON ROADS

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Abstract

The main goal, of road traffic safety strategies is that, by applying appropriate research methods and analysis of the achieved results, provide the necessary quantitative and qualitative identification of a complex system of road traffic safety.The paper presents the analysis and basic guidelines of the Safety Strategy in order to reduce the number of road accidents using the experiences and goals of European Union countries that have many years to implement them in their countries, as well as the analysis of the accident situation in the Republic of Macedonia.

Keywords: strategy, objectives, traffic accidents, road safety.

MEDICAL SCIENCES

SACRECTOMY – PARTIAL AND TOTAL AND ITS IMPLEMENTATION AS A NEW METHOD IN THE REPUBLIC OF MACEDONIA

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Abstract

Sudden Benign and Malign tumors of the sacral bone that has to be operated, should be treated with resection of the tumor, which often is followed by sacral bone resection – sacrectomy. Sacrectomy is a complex operative procedure due to its position and its relation with important organs of the pelvis, and due to postoperative clinical consequences. Sacrectomies can be partial and total. Partial sacrectomies are not followed by axial instability and stabilization is not needed. In opposite, total sacrectomies are related to huge destabilization of the axis of the body, with spinopelvic discontinuity. That‘s why they impose rigid stabilization, with bone replacement.

Contraindicating sacrectomy due to sacral tumors has a wide range and depends on the ability, experience in pelvic and spine surgery, and ambitious of the surgeon and the following medical personal, depends on the hospital facilities, availability of instruments and implants, and also the availability of other surgeons on call, abdominal, vascular and/or gynecologist.

Partial and total sacrectomies have been introduced in our Clinic and successfully operated, with good clinical and radiological results. New biological–molecular therapy that is very successfully used in the treatment of several sensitive tumors can change our surgical approach and treatment strategy.

Keywords: benign tumors, malign tumors, sacrectomy.

EMERGENCY MANAGEMENT AND TREATMENT OF SUDDEN CARDIAC ARREST

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Abstract

Sudden Death Syndrome or Sudden Cardiac Arrest is a life-threatening emergency condition in which the heart suddenly stops beating. This happens when blood stops flowing to the brain and other vital organs and if left untreated within a few minutes the patient dies. Sudden cardiac death is responsible for half of all deaths from heart disease. Incidence: Sudden cardiac death occurs more often in adults in their mid-30s to mid-40s and affects men twice more often as women. Sudden cardiac death is the leading cause of natural death, causing approximately 325,000 adult deaths in the United States each year. This condition is rare in children, affecting only 1 to 2 per 100,000 children each year. Causes. Most cases of SDS are related to undetected cardiovascular disease.

Mechanism: Gene mutations are associated with many syndromes that fall under the SCA umbrella, but not every person with SCA has mutated genes. It is possible that other genes are linked to SCA, but they have not yet been identified.
Emergency medical management and care. Monitoring vital signs. BLS, ACLS. If a person who has suffered SCA needs to treated immediately with an electric-shock (AED, biphasic defibrillator),

the electric shock can restore a normal heart rate that has stopped beating. With each passing minute, the chances of SCA surviving fall diminish. Police, firefighters, and nurses and other first responders usually need to be trained and educated, to possess skills and knowledge, to know the signs and symptoms of SCA, medications, and medical devices to manage an arrest. 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, Sudden Death Syndrome, BLS, AED, ACLS.

DIFFERENCE OF D-DIMER VALUES BETWEEN PATIENTS WITH ACUTE ISCHEMIC STROKE WITH AND WITHOUT COVID-19 DISEASE

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Abstract

Background: Latest in the wake of the SARS-COV-2 pandemic, many studies point out the deranged hemostatic function in patients with acute ischemic stroke (AIS) due of the Covid-19; however, reports of high levels of D-dimers in cases of AIS and Covid-19 do not were without conflicting findings.

Aim: To explore the difference of D-dimer levels between patients with proven AIS and Covid-19 and AIS patients without Covid-19.

Material and methods: The present study was a descriptive as well as a comparative study. Due to the coronavirus pandemic – Covid-19 during inclusion period, per hospital protocol all patients with the clinical signs of an acute stroke that are hospitalized for diagnosis and treatment undergo native computed tomography of the brain, electrocardiography and laboratory work-up with complete blood count, metabolic panel, markers of hemostasis and testing for SARS-CoV-2 infection.

Results: Nine AIS patients with and twenty-four without Covid-19 met the inclusion criteria. Twenty-six patients with AIS (78.79%) had elevated D-dimer levels (>500 ngr/mL), among them eight patients (30.77%) had confirmed AIS/Covid-19. A not significantly higher D-dimer levels was found in positive for SARS-CoV-2 versus negative for SARS-CoV-2 (2850.25 [610-6530] ngr/mL versus 1430.67 [509-4090] ngr/mL, P = 0.138).

Conclusion: It is worth noting that the results suggest associations between D-dimer levels and AIS and Covid-19 disease only, but in cases diagnosed simultaneously with both diseases (AIS/Covid-19) that suggest association was not significant. These results demonstrated that more attention is warranted when interpreting elevated D-dimer levels in AIS patients with and without Covid-19.

Keywords: ischemic stroke, Covid-19, D-dimer levels, comparative analysis

PREVALENCE OF URINARY INCONTINENCE IN WOMEN IN REPRODUCTIVE PERIOD AND ASSOCIATED RISK FACTORS

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Abstract

Introduction: Urinary incontinence (UI) is a common health problem and negatively affects the quality of life of women who are affected. UI is seen more frequently in females than males, and it can affect all ages.
Objective: The aim of study was to determine the prevalence of UI in women in reproductive period and the factors affecting it.
Methods: The study is a cross-sectional and descriptive study. A questionnaire was conducted with a total of 160 women aged 18 and over about their urinary incontinence complaints between January 2021 and April 2022, at the Clinical Hospital in Tetovo, North Macedonia. Data were obtained by a face-to-face interview, using a questionnaire consisting of questions about the women's demographic characteristics, medical and obstetric history and UI.
Results: It was found that 44 (27.5%) of the women experienced the symptom of UI. The correlations between UI and age, place of living, educational level, being a housewife, Body mass index, the presence of chronic diseases, chronic constipation, parity, mode of delivery, and state of menopause were significant.
Conclusions: UI was common problem in the women of reproductive period and more public education by physicians and care needs is necessary for adequate prevention, medical care and treatment.

Keywords: Urinary incontinence, reproductive period, women health.

IDIOPATHIC THROMBOCYTOPENIC PURPURA IN TUBERCULOSIS (CASE REPORT)

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Abstract
Tuberculosis (TB) is a contagious disease in both developing and developed countries. The incidence is increasing due to bacilli resistant to many drugs and the human immunodeficiency virus (HIV). Since 2012, India has the highest incidence of the disease at around 2.2 million cases, accounting for 26% of the global incidence according to World Health Organization statistics. A wide range of hematological manifestations is observed in TB, where thrombocytopenia is common in miliary TB and thrombocytosis in pulmonary TB. Immune thrombocytopenic purpura (ITP) is characterized by a low platelet count accompanied by the presence of autoantibodies. The association of immune thrombocytopenic purpura and tuberculosis is a rare condition. In the case presented, anti-tuberculosis therapy was effective for both tuberculosis and thrombocytopenia, suggesting a causal link between tuberculosis and immune thrombocytopenic purpura.
Purpose: Reporting a case of association of PTI and TBC
Method: Clinical case study and correlation with literature
Discussion: The pathophysiology of thrombocytopenia in tuberculosis remains unanswered. This is a rare condition, estimated to occur in less than 1% of tuberculosis cases. Mycobacterium tuberculosis can break down the antigen with platelets leading to the formation of antiplatelet antibodies. HLA-specific presentation of tuberculosis may also lead to antiplatelet immune response in some patients.

Keywords: PTI, thrombocytopenia, Mycobacterium tuberculosis, TBC, antituberculous therapy.

ASPIRIN REDUCES THE RISK OF DEVELOPING INSULIN RESISTANCE IN EXPERIMENTAL ANIMALS, WHICH HAVE BEEN TREATED FOR A LONG TIME WITH PALM OIL

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Abstract

Introduction: Aspirin is a pharmacological agent with anti-inflammatory action. Widely used as an analgesic, antipyretic, in the treatment of rheumatism and as a platelet antiplatelet agent. The effect of aspirin on TNF-α and carbohydrate metabolism was studied in male rats treated with palm oil for 30 days
Purpose and tasks: Study of aspirin whether it reduces the risk of developing insulin resistance in experimental animals
Material and Method: Palm oil, aspirin and experimental animals. Five days of aspirin lowering TNF-α concentrations in animals not treated with palm oil. Administration of aspirin for the last five days of 30 days of palm oil treatment reduces the concentration of TNF-α.
Results: Palm oil altered the test curve and higher glucose levels were maintained at 90 minutes. Palm oil increased serum TNF-α levels compared to controls ($P < 0.01$). Aspirin reduces elevated TNF-α levels in animals treated with palm oil for a long time. Aspirin also decreased TNF-α concentrations in animals untreated with palm oil, which was statistically significant compared to control animals ($P < 0.05$).

Keywords: Palm oil, aspirin, TNF-α.

FREQUENCY OF DISEASES IN SCHOOL CHILDREN AND YOUTH

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Abstract

Aim

The aim of the study is to determine the frequency of diseases through retrospective data from clinical examinations of school children and youth according to:

- gender
- type of disease and
- age group

Material and methods

For this purpose, retrospective data were used for the period 01.10.2021 - 31.12.2021 for patients examined in the health organization "Dr. Sani" in Tetova where out of the total number of examined (217), 91 of them were males while 126 were females.

The obtained data were entered into patient records using the WHO modified human health assessment form, adapted and modified to the nature of our study.

Results

The results of graph 1 show that 68.67% of the treated patients belong to school childrens and youth, while 31.33% belong to the group of adult patients.

The results of graph 2 show a higher presence of diseases in females with 53.02% compared to males in 46.97%.

Of the total number of pathologies that have affected our patients, according to the results of Table 1, acute pharyngitis and tonsillitis dominate with 28.48% of cases.

Regarding age groups, the results of Table 2 show the dominance of the age group 7-9 years with 51.0% of cases.

Conclusion

1. School children and youth are not immune to a variety of diseases and are affected by them without exception.
2. The higher percentage of female patients affected by these diseases is attributed to the weaker immunity.
3. Timely, accurate and comprehensive assessment of diseases in children and adolescents provides information that is essential for health policy decision-making.
4. The difference in percentage of the results of different authors regarding the diseases of school children and youth can be explained by the different standards that exist in different countries where the authors and studies come from.

Keywords: Diseases, frequency, school children, youth.

READINESS OF POSTPARTUM MOTHERS OF THE HEALTHY TERM INFANT, FOR HOSPITAL DISCHARGE

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Abstract

Introduction: Childbirth is one of the greatest events in the life of every mother and is also a great challenge and stressful situation which often raises concerns and doubts among mothers if they will manage to cope with new obligations.
Aim: The aim of the study was to analyse the readiness to discharge women from the hospital after the delivery. This applies to readiness was both in the physical sense (pain, strength, energy) and psychological as well as self-assessment of readiness to take care of the baby and self-care at home.
Material and methods: The study was cross-sectional and descriptive, conducted among 202 postpartum women on the day they were discharged from the hospital, in the Department of Gynecology and Obstetrics of Clinical Hospital in Tetovo from June to October 2017. Data were collected through self-administered questionnaires on the day of discharge. The questionnaires were distributed among post -partum women and were asked to complete it.
Results: Of 202 mothers, unreadiness was identified in (37) 17% for different reasons and readiness for discharge was identified in (165) 83% of them.
Conclusions: The timing of newborn discharge should be a joint decision made by the mother and healthcare providers based on readiness. The decision should consider the mother‘s health status,

infant's health status, the mother's perception of readiness, and the availability of familial and social support for the mother and infant.

Keywords: readiness for hospital discharge, mother‘s health, newborn‘s health.

SURGICAL WOUND INFECTIONS – EPIDEMIOLOGICAL CHARACTERISTICS

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Abstract

Postsurgical complications are relatively common, and most of them deal with complications of surgical wounds.
The infection of surgical wounds remains a frequent and complex problem, responsible for high rate of morbidity and mortality in operated patients.
Frequently the cause of these infections are nosocomial bacteria, which are difficult to eradicate from hospital settings.
Depending on the depth of the spread of these infections along the surgical wound, they are classified into:
Superficial infections involving only the skin and the subcutaneous tissue
Deep Infections - involving muscles, fascia and sometimes bone structure, and
Infection of cavities and organs where the surgical intervention was performed, such as the abdominal and thoracic area.
To consider wound infection as postoperative, it must appear no later than 30 days after the surgery.
Aim of the study: to show the incidence of postsurgical infections in patients operated at the Department of General Surgery at the Clinical Hospital in Tetovo, in the period from January to December 2021. At the same time, we will provide an overview of the most common causes of these infections.
Material and methods: This study included 192 patients operated due to various surgical pathologies, such as cholecystectomy, inguinal hernia, appendectomy, and obstructive ileus during the period from January to December 2021. The data for our study were obtained from the records of these patients.

Results: Out of a total of 192 patients included in the study, in 17 of them surgical wound infection was registered as a complication (8.85%). Most patients underwent surgery due to inguinal hernia, total 94, cholecystolithiasis 71, appendicitis 19 and obstructive ileus 11 patients. Based on microbiological examinations of swabs from infected wounds, it resulted that the most common causes of infections are S. Aureus bacteria isolated in 9 patients with surgical wound infection, and P. Aeuroginosa in 6 of them. Other bacteria were E. Coli isolated as single in two cases and in combination with S. Aureus in two other cases. More than one bacterium was also isolated in another three patients with surgical wound infection. In two cases, the S. Aureus and P. Aeuriginosa bacteria were isolated, while in one case, P. Aeruginosa and E. coli.
Based on the antibiogram, it turned out that the antibiotics to which the isolated bacteria were most sensitive were Amikacin and Imipenem for Gram-negative bacteria such as (Proteus and E. Coli), while for Gram-positive ones (S. Aureus), vancomycin and trimethoprim/sulfamethoxazole.
Conclusion: Surgical wound infections continue to be a major concern worldwide. Thes infections are not just health problems, as they increase the rate of morbidity and mortality in patients, but they are also a potential source of developing bacteria resistant to two or more antibiotics (superbugs), the eradication of which can be extremely difficult.

Keywords: wounds, postsurgical, infection, bacteria.

PREVENTION AND TREATMENT OF COMPLICATIONS OF COVID-19 CONCOMITANT DISEASES, COORDINATING FACTOR FOR REDUCING MORTALITY

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Abstract

The most important complications are those of the cardiovascular system, such as:
− acute myocardial infarction
− heart failure
− pulmonary, cerebral, intestinal thromboembolism etc.
Such a phenomenon emerged as another important thing; Depression and other psychics to suicide, etc. The comparable features associated with common diseases of Covid-19, and their recognition is of great importance for the application of biochemical and clinical monitoring recommendations and indicators to minimize mortality.
Preliminary monitoring and adequate treatment of risk factors, early and timely treatment of covidium, results in reduced mortality and optimal attitude towards quality of life. Cardiovascular diseases and myocardial infarction still remain in the first place in our prospective study conducted in the city of Tirana, where they occupy a mortality rate of 51.7%, from 48.3% in the village. In terms of age group distribution, 89.7% are over 60 years old.
Reducing mortality and optimal attitude towards quality of life, have made the review of CVDs, the subject of ongoing studies and especially post-covid.
Early diagnosis of hypercoagulability, infarction, heart failure, pulmonary edema, thromboembolism, pregnancy, prenatal diagnosis, diagnosis of heart defects and specific diseases resulting

from infarction; as well as risk factors, obesity, hypertension, hyperlipedemias encountered at a young age.
Awareness of eliminating addictions such as alcohol abuse drugs, smoking, causal life;
Against drug use and abuse there should be a treatment plan for concomitant diseases, advance adjustment of medication, lipid control, c-reactive proteins, treatment of secondary pathologies leading to myocardial infarction and consequently impact on increased mortality.

Keywords: Prevention and treatment, diseases.

PULMONARY ABSCESS IN LOWER LOBE OF THE LEFT LUNG – CASE REPORT

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Abstract

Lung abscess is defined as necrosis and cavitations of the lung following microbial infection—can be categorized as primary (80% of cases) or secondary; alternatively, it can be categorized as acute (<4–6 weeks in duration) or chronic (40% of cases). We accepted a 46-year-old man in the Department of Thoracic Surgery at the Clinical Hospital in Tetovo, because of generalized chest and back pain. The patient‘s main complaints were expectoration of purulent sputum, dyspnea, persistent productive cough, fatigue and in febrile state.

Promptly, after admission to our clinic, we immediately performed chest X-ray, CT scan, which was easily diagnosed with abscess in lower left lobe of the left lung. Also, other investigations took place, such as: sputum culture, pleural fluid punction, blood analysis, and bronchoscopy. Through an open surgical procedure – thoracotomy (posterior-lateral) via double lumen endotracheal tube (DLT), we successfully did resection of the necrotic mass of abscess in the lower lobe of left lung – lobectomy.

Conclusion: For an intrapulmonary lung abscess is indicated a lower lobe lobectomy like a non-waiting elective case surgery.

Keywords: Pulmonary abscess, thoracotomy, DLT, lobectomy.

CONCENTRATIONS OF PLGF MOLECULE IN THE EVALUATION OF HYPERTENSIVE CONDITIONS ON PREGNANCY AND ESPECIALLY PREECLAMPSIA – A REVIEW

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Abstract

How pregnancy incites or aggravates hypertension remains unsolved despite decades of intensive research. Indeed, hypertensive disorders remain among the most significant and intriguing unsolved problems in obstetrics. Preeclampsia is a systemic syndrome that seems to originate from the placenta and is associated with an imbalance between angiogenic factors in the maternal circulation. PLGF (placenatl growth factor) is an increasingly important molecule in the prediction, diagnosis and treatment of pre-eclampsia. It has pro-angiogenic effects on the feto-placental circulation and supports trophoblast growth.

The effect of antihypertensive therapy and also evaluation of laboratory findings, ultrasonographic examinations, blood pressure values and concomitant diseases of patients with hypertensive disorders in pregnancy are very immportant. Placental growth factor (PLGF) is an increasingly important player in the clinical management of pre-eclampsia.

CONCLUSION: Mechanisms by which PLGF expression is regulated continue to be investigated. Low circulating PLGF precedes the manifestation of clinical disease in pre-eclamptic pregnancies and intrauterine growth restriction.This review focuses specifically on the role of PLGF in normal and pathological placental development and in the clinical management of pre-eclampsia. Several studies have shown that women who subsequently develop preeclampsia have significantly lower maternal PLGF concentrations in the first trimester than those with

normal pregnancies. The optimal time for screening is 11-13+6 weeks of gestation.

Keywords: preeclampsia, PLGF, hypertensive disorders, intrauterine growth restriction.

MEMBRANOSE NEPHROPATHIA: ETIOLOGY, DIAGNOSIS, TREATMENT, PROGNOSIS, CASE STUDY

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Abstract

NEPHROPATHIA MEMBRANOSA (NM) is a form of chronic glomerulonephritis that in 80% of cases is presented as nephrotic syndrome, while in other cases asymptomatic proteinuria. All glomeruli, or almost all, are attacked by widespread thickening of the capillary anus, respectively the basement membrane of the glomerulus. It is a disease of immunocomplexes where antibodies that pass through the basement membrane of the glomerulus bind to the Antigens of epithelial cells and form Immune complexes in situ.
Etiology: Nephropathia Membranosa (NM) is usually idiopathic, but may be secondary to drugs (Ari, Penicillamine, NSAIDs (non-steroidal anti-inflammatory drugs), captopril, probenecid, infections (Hepatitis B and C), HIV, syphilis, malaria), autoimmune diseases: Systemic lupus erythematosus (SLE), thyroiditis, solid lung, and colon cancer, melanoma, malignant tumors of the kidney and stomach, Hodgkin and Non-Hodgkin lymphoma, chronic lymphatic leukemia, diabetes, and genetic factor.
Epidemiology: Primary membranous membranopathy disease is a common cause of idiopathic nephrotic syndrome in non-diabetic patients of 20-37% of kidney biopsies, increasing to 58% in the elderly over 65 years. The disease mostly affects men in a ratio of 2:1 compared to women for unknown reasons, especially in the ages of 40-50 years and beyond where it is also the cause of the idiopathic nephropathic syndrome. It is rare in children less than 5%

or 7% of biopsies according to some authors cited below. The prevalence of NM increases by 13% according to reports by some authors. The Republic of North Macedonia is increasingly closer to European and Balkan trends in this regard. According to an annual internal report of the Internal Medicine Clinic in Tetovo, 33 subjects with glomerular disease were hospitalized, with no significant differences between the sexes (2016 report). The data have been reduced due to the OVID 19 virus pandemic in recent years.
The clinical expression of NM was different for each patient. There was reported nephrotic syndrome in 50-80% of cases; others as asymptomatic nonselective proteinuria, 60% of patients have erythrocytes. Hypertension is usually absent, renal function is preserved and no signs of glomerular disease activity are found in urinary sediment. How it will be presented in the case of the study will be referred to below.
THE PAPER aimed to retrospectively compare the clinical-biochemical data of the patient with NM, the therapy given during the evaluation of the patient as well as our experiences and those of other authors on this pathology.

Keywords: Nephropathia membranosa, Hypertensio arterialis nephrogenesis, man, case study presentation.

TREATEMENT OF MORBID OBESITY WITH LAPAROSCOPIC SLEEVE GASTRECTOMY

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Abstract

The epidemic of obesity in the World is a major public health issue and more than a third of adults are now considered obese (body mass index > or = 30 kg/m2). Surgery for morbid obesity, bariatric surgery, is the most durable treatment for this disease.
Primary bariatric surgery has been proven to be effective in weight loss and improvement of weight-related metabolic co-morbidities.
Bariatric surgery is the most effective treatment for obesity with or without type 2 diabetes mellitus and its complications (obstructive sleep apnea, hypertension, elevated cholesterol).
The laparoscopic sleeve gastrectomy is a type of bariatric surgery in which a portion of the stomach is surgically removed.
Design:
This constitutes a prospective study carried out in a tertiary care City Hospital in Skopje –8th September" and included 8 morbidly obese patients who underwent LSG. The operation was performed through one 15, one 12 mm and two 5 mm ports, using the Endo-GIA stapler to create a lesser curve gastric tube over a 36-Fr bougie.
Results:
Operative time, complication rates, hospital length of stay, Body Mass Index (BMI), % of Excess Weight Loss (EWL) and appetite were evaluated. There were 3 females and 5 males, aged (mean+/-SD) 35.5+/-10.5 yrs and preoperative BMI 47.8+/-7.5 kg/m2. Three of them had Diabetes mellitus type 2 (8 mmol/L +/- 3 mmol/L), Sleep apnea all of the patients, Hypertension four of them (140/90 mmHg +/- 20/15 mmHg). The operative time was 110.7+/-30 min.

There was one conversion to open surgery. All patients, except one, were discharged on the forth postoperative day after an upper GI series and the initiation of a clear liquid diet. At the follow-up (3.0 +/-1.0 months post operatively), the % EWL was 30.5+/-10.5. Six patients who received regular postoperative dietician counselling at follow-up did better than the others who did not (% EWL 35.4+/-5.8 vs 25.2+/-4.1, respectively). All patients reported significant loss of appetite.The three patients that were with diabetes mellitus had significant improvement. Sleep apnea normalized at all of the patients that underwent LSG. Hypertension improved at all of them.

Conclusions:

Although the number of patients is relatively small, the data of this study indicate that laparoscopic sleeve gastrectomy is effective in weight reduction, normalization of diabetes mellitus type 2, loss of sleep apnea and normalization of blood hypertension. A higher number of patients and longer follow-up period will be necessary to evaluate long-term efficacy.

Keywords: LSG, morbidly, Endo-GIA.

GASTRIC AND COLONIC CANCER CASE CASE REPORT

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Abstract

Introduction: Gastric and colorectal cancer is present in 4% of cases, commonly as additional finding. This is the case of invasive, synchronous gastric and sigmoid colon cancer.
Case report: A 68-years-old male patient admitted to our institution complaining on pains in epigastrium, vomiting, rapid weight loss and occasional constipation. Using the method of esophagogastroduodenoscopy (EGD) the presence of ulcero-infiltrative tumor of gastric fundus was verified, and colonoscopy revealed stenosing tumor of sigmoid colon. Undergoing a multislice computed tomography (MSCI) of the thorax and the abdomen excluded malignant dissemination. A total gastrectomy with omentectomy, splenectomy, D2 lymphadenectomy and typical left hemicolectomy were also performed. Histopathological examination verified invasive, diffuse gastric adenocarcinoma and invasive, tubular colon adenocarcinoma. The patient underwent systemic postoperative chemotherapy. Two years after the surgical procedure, the patient is alive, with no signs of recidivism.
Conclusion: In patients with symptomatology which does not correspond to primary malignancy, just like in the presented case, additional diagnostics is required. Combined resection is adequate surgical procedure for synchronous gastric and colonic cancer.

Keywords: Gastric, colorectal, gastric cancer.

CORRELATION BETWEEN MAMMOGRAM DIAGNOSTIC AND CLINICALLY MALIGNANT LESIONS OF THE BREAST

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Abstract

Background/aim: Not only that ultrasound makes the difference between cystic and solid changes in breast tissue, as it was the case at the beginning of its use, but it also makes the differential diagnosis in terms of benign-malignant. The aim of this study was to assess the role of sonography in the diagnosis of palpable breast masses according to the American College of Radiology Ultrasonographic Breast Imaging Reporting and Data System (BI-RADS) and to correlate the BI-RADS 4 and BI-RADS 5 category with pathohistological findings.
Methods: A retrospective study was conducted with the breast sonograms of 30 women presented with palpable breast masses found to be mammography category BI-RADS 0 and ultrasonographic BI-RADS categories 4 and 5. The sonographic categories were correlated with pathohistological findings.
Results: Surgical biopsy in 30 masses revealed: malignancy (56.7%), fibroadenoma (26.7%), fibrocystic dysplasia with/without atypia (10/6), lipoma (3.3%) and intramammary lymph node (3.3%). Correlation between BI-RADS categories and pathohistological findings was found ($P < 0.05$). All BI-RADS 5 masses were malignant, while in BI-RADS 4A category fibroadenomas dominated. A total of 53.8% of all benign lesions were found in women 49 years of age or younger as compared with 35.3% of all malignancies in this group ($p < 0.05$).

Conclusion: Ultrasonography BI-RADS improved classification of breast masses. The ultrasound BI-RADS 4 (A, B, C) and BI-RADS 5 lesions should be worked-up with biopsy.

Keywords: BI-RADS, Mammogram, Diagnostic.

LEFT VENTRICLE (LV) AND LEFT ATRIUM FUNCTION IN PATIENT WITH AORTIC VALVE STENOSIS.ECHOCARDIOGRAPHY ANALYSIS

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[5]*Ambullance Medartis*

Abstract

Introducing:
The Aotic valve Stenosis (AS) has impact in functioning of the Left ventricle (LV) and Left atrium(LA) by decreasing the Ejection Fraction(EF) and Longitudinal strain(LS).This effect is more pronounced in LA functioning, due to a smaller possibility of adaptation.

Objectives
The objective of the study was echocardiography analyze of left atrium (LA) and Left ventricle(LV) function, in patients with aortic stenosis(AS) compare to group of persons, without cardiac disease .
The objective of the study is to conduct an echocardiographic analysis of the left atrium (LA) and Left ventricle (LV) function, in patients with aortic stenosis (AS) compared to a group of individuals without any cardiac disease.

Matherial
40 patient, with AS,with Peak Gradient(PG) of Aortic valve(AOV) above 64 mmhg vs second group from 40 patient, with moderate AS with PG of AOV under 64 mmhg , compare between them .Booth groups where compared with results from 60 pople,without known heart disease.

Method

Ultrasound was performed using Philips Epiq elite rev.7.3, with X5-1 transducer.Analysis was done online with Autostrain LV and Autostrain LA and offsite with Q lab version 15.5.

In case of LV we have analyzed Ejection Fraction(EF), Endiastolic volume of LV(EDV) was done with Auto 2DQ,endocardial GLS(EndGLS), Myocardial Global strain(MyoGLS),Radial strain(RS) and Time to peak values(T2P) with Autostrain.

For LA, we have analyzed the EF,EDVof LA,Fractional area shortening(FAC) was done with Auto 2DQ,GLS of LA,E wave strain rate(SR) and A wave SR of LA with Autostrin LA.

I study has been excluded the cases with Atrial fibrillation, LV failure, documented coronary artery disease, cardimiopathy, pericardial disease and patient with heart failure.

Conclusions

- Systolic indices of LV in group of severe AS ,are lower then normal values
- In mild and moderate AS, LV indices are in normal ranges.
- In severe AS , all LA values are lower then normal values for LA functioning
- In mild and moderate AS ,LA indices are in normal ranges
- Increase of the EDV of LA, is registered only in group with severe AS
- Severe decrease of booth SR values of LA in case of severe AS.

Keywords: Left ventricle (LV), Left atrium, aortic, echocardiography.

NEGATIVE EFFECTS OF COVID-19 IN EARLY DIAGNOSIS AND TREATMENT OF BREAST CANCER PATIENTS

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Abstract

No doubt that Covid-19 has altered the care of patients in different departments to an unknown extent. Clinical trials have been put on hold and many important things have been left on pause.
Since the beginning of this pandemic, there has been an urge to respond to it in terms of how not only diagnosing and treating patients with breast cancer but how to follow them up in the clinic, as well.
In terms of diagnosing the disease, mammographic images and biopsies of patients with suspected cancer were still possible, but what changed during the pandemic is that the screening program was put on hold, so a lot of screen-detected cancers which are diagnosed, very small early impalpable tumors, that has halted until the peak of the pandemic has passed.
So, now it is expected to get a surge of new cancers coming up through, possibly slightly later diagnosed than they would have been otherwise, so a reduction in the number of new diagnoses has been observed.
As far as treatment is concerned, surgery had to be reorganized, for a lot of patients, because the operations rooms and the anesthetic staff, and the intensive care units were being prioritized for patients with coronavirus.

Keywords: Breast cancer, coronavirus, treatment, diagnoses.

WAIST-TO-HEIGHT RATIO AS A SCREENING TOOL FOR IDENTIFYING OBESITY IN CHILDREN AND ADOLESCENTS

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Abstract

Background: Childhood and adolescence obesity is growing worldwide and raises concerns that overweight or obese children and adolescents are at greater risk of becoming obese than adults. An early diagnosis is very important and for this purpose, WHtR is a very easy method to use as well as to be interpreted by healthcare workers.
Objective: The main purpose was to investigate the prevalence of childhood and adolescence obesity in the Tetovo region, North Macedonia by analyzing the waist-to-height ratio (WHtR), which has recently attracted attention as a very important anthropometric index for central obesity.
Methods: The character of this research is " Cross-sectional" and was conducted in primary and secondary schools in the region of Tetovo, North Macedonia, during the period April to June 2019 with 625 male and female students aged 12-17 years. The results were processed with statistical programs STATISTICA 10.0 and SPSS 20.0.
Results: The prevalence of overweight and obesity / abdominal obesity was respectively in 8.16% who belonged to the category increased risk/high risk and 0.64% who belonged to the category very high risk. Statistically significant results with p< 0.05 were

found between the mean values of body height, biacromial breadth, mid-upper arm circumference (MUAC), and the upper extremity length in relation to the WHtR.
Conclusion: The waist-to-height ratio is much safer than BMI in predicting Obesity and has a stronger association with cardiovascular disease as well as being better at predicting metabolic syndrome and the risks that can come from it.

Keywords: Children, Adolescents, Waist-to-height ratio, Overweight, Obesity.

SURGICAL MANAGEMENT OF LUNG ABSCESS: POSTERO-LATERAL THORACOTOMY

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Abstract

Lung abscess is a type of infectious pulmonary disease, which occurs because of infection and destruction of the pulmonary parenchyma with central necrosis, eventually leading to cavity formation. The characteristic finding of chest X-ray is an air-fluid level in the cavitary lesion. In the era without antibiotics, putrid lung abscess was a crushing condition.

Currently primary management of lung abscess mainly involves proper systemic antibiotics, intensive care, percutaneous tube thoracostomy drainage and if indicated surgery which contains decortication and pulmonar resection. Surgical management for lung abscess became a more challenging task, since indication, timing, and the proper procedure for lung abscess are not well established. Undoubtedly, surgical intervention, including pulmonary resection or decortication procedure, tends to be restricted to those refractories to intensive medical treatment, complicated by life-threatening hemoptysis, pyopneumothorax, or pleural empyema. The primary goal of surgical management is adequate control of the septic focus.

Our aim in this kind of case reports is to acknowledge our positive experience in the surgical management of lung abcess with postero-lateral approach (also preferred theoretical approach for such situations) and the benefits for a successful decortication and lung resection in a small – new thoracic unit without any minimal invasive – VATS experecience for lung infection surgical disease.

Keywords: Infection, lung abscess, minimal invasive – VATS, thoracic surgery, pulmonary resection.

VENTRICAL TACHICARDIA, HOW AND WHEN?

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Abstract

The paper analyzed the occurrence of Ventricular Tachycardia in patients admitted to the intensive care unit in the department of cardiovascular diseases at the Tetovo Clinical Hospital in the period from 01.01.2020 to 31.12.2021. The study included a total of 58 cases with ventricular tachycardia grouped by age and sex, pathophysiological substrate - work diagnosis, used method and subsequent complications. Out of 58 cases analyzed in the material, it turned out that the conversion with monophasic or biphasic defibrillator was a primary solution in the treatment of this emergency situation, applied in 46 cases or 79.3%, in 12 cases the conversion was spontaneous without the use of a defibrillator. In 25 subjects or 43.10% of cases with VT analyzed, VT was the result of preliminary resuscitation due to asystole. The pathological substrate is preceded by Acute Myocardial Infarction with 39 cases or 67.2 followed by Heart Failure with different etiologies in 12 cases or 20.68% and 7 cases or 12% were with undefined etiology. In 36 cases there was a transient ischemic attack of the brain with a short duration from 30 seconds and in 2 cases we had a long-term complication with the development of Cerebrovascular Stroke. Timely identification of Ventricular Tachycardia, solution of adequate strategy greatly reduces hospital mortality from complications of Cardiovascular Disease as well as the risk of developing ischemic brain disease.

Keywords: Ventricular Tachycardia, Acute Myocardial Infarction, Transient Ischemic Attack.

RETINOPATHY OF PREMATURITY IN PREMATURE INFANTS GESTATIONAL AGE MORE THAN 30 WEEKS AND BIRTH WEIGHT OVER 1500 GRAMS - 10 YEAR RESULTS

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Abstract

Purpose: The purpose of this paper is to analyze the possibility of developing ROP and need for treatment in premature babies born between 30 and 36 weeks of a gestational age and birth weight over 1500 g.

Method: In this retrospective study were analyzed data of premature babies which followed in period from 2010-2020. In Republic of Macedonia for screening of ROP is usedrecommendations from the American Association for Pediatric Ophthalmology and Strabismus where clearly defined inclusion for the screening program for ROP of allprematurus with a birth weight (BW) of 1500 g or less and / or born at 30 gestational weeks (GW) or earlier and selected infants with a birth weight between 1500 to 2000 g withunstable clinical course.

Results: In this retrospective study were included 314 premature babies treated with laserphotocoagulation in the period from 2010-2020 performed by one eye surgeon. 104treated neonates are with gestational age more than 30 gestational weeks (33.12%) and 64 infants are with BW over 1500 gr (20.38%).

Conclusions: The results concluded that premature infants with unstable clinical course, born between 31 and 36 weeks of a gestational age and birth weight over 1500 gshould be sreened for ROP.

Keywords: screening for ROP, birth weight (BW), gestational age (GA), laserphotocoagulation (LPC).

THE FIRST THREE ABDOMINOPLASTY SURGERIES AT THE SURGICAL CLINIC OF TETOVO

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Abstract

The abdominal trunk is an area of special interest to plastic surgeons as it presents a large area of opportunity for body contouring. The trunk is a gross description of the area between the inferior aspect of the breasts and the beginning of the pelvis. Abdominoplasty, also known as a "tummy tuck," is a technique that removes extra skin and fat from the abdomen while also strengthening the abdominal wall musculature. The goal of this operation is to achieve a more visually attractive abdomen, as well as a flatter and thinner stomach.

There are three methods of abdominoplasty:

- **Complete abdominoplasty:** For patients who require the most correction, this is the best option. The incision (cut) is made at the bikini line, at about the same level as your pubic hair. The length of the scar depends on the amount of extra skin.
- **Partial or mini-abdominoplasty:** Mini-abdominoplasties are done with shorter incisions and are often performed on people who have less excess skin. During this procedure, your belly button is unlikely to be displaced.
- **Circumferential abdominoplasty:** This procedure involves the entire abdomen, including the back. You might have back liposuction or circumferential abdominoplasty if you have a lot of excess fat in your back as well as your abdomen.

In the Clinic of Tetovo, interventions were performed only in the complete abdominoplasty method.

Aim of the study: to show the innovation in Clinical Hospital in Tetovo, at the Department of General Surgery with the first three successful interventions of a tummy tuck. Also to show the incidence of possible complications such as postsurgical infections, seromas or hematomas, blood clotting, poor wound healing, body reaction during the intervention, any possible chronic disease etc.

Material and Methods: Three abdominoplasties were performed in the Tetovo Hospital between November 2021 and April 2022, with a diagnosis of abdominal pannus. The techniques that has been used are:

- Strong plication of the rectus sheath.
- Inferior and medial advancement of the abdominal flaps during closure.
- High Tension Stitches to central and lateral abdominal flap.
- Waist circumference has been measured at the midpoint between the lower margin of least palpable rib and the top of the iliac crest.

Results: Out of 3 patients, all of them were females who complained only about aesthetics.
Patient 1 (15 November 2021): 43 years old, without a chronic disease, intervention of cholecystectomy before, had good body reaction to surgery with a removal of 4 kg fat of the abdominal area. Post-surgical treatment included antibiotics for prevention of infections (metronidazole), for possible stomach pain (metoclopramide, cimetidine), for blood clotting (clexane).
Patient 2 (7 April 2022): 29 years old , without chronic disease, first surgery in her life, good body reaction with a removal of 2.5 kg fat of the abdominal area. Post-surgical treatment: antibiotics (metronidazole), pain relief (metoclopramide, tramadol), a treatment of blood clotting with clexane for 2 weeks.
Patient 3 (29 April 2022): 39 years old, without a chronic disease, one cesarean section before, excellent body reaction to surgery with a removal of 7 kg fat of the abdominal area. Post-surgical treatment: combination of two antibiotics (vancomycin, metronidazole), pain

relief for a longer period (tramadol, metoclopramide), blood clotting treatment (clexane) for 1 week.

Conclusion: It has been documented that men and women with large waist circumference have lower life expectancy. We describe an abdominoplasty technique which can specifically reduce waist circumference and could offer them important health benefits and possibly lowering mortality rates.

Keywords: incision, wound, post-surgical, abdominal musculature, tummy tuck.

LIPID VARIABLES IN RELATION TO CORONARY ARTERIES ATHEROSCLEROSIS EXTENT IN ST ELEVATED ACUTE MYOCARDIAL INFARCTION

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Abstract

Aim: The relationship between different lipid profiles and the extent of coronary lesion in acute myocardial infarction has been rarely reported in epidemiological and clinical studies. The aim of this study was to evaluate the association between different lipid profiles and the extent of coronary atherosclerotic lesion in patients with ST elevated acute myocardial infarction.
Method: We analyzed data from 50 consecutive patients with acute myocardial infarction who underwent coronary angiography during hospitalization within 3-month period at the Clinical Hospital of Tetovo. Patients were classified by coronary angiography into: one-vessel disease (1VD), two vassel disease (2VD) and three vassel disease (3VD), with obstructive coronary artery disease (CAD), defined as ≥50% angiographic stenosis. Laboratory analysis for lipid fractions were performed.
Results: One-way analysis of variance (ANOVA), showed statistical significant association between the mean of total cholesterol (TC) to high density lipoprotein cholesterol (TC/HDL) ratio and number of coronary arteries involved with obstructive lesion (p=0.021). No significant association showed between extent of coronary artery lesion and Non-HDL (p=0.33), HDL (p=0.438), low density lipoprotein cholesterol (LDL) (p= 0.713), Triglycerides (TG) (p=0.352), and TG/HDL ratio (p=0.143). In multiple regresion

analyse, TC/HDL ratio value statistically significantly predicted extent of coronary atherosclerotic lesion (p=0.044).
Conclusion: Among all lipid variables examined, TC/HDL ratio appeared as most powerful indicator of extent of coronary lesion at patients with acute myocardial infarction. Therefore, in patients with suspected CAD, the TC/HDL ratio should be used as an easy, non-invasive and inexpensive method to measure the extent of coronary heart disease in order to determine the diagnosis, strategy and treatment of these patients.

Keywords: Lipid variables, Extent of coronary lesion, acute myocardial infarction.

THE QUALITY OF TETOVO'S NATURAL SPA WATER

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Abstract

Tetovo's natural SPA is a really frequented place by the people, some of them affirmed that it has many healing properties and some of them gained illnesses, thus I decided to study the drinking water and search for any organ damaging substance or disease causing substances. Statistical researches show that around 800.000 people estimated to die each year from diarrhea as a result of unsafe drinking water, a large number of deaths could be avoided if risk factors were addressed. In this research I searched for three main contaminants such as chemical contaminants (heavy metal, urine and pH), soil (turbidity, soil composition and rock formation) and biological contaminants (parasites, fecal coliform bacteria and E coli). I had two samples from two different sources, higher point (sample 1) and lower point (sample 2). I used two testing methods such as chemical method and microbiological method. I filtered the water of two samples and put the filters in non-selective petri dishes separately, the time taken for the entire procedure to run and end with the resulting numbers was 48hr from which I got the results as follows, in sample 1 the turbidity was high with no fecal contamination, in sample 2 the turbidity was low with no fecal contamination. In the paper I have added pictures of the whole process of this research, the results are also more expanded. It is surprising to see what kind of water many people of this town have been drinking.

Keywords: contaminant, method, sample, substance, disease.

ANALYSIS OF GLOBAL LONGITUDINAL STRAIN OF LEFT VENTRICLE IN PATIENTS WITH HYPERTENSIO ARTERIALIS WITHOUT HEART FAILURE

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Abstract

According to WHO data almost 42% of the world‘s population are diagnosed with Hypertensio arterialis (HTA). The purpose of this paper is to analyze the effect of HTA on the functioning of the left ventricle (LV) and the detection of early changes in the functioning of the LV, in order to prevent its advancement. The endocardium and its function are the first to be damaged in HTA, because it is responsible for the Longitudinal function of the LV. Quantification with Speckle tracking (SR) of the Longitudinal strain (LS) enables the quantification of the endocardial function of the LV. Fifteen patients without cardiovascular disease and fifteen patients with arterial hypertension without signs of heart failure were analyzed. Excluded from this study were patients with atrial fibrilation, mitral and aortic valve disease, diabetes mellitus and those with pericardial effusion. These patients were analyzed by using the 2D echocardiography (Philips Epiq Elite, Rev 7.0.3) and quantification of LV function was done with Autostrain LV. ANOVA method with statistical results of significance was used after collecting the data of those fifteen patients and their processing in quantitative terms. The results show that HTA reduces EF and LV in the subclinical stages

of the HTA group and GLS value of LV indicates a decrease in value in the HTA group.

Keywords: GLS, HTA, LV, Autostrain.

TREATMENT OF PATIENT WITH ACUTE STOKE WITH THROMBUS ASPIRATION– CASE REPORT

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Abstract

Acute brain stroke is a term used to describe conditions associated with sudden, reduced blood flow to the brain, most commonly affected artery is the arteria cerebri media. Acute brain stroke causes neurological deficiency that varies in symptomatology and clinical scale. Acute brain stroke represents a medical urgency with high probability for invalidity and death. This condition is among the highest causes of death in Europe. Treatment goals include improving blood flow, treating complications and preventing future possible invalidity and mortality. In the Clinical Hospital of Tetovo was admitted patient with sudden head ache which fast prograde to loss of consciousness and left hemiplegia. In the neurology department investigation and diagnostic procedures were performed. The CT scanning diagnosed arteria cerebri media occlusion and the patient was admitted to interventional catheterization laboratory. Cerebral angiography visualization showed occlusion of arteria cerebri media with thrombus. The thromboaspiration was performed throw the right trans radial access after anesthesiological premedication, parenteral anticoagulation agents were administrated. The procedure resulted in thrombus aspiration and complete reperfusion of cerebral blood flow. After the intervention the patient was transferred to neurological intensive care unit. Patient was stable during post interventional period and was discharged home. Symptoms improvement was confirmed with neurological examination. Follow up shows complete relieve of symptoms.

Keywords: Acute, Stoke, Thrombus, Aspiration

TREATMENT OF ABOVE RESPIRATORY TRACT INFECTIONS WITH THIRD GENERATION CEFALOSPORIA IN PRESCHOOL CHILDREN

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Abstract

Cephalosporins are the third generation beta-lactam antibiotic. Respiratory infections constitute the most common disease 70% in preschool children occurs mainly during the 3rd to 6th years of life, this disease has a seasonal course with its peak in the winter-spring period.

Purpose of the paper: To show the effect of third generation cephalosporins on upper respiratory infections in preschool age, and the negative effects.

Material and methods: Random cases, aged 3 to 6 years, have been studied.

In all cases, hemogram with leukoformula, CRP, throat swab, throat inspection, lung auscultation, anamnestic data was performed.

Results: According to the results obtained from 58 suspected bacterial cases in 35 cases we diagnosed bacterial infection according to the protocol for bacterial infections. , H. influenzae, pneumococcus, staphylococcus, etc.), in 23 cases in the throat swab results (adenoviruses, influenza virus, parainfluenza, respiratory syncytial, coxsackie viruses, etc.).

Statistical processing: from statistical methods the arithmetic mean with standard deviation was used: $X \pm SD$.

Conclusion: Third generation cephalosporins have been shown to be less toxic to the kidneys and heparin so the treatment has been effective and beneficial for the child.

Third-generation cephalosporins are one of the best treatment options for upper respiratory tract infections as an alternative to penicillins.
In cases diagnosed as bacterial infections, oral cefixime treatment has given rapid results since the third day of treatment, normalizing the temperature, cough, and general condition in children.

Keywords: Third generation cephalosporins, respiratory infections.

UREMIC PERICARDITIS

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Abstract

One of the most common manifestations in uremic patients treated with hemodialysis (HD) bicarbonate are pericardial effusions or uremic pericarditis. Uremic pericarditis in uremic patients treated with HD occurs as a consequence of inadequate treatment of HD, non-compliance with dietary volume overload (between sessions of HD) of 3500-5000.

Purpose of the paper: the aim was to verify the etiology, clinical manifestations, method and methods of examination-diagnostics (laboratory images, ECG, echocardiography) and the method of treatment of uremic pericarditis.

Material and Methods: In this research klinik, observers analyzed 140 patients treated with HD over 36 months (60 were female while 80 were male with identical mean age of 58.00 ± 10.00 years treated with HD with a frequency of three times a week from 4, 5 hours at the University Clinic of Nephrology, Faculty of Medicine in Skopje.

Results: out of 140 patients treated with HD, 50 patients (of whom -20 were female and -30 were male), were manifested symptoms of uremic pericarditis.

Conclusions: The increase in the prevalence of chronic terminal renal failure (IRKT) in the last decade affects an increase in pericardial syndromes that are due to uremia and requires a more serious approach and early diagnosis and adequate treatment. Inadequate HD, dietary disregard, bulky overload), frequent infections were contributing factors. In recent years uremic pericarditis occurs less frequently, which consists of higher education of patients on the diet, adherence to the duration of HD, use of modalities and more sophisticated dialysis membranes (coated with tocopherol).

Keywords: Uremia, uremic pericarditis, Hemodialysis (HD).

ANEMITIES AS RESULTS OF COMPLICATIONS OF DIFFERENT PATHOLOGIES AND THEIR TREATMENT

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Abstract

Recently we are increasingly faced with anemia from many, many different pathologies, given the physiological importance of anemia, substitution with blood and blood products, with 2-valent iron preparations in parenteral form and so, we took a study to alleviate and alleviate the complications of anemia and precisely those with ferrodeficiency.
A.Hospitalized patients and their treatment with SIDERAL FORTE (Sucrosomial Iron)
2. Outpatients treated with SIDERAL FORTE.
Patients were included from different age groups regardless of gender, occupation, nationality, color and religion.

Keywords: Pathologies, Anemities, Treatment.

HEMIPLEGIC MIGRAINE - HM

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Abstract

Hemiplegic migraine is a clinically and genetically heterogeneous condition with attacks of headache and motor weakness which may be associated with impaired consciousness, cerebellar ataxia and intellectual disability. Motor symptoms usually last <72 hours and are associated with visual or sensory manifestations, speech impairment or brainstem aura. HM can occur as a sporadic HM or familiar HM with an autosomal dominant mode of inheritance.
Familiar HM mutations are known in three genes, the CACNA1A (FHM1) gene, the ATP1A2 (FHM2) and the SCN1A (FHM3) gene and seem to have an autosomal-dominant mode of inheritance.
The aim of this study was to search how the patients during the pandemic period of COVID 19 has affected humans, so in my country exactly in my city in Tetovo I have taken a specific case which I will address in more detail diagnosis with HM. Although migraine is a common condition with a prevalence between 15% and 20% in the general population, HM is rare.
The pathophysiology of HM is close to the process of typical migraine with aura, but appearing with a lower threshold and more severity. We reviewed epidemiology, clinical presentation, diagnostic assessment, differential diagnosis and treatment of HM to offer the best evidence of this rare condition.
The management relies on the control of triggering factors and even hospitalization in case of long-lasting auras. As HM is a rare condition, there are no randomized controlled trials, but the evidence for the treatment comes from small studies.

Keywords: HM, CACNA1A - FHM1, ATP1A2 - FHM2, SCN1A - FHM3, Pathophysiology, Migraine.

BLOOD DONORS IN THE TETOVO REGION IN 2019 BASED ON: SEX, NATIONALITY, RH PHENOTYPE AND HEMOSTASIS TEST

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Abstract

To ascertain strategies for encouraging reluctant donors to donate blood, we have pursued this process for 12 months in a row, in order to get the correct statistics of donators. Our research concludes that having a considerable amount of blood bags during medical procedures, decreases death rate of pregnant women up to 55% while for the surgical interventions, blood supply is necessary.

In the first month we had 68 blood donors, in the second month there was an increase of benefactors, we had 92 blood donors while in the third month again we had a decrease in the number of donators, there were 68 donators, in the fourth month we had 83 donators, in the fifth month there were 63 donators, in the sixth month we had 82 donators in total, in seventh month we got 70 donators, in the eighth month there were 86 donators, in ninth month there were 88 donators, in tenth month we got 83 blood donors, in the eleventh month we had 94 donators and in the last month in which we were able to pursue the process, there were 77 donators in total, all of them from both genders.

We believe that our fundamental research will raise the awareness of the importance of blood donation, even though we have shown statistics of our small town, we are sure that there are many other cities with kind people.

"Tears of a mother cannot save her child's life, but your blood can".

Keywords: Benefactor, Reluctant donors, Mortality.

GASTROINTESTINAL COMPLICATIONS - COVID-19

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Abstract

Gastrointestinal bleeding (GIB) is a symptom of a disorder in your digestive tract. The level of bleeding can range from mild to severe and can be life-threatening. This symptom has been noticed among patients with COVID-19 hospitalized in the Clinical Hospital of Tetovo. Recently, anticoagulation has shown to decrease mortality but it‘s still unclear if it contributes to increased GI bleeding. There is a significant occurance of massive gastrointestinal bleeding in those patients.

Aim of this research: To examine and document the risk factors that impact the incidence of gastrointestinal bleeding in COVID-19 patients and to study the positive and negative effects of anticoagulant therapy. As anticoagulants were used - Fraxiparine,Enoxaparine Aspirine, Xarellto, therapy with corticosteroids.

Methods: This research has been done at the Clinical Hospital of Tetovo in 2020. We retrospectively reviewed all patients admitted with COVID-19, from 26th March 2020 to 31st December 2020. We collected data including demographics, comorbid conditions, laboratory parameters, steroid and anticoagulant use. This research included 400 COVID-19 patients with gastrointestinal bleeding.

Results: Out of a total number of 400 COVID-19 patients with gastrointestinal bleeding (GIB), 42% of them, which means 168 patients, have resulted with symptoms of hematemesis, melena, anorexia, vomitus and abdominal pain.

Conclusion: The use of anticoagulants in some cases has been a risk factor for the incidence of gastrointestinal bleeding, especially in

patients who have had stomach and duodenum problems, such as: gastric and duodenal ulcer, or acute erosive gastritis.

Keywords: COVID-19, gastrointestinal bleeding, anticoagulation, melena.

ANTI-COVID-19 VACCINE - AN HISTORICAL ACHIEVEMENT, ITS SUCCESS AND EXPECTATIONS

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Abstract

The coronavirus SARS-Cov 2, cause of the infection known as Covid-19 ka has taken so far the lives of about 15 million people worldwide according to recent studies. This number is 3 times higher that the number of deaths reported by corona virus worldwide. Deaths reported by Covid-19 are about 6.5 million while the number of excess deaths during the pandemic is 14.9 million persons. For Albania the Covid-19 reported cases are 276266 from which 3496 have died. Using the same principle to calculate the real number of deaths from Covid-19 we come to an estimate of 10 thousand persons. This remains to be confirmed comparing the number of Covid deaths with the number of total deaths during two years of the pandemic. According to the WHO the only effective way to lower the mortality and the severity of Covid-19, especially in patients older than 60 and those with risk factors, remains the vaccination with the available vaccines approved for emergency use. So far in Albania have been administered about 2.8 million vaccine doses while worldwide about 11.5 billion doses. Until 31st of December 2019 the time of development for a vaccine was between 4 and 20 years. Experience in working for a vaccine against SARS-Cov 1, MERS and cancer immunotherapy, made it possible in less than 10 months to have available 10 different vaccines anti Covid – 19 and more than 60 others on the way. The Pfizer/BioNTech vaccine was the first to be prepared and approved for public use. It was produced using a new technology never used before in vaccine preparation. The vaccine stimulates our immunity introducing the

mRNA for the Spike viral protein. The protein is synthesized in our cells, presented to lymphocytes and triggers antibody production as if the virus itself was introduced into our system. The vaccine resulted to be 95% effective and pretty safe according to the monitoring bodies, opening the way for emergency use in the population. The Vaccination Comity of each country, including our own with an extensive experience in vaccination campaigns, would control each phase of the process like planning, administration and the completion of the vaccination process in Albania.

Keywords: vaccination, Covid – 19, mARN.

GLAUCOMA – THE SILENT THIEF OF EYESIGHT

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Abstract

Glaucoma is a progressive disease (group of dysfunctions) which brings damage to the optic nerve, thus leading to the reduction of the eyesight.

The main indications of glaucoma are: increased intraocular pressure, excavation of the optic nerve disc and occurrence of scotomas in the visual field. Humor aquosus is formed regularly in the vitreous body which from there passes through the posterior chamber and with the help of pupil it passes towards the anterior chamber as it ends in the Schlemm‘s canal (iridocorneal angle).

Normal intraocular pressure varies from 1,3–2,9 kPa or 10–22mmHg.

There are several methods by which we can measure intraocular pressure: digital (palpations), impressive, aplantic and pneumotonometry.

Performed examinations during glaucoma diagnostification are: tonometry (measurement of the intraocular pressure), biomicroscopy (evaluation of anterior and posterior chambers depthness), gonioscopy (measurement of the iridocorneal angle), and perimetry test (visual field), OCT (optical computer tomography).

Glaucoma classification: POAG (primary open angle glaucoma), Acute glaucoma (with closed angle), Secondary glaucoma (occurs as a consequence of other eye dysfunctions) and Congenital glaucoma (genetically-determined).

The main symptoms of glaucoma are: increased intraocular pressure (>22mmHg), conjuctival and ciliary hyperemia, orbital region pain, nausea, vomiting, photophobia, mydriasis (dilated pupils), decreased visual acuity, corneal edema etc.
Glaucoma treatment can be conservative or surgical. Conservative treatment consists of beta blocker drugs (timolol), carbonic anhydrase inhibitors (acetazolamide), prostaglandin analogue (latanoprost), agonists at adrenergic receptors (brimonidine), miotic (pilocarpine), hyperosmotic agents (mannitol). Surgical treatment include: Iridectomy, YAG laser iridotomy, Trabeculectomy, Selective laser trabeculoplasty LST, iridocorneal shunts implantation etc.
Conclusion: Glaucoma is an ophthalmological progressive disease which requires prompt and qualitative treatment in order to not lead to vision loss. Preventive methods such as: screening of the intraocular pressure in adults over 40 years of age can detect and prevent the disease in time and maintain vision throughout life.

Keywords: Glaucoma, Intraocular Pressure, Optic Nerve Damage, Visual Field, Humor Aquosus.

REPORT ON THE COVID 19 SITUATION IN REPUBLIC OF NORTH MACEDONIA IN THE PERIOD 21.03 –01.05.2022, AND PRIOR, AS WE ARE APPROACHING THE END OF COVID MASS RESTRICTIONS

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Abstract

Covid - 19, is a virus induced pandemic, firstly introduced as such by World Health Organization on 11th March 2020, with the first reported cases on 17th November 2019, in Wuhan China. The first reported case in North Macedonia was on 2nd February 2020. This pandemic swept the whole world with a mortality rate of 3.4% of all infected cases, presenting mainly with respiratory symptoms, and required intensive care. It was induced by SARS – COV – 2, with many different genetically variants such as alfa, beta, gamma, epsilon, zeta, eta, theta, iota, kappa, lambda, mu, delta, and omicron, with their respective lineages. There were many restrictions taking place worldwide, conducted by the World Health Organization, from social distancing, mandatory public mask wearing, and public movement restrictions with introduced police hours, also closure of public educational and recreational institutions for various and

necessary periods. Within the health care system changes took place, considering staff members and units, with the intention of prioritizing covid infected individuals. This report presents cumulative information, emphasizing the 21.03 – 01.05 2022 period, that were provided by the Ministry of Health in Republic of North Macedonia, regarding incidence, prevalence, mortality, lethality, cured, active, and currently infected cases, according to regions, age groups and gender in more details. This report also includes the number of vaccinated individuals, number of doses and the type of vaccines, analyzed by age groups.

Keywords: COVID – 19, North Macedonia, reported cases, crisis management, vaccination.

IMPACT OF LEVEL OF EDUCATION AND INCOME ON THE QUALITY OF LIFE OF PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Abstract

Objective: Diabetes Mellitus is a group of metabolic abnormalities characterized by an increase in blood glucose levels due to defective secretion of insulin, the malfunction of insulin, or both.
Aims and Objective: The main aim of this study is the measurement of the impact of level of education and income on the quality of life of patients with Type 2 Diabetes Mellitus.
Material and methods: A cross-sectional transverse study was performed on patients with Type 2 Diabetes Mellitus (T2DM), in permanent residents of Tetovo and the surrounding area. The sample of the 373 study participants was taken from the total number of T2DM patients in this region. Out of these, 214 were female (57.37%), while 159 were male (42.63%). The research was conducted during the period of 2019-2021.
Results: After analyzing each question answered for the 5 main domains of the D-39 questionnaire, the results obtained from 1 = no effect at all on QOL to 7 = big effect on QOL were transformed on a scale from 0 - 100. Our results show that for <0,05 people with higher level of education had significant better QoL than people with high school which had better QoL than people with elementary school. Also our results show that people with monthly income >15.000 den have worse QoL than people with a monthly income of <15.000 den. The result was significant only for domain ―Anxiety and worrying".
Conclusion: This study found that people with no education or lower level of education have worse quality of life than people with

higher level of education. Monthly income did show to be a significant factor for determining quality of life. Overall result didn‘t have significant statistical difference between different incomes. The only difference was on the domain ―Anxiety and worrying" where people with monthly income <15.000 den had worse QoL compared to other group.

Keywords: QoL, Diabetes Mellitus, Anxiety, Income, Education.

POLYCYSTIC OVARY SYNDROME AND HYPERINSULINEMIA

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Abstract

Introduction: PCOS is characterized by reproductive disorders as well as hyperandrogenemia. There is a strong link between PCOS and hyperinsulinemia, based on epidemiological, etiological, and genetic studies. Polycystic Ovary Syndrome (PCOS) is a common pathology in women of reproductive age.
Aim of the paper: To confirm the association of hyperinsulinemia with the exacerbation of the syndrome, the appearance of hyperinsulinemia as a result of obesity. Subsequent hirsutism from hyperandrogenism as a result of disruption of steroid metabolism by insulin resistance.
Materials and methods: The study included a total of 100 female patients of whom 70 are diagnosed with polycystic ovary syndrome and 30 are the control group. Patients are of reproductive age with a mean age of 25 years.
The following parameters were analyzed in patients: Weight, height, waist circumference, waist circumference, waist / hip ratio, insulin, glucose, Follicle-stimulating hormone, Luteinizing hormone, LH / FSH, Testosterone, Cholesterol, HDL, LDL, Oralglicer Tolerant Tests.
Results: The average BMI of all patients is 23.4; The average for Insulin is 11.58, for the average Follicle-stimulating Hormone 4.36 and for H. Luteinizing 7.25.

The standard deviation of the above parameters is as follows: BMI = 2.8; LH = 0.67; FSH = 0.53; Insulin = 2.71.
Conclusion: The results showed a significant correlation between obesity and hyperinsulinemia ($p < 0.0001$). Syndrome and Hirsutism clinic.

Keywords: Polycystic Ovary Syndrome, Obesity, Hirsutism, Insulin Resistance.

MEDICAL MANAGEMENT AND TREATMENT OF EPILEPTIC ATTACKS AND THEIR SURGICAL TREATMENT

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Abstract

The word epilepsy is derived from Greek words meaning ―to seize upon" or a ―taking hold of." Our predecessors referred to it as the ―falling sickness". Epilepsy is ―a disorder of the brain characterized by an enduring predisposition to generate epileptic seizures." A seizure is a transient disturbance of cerebral function caused by an abnormal neuronal discharge.

Epilepsy affects at least 65 million people globally, most in underserved regions. Depending on which areas of the brain are involved, epileptic seizures may consist of loss of awareness with body shaking, confusion, and difficulty responding; visual or other sensory symptoms; isolated posturing or jerking of a single limb; or brief loss of awareness. Many patients with an isolated first seizure never have another seizure; however, after a second unprovoked seizure, the risk of recurrent seizures is high, and individuals with two or more unprovoked seizures separated by at least 24 hours are diagnosed with epilepsy. Over two-thirds of all epileptic seizures begin in childhood and this is the period when seizures assume the widest array of forms. In the practice of pediatric neurology, epilepsy is one of the most common disorders, and the chronicity of childhood forms adds to their importance. If prolonged or repeated every few minutes, the condition termed status epilepticus, it may threaten life. For all these reasons, physicians should be informed about seizure disorders, drug treatment, and in cases when the person's daily life becomes difficult by their frequency and intensity to suggest surgical interventions.

Keywords: Epilepsy, Epileptic Seizures, Status Epilepticus, Diagnosis, Treatment.

HYPOSPADIAS SURGERY: CURRENT DILEMMAS!

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Abstract

Background: Hypospadias is a challenging field in urogenital reconstructive surgery. Over the past 150 years, a variety of surgical techniques is used for its repair.
Objective: The objective of this study is to list the main dilemmas and questions raised by intraoperative and postoperative hypospadias repair, complications and its long-term evaluation.
Material and methods: The study included 248 boys with distal, midshaft and proximal hypospadias, as well as secondary hypospadias. Reasons for surgical treating of hypospadias include: a normally sited meatus at the tip of the glans, spraying of urinary stream, inability to urinate in standing position, a complete release of chordee with straightening of the penis, fertility issues because of difficulty with sperm deposition, and decreased satisfaction with penis appearance. During fourteen years‘ experience, we analyze: optimal timing of surgery, controversies in use of testosterone before surgery, different types of urinary diversion, penile degloving, one or two-stage urethroplasty, various factors in deciding the type of technique, , use of secondary flap, suture material, contorversies in type of dressing, postoperative complications, in particular appearance of urethrocutaneous fistula.
Results: We corrected hypospadias between 6 and 24 months of age. Indication for use of testosterone before surgery in our study was diameter of the glans < 14 mm or penile size < 25 mm. We use a suprapubic urinary diversion with a puncture catheter that drains into a urine bag or on a diaper. Because no single procedure works

for all types of hypospadias, we choose a suitable technique after correction of chordee. Urethral plate preservation procedures and one-stage techniques were our preferences. We mandatory use penile degloving in all cases. Usually polyglyconate absorbable sutures were used for all layers closure. In addition, a healthy-vascularized tissue for covering neourethra were used in overall surgical success. Dressings following our hypospadias repair consist in use of gentle compression of penis for hemostasis and immobilization of the wound. The follow-up period was 1, 3 and 6 months.

Conclusions: Based on this study, the following conclusions has been reached: a) the basic principles of hypospadias surgery are to achieve orthotopic neomeatus with smooth and forward directed urinary stream, correction of ventral curvature for full and proper erection, the highest possible aesthetic appearance of the penis and free sperm transport; b)from the psychological point of view, optimal timing of surgery is between 6 and 18 months of age; c) we observed that use of testosterone before surgery have significant effects on penile size and diameter of glans; d) the importance of urinary diversion for preventing postoperative complications is not clear; e) urethral plate preservation urethroplasty is the procedure of choice in both distal and proximal hypospadias; f) penile degloving is an important step in orthoplasty and this procedure alone can correct ventral curvature; g) polyglyconate absobable sutures and the technique of suture placement may contribute significantly in the outcome of hypospadias surgery; h) vascularized secondary flap cover over neourethra definitely helps in overall surgical success; i) dressings may not be indicated for all hypospadias repairs; j) an ideal follow-up will be at 1, 3, 6 months.

Keywords: hypospadias, dilemmas, repair.

RECENT RECOMMENDATIONS FOR VACCINATING CHILDREN AGAINST COVID-19

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Abstract

The COVID-19 pandemic remains a serious health problem worldwide. Currently the best and safest way to protect against this virus is vaccination. Regarding pediatric ages, attitudes about whether they should be vaccinated or not is a topic of discussion among pediatricians. The main arguments why children should be vaccinated are based on the risk of infection with the COVID-19 among children, the risk they pose to the spread of the virus in their communities, the closure of schools, and so on.

Aim of the study: The main purpose of vaccinating children against the COVID-19 virus is not only to protect them from infection and acute illness, but also to avoid the long-term consequences of this disease. In this paper we will present the views of WHO and the most prestigious pediatric associations about vaccination of children of different age groups. Benefits and risks of vaccination will be the subject of this paper.

Recommendation: It is well known that clinical concerns and disorders of SARS COVID - 19 infection are much easier in children than in adults, but children infected with this virus are at risk of two long-term effects, which can have lifelong consequences. The first is an inflammatory multisystem syndrome, also known as "multisystem inflammatory syndrome in children ". The second is the persistence of symptoms after SARS-CoV-2 infection, which is clinically manifested with a heterogeneous group of conditions. Numerous studies show that vaccination of children aged 5-12 years with messenger RNA (mRNA) vaccines like the Pfizer and Moderna COVID-19, do not pose any risks and especially are not associated

with the disorders like autism. Studies for children under five years of age do not provide definitive recommendations due to the small number of children of these ages who have been vaccinated.
Conclusion: It is estimated that the risks and benefits of vaccinating children against SARS COVID - 19 vary depending on their age, i.e., whether they are infants, young children or adolescents. Children under the age of five are still the most controversial group about whether they should be vaccinated or not.

Keywords: COVID – 19, vaccination, children.

UNILATERAL INFILTRATION OF THE OPTIC NERVE AND ORBIT REVEALING RELAPSE OF AN ACUTE LYMPHOBLASTIC LEUKEMIA

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Abstract

Introduction. Ocular tissue remains a sanctuary for leukemic proliferation because of poor chemotherapy penetration of the blood-retina and blood-aqueous barriers. Thickening and enhancement of the optic nerve in patients with underlying leukaemia should be considered suspicious for leukaemic infiltration and should be differentiated from optic neuritis. The leukaemic infiltration of the optic nerve is more common in children. The chemotherapeutic drugs cannot penetrate the blood-brain barrier and the invasion of leukaemic cells in the small optic canal can interfere with the flow of CSF.

Purpose. To describe the clinical presentation and imaging features of a leukemic optic nerve and orbit infiltration. We present a case of unilateral infiltration of optic nerve and orbit revealing a relapse of an acute lymphoblastic leukemia.

Methods. A 10-year-old child with past history of treated acute lymphoblastic leukemia 5 years ago, presented to our clinic with decreased vision, eye pain during ocular motility and severe protrusion and exotropia of the left eye. At the moment of our examination, pediatrician confirmed that the child is healthy and no signs of leukemia.

Results. At presentation, we noticed very pronounced protrusion and exotropia of the left eye, lagophthalmos and conjunctival hyperemia. Ocular examination revealed normal visual acuity in his right eye and decreased visual acuity in his left eye 20/200. Pain

during ocular motility and limited elevation, abduction and adduction as well convergence insufficiency.
Ishihara test showed impaired red-green colour vision. Diminished light brightness and contrast sensitivity in his left eye and a relative afferent pupillary defect was present.
Fundus examination showed severe hyperaemia and oedema of the optic disc with blurring margins and whitish-yellowish peripapillary leukemic infiltrates, flame-shaped haemorrhages, few dot and blot retinal hemorrhages in the middle periphery of the retina and towards superior and inferior temporal retinal vein, as well as dilated and tortuotic retinal veins.
MRI result showed the presence of a perineural lobulated expansive lesion that infiltrates the intraconal fat with loss of its signal as a sign of infiltration. The described mass displaces the eyeball ventral and causes axial proptosis while posteriory extends to the prechiasmatic segment of the left ocular nerve with infiltration of the same; penetrates into the posterior third of the ethmoidal sinus with infiltration of the ethmoidal cells as well as towards the left cavernous sinus, para and suprasellar with dural involvement beside the left middle cranial fossa. The orbital apex is dilated and completely occupied by the described substrate. Size of this mass was about 5.3 cm and 4.5 cm.
We diagnosed as relapse of leukemic optic nerve and orbit infiltration and referred to the pediatrician-oncologist for further management. Bone marrow biopsy (myelogram), flow-cytometry and lumbar punction was done and demonstrated blast infiltration and therefore was confirmed ocular relapse of the lymphoblastic leukemia.
Conclusion. Isolated optic nerve relapse of leukemic infiltration is of paramount importance to early diagnosis, as vision can be saved if treatment is initiated promptly. Optic nerve leukemic infiltration has a severe prognosis. Ophthalmic assessment is essential in patients with ALL in order to diagnose an early ocular involvement and the patient's vision can be preserved if treatment is initiated promptly.

Keywords: infiltration, optic, nerve, orbit, acute, lymphoblastic, leukemia.

THE IMPACT OF MEDIA ON OVERWEIGHT AND OBESITY AMONG CHILDREN

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Abstract

Overweight and obesity among young people are one of the crucial problems of public health in the 21st century. **39 million children under the age of 5 were overweight or obese in 2020**. Obesity is preventable.Since media became more attractive, the number of obese young people has increased rapidly, suggesting that media has a great impact on eating habits.

Aim: Presentation of media influence on overweight and obesity development in children and adolescents, with the special interest in advertising and marketing strategies which are addressed to these age groups.

Materials: The research has been conducted on the group of 100 children (44 aged 7 - 10, 56 aged 10 - 13). The children were asked about time spent on watching TV or playing computer, their favorite advertisement, the food eaten at school, and the snacks most often bought in a school canteen. Results: Children spend approximately 4-5 hours on watching TV or playing computer, mostly during their parents' working hours. 38% of interviewees eat during breaks in TV programmes. 7-8 years old children know advertisements very well, however, do not understand them completely. From the age of 11, children understand advertisements well but still over 60% of them usually buy well-known products, preferably those recommended by media stars. 78% of children do not eat sandwiches at school; they consume mainly chocolates and sweets and chips bought in a school canteen.

Conclusions: As media affects children's eating habits in a great way, it seems that there should be established history law

regulations prohibiting: advertising of sweet products before 7 o'clock p.m., and interrupting children's programmes by broadcasting advertisements. Moreover, parents should teach their offspring a more critical attitude towards advertising.

Keywords: Obesity, overweight, children, media.

MANAGEMENT OF THORACO-ABDOMINAL TRAUMA AFTER GUNSHOT WOUNDS. A CASE REPORT AND LITERATURE REVIEW

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Abstract

Trauma remains the leading cause of mortality in the population, especially those at a young age. Penetrating thoraco-abdominal injuries can be fatal thus involving a series of combined systems. When these injuries occur, prompt diagnosis and prompt treatment of damaged organ damage are of paramount importance. The use of updated management guidelines is more in the weapons for the emergency surgeon.

Pseudo aneurysms of the right hepatic artery are uncommon; appearing in approximately 1% of hepatic trauma cases and have a late onset. Although they are usually asymptomatic. Traumatic right hepatic artery pseudo-aneurysms are potentially life-threatening complications that can occur after blunt abdominal trauma and penetrate abdominal trauma .The investigation and management of these lesions must be individualized according to the clinical scenario. They should always be treated because of the high risk of complications, especially late hemorrhages. Currently the treatment of choice is endovascular embolization with coils or the exclusion of the pseudo aneurysm using other intravascular devices. But in developing countries the opportunity to have such equipment is impossible and in these conditions, the method used is exploring pseudo aneurysm The lateral defect in the right hepatic arterial wall was sewn with non-absorbable sutures, occluding the vessel; segmental hepatic arterial flow was maintained by collaterals. Within the aneurismal cavity, a friable, necrotic area located

anterior-inferiorly in the segment VII-VIII of the liver. We present a case of post-traumatic hepatic artery pseudo aneurysm that was successfully treated using this exploring pseudo aneurysm and ligature of the injured artery.
To summarize, for the treatment of thoraco-abdominal injuries it is necessary to know all therapeutic options and to evaluate the convenience of each one. In the absence of sophisticated imaging and intra-arterial embolisation, we contribute by adding our experience to the case reported in the bibliography.

Keywords: chest trauma liver trauma, gunshot wound

EXAMINATION OF APPROACHES TO LEARNING AND ACADEMIC ACHIEVEMENT OF NURSING STUDENTS AT UBT COLLEGE

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Abstract

Introduction: Students use different approaches during learning. Two approaches to learning have been mainly identified. The deep approach to learning arises from students 'intrinsic motivation for the need to understand content meaningfully. Whereas, the surface approach to learning involves the external motivation of students to pass the exams with minimal effort. Academic achievement is defined as performance results that indicate the degree to which a student has met specific goals during their studies.
Purpose: It was to examine whether the type of approach to learning predicts the academic achievement of nursing students.
Methods: The research used transvesal design. The research involved 137 students of the Nursing Studies program at UBT College. Students completed the R-SPQ-2F questionnaire. Data were analyzed with SPSS-26.
Results: Most nursing students who use the deep approach to learning reported a grade point average of 8.6-9.4, while students with surface approach to learning had a grade point average of 6.0-7.5. First-year students preferred the deep approach to learning, while third-year students preferred the surface approach.
Discussion: The approaches to learning predict the academic achievement (grade point average) of nursing students. Students who use the deep approach reported higher grade point average, as opposed to students who used the surface approach who reported lower grade point average.

Keywords: approaches to learning, academic achievement, nursing students, UBT College.

EFFICACY AND RATIONALE BEHIND COMBINATION OF ANTIOXIDANT THERAPY IN MEN WITH OLIGOASTENO-ZOOSPERMIA AND ELEVATED CASPASE-3 ACTIVITY

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Abstract

The rate of male infertility globally without exception, has attracted the attention of healthcare professional and pharmaceutical companies.

To verify the effectiveness of combination therapy with antioxidants as recommended in some elaborated papers in major medical libraries such as: PubMed, Cochrane, Scopus and Elsevier, a total of 57 individuals were enrolled in the study after fulfilling the inclusive criteria. Standard semen analysis along with biochemical analysis of Caspase-3 levels were done before receiving therapy and after six months. The groups were randomly divided into the individuals who received the combination of the antioxidant formula (n=34) and the individuals who received placebo therapy (n=23).

After 6 months of treatment, there was an improvement in concentration (mean & SD, 31.26 ± 3.39) and motility (46.18 ± 5.97) in the group that had received antioxidant therapy for 6 months with statistically significant difference ($p<0.001$), whereas the placebo group showed no statistically significant improvement after the 6 months period in concentration (9.96 ± 3.23; $p=0.950$)

nor in motility (30.52 ± -5.29; p=103). In the group treated with antioxidants we had a reduction in caspase-3 activity (2.21 ± 0.62; p <0.001), whereas in the placebo group the mean caspase-3 activity had no statistically significant changes (4.05 ± 0.73; p=0.275).
Such therapy seeing the cost-benefit of the same in situations when the consequence of male infertility is increased free radical activity, is justified and contributes positively to the process of conceiving natural fertilization.

Keywords: Male infertility, antioxidants, capase-3, fertilization.

DIAGNOSTIC VALUE OF MATERNAL SERUM INHIBIN A IN PREDICTION OF ADVERSE PREGNANCY OUTCOME

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Abstract

Intoduction: Proteomic studies that work on specific proteins are released from the fetus to the maternal blood circulation, are offering new abilities for identification protein markers in noninvasive prenatal diagnosis.

Objective: The aim of this research is to find a correlation of serum biomarker Inhibin A, in the second trimester of pregnancy, as possible predictor for early diagnosis of adverse perinatal outcome.

Material and method: This cohort study is realized in a SHGO "Mother Theresa"-Skopje, from November 2019 to June 2021. It includes 673 pregnant women, 18-23.6 g.w., followed up till delivery, by serum Inhibin A, fetal biometry, amniotic fluid quantity, placental maturity and volume, and gestational week and bodily measures of the fetus in delivery.

Results: From 673 respondents, 523 (77.7%) had favorable pregnancy outcome and made up the control group, while in 150 (22.3%) of pregnant women had adverse pregnancy outcome and made up the examined group (EG). From EG, 48 (7.13%) had preeclampsia, 32 (4.75%) had pregnancy induced hypertension, 20 (2.97%) had fetus small for gestational age, and 50 (7.43%) had intrauterine growth retardation.

Conclusion: Inhibin a value as a single marker for adverse pregnancy outcome was found as very good predictor, while it's combination with placental volume in the second trimester of pregnancy, represented a very good test for pregnant women with adverse and favorable pregnancy outcome.

Keywords: Inhibin A, screening in the second trimester, pregnancy outcome.

MOTIVATION OF BLOOD DONORS DURING THE COVID-19 PANDEMIC IN THE REGIONAL CENTER FOR TRANSFUSION MEDICINE TETOVO WITH OTHER SERVICES GOSTIVAR, KICEVO AND STRUGA

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Abstract

Donating blood and saving the lives at the same time of the sick or injured people who need blood the most, is a high moral, human and solidarity act as well as a general social obligation. The institute is fully committed by organizing different activities such are promotional activities, announcing blood donation activities within the hospital and university locations, social media,newspapers, posters in various formats, brochures, TV spots and radio broadcasts. Data from in-service and out-of-service blood donation diaries were used, including the service of transfusion medicine in Tetovo, Gostivar, Kichevo and Struga, as well as questionnaires which provide a reliable anamnesis for the recruitment of blood donors. A systematic review and meta-analysis were performed to identify the articles needed to evaluate the impact of COVID-19 to blood transfusion services. There is not a statistic signification difference in the aspect of nationality, gender, residency and type of blood donation volunteers in the pre-pandemic and after the onset of pandemic Covid-19. In all services the total number of donors for this two year period in pandemics is 11098 donors of which donors volunteers 9478 (85.41%), family 1620 (14.59%). We can say that we have been working hard for the eradication of family blood donation, and just when we were ready, the pandemic hit us reversing the process in the next two years, where we have an significant ($p<0,05$) increase in family donation again by almost

13% . From the obtained results we can see a permanent increase in the number of voluntary donors even in times of pandemic with Covid-19.

Keywords: Motivation, blood donation, Covid-19 pandemic.

SURGICAL TREATMENT OF RECTAL PROLAPSE CASE REPORT

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Abstract

Introduction: Many factors have been identified as a possible cause of rectal prolaps. Despite the fact that it is not a life- threating condition, its clinical presentation varies, and sometimes it can present as an emergency. We presented a patient with prolapse of an unusually large segment of the rectosigmoid colon caused by chronic constipation, as an incarcerated segment repaired surgically.
Case report: A 72-year-old female patient was referred to the Emergency Department in bad condition with severe pain in the perianal region. On examination a complete rectal prolaps as well as a part of sigmoid colon were found. Macroscopically, the prolapsed segment appeared edematous, livid, with ulcerations. An attempt to manually reduce prolapse failed, therefore resection of 50 cm of sigmoid colon with rectopexy had to be performed. No complications occurred and the patient was without symptoms six months later. Colonoscopy did not reveal any abnormality.
Conclusion: Although the preoperative management and preparation of the patient was limited, emergency surgical intervention for such a case was the strategy of choice due to magnitude of the prolapsing segment. It provided a successful and permanant solution.

Keywords: surgical treatment, rectal prolaps.

GEREATRIC PATIENTS IN EMERGENCY DEPARMENT; FEATURES OF CARE FOR THEM

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Abstract

Background: Aging is a global phenomenon. Over the years, the chronic diseases carried by the elderly increase. These people are vulnerable to both the effects of the disease and the impact of the care environment. These demographic changes that result in an increase in the severity of chronic diseases, in addition to functional, financial and transport constraints, translate into an increase in the number of presentations in Emergency Department (ED). This in turn is accompanied by a higher percentage of hospitalizations, greater consumption of human and material resources, longer stay days and a higher percentage of returns to ED and hospital. (within 3 months of leaving ED, 5% die, 20% relapse and 20% return at least once to ED 1 ; age> 65 years occupy 53% of frequent users, versus 41% of non-frequent users; p = 005).
Methodology: The study extends to the period 1 January-31 December 2019. Place of study: Emergency department, UHT –Mother Teresa". The Emergency Department patient registry and the electronic data registry at UHT –Mother Teresa" were used to collect the information. Data analysis was performed with SPSS package, version20.0.
Results: Emergency assessment and management of these patients presents difficulties (underestimation or ignorance). Obtaining a medical history, due to frequent functional, cognitive and sensory impairments, or depressive states, which reduce their communication skills, often becomes impossible. Delirium occurs in 10-20% of elderly patients in the emergency room, and up to 75% of cases cannot be diagnosed by emergency physicians 1. The

emergency physician, in his daily practice must adopt the basic principles of geriatrics in relation to with rapid decision making, benefit / loss assessment of treatment, quality of life and multidisciplinary care.
The main complaints of the elderly in DU are, chest pain (30%), dyspnea (15%) and abdominal pain (10%). The main challenge in the care of these patients is the modification of the clinical course, the response to treatment and the results, as a result of age changes. Atypical symptomatology is common at these ages. Nonspecific complaints, such as general weakness, are among the top 10 presentation symptoms in DU. Neuro-imaging study is important to differentiate acute or chronic weakness, as in about 75% of cases are the consequences of Cerebrovascular Accidents (ischemic or hemorrhagic).
Conclusion: The emergency physician, in his daily practice must adopt the basic principles of geriatrics in relation to with rapid decision making, benefit / loss assessment of treatment, quality of life and multidisciplinary care.

Keywords: elderly, ED, clinical presentation.

LIFE SATISFACTION IN PATIENTS WITH CHRONIC DISEASES

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Abstract

The purpose of this study is to assess the degree of life satisfaction in patients with chronic diseases.
Data collection was performed through non-experimental methodology in quantitative form and the application of an appropriate questionnaire to measure life satisfaction in patients with chronic diseases. The sample included in this study is from 120 patients in the municipality of Zhelino in the Republic of Northern Macedonia.
Life satisfaction is the way of entertaining the individual, establishing healthy social relationships, fulfilling activities in certain periods, and emotional well-being. Through comparative statistics were found statistically significant differences in the level of life satisfaction according to the type of disease in chronic patients, also significant differences were found according to the gender, age, and duration of the disease of the respective patients.
Correlation statistics found statistically significant links between life satisfaction and disease duration in chronic patients, and a correlation was also found between life satisfaction assertions and disease duration.
The results of this study are of particular importance for health institutions, social care centers, and the ministry of health by providing important correlational and comparative statistical data on the degree of life satisfaction and chronic diseases.

Keywords: satisfaction, life, patients, chronic diseases.

THE PREVALENCE OF KNEE OSTEOARTHRITIS IN ADULT POPULATION, IN ALBANIA

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Abstract

Background: Osteoarthritis is a common arthropathy of the knee. The prevalence of the disease in the adult patients is 5.6%. The aim of the study was to measure the prevalence of knee osteoarthritis among adults with knee osteoarthritis. We used the American College of Rheumatology criteria for the diagnosis of primary osteoarthritis of the knee joint.

Materials and methods: The study extends to the period 1 January 2015-31 December 2019. Place of study was UHT "Mother Teresa". The electronic data registry at UHT "Mother Teresa" were used to collect the information. We made sure that a patient registered only once in the database. Data analysis was performed with SPSS package, version20.0.

Results: A total of 589 patients were hospitalized with osteoarthritis during the study period, of which 308 patients with gonarthrosis (knee arthropathi). The mean age of the population was 42.73 ±13.7 years. Seventy five percent were female. The factors found to be associated with osteoarthritis were age (P =0.003), obesity (P =0.017), previous knee injury (P = 0.037) predisposition (p=0.042) and hard work (P =0.02).

Conclusion: Osteoarthritis is one of the most common rheumatologic problems. The risk factors of the disease are advancing age, obesity, previous knee injury, predisposition and hard work.

Keywords: knee, osteoarthritis, adult, population.

TREATMENT AND IDENTIFICATION OF CASES OF RESPIRATORY PROBLEMS IN CHILDREN IN THE DISTRICT OF SHKODRA FOR THE PERIOD JANUARY 2020- MARCH 2021

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Abstract

Respiratory diseases occupy the second place in Albania and are quite common in children. Respiratory infections are most often caused by one or more viruses, as: rhinovirus, adenoviruses, influenza, parainfluenza and, in some cases, can be caused by bacteria where the most common are: S.pneumonie, hemophilus influenzae, moraxella catalis, streptococcus pyogenes and mycoplasma pneumoniae. Since the respiratory system in children is more sensitive due to the weak immunity they have, it is precisely these ages that are most affected by respiratory diseases. Since the respiratory system in children is more sensitive due to the weak immunity they have, it is precisely these ages that are most affected by respiratory diseases. They are diseases that we encounter most in the winter season. In the realized work, the respiratory diseases that are most encountered, based on the study of the cases registered in the regional hospital of Shkodra, are bronchitis, laryngitis, bronchopneumonitis, pneumonia, and tonsillitis.

The Aim: The aim of this study is to identify, treat and evaluate cases of respiratory problems of children in the pediatric ward at the Regional Hospital of Shkodra.

Matherials and methods. The children taken in the study are the cases presented in the pediatric ward at the regional hospital of Shkodra. The study included cases recorded in hospital records corresponding to 622 cases from January 2020 - February 2021.

From these data it resulted that 146 cases were children with bronchitis, 89 cases with laryngitis, 255 cases with bronchopneumonia, 32 cases with pneumonia and 100 cases with tonsillitis. In this study, different pediatric age groups were taken, according to gender and place of residence. The data was processed in microsoft office excel 2007.

Results and discussion. Based on the study done in the medical records of young patients, it turns out that children affected by respiratory diseases, different ages and children of both genders. For these years it has been decided that there should be no respiratory disease in bronchopneumonia translated into all pediatric ages.

Keywords: Respiration, respiratory tract, lungs, bronchi, nursing assessment.

THE DECLINE OF ALBANIAN BIRTH RATE AND LONG-TERM CONSEQUENCES IF NOT SUSTAINABLE POLICIES UNDERTAKEN

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Abstract

Albania birth rate has gone in a constant decline in last decades, according to Albanian Institute of Statistics - INSTAT, fertility rate in Albania was 2.9 birth per women in 1990 and 1.5 birth per women in 2021. The birth rate in Albania has declined intensely form 82,125 births in 1990 to 27.284 births in 2021. Up to date, there is no any sustainable long term health policy to change these data, even though since January 2019 there was introduced a symbolic incentive as a ~~"b~~aby bonus" of 333 Euro for every born child, which is one time bonus only, where other countries do have baby bonus each month until certain age in order to encourage and support young couples to have children. Different countries have focused health politics in order to balance the demographic changes in respect of aging and immigrations, as aging population is becoming one of nearest biggest problem. Albania is one of the fastest aging country according to national international demographic population data institutions. Also, there are other incentives, as infertility rate is increasing according to many latest studies, like assisted reproductive technology costs are being covered by government, and Albania is the only country in European region that yest has no such an incentive. More than 650 thousand people in Albania are over 65 years old, with a population 2.8 million people, according to the Organization for Economic Cooperation and Development, Albania ranks fourth globally for the

emigration of highly skilled people. Having said that, it is very essential to create national health incentives to create friendly, safe and prospective environment for young population and to address reproductive issues like birth rate as well, if we want to address the actual challenges we are facing as a country and not only.

Keywords: Birth rate, decline, immigration, health, policies, consequences, incentives, Albania.

PREVALENCE OF POST-TRAUMATIC STRESS DISORDER IN US MISSION OF EX-WORKER IN WAR ZONES IN IRAQ AND AFGHANISTAN, COMORBIDITY AND CORRELATION WITH SOCIAL FACTORS

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Abstract

Introduction: After the end of the war in Kosovo, many American companies engaged workers in their missions in war zones in Iraq and Afghanistan. During the three-year period March 2019 March 2022, a high prevalence of stress disorder PTSD 20.9% was recorded, accompanied by a prevalence of depressive disorders 41.2%, emotional distress 45.7% and sleep disorders 47.9%. During this three-year period there has been very little research on workers returning from US missions to war zones.

Purpose: This research aims to assess the prevalence of PTSD of former Kosovar workers and to assess the impact of social factors on the occurrence of comorbid problems.

Methodology and instruments: Cross-sectional study techniques will be applied, and specific questionnaires will be applied as instruments: Harvard Questionnaire Trauma Rating Scale- HQTRS Beck Depression Inventory-II Generalized Anxiety Disorder Assessment -GAD 7 Global Assessment of Functioning-GAF Rosenberg Selfesteem Rating Scale-RSRS.

In this research are included 98 former workers of both sexes from the city of Ferizaj with the district retina, Gjilan with the district, Vitia with the district, Lypjani, Shtimja and Kacaniku. The collected data were analyzed and processed with SPSS.

Conclusion: This research in addition to identifying PTSD prevalence will demonstrate the consequences of post-traumatic

stress disorder associated with mood disorders, anxiety and emotional distress disorder.

Keywords: PTSD, post, traumatic, stress.

INTRAVENOUS THROMBOLYSIS IN A PATIENT WITH A CALCIFIED CEREBRAL EMBOLUS: A CASE REPORT

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Abstract

Background: Recent clinical reports have been reported information on the calcified cerebral embolus as a cause of acute ischemic stroke (AIS). Middle cerebral artery is considered as the most common site of calcified embolism. In the management of AIS, thrombolysis with intravenous tissue plasminogen activator (rt-PA) is still the preferred treatment. Results of rt-PA administration remain limited. The aim of this case report is to describes background, treatment and outcome of a 74-year-old female patient with acute onset of right central facial paralysis, moderate dysarthria, right hemiplegia, and a positive Babinski sign that started one hour prior to admission in Department of Neurology in Clinical Hospital Tetovo. The patient`s NIHSS (National Institutes of Health Stroke Scale) score was 23 and his MRS (Modified Rankin Score) was level 4. Initial non-contrast computer tomography of head did not show bleeding, no acute ischemic changes, but revealed a focus of calcification (maximum value of 320 HU). Patient after tissue plasminogen activator treatment showed symptomatic improvement (NIHSS score 12, MRS 3). Three months later, the patient`s NIHSS score was 5, and his MRS was 2. She could manage all activities of daily living with assistance. Discussion: In this case, AIS can be attributed to the embolism resulting from the fragmentation of an already existing calcified embolus. This non-fresh blood clot may be one cause for the result of rt-PA administration in this case. The patient responded well to treatment, despite additional interventions can be used in the future to aid in greater improvements.

Keywords: ischemic stroke, calcified cerebral embolus.

HEALTH AND PSYCHOLOGICAL WELL-BEING OF NURSING STUDENTS IN KOSOVO

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Abstract

This study conducted on nursing students in the Republic of Kosovo, aimed to identify students well-being, gender differences and to recognize the role of COVID-19 virus infection in their psychological well-being. The instrument used in this study had a relatively high alpha a = .75 reliability where data were collected through an online survey. According to statistical rules any measuring instrument that has reliability above a = .70 gives sufficiently reliable results. A total of 227 students (72 males and 155 females), ranging in age from 18 to over 45, participated in the study. Regarding the COVID-19 pandemic, 24.2% of students stated that they had been infected with the SARS-CoV-2 virus, and 172 students stated that they had not et been infected with the SARS-CoV-2 virus. The results showed that there were gender differences in psychological well-being, and identified those affected by the SARS-CoV-2 virus and poor financial status were a negative factor in the psychological well-being of students. No differences were found from the students' place of residence to the psychological well-being. Male students were found to have higher psychological well-being than female students while students infected with SARS-CoV-2 had lower psychological well-being than students who were not infected with the virus.

Keywords: Health and psychological well-being, SARS-CoV-2, financial status, students.

OBTURATOR HERNIA CAUSE OF INTESTINAL OBSTRUCTION AND FEMORAL ABSCESS IN HERNIA SAC

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Abstract

Obturator hernia is a rare pathology, usually affecting elderly people, especially multipary women.
Patients represents with intestinal ileus, abdominal pain and the pain in the region affected (Howship-Romberg sign), not a typical clinic, elderly patients usually with other pathology that delay their appearance to the surgery department, with delays in its diagnosis or surgical interventions contributing directly to the high morbidity and mortality rates that are characteristic of the perforation of gangrenous bowels.
Obturator hernia pathology is really rare, always we should keep in mind as a cause of intestinal ileus specially in elderly, emaciated women. Treatment is always surgery. Delays in diagnosis and treatment are associated with high morbidity and mortality.
Radiologic examinations like abdominal a plain abdominal Xray and CT scan have high sensitivity in diagnosis. Early diagnosis and prompt surgery could lower morbidity and mortality.

Keywords: obturator hernia, pathology, Xray, surgery.

THE SPECTRUM OF CONGENITAL ABNORMALITIES AND SYNDROMES IN A ONE YEAR PERIOD: AN AUTOPSY BASED STUDY

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Abstract

Objective: My goal was to highlight the prenatal diagnosis and management of congenital anomalies through sharing our experience in the autopsy department at the Institute of pathology.

Material and Methods: We evaluated prenatal findings and postnatal outcomes of neonates who had an anomaly diagnosis in a one-year period 2020. A total of four hundred autopsy were performed and in 63 cases were confirmed various anomalies and were included in the study. Birth or termination preferences of mothers were recorded in all cases.

Results: The mean maternal age was 30±5.5 years and the mean gestational age at diagnosis was 22±5.5 weeks. Malformations of the central nervous system were found in eighteen of 63 cases (28%), cardiac malformations in eleven of 63 cases (17%), and malformations of digestive tract in nine of 63 cases (14%), numeric chromosomal abnormalities in seventeen of 63 cases (27%) and complex malformations in eight of 63 cases (12%).

Conclusion: Currently, pediatric autopsy is more accepted than adult autopsy because parents want more information about the death of their child and the implications for future pregnancies. The fetal autopsy is the single most directly evident investigation, which gives information that changes or significantly improves the clinical diagnosis.

Keywords: autopsy, congenital abnormalities, complex malformations.

PSYCHOTHERAPY AND ANXIETY: XANAX OR MEDICINAL PLANTS

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Abstract
The increase in stress during and after the Covid 19 pandemic has increased the number of people affected by anxiety, especially in a developing country like Albania, the pandemic had the potential to develop more consequences on mental health. Great insecurity, suicide cases in covid hospital, hospital treatment protocols were followed by an individual treatment at home. Referring to the data from the register of psychiatrists in the Fier polyclinic, the percentage of users of tranquilizers has increased, xanax remains a drug used even outside of medical prescriptions. Cases of using xanax in an irregular manner or replaced with medicinal plants at home have increased the degree of risk and secondary consequences to patients with anxiety problem. Some people may need addiction treatment for alprazolam, available as Xanax, which is part of a group of sedatives called benzodiazepines.
When addressing the causes of aggravated anxiety, patients / clients in psychotherapy enumerate irregular treatment, without consulting a doctor or self-reducing the xanax dose. There are many cases of taking the medicine in the pharmacy with the old boxes, or replacing it with medicinal herbs.
The damage shown by the indiscriminate use of the sedative drug xanax-Alprazolam, known by various trade names, is the most commonly prescribed psychotropic medication in the United States. Alprazolam is frequently prescribed to manage panic and anxiety disorders. or their replacement with medicinal plants without consulting a specialist reflects irreparable consequesnces. Many stories during the psychotherapy process bring more detailed information and consequesces of disordes from long term or irregular misuse with xanax sedatives. We, nurses, the pharmacist, can verify dosing and check for can be invaluable asset in observing and verifying that the patient is adherent, not misusing the

medication, and offerin counsel. When healthcare professionals function as an inter professional team, alprazolam therapy stands to have increased odds of being effective while avoiding adverse events, leading to better patient outcomes.

Keywords: psychotherapy, anxiety, xanar, medicinal plants.

DIAGNOSTIC VALUE UM (lung ultrasound) IN STAINING TRIASHING AND TREATMENT OF PNEUMONIA FROM COV-19

Maksim ÇELA, Elton CEKA, Yllkan TOPI

Abstract

The aim of this study is to estimate the value of lung ultrasound in diagnosis, staging triage of patients with cov-19 pneumonia. To achive this purpuse we study the grup of people (280) with the symptoms of pneumonia from Cov infection in small town of Peqin (far away from acess on CT and X-ray.) This was carry out on the month of september –december year 2020 The patiens who appear with fever, shortness of breath, and cough .all these were pozitive por test PCR .All the pation before doing ultrasound have dome measure the room Oximetry .Dr Topi has done the ultrasound with Acuson Siemens withe linear probe 7-12 MHz in 12 point of both hemithorax. The examination was ccary out in standing and lying untill to reach the PLEURAL LINE to scan in both sagital and transversal .The images of the patient with pneumonia send via what'up to MC or EC for double check and they recordet imazhe and staging the pneumonia according to Lung Score (Volpiceli et al) and the extension of disease.The patients were divided in thre grups according to Oximetry and lung ultrasound in 3 grups ;FIRST GROUP (with O2 >94% were 124 patients , 26 were with ultrasound pozitiv for pneumonia – follow up in one week and isolation home.the rest were send home SECOND GROUP with the Oxymetry 90-94% total 118 patients from them 46 were with ultrasound pozitiv for pneumonia –F/U and home and treatment at home, 69 were with ultrasound pozitiv foir pneumonia but they had accompanying other disease like hypwrtension ,diabetis, reumatic chronic this grup was difficut to menage The third groupwas with Oxymetry <90% with ultrasound pozitiv for pneumonia ,from them36 pacient isoleted amd treated with pneumonia from them 6 patient lost the battle with virus.

Conclusion-Lung ultrasound may be helpfull like preliminary triage tool in out patients or ambulatory condition.2.Serve like early diagnosis or exlusion for pneumonia of cov -19 3 It is fast method which can repeated again and again 4 This method is not only for pandemic event but will serve like like usufull tool for diagnosis for the family physiciens. 5 This method can replace the Xray and CT in diagnosis of pneumonia .6 It is usfull method to follow up and ajust treatment .6 Decrease drastically the over load in the terciar system and ICU. 7. Decrease drastically direct expenditure of the patient (10 EU/300 EU CT).

Keywords: UM, Pneumonia, COV-19.

DENTAL MEDICINE

THE USE OF L-PRF COMBINED WITH DIFFERENT GRANULATION OF DEPROTEINIZED BOVINE BONE MINERAL FOR EARLY IMPLANT PLACEMENT AFTER MAXILLARY SINUS SURGERY

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Abstract

In this study we conducted different granulation of grafted sites in S particles DBBM sites with LPRF and L particles DBBM with L-PRF. AIM Growth factors play an important role in tissue regeneration, our study aimed to investigate the effects of L-PRF to accelerate bone formation after maxillary sinus augmentation combined with different granulation of DBBM as the graft material, and the outcomes of early placement of dental implants after sinus augmentation. Matherial and methods: This randomized clinical trail was a split mouth study. Bilateral maxillary sinus surgery was obtained at 16 patients with the test group L-PRF and L-DBBM and control group L-PRF and SDBBM. After 4 weeks bone drilling was made for implant placement and the other with trephine bur for histologic analysis. RESULTS: Both materials were successful for maxillary sinus augmentation. There was no statistical significance between both groups. Conclusion: The use of L-PRF with L-DBBM shows and accelerates better new bone formation and graft volume material in 4 months. Our study suggests that with the use of L-PRF we have faster bone graft maturation and this can lead to faster implant placement period.

Keywords: L-PRF, Granulation, Implant, Surgery.

NEOVASCULAR GLAUCOMA, CORRELATION BETWEEN TO THE IRIDOCORNEAL ANGLE AND VISUAL ACUITY

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Abstract

Aim: Neovascular glaucoma (NVG) is an atrophic optic neuropathy resulting from the neovascularization of the iridocorneal angle–ICA. To analyze the findings in the iridocorneal angle at the NVG and correlationwith IOP, PNO and visual acuity.
Method: In this retrospective study, were includedpatients with NVG, of 75 male and 41 female, treated at the Eye Clinic in Prishtina, during the period of time from January 2014 until February 2022. The mean age of the patients with the changes in the ICA was 61,1 years. We have performed relevant biomicroscopy, gonioscopy, tonometry, ophthalmoscopy examination as well as visual acuity test.
Results: At the ICA we have classifiedfour stages and ascertained that there is a high and positive correlation between stages to the ICA and IOP which was variated from 25 - 59 mmHg. Visual acuity damages were in correlation with the changes in the PNO from initial stage till absolute stage.
Conclusions: All necessary measurements should be taken in order to prevent neovascular appearance, spread and development in the ICA of etiology whatever because such a monitoring will enable us to prevent the elevation of the IOP with direct influence at the PNO and visual acuity and to be successfully in managing of the NVG.

Keywords: NVG, ICA, IOP, Visual Acuity.

IMPACT OF OCCLUSAL CONFIGURATION ON PENETRATION ABILITY OF COMPOSITE AND GLASS-IONOMER SEALANT

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Abstract

The problem of penetration ability of sealants is due to the shape and type of the fissure. Therefore, the sealant which can be adapted well in narrow, deep or shallow fissures, most likely, will provide superior sealing and prevention of dental caries.

Aim: The aim of our study is the evaluation of occlusal morphology and level of penetration of composite and glass-ionomer sealant at fissure system.

Materials and methods: To realize our aim, will be conducted an in vitro study containing 40 premolars and molars extracted for orthodontic purposes, without any structural anomalies, divided in two groups. Group-I: Fissures sealed with resin based sealant (Helioseal-F, Ivoclar Vivadent AG, Liechtenstein). Group-II: Fissures sealed with glass-ionomer cement sealant (Fuji Triage, GC Corporation Tokyo, Japan)

Results: The results of statistical analysis for the first group confirmed a significant difference for the level of penetration of the sealant into the fissures, depending on the shape of the fissure ($p=0.009$). Results of statistical analysis for the second group did not confirm a significant difference for the level of penetration of the sealant into the fissures, depending on the shape of the fissure ($p=0.375$).

Conclusion: Both materials are able to penetrate the entire length of the fissure. While, in situations of incomplete penetration level, the results are satisfactory. Higher level of sealant penetration at the samples of the second group, despite the presence of Y-shape fissures, shows that except the shape of the fissures, the ability of sealant penetration is also influenced by the viscosity (consistency)

of the material. The shape of the fissure has a significant impact on the penetration level of the composite sealant, while the shape of the fissure has no significant impact on the level of penetration of the glass-ionomer sealant.

Keywords: Penetration ability, occlusal morphology, fissure sealant.

PERMANENT DENTAL ARCHES PROSTHETICALLY TREATED

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Abstract

Aim: The aim of the study is to assess the frequency of treatment of dental defects with prosthetic appliances according to gender, jaws, age groups and time period.
Matherial and methods: For this purpose in the period 2017-2021, 1785 patients were examined. From this group 52.83% of them were male patients while 47.17% were female patients. The age of the examinees was from 13 to 82 years, with an average age of 48.2 years.
The data obtained were entered into patient records using the WHO-modified oral health assessment form, adapted and modified to the nature of our study.
Results: The results show that the percentage of males is 51% and the percentage of females is 49%, while the percentage in the maxilla is 58% and in the mandible 42%.
The age group 60-69 years has a higher percentage of prosthetic appliances(31.04%), while the age group 20-29 years has a lower percentage(8.31%), and the age group up to 19 years is represented by 0%.
According to the time period, the period of 6-10 years has a higher percentage of prosthetic appliances(39.71%), while the lowest percentage of present prosthetic appliances is in the period of 30 years and more(1.15%).

Conclusion:
1. Men and women value oral health and show almost identical care for the prosthetic treatment of their dental arches.
2. Prosthetic treatment in a higher percentage of the maxillary dental arch shows the importance that patients pay to aesthetics.
3. Differences between the results of different authors regarding dental systems rehabilitated with partial prosthetic appliances, according to age groups, can be described to:
- variations during the planning of the study process
- excessive representation of certain age groups and
- types of prosthetic appliances which may have an impact on the examined contingent.
4. Prosthetic appliances in general, due to the action of biological and mechanical forces, as a result of their damage, negative action on the teeth and the supporting apparatus, as well as on the surrounding soft tissues and ridges, should be repeated every 5- 7 years

Keywords: Prosthetic appliances, dental arches, treatment, frequency.

PERMANENT DENTAL ARCHES AND FREQUENCY OF PARTIAL TOOTHLESS

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Abstract

The aim of our study is to determine the partial toothless of permanent dental arches according to:
- gender
- jaws
- age group and
- time period

Material and methods

For this purpose in the period 2017-2021 in the specialist dental clinic "Protetika Ag" in Tetova were examined 1125 patients. Of this group 52.83% were male while 47.17% were female.

The analysis of the results was done by means of descriptive statistical method, the distribution of data was shown by means of percentages, while the comparison was done by means of X2-test.

Results

The results of graph 1 show a predominance of this pathology in females with 55% versus males in 45%.

According to the results of graph 2, the mandible convincingly dominates with 62% versus the maxilla with 38%.

The results of graph 3 show that the localization of partial toothless both jaws, in absolute percentage 71% is located in the trans-canine region followed by the inter-canine region with 22% and the inter-trans canine with 7%.

According to age groups, the results of Table 1 show that the highest percentage of partial toothless in dental arches we encountered in the age group 50-59 years with 30.58%, while the lowest percentage we have in the age group up to 19 years only with 4.13 %.

Conclusion

1. The high frequency of partial toothless in patients with permanent dentition is a clear indication of the prevalence of dental diseases and the success or failure of oral hygiene and dental care.
2. The difference in percentage of the results of different authors regarding the partial toothless in the examined dental patients can be related to:
- time factor
- health culture
- standard of living standard
- the volume of the examined mass of the population and
- with different standards that exist in different countries where authors and studies come from.
3. The fact that 4.13% of the examined patients in the age group up to 19 years and 6.61% of the patients in the age group 20-29 years have partial toothless of their dental systems, requires the evaluation of the necessary interventions within the framework of their oral status and raising awareness regarding this issue.

Keywords: Permanent dental arches, partial toothless, frequency.

PERI-IMPLANTITIS AND THEIR TREATMENT IN MODERN DENTISTRY

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Abstract

Implantology represents important science in modern dentistry. Implementation of dental implants in modern dentistry whose goal is to replace the lost biological teeth.

Since implant implants we face various diseases of the orofacial system. Peri-mucosytis and Periimplatiitis are the most frequent illnesses that are the main cause for their appearance are microorganisms of the oral cavity.

Microorganisms initially interfere with oral mucous membrane tissue and then progress to strong tissue, resulting in the irreversible pathological changes of the mucous membrane surrounding the implant. The progression of the pathological process leads to osteolysis of the bone around the implant.

In our study we will present the contemporary ways of treating periramplasty in patients with dental implants.

Keywords: Microorganismes Bacteria, implants, peri-implantitis.

INDICATIONS FOR REMOVAL OF THIRD MANDIBULAR MOLARS

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Abstract

System: This paper presents a statistical analysis of epidemiological and clinical features and indications for third molar extraction.
Material and Method In the period 2016 - 2020 in the Department of Tasks in Tetovo were performed extractions of 617 third impacted mandibular molars. Annuals were reviewed retrospectively. Indications for removal of classification into 8 groups. The age, gender, and major complaints of all patients were recorded
The variables tested take care of patients' personal information, impact levels, clinical picture, and indications for extraction.
Results: The results were based on data from the first 617 patients from whom the third molars were extracted, from the others Male-241 (39, 06%); and Female-326 (60.94%) their age groups ranged from 15-55 years. Recurrent pericortium was found in the most well-known indication is recorded 293 (47.49%), followed by second and third molar caries 197 (31.92%), prophylactic 136 (22.04%), orthodontic reasons and cysts / tumors were among the other indications recorded. Their pain and tenderness as the most unknown symptoms.
Conclusion: The main reason for the removal of the body of the affected third molars was pericoronitis, which occurs in a younger age group and affects more females than males.
This was followed by dental caries and prophylactic team extraction.

Keywords: Indications, Lower third molars, Pericoronitis, prophylactic extraction.

MANAGEMENT OF ORAL SURGERY INTERVENTIONS IN PATIENTS WITH ANTICOAGULANT THERAPY

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Abstract

The rapid advancement of medicine along with the improvement of living conditions in recent decades have led to a considerable extension of life expectancy. As a result, the age structure of the population changes, with the percentage of the elderly population constantly increasing. Through diseases every day seriously threatens the lives of patients up to the most difficult ones with lethal prognosis. Cardiovascular disease is the most common cause of death in the World. Its treatment often requires anticoagulant therapy, which increases the risk of bleeding after oral surgery procedures.

The purpose of this study is to provide a review of the management of oral surgery interventions in anticoagulant-treated patients. Systemic anticoagulation has been used for decades with vitamin K antagonists, heparin, and aspirin, and more recently with anticoagulants direct oral (AKDO) as an anticoagulant preparation.

Doctors and dentists should consider the risks of bleeding while being on anticoagulants versus the thrombotic risks of stopping the medication in people who are having dental surgery.

The current trend is to maintain treatment during the surgical procedure, ensuring good hemorrhage control with local hemostatic measures. However, new antiplatelet drug protocols have not been fully established.

When a clinician is faced with a decision to continue or discontinue anticoagulant therapy, for a patient to undergo oral surgery intervention, the decision goes down to "bleeding or dying."

Conclusions

• Patients on anticoagulants in the form of Vitamin K antagonists, direct oral anticoagulants, or antiplatelet drugs, having a low-risk dental intervention, do not need discontinuation of anticoagulants, as they have a low risk of bleeding.

• The risk of discontinuing antiplatelet therapy and the patient's predisposition to thromboembolic events outweighs the minimal risk of bleeding from dental procedures.

• In patients who need oral surgery or dental intervention with a high risk of bleeding, an individual evaluation of the benefit / risk ratio of anticoagulation should be performed.

• Switching to long-term anticoagulation with short-term anticoagulants should be planned according to international guidelines.

Keywords: Anticoagulants, Oral Surgery, Exodontia, Dental Management.

FREQUENCY OF ALVEOLITIS SICCA DOLOROSA (ASD)

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Abstract

Alveolitis is a pathological disorder of the normal healing of the post-extraction wound, in which for various reasons no physiological clot is formed or it is destroyed (colic). In both cases the consequences are the same, local inflammation of the alveoli is caused, while the free nerve endings are subjected to various mechanical, thermal and chemical influences which cause intense pain.

The purpose of this study is to assess the frequency of alveolitis by age, sex and causative factors in the interventions performed in the Specialist Department of Oral Surgery in Tetovo.

Material and methods: The clinical material consists of 1628 patients who have undergone tooth extraction in the period January 2014 - December 2020. In the Specialist Department for Oral Surgery in Tetovo. Collected and retrospectively analyzed to assess the frequency of alveolitis according to demographic circumstances and the influence of factors in its presentation.

Results: Out of 1628 extracted teeth, 64 (3.93%) patients presented with pain, of which 39 (60.94%) were female, while 25 (39.06%) were male. The difference was found to be statistically significant ($p < 0.05$). The highest rate of alveolitis is observed in patients between 36 and 55 years old. This relationship between age and alveolitis had no significant significance ($p > 0.05$). The incidence of alveolitis was significantly higher in smokers 43 (67.19%) than in non-smokers 21 (32.18%) ($P < 0.005$).

Conclusions: This study showed:

• Alveolitis occurs in 3.93% of cases, of which 59.38% were female and 40.62% were male. The difference was found to be statistically significant ($p < 0.05$).
• The incidence of alveolitis was significantly higher in smokers 67.19% than in non-smokers 32.18% ($P < 0.005$).

Keywords: alveolitis, extraction, smoking, ASD.

EVALUATION OF CLINICAL EFFICACY THERAPEUTIC ON THE USE OF CHLORHEXIDINE GLUCONATE TO INFLUENCE THE SHAPE OF THE GEL AND PERIOCHIP DURING GINGIVAL INFLAMMATION IN CHRONIC PERIODONTAL DISEASE

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Abstract

Objectivies: Evaluation of the practical clinical therapeutic effect, on the influence of the form in gel and chip containing chlorhexidine Gluconate during gingivitis, through comparative analysis in patients using conventional method (CM), conventional gel-supported therapy (chlosite) Chlorhexidine gluconate (CM-S and conventional therapy supported with PerioChip Chlorhexidine gluconate (CM-S).
Materials and Methods: To achieve this goal, there were included 30 patients from both groups and genders, aged 20-50 years old, in whom during radiological and clinical examination were diagnosed with chronic periodontal disease. The subjects were divided into three groups: in the first group, there were used only conventional methods, the second group was treated with CM-S gel and the third group with CM-S PerioChip Chlorhexidine gluconate. In all three groups included in this study, gingival inflammation with the Sillness Loo index was determined in four time points: first, during the initial treatment, then after the 15th day, after 30th day and in the end after 90 days of the first treatment. The Gel and PerioChip Chlorhexidine gluconate in patients was initially administered during the first examination. Numerical statistics were analyzed by

descriptive statistical methods (Mean Standard Standard Deviation, ± 95% CI, Min., Max.), While the interactive effects between the two examined methods after the first treatment, on the 15th, 30th and the 90th day, the effects were analyzed with repeated measures of Anova (F) / Bonferroni Post-hoc test (p).
Results: The results show the reduction of gingival inflammation in all three groups after 15, 30 and 90 days after the treatment compared to the first examination. Comparison of the gingival inflammation index on the 15th, 30th and 90th day between the three groups, shows significantly better therapeutic efficacy in the CM-S-treated groups, which was supported by the use of Gel and PerioChip Chlorhexidine gluconate.
Conclusion: Subjects treated with CM-S, compared to those treated with CM, had a significantly improved their clinical effect, while having significant efficacy against gingival inflammation whereas the gel application method has more significant application efficacy.

Keywords: chronic periodontal disease, gingival inflammation, conventional therapy, Gel and PerioChip Chlorhexidine gluconate.

DENTAL IMPLANT FAILURE RATES AND POTENTIAL RISK FACTORS

(DATA ANALYSIS)

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Abstract

Implantation procedure requires multiple steps of evaluation before the surgery takes place, this pre-operative stage it has its substantial importance because we can determine whether we will have a successful implant procedure or not. The success of an implant procedure depends on many factors, internal and external.
Despite the predictability of implant success, a small percentage of patients will experience implant failure. The success of dental implants is determined by the implant site, the patient's condition, the surgeon's experience, surgical method precision, and implant type. Endosseous dental implants can fail before or after occlusal loading with a prosthetic superstructure.
The biological failures can be categorized into "early failures" (due to failed osseointegration, indicating poor bone repair) and "late failures" (related to delay bone healing) (due to loss of osseointegration). Smoking, implant features, infection, and insufficient bone quality/quantity are all possible causes of early implant failure. Recognition of risk variables can help reduce dental implant failure rates and improve predictability.

With this research we tried to gather scientific data which prove us the impact of risk factors and the percentage of implant failures, and with this to have an overview of who are those factors with the greatest impact and how to prevent them.

Keywords: Dental implants, risk factors, rating, implant failure, external and internal factors.

EVALUATION OF THE DEGREE OF TEETH MINERALIZATION IN PATIENTS WITH TEETH AGENESIS (HYPODONTIA)

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Abstract

The main goal of this study is to determine the correlation between hypodontia and mineralization of teeth and to prove the impact of hypodontia on delayed tooth development.
For the realization of our objectives, clinical and X-ray analysis was performed on 64 subjects, of which 6 subjects were with congenital absence of one or more teeth and 58 subjects as a control group with complete dentition. Patients were aged (8-15) from both genders. The dental age (DA) and chronological age (CA) of the subjects were calculated by the Demirijan method. The mean difference between dental and chronological (DA – CA) age was analyzed by T-test and One Way ANOVA, and the correlation between (DA – CA) difference was analyzed by Spearman Correlation and Pearson Correlation. Tooth development in patients with hypodontia was delayed compared to patients without hypodontia. Male subjects with hypodontia had a greater delay in tooth development compared to female subjects, with a insignificant difference of $p > 0.05$. The prevalence of delayed tooth development in patients with hypodontia increases in proportion with increasing chronological age. Patients with hypodontia have delayed development of permanent teeth, compared with subjects without hypodontia of the same age and the same gender.

Keywords: Hypodontia, dental development, dental age, chronological age, Demirian method, prevalence.

CORRELATION BETWEEN THE POSITION OF IMPACTED THIRD MANDIBULAR MOLAR AND POSTOPERATIVE COMPLICATIONS – A CLINICAL AND RADIOGRAPHIC EVALUATION

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Abstract

Third molars are the last teeth to erupt in oral cavity, in most cases they are impacted, because of their inappropriate position. The aim of this study is to analyze the correlation between the position of impacted third mandibular molar and the postoperative complications after surgical extraction of the tooth. The sample of the study consisted of a total of 80 patients, of both sexes, diagnosed with fully or partially impacted third mandibular molars, who were followed up after the surgery for a three-month period. For all participants in the research panoramic radiography was taken before the intervention, to analyze the angulation, the depth of impaction and the relation to the covering tissue of the impacted third mandibular molar. Postoperative complications were recorded and analyzed after surgical extraction of the impacted third mandibular molar. The most manifested postoperative complications after the impacted third mandibular molar surgery were trismus, swelling and dry socket. All the pathologies were associated with the tooth position. Trismus was most common for the mesioangular position of impacted third mandibular molar, class III B. Swelling occurs predominantly in the impacted third mandibular molars with mesioangular position, class II B. Dry socket was more prevalent in

impacted third mandibular molars with vertical position, class II A. The position of the impacted third mandibular molar has a significant correlation with the development of postoperative complications after the surgical tooth extraction.

Keywords: Impaction, Mandibular third molar, Position, Trismus, Swelling, Dry socket, Panoramic radiography.

PHARMACY

ASSOCIATIONS BETWEEN SOCIODEMOGRAPHIC VARIABLES WITH TOBACCO, ALCOHOL, AND CANNABIS CONSUMPTION AMONG COLLEGE STUDENTS

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Abstract

Background: Tobacco, cannabis and alcohol consumption is found most common amid college students. Causing life-threating diseases, correlated with social, financial and health problems.
Objective: For the present study, we aimed to identify the factors associated with the consumption of tobacco, alcohol, and cannabis among university students.
Methods: The present study executed is considered cross-sectional, which was conducted during 2020-2021 academic year in two

universities (both in private and public universities) throughout Gjilan, Kosova. From a random sample of 1003 undergraduate students, approximately 50.54% completed the survey (507 respondents). This survey is conducted in classrooms through student-completed questionnaires.
Results: The mean±SD age of study sample was 21.56±1.81 years, 56.4% were females. The lifetime prevalence of tobacco usage amid study sample was 66.7%, alcohol 54.2% and the cannabis had a prevalence of 13.8%. Males had a higher prevalence of cannabis, tobacco and alcohol usage in the last 30 days as well as the previous 12 months compared to female counterparts (p<0.05). Adjusted logistic regression analyses showed that being a female decreases the risk of cannabis abuse by 71% (Odds:0.293, 95%CI: 0.153-0.551), living in the urban setting increases the risk by 2.3 times (95%CI: 1.266-4.523), increase in age by 1.2 times (95%CI: 1.034-1.433), smoking tobacco by 4.6 times (95%CI: 1.357-16.036), and alcohol consumption by 14.9 times (95%CI: 4.406-50.231) (p<0.05).
Conclusion: Smoking, drinking and cannabis were found to be common among university students, notably among male students. These findings can help program managers and policy makers devise effective and appropriate control programs and policies for substance-using university students.

Keywords: tobacco, alcohol, cannabis, university students, associated factors.

ANALYTICAL STRATEGIES TO ANALYZE AND DETERMINE OF MULTI-RESIDUE ANTIBIOTIC DRUGS IN MILK

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Abstract

Antibiotics are class of pharmaceutical compounds, which are used for prophylactic and therapeutic purposes. Betalactams, quinolones, tetracyclines, macrolids, lincosamides, sulphonamides and other antibiotic drugs exhibiting bactericidal or bacteriostatic antimicrobial activity. Furthermore, administration of antibiotics for growth promoting effects to increase feed efficiency can lead to the presence of their residues in milk, which may harm human health including allergic reactions in hypersensitive individuals, toxic effects, carcinogenic effects, imbalance of intestinal micro flora and bacterial resistance.

In order to ensure and protect the human health the European Union (EU) has set tolerance levels for these compounds as maximum residue limits (MRLs).

To determine of antibiotic residues can be found various chemical, microbiological and immunologica assays. The most commonly used are screening methods and confirmatory methods for simultaneous analysis of antibiotic residues of different classes and quantification at the level of interest.

A comprehensive review on the analytical methodologies concerning antibiotic drug residues in milk reported in the literature is provided in the present article.

Emphasis is given on chemistry and antimicrobial activity of antibiotics, sample preparation regarding clean-up and extraction,

chromatographic conditions and method validation according to legislation. Results of published assays are comparatively presented

Keywords: Analysis, Antibiotics Residues, Optimisation, Validation, LC-MS/MS method.

CANNABIDIOL; A POTENTIAL THERAPEUTIC COMPOUND FOR VARIOUS DISEASES

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Abstract

For ages, Cannabis Sativa (cannabis)-based medicines have been used for therapeutic purposes in various cultures being suggested by physicians for a variety of ailments, including headaches and migraine used to treat spasms, pain, asthma, depression, sleep disorders, and anorexia in Europe at the end of the XIX century. Cannabis Sativa plant contains several hundred phytoconstituents, including the infamous "cannabinoids". Currently, medical marijuana is one of the world's fastest-growing industries and much attention is paid to Cannabis derivatives—phytocannabinoids, which interact with the endocannabinoid system (ECS) constituents. Cannabinoids have a number of potential therapeutic benefits, including analgesic, anti-inflammatory, and immunosuppressive characteristics. Two cannabinoid receptors are known to date; Cannabinoid 1 (CB1) receptor and Cannabinoid 2 (CB2) receptor. Both exert their function in different tissues and organs. CB1 receptors are abundantly expressed in the peripheral nervous system (PNS), with the highest concentrations found in sympathetic nerve terminals, whereas CB2 receptors are predominantly found in immune, inflammatory and haematopoietic cells. Many of C. Sativa's pharmacological characteristics are attributable to cannabidiol (CBD), a non-psychoactive component, as well as 9-tetrahydrocannabinol (THC), a psychoactive component. CBD is a cannabinoid that has potential for clinical research and therapeutic use because it does not produce psychoactive effects due to a low affinity for CB1 and CB2 receptors and is also well-tolerated without side effects when chronically administered to humans. Many in vivo and in vitro studies highlight the pharmacological properties of CBD as well as its impact on obesity in different

tissues. As research progressed, global policies have increased access to medical cannabis or cannabinoid-based treatments. The aim of the study is to make a literature review regarding the research done on the use of CBD.

Keywords: Cannabidiol, Cannabinoid 1 receptor, Cannabinoid 2 receptor, the endocannabinoid system.

INVESTIGATION OF THE REACTIVITY OF NICOTINE DURING THERMAL EXCITATION IN DIFFERENT CHEMICAL ENVIRONMENT - HEALTH IMPLICATIONS

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Abstract

Nicotine is a pyridine alkaloid that is widely used in plants. Although it is highest in tobacco (Nicotiana tabacum, Solanaceae), it is also found in other plants of the Solanaceae family, such as potatoes, tomatoes, and aubergines. It is estimated that through the usual diet we consume about 1.4 μg of nicotine per day. However, only in tobacco is nicotine present in sufficient quantities (~ 2% by dry weight) to have pharmacological effects. People have recognized the stimulant effects of smoke produced by burning dry tobacco leaves thousands of years ago, and cigarette smoking remains the most common form of tobacco nicotine consumption.Numerous relevant scientific studies point to cigarette smoking as the leading cause of preventable morbidity and mortality in humans, causing extremely serious health problems, including cardiovascular disease, chronic obstructive pulmonary disease (COPD), emphysema, cancer. Various infectious diseases, etc.Hence, the aims of this study are to understand the pharmacological properties of nicotine and its role in the process of addiction, viewed from a chemical and pharmacological perspective. Certain mechanisms of its action will be modeled at the molecular level, using theoretical approaches such as hybrid statistical physical-quantum mechanical methodologies. It will be analyzed how the heating temperature of tobacco is related to the volume of harmful and potentially harmful substances present in the smoke and

aerosol. The obtained results are expected to enable analysis of the impact of different temperature conditions on the reactivity of nicotine, and thus an assessment of the level of harmfulness to human health.

Keywords: nicotine, tobacco, COPD, addiction, heating, temperature.

OFF - LABEL USE OF MEDICINE

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Abstract

Off –label use of medicine is the prescribing and the use of medicine outside the indication that is given in SmPC and FIP, which means that medicine is used outside of its authorized indication, dose, and route of administration or patient group. This type of use of medicine is a legal practice that gives the freedom to doctors to apply new therapeutic options that is based and justify on the latest clinical and scientific evidence that guarantee the safety and efficacy on off-label use. Off-label prescribing is an increasingly common practice and it plays an important part in medical treatment since it may be benefit to patients when no other authorized medicine is available. According literature data, off label use of medicine is mostly present in some clinical areas: oncology, hematology, psychiatry, and rheumatology. Also it is more common in groups of patients who are not often included in clinical trials: children, pregnant women and geriatric patients, because they are often excluded from clinical trials as they may be at higher risk of side effects than most other groups.

Some countries have the guidelines for prescribing and using the off-label medicines. There is no unique or general agreement on off –label use of medicines in national or international level, but the doctor‘s and regulatory authorities approve off –label use in compliance with certain scientific and legal requirements.

The aim of this paper is to give a brief review of articles, documents and scientific data on off-label use of medicine, to describe the benefits and risks, and also to make the comparison of national legal framework on off - label prescribing and use in different countries in Europe.

Keywords: off-label use, medicine, safety, legal framework, benefits, risks

POLYPHENOLIC CONTENT IN METHANOLIC EXTRACT OF SAMBUCUS NIGRA LEAF FROM KOSOVO: LC-DAD-ESI-MS N PROFILE

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Abstract

Sambucus nigra L. is commonly used for medicinal purposes and can be found in forests, thickets, parks, balks, or in-home gardens. Almost every part of the elderberry plant has some uses: fruits, flowers, leaves, roots, pith, and bark. Historically, the leaves were considered to relieve pain and promote healing when applied as a poultice. The polyphenolic compounds were determined in methanolic extracts prepared by the leaves of Sambucus nigra collected from 11 different localities in Kosovo in May and June 2021. 0.5 g of powder plant material (leaves) was extracted with 20 ml of 70% methanol, for 30 min using an ultrasonic bath. Liquid chromatography with diode-array detection (LC–DAD) was used for separation and quantification. Quantification was performed directly by HPLC/DAD using five-point regression curves ($R2 \geq 0.999$) of authentic standards. Phenolic acid derivatives were quantified with caffeic acid at 330 nm and flavonoids were determined at 350 nm as quercetin equivalent. With LC-DAD-ESI-MSn in methanolic extracts of Sambucus nigra leaf were identified 37 individual phenolic compounds with a total content of 36139.62-93090.37

mg/kg DW. The dominant individual compounds were caffeoyl-kaempferol (1157.34-27342.46 mg/kg DW), quercetin-3-rutinoside (1393.29-11917.56 mg/kg DW), quercetin coumaroyl-rhamno-glucoside (2171.74-8958.14 mg/kg DW), caffeic-acid derivative (2965.59-8571.72 mg/kg DW), followed by quercetine malonyl diglucoside, dicaffeoylquinic acid isomer and kaempferol-3-malonylglucoside. Acetyl-isoorientin was found only in sample SNLE-5 and hydroxy trimetoxy flavonoid in sample SNLE-6 with a content of 991.71 mg/kg DW and 634.11 mg/kg DW, respectively.

Keywords: Sambucus nigra, leaf, methanolic extract, polyphenolics, LC-DAD-ESI-MSn.

GMP CHECKLIST - A TOOL FOR QUALITY AUDITS

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Abstract

Quality audit is an important dynamic part within a pharmaceutical industry quality management system. It is conducted to review and evaluate a system for its quality and ensures all the involved parties that a program complies with regulatory and GMP requirements. A quality audit is usually carried out by an internal or external quality auditor or audit team. Auditors should design tools and find ways to make them useful in achieving the desired results. A GMP audit checklist has been discussed to be a useful guide and an effective tool to assist in conducting an in-depth audit process. A checklist is a list of questions related to the identification and evaluation of the effectiveness of a process and internal control systems, and verification of compliance to the requirements of the organization‘s documented quality management system. The most effective GMP audit checklists in pharmaceutical industry should, at the very least, include sections addressing the following: Quality management, Personnel, Facility and Equipment System, Documentation, Production System, Packaging and Labelling System, Storage System, and Laboratory Control System. Once the checklist is established, it should find its pathway in order to assess the problematic areas, accurately identify potential problems, assign corrective actions as well as verify the completed corrective actions.

Keywords: Quality audit, GMP checklist, auditors, quality management system.

POLYTHERAPY AND DRUG INTERACTIONS

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Abstract

Studies carried out in different countries have shown an increase in the occurrence of drug interactions, especially in elderly patients. Physiological changes, alterations in homeostatic regulation and diseases modify pharmacokinetics and drug response in older patients. This presentation gives a reflection on polytherapy and interactions between drugs based on scientific literature. Main objective of topics focuses on analysis and evaluation of interactions between drugs in patients with chronic polytherapy and how much attention is paid by healthcare professionals, especially by doctors and pharmacists. Based on this statistical analysis, the results showed that there was a considerable number of interactions between drugs, so in 100 analysed patients were reported 24 major interactions, 292 moderate, 54 minor, and in 9 patients there was no interactions between drugs that they use. Major interactions are highly clinically significant, those combination of drugs should be avoided and repleaced with other drug.

Keywords: Polytherapy, drug interactions, major, moderate, minor.

SIDE EFFECTS OF NSAIDs ON PATIENTS THAT HAVE USED THEM FOR A LONG TIME

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Abstract

Non-steroidal anti-inflammatory drugs (NSAIDs) reduce pain and swelling in chronic joint diseases such as osteoarthritis, rheumatoid arthritis and acute inflammatory conditions such as; sports injuries, fractures and tissue injuries. NSAID's function is by inhibiting cyclooxygenases.

The main purpose of this study is to look at the effects of NSAIDs use in patients that have used them longer.

A total of 100 patients of different genders and age groups of NSAIDs have a long history. Patients have had different comorbidities, they happened to meet in different pharmacies in Tetovo and the surrounding area.

Out of a total of 100 researchers resulted in with GI patients, 3% who were routine regular patients. With electrolyte and fluid masses it was 12%. With interstitial nephritis 11% with IRA 10%, with IRK 2% and 26% of patients did not pass the effect of use.

The use of these drug requires special care as it can be used chronically and it can produce various as acute and chronic renal failure, interstitial nephritis, edema and various diseases in the body. If the risk of NSAIDs associated renal toxicity is low, the number of patients at risk is high due to their long-term use.

The effects of NSAIDs on renal use appear to be dose-dependent. Since the onset of the first symptoms, the management and the monitoration on these patients needs to be set and to avoid the side effects.

Keywords: NSAIDs, side effects, comorbidities.

SOCIAL FACTORS AFFECTING SELF-MEDICATION. HOW TO PREVENT THE RISK?

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Abstract

Patients' use of drugs and self-medication as their first choice is a common and complex phenomenon. Among the causes of this phenomenon are social factors which greatly affect the way of perceiving the disease and its treatment. From numerous studies on this topic, we can conclude that there is a link between self-medication and social or demographic, and cultural factors. These factors should be identified and their impact on different groups of the population should be determined. The purpose of this research was to determine the prevalence of self-medication and the social, demographic, economic and cultural factors associated with it.
By recognizing these influencing factors we can reduce this form of treatment, the health damage it brings to patients and on the other hand we can propose good management policies which would also reduce unnecessary costs to the health system. Strategies to prevent this phenomenon should consist in terms of strengthening the legal criteria in terms to express the role of pharmacist to advise patients about the consequences that may cause incorrect use of medicaments and self-medication.

Keywords: self-medication, medicaments, social factors, health system.

COMPARISON OF RENAL TOXICITY BY NSAIDS DEPENDING ON THE MECHANISM OF ACTION IN PATIENTS WITH HEADACHES

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Abstract

Non-selective COX inhibitors are most widely-prescribed NSAIDs treatment of headaches. Celecoxib is another NSAID therapy that has been approved in the last several years, with different mechanisms of action. Nonsteroidal antiinflammatory drugs (NSAIDs) cause renal toxicity following inhibition of cyclooxygenases. Relatively little is known about the comparative nephrotoxicity of NSAIDs in patients with chronic headache based on COX inhibition. Therefore, this study was designed to compare the nephrotoxic effects of non-selective COX inhibitors and selective inhibitors on the kidney.

Besides conventional markers of renal function (serum/urine creatinine determined by Jaffe's methods of enzymatic assay for urea in serum, uric acid in serum and glutamyl transferase [$_{\gamma}$-GT] in serum), Jon selective electrode (ISE) are used for determination of electrolite in serum, we used nephelometry by β2 microglobulin (β2M) and photoelectric colorimetry for microalbuminuria in urine, to monitor glomerular and tubular functioning. Any history of kidney diseases was exclusion criteria to enter the study.

The results showed increased values of microalbuminuria in patients treated with NSAIDs as non-selective COX inhibitors compared with patients treated with NSAIDs as relatively selective and highly selective COX-2 inhibitors - 52.8% (19), 16.7% (2), 16.7% (4),

consequently and in β2 microglobulin 97.2% (35), 91.7% (11), 54.2% (13), consequently.
The renoprotective properties of highly selective COX-2 inhibitors have been confirmed in relation to non-selective COX inhibitors that have been shown to be less nephrotoxic agents.

Keywords: Nephrotoxicity, Nonsteroidal antiinflammatory drugs, COX inhibitors, Headaches.

EFFECTIVENESS OF COMBINATED THERAPY IN A FORMULATION

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Abstract

The use of combination therapy in Hypertension training helps to reduce blood pressure in patients who have had no effect from the use of antihypertensive monotherapy used.

This study aims to prove the efficacy of combination antihypertensive therapy in a pharmaceutical formulation in the treatment of Hypertension

A total of 100 patients of both sexes and age groups over 50 years who used antihypertensive monotherapy and then switched to combination therapy with which they had improved their hypertension status were taken. The research period lasted 3 months (February-April 2022). Data were obtained from random patients in pharmacies and surgeries of primary care physicians Gostivar and surroundings. Some of the patients also had comorbidities such as diabetes, renal insufficiency, heart failure, etc.

In 77% of patients who have previously received combination antihypertensive therapy have used a combination of ACE inhibitor drugs plus thiazide diuretics, 23% of patients have used ACE Calcium channel blockers and inhibitors.

In 88% of the surveyed patients, the use of combination therapy showed results, while in 12%, the use of combination therapy had no effect. According to the results from this study we can conclude that the treatment of Hypertension with combination therapy in one formulation regulates Hypertension and at the same time improves the patient's lifestyle.

Keywords: Hypertension, comorbidities, monotherapy, combination therapy.

MONITORATION OF COPPER CONCENTRATIONS IN WILSON'S DISEASE PATIENTS

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Abstract

Wilson's disease is a rare inherited disorder in which the synthesis of enzymes for the transport of extra copper from the liver to other organs is disrupted and therefore copper accumulates in the liver, brain and other vital organs. It may be toxic Wilson's disease is a curable disease if detected early and administered appropriate pharmacotherapeutic treatment to eliminate excess copper.
Purpose of this report: is to monitor the concentration of extra copper in the urine 24 / h in patients with Wilson's disease.
It is a retrospective study conducted during the period January 2021-January 2022. Patients were diagnosed with Wilson's disease. Data were obtained at the Institute of Clinical Biochemistry in Skopje processed with the PinAAcle 900F atomic spectrometer.
Results: from the laboratory results obtained from patients with Wilson's disease we observe low concentrations of ceruplasmin and Cu in serum and increased concentration of Cu in urine 24 / h above 100µg.
Conclusion: Special attention should be paid to laboratory tests and early diagnosis because proper and timely treatment changes the quality of life of patients diagnosed with Wilson's disease.

Keywords: Wilson's disease, urine, atomic spectrometry.

BIOLOGY AND ECOLOGY

CONCENTRATION OF HEAVY METALS IN THE TOP SOIL OF SETTLEMENTS NEAR THE CITY OF MITROVICA POLLUTED BY MINES AND SMELTERS

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Abstract

Concentrations of five heavy metals were determined in soil collected from polluted areas of soil in Mitrovica villages: Zaselle, Shupkovc, Kelmend, Boletin, Zhazh, Kqiq, Smrekonice, Tavnik, Suhodoll and Vidimriq, for a comparative study.
Champions of soil were collected uniformly of an initial quantity of about 100 g of each sample.
Analysis was accomplished by electrothermal atomic absorption spectrometry after total digestion.
The highest concentration level of Fe measured in Shupkovc; Zn, Pb and Cd in Zhazh; Cr in Zaselle, Kqiq and Tavnik
The highest concentration of heavy metals shows a higher efficiency as a bioindicator for pollution of the environment near mining polluted cities.

Keywords: heavy metals, soil, concentration.

DIVERSITY AND ECOLOGY OF MACROMYCETES ON SHAR MOUNTAIN MASSIF, REPUBLIC OF NORTH MACEDONIA

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Abstract

New research on the biodiversity of mushrooms in the region of Shar Mountain massif has been conducted from September to November 2016. The material is collected in a variety of substrates. The types found are recorded in some localities such as near Gajre, Lisec, Popova Sapka, Jellak, Rogachevo, Staro Selo, Leshnica etc. Some living organisms or plant associations are included, such as *Quercetum frainetto-cerris macedonicum, Orno quercetum-Petraea, Calamintha grandiflorae-Fagetum, Fagetum subalpinum-scardopindicum*, *Piceetum subalpinum scardicum),* etc. out of a total of 76 species described, 59 species are terricolous mushrooms and only 17 are lignicolous. Registered species belong to the *Basidiomycota* (72) and *Ascomycota* (4) types and the orders: *Agaricales, Boletales, Polyporales and Russulales*. The most researched gender is Amanita (7). As most common species we can mention: *Amanita rubescens, Amanita pantherina, Agaricus macrosporus, Armillariella mellea, Fomes fomentarius, Laccaria lacata, Oudemansilla radicosum, Russula cyanoxantha, Stereum hirsutum, Trametes hirsuta.* The mostrare species are: *Amanita crocea, Albatrellus cristatus Boletus regius, Panaeolus semiovatus, Stropharia caerulea...*

Keywords: Shar Mountain, fungi, macromycetes, edible.

EVALUATION OF LEAD EXPOSURE ON BIOCHEMICAL AND HEMATOLOGICAL PARAMETERS OF FERAL PIGEON (COLUMBA LIVIA) LIVING IN URBAN AREA

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Abstract

This study estimates the effect of environmental pollution in some oxidative stress biomarkers in feral pigeons (Columba livia), from polluted areas. Specimens of feral pigeons (Columba livia: 20 birds male and female), were collected in Peja town (urban area) and in Lukinë village-Prizren (rural area).Blood lead level (BLL) was determined with atomic absorption spectrometry with atomic absorber with a GTA 100 graphite furnace and PSD 100 autosampler. Erythrocyte δ-aminolevulinic acid dehydratase (ALA-D) activity was measured according to the CEC standardized method of Berlin and Schaller. The hematocrit (Hct) was determined in heparinized capillary tubes. Hemoglobin (Hb) was measured with Drapkin's reagent by a standard cyan methemoglobin method of Van Kampen and Zijlstra. The blood lead level (BLL), and hematocrit (Hct) were significantly higher ($P<0.001$), in feral pigeons of Peja, compared to Lukinë pigeons. The δ-Aminolevulinic Acid dehydratase (δ-ALA-D) activity, of feral pigeons from Peja, was significantly inhibited ($P<0.001$), compared to the control

group. The amount of hemoglobin in both groups was different, but not statistically significant. The results of this study suggest that feral pigeon may be used as a model for monitoring lead toxicity, on some biochemical and hematological parameters. The ability of pigeons to accumulate lead draws attention to the potential hazard of children ingesting street dust from such areas.

Keywords: Blood, Lead, ALA-D, Hct, Hb, Feral pigeons.

INCIDENCE OF UTERINE CANCER IN WOMEN IN THE MUNICIPALITY OF BUJANOC

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Abstract

The aim of this study is the research of the number of patients with uterine cancer among different age groups of the Municipality of Bujanoc during the period 2015-2019. The identification of potential causes of this disease in the Municipality of Bujanoc, has also been researched. This study is based on statistics obtained from the Institute of Public Health in Vranje. The results show that the highest number of affected women was found in 2016, with 10 cases, while the lowest number in 2019 with 4 cases respectively. The most affected age group of women was that of 60-69 years, with 10 cases, followed by the age group 40-49 years, with 6 cases, 30-39 years, with 5 cases and 50-59 years, with 4 cases respectively. The results of this study indicate the risks of the increased number of cases of women with uterine cancer and suggest a serious institutional commitment to prevent this disease.

Keywords: Uterine cancer, age groups, Municipality of Bujanoc.

NEW LOCALITY OF SPECIES ROSA PIMPINELLIFOLIA L., IN NORTH MACEDONIA

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Abstract

New locality of *Rosa pimpinellifolia* L., (Rosaceae) was found during field research in August 2020. Even after many years of effort of research, the Burnet rose was found for the first time in a mountain ridge located on the border between Kosovo and North Macedonia known as "Maja e zezë – Black Peak", approximately 2000 m above sea level. Until now, it is restricted to only seven known locations, and possibly another ten small sites in North Macedonia. Taxonomic identification of Burnet rose follows-standard references for the Macedonian Flora. New distribution locality and brief morphological descriptions of the *Rosa pimpinellifolia* were provided together with the conservation and status issues. Further field trips are needed to confirm the spread of Burnet rose across Sharr Mountain.

Keywords: Sharr Mountain, New locality, *Rosa pimpinellifolia*.

EPIDEMIOLOGY OF TULAREMIA IN THE REPUBLIC OF KOSOVO

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Abstract

Tularemia is a zoonotic infection caused by the facultative intracellular gram-negative bacterium *Francisella tularensis*, a biological threat agent. The bacterium is typically spread by ticks, deer flies, or contact with infected animals. It may also be spread by drinking contaminated water or breathing in contaminated dust. It does not spread directly between people. Symptoms may include fever, skin ulcers, and enlarged lymph nodes. Occasionally, a form that results in pneumonia or a throat infection may occur. Considering the fact that tularemia in Kosova has had some epidemiological outbreaks since 1999, the aim of this study was to research the epidemiologic characteristics of tularemia in Kosova, to identify cases with this disease in periods of 2016–2019 and to identify potential causes of it. For this study there have been used statistical data taken from the Kosova National Health Institute in Prishtina. The methodology of this study is descriptive, thus, there have been elaborated data of previous epidemic years such as those of 1999 until 2015 and we researched about the tularemia cases of the 2016–2019 time period, in order to present an overview of this disease. Since 1999 when the first tularemia case appeared, there have been sporadic reports of tularemia cases every year, and there have been four epidemiological outbreaks in our country until 2015. The highest number of the reported and confirmed cases in labs mark the epidemy of the years 2014–2015 with 459 cases

(24.4/100000 residents) compared to the 1999–2000 epidemy with 247 cases, 2001–2002 with 327 cases and the one of the year 2010 with 237 cases. During the time period of 2016–2019 the overall number of the infected people has been 95 people, lower number of cases. These data have been elaborated using the incidence of infected people in 100000 residents. Regarding the year 2016 the incidence resulted in 1.43%, regarding 2017 it was 1.91%, the year 2018 was 1.06% and per 2019 it was 0.63%.

Keywords: Tularemia, Francisella tularensis, epidemiology, Republic of Kosovo, intracellular.

INCIDENCE OF PARKINSON'S DISEASE IN THE KICEVO REGION IN NORTHERN MACEDONIA

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Abstract

Parkinson's disease (PD) is a multi-attribute neurodegenerative disorder combining motor and nonmotor symptoms without well-defined diagnostic clinical markers. The presence of primary motor features (bradykinesia, rest tremor, rigidity and loss of postural reflexes) are the most characteristic signs of PD that are also utilized to identify patients in current clinical practice. Epidemiological studies on the incidence of PD are important to better understand the risk factors for PD and determine the condition's natural history. This paper examines the incidence and prevalence of DP in total and its variation by gender. We searched data for epidemiologic studies of PD from 2015 to 2021. The data were analyzed in general and by gender in particular, and referring to the official data on the population of the Kicevo region (30138 inhabitants), were determined whether a significant difference was present between the sexes. From the data obtained it was found that the total number of persons with Parkinson's disease from 2015 to 2021 resulted in 1401 (4.65%). The number of women affected was 871 (2.89%), while the number of men was 530 (1.76%), that is, the number of women was higher than men for 341 (1.2%) cases. The incidence of PD in general in recent years (2019-2021) was increasing and significantly higher compared to earlier years (2015-2018).

Keywords: Parkinson's disease, incidence, symptoms, levodopa, neurodegeneration, Lewy bodies.

PREVALENCE OF SALMONELLOSIS IN BUJANOC AND SURROUNDINGS

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Abstract

Salmonellosis is a symptomatic infection caused by bacteria of the *Salmonella* type. It is also a food-borne disease and is defined as diseases, usually either infectious or toxic in nature, caused by agents that enter the body through the ingestion of food. In humans, the most common symptoms are diarrhea, fever, abdominal cramps, and vomiting. Occasionally more significant disease can result in dehydration. Specific types of Salmonella can result in typhoid fever or paratyphoid fever. Because *Salmonella* continues to be one of the more major food-borne pathogens from a public health standpoint, the purpose of this study was to investigate the prevalence of salmonellosis in and around Bujanovac in the period 2010-2018, in the observation and analysis of eventual gender differences, in an attempt to understand which were the most affected age groups and to learn the mortality of caused by salmonellosis. This study is based on statistics obtained from the Institute of Public Health in Vranje. The results showed that out of 156 persons who underwent the examination, 44 of them were ill (28.20%). The highest prevalence was presented in 2010, with 35.29%, while the lowest in 2013, with 14.28%. The most affected gender were males with 61.36%, a percentage higher by 20.46%, compared to the overall percentage of 40.90% of females. The most affected age group was 0 to 20 years old with 28 cases (the most affected young children), while the least affected was those over 60 years old. Infection and morbidity compared to previous years have become more and more reduced. Factors that have contributed to the reduction of infection and morbidity, we think are the best hygienic conditions, reduced poverty to some extent and increased education.

Keywords: Salmonelosis, prevalence, Municipality of Bujanoc, agents, toxic.

NEW LOCALITY OF DISTRIBUTION OF RAMONDA NATHALIAE PANČIĆ & PETROVIĆ (GESNERIACEAE) IN REPUBLIC OF NORTH MACEDONIA

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Abstract

From the current knowledge of flora in North Macedonia, *Ramonda nathaliae* Pančić & Petrović is present in some localities along the mouths of the River Vardar. New localities of spread of this species were discovered several years ago, near the village of Cerovo and in Karpallak (Abdullai K., Haziri A., Millaku F. and Krasniqi E, May 2008). During the ongoing research of *Ramonda nathaliae* Pančić & Petrović, in North Macedonia, another new locality was recognized which represents a new record of distribution of this species in the flora of North Macedonia.
Examine specimens: on steep rocky terrain: 364 m, 41º 58' N, 21º 11' E, May 2022, in Laskartsi, Municipality of Zelino.

Keywords: New locality*, Gesneriaceae, Ramonda nathaliae* Pančić & Petrović, Laskartsi, North Macedonia.

CRISPR/CAS GENE THERAPY

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Abstract

Clustered regularly interspaced short palindromic repeats (CRISPR)/CRISPR-associated enzyme (CAS) is a naturally occurring genome editing tool adopted from the prokaryotic adaptive immune defense system. Recently, Cas9/CRISPR has been reported to successfully induce targeted gene disruption and homologous recombination in both prokaryotic and eukaryotic cells with higher efficiency compared with ZFN and TALEN. Additionally, it is easier to design guide sequences and easy to use for the Cas9/CRISPR system. This novel technology will be of great potential for application in both research field and clinical trials. This Review describes the development of technologies based on nuclease-deactivated Cas9, termed dCas9, for RNA-guided genome transcription regulation, both by repression through CRISPR interference (CRISPRi) and by activation through CRISPR activation (CRISPRa).

Keywords: CRISPR/Cas9, genomic, gene therapy, gene editing, clinical trials.

HOROLOGY AND TAXONOMY OF FAMILY GEOMETRIDAE IN SOME LOCALITIES IN SHARR MOUNTAIN

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Abstract

In this investigation were collected the adult individuals of species that belong to the family Geometridae (Moths) - group of Lepidoptera in ten localities of Shar Mountain, the part which belongs to the Republic of North Macedonia. Our research has lasted two-years (2019-2020) from April to November. Compared to literature review and with the results of this study this family of moths is counted as the family with high species richness from other groups of Heteroceras. The material was collected during the night period in several localities in Sharr Mountain, by light-traps (pyramids with white sheets, equipped with UV lamps). The collected material was narcotized and systematized in plastic boxes lined with cotton or soft material to avoid damage or destruction of the individuals because then we will have a lot of difficulties in morphological determination. The collected material was transported to the laboratory of the Institute of Ecology and Technology in Sharr Mountain, for preparation and morphological determination. In this period of field observation 101 adult individuals and in laboratory we identified (with stereomicroscope Nikon SMZ 1500) 48 species of Geometridae moths belonging to 27 genera and 9 subfamilies.

Keywords: Geometridae moths, field observation, morphological determination, Sharr Mountain.

COMPUTER SCIENCE

A NEW CENTRIC SYSTEM FOR MANAGING PERSONAL INFORMATION

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Abstract

Information Management is a very important concept when talking about huge amounts of information. Advances in technology, the spread of mobile devices and improvements in internet connectivity, have created a data-rich world where the amount of personal data/information has increased immensely. Personal information is recognized as one of the most valuable resources for many people. Personal data stores (PDSs), known as personal information management systems (PIMS), represent a class of a technology, focused on data management. In essence, a PDS equips a user with a technical system for managing their data/information by providing means to create, store, organize, maintain, retrieve, and use them otherwise managed by their device. What is already proven is that the use of data/information in a real time framework is a very essential thing for many users. How difficult it is to find data/information depends on how well we are able to maintain them. PIMS such as GMAIL offers a range of functions that users can use to manage personal data/information. But there is a problem, users are either not aware of them or because of not very user-friendly interfaces do not use them much. These came as a result of a survey where among others people who were part of this survey expressed the need for a system for their daily obligations. This gave us the idea to build a new PIMS that would meet the needs of users for quick and effortless control and access to personal information. The post-registration system offers the ability to organize, store and

maintain information in a very easy form as they are all in one place. The aim of this paper is to introduce the system and its features.

Keywords: information management**,** personal data/information, personal data stores, personal information management system.

ADVANTAGES AND RISKS OF INTERNET - CASE STUDY: STUDENTS OF PRIMARY AND SECONDARY SCHOOLS IN SHTIME

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Abstract

The Internet has a significant role in communication and study for everyone today. It is seen as a valuable source of information and an additional tool in a teaching process. It can motivate students by making teaching more fun and allowing variation in teaching. But it has its own drawbacks. Numerous surveys attempted to examine the positive and negative influence of the Internet in the lives of children and in the education context.

This study attempted to investigate the frequency of use, the advantages and the risks of the Internet among the most vulnerable part of society, teens, who are often subject to problems and misuse of the Internet and are an easy prey of online predators. The survey questionnaire was chosen as a mean for conducting the investigation into the use of the Internet by a research sample of primary and secondary school students, aged between 11-16 in the city Shtime, Kosovo. Depending on the answers, it is worth noting the fact that 15 and 16 years old students are considered more at risk for frequency use of the Internet, thus teachers and parents have an important role in avoiding the risks by increasing awareness and in helping them with the problems they may have. It is recommended a close survey in order to create a safe student-internet interaction environment.

Keywords: Internet, school, teens, protection, risks, teachers.

APPLICATION OF CRYPTOGRAPHY IN M-BANKING

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Abstract

Mobile banking is a faster and more convenient way to effectively manage your money, it is a more complex system in the field of information technology, where in addition to functionality, speed, a high level of security is required.

This is expressed more in situations when interaction with customers is mandatory, such as checking the balance sheet, paying bills, transferring money, etc. In this way data security ensures Confidentiality, Authenticity, Ingrity and Non-repudiation.

Often, data is exposed to a threat from users that it is not supposed to be. This article will analyze the role of cryptography in mobile banking by analyzing the increased security in conducting electronic transactions via mobile phones.

Further, we propose an idea for implementing new application using authentication parameters, such as, username and password, and an additional parameter of SIM (ICCID) card, utilizing the combined cryptography.

Keywords: Mobile baking, cryptography, SIM card.

NEW SOCIO-ACADEMIC PLATFORM BASED ON THE RESULTS REVEALED FROM COMPARATIVE ANALYSIS OF THE EXISTING PLATFORMS

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Abstract

Undoubtedly social network platforms today play a very important role in creating bridges for communication for every profession. The success that Facebook has achieved as a generic platform, has led to the launch of other social network platforms that aimed to provide services to the academic community. Platforms like Academia.edu and ResearchGate today are very popular and widely used by the academic community and professionals. These platforms known as ASNS (Academic social networking sites) provide opportunities for this community to connect and make the results of their work easier to be accessed. Based on the impact that ASNS have, and after reviewing comparative analysis from the survey with end-users, the academic community and professionals, which attempted to highlight the strengths and weaknesses of actual most used platforms, we have published a new socio-academic platform, AcademicGate, and made sure to include proposals revealed by the surveys.

The purpose of this paper is to present the data collection from the comparison analysis taken from the surveys available on the web with two most used ASNS, Academia.edu and ResearchGate, and the users of the newly built platform AcademicGate, which is currently in use in Northern Macedonia. The survey was conducted with students, academic staff and other professionals.

Keywords: AcademicGate, ResearchGate, Academia.edu, socio-academic networks, academia.

CRYPTOCURRENCIES: THE RISE OF A FUTURISTIC CURRENCY

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Abstract

The 21st century represents the greatest revolution humans have had since its creation. After the 2000s, the pillars on which the era of new technology will be built have been laid. Many innovations have been created, starting from Smartphones, VR Gadgets, smart devices that find use at home, such as smart TVs or smart fridges, where all these innovations have replaced their predecessors who possessed weaker technology and far weaker features that the latest technology has. Despite the fact that almost all aspects of human life are being fulfilled with new age technology, there is still an item, which was initially said to have been used 5000 years BC and continues to have the same use to this day. That item is money. Despite the changes that have taken place over the centuries, the system of coins and money has not changed for any reason and at any moment and the same continues to be used today. But that does not mean it will not change. The archenemy of money in terms of new technology, which has the potential to replace it, is known as cryptocurrency. In this paper, we tried to give an elaboration about blockchain, the database on which all cryptocurrencies are created. In terms of cryptocurrencies, our focus was mainly on bitcoin and ethereum, as the two most successful currencies. We concluded the paper with a survey about cryptocurrencies, including a personal point of view, the topic in general and the survey.

Keywords: cryptocurrency, blockchain, bitcoin, ethereum.

IT SYSTEM IN TOURISM AND HOSPITALITY

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Abstract

With the development of the tourism industry, many other things have changed that are part of the tourist offer, the information system in tourism and hospitality has improved and expanded everywhere. Nothing can be done without the help of the information system. According to research by the World Travel and Tourism Council (WTTC), tourism contributes 10% of global Gross Domestic Product (GDP) and employs over 200 million people.
The term "tourism" comes from the French word "tour", which means travel and includes a broader study of people's activities for temporary movement for work, pleasure or other reasons. A tourist is a person who travels from 24 hours to a year and with a minimum distance of eighty kilometers, for personal reasons that are not paid activities at the place visited. Tourism as a service industry consists of tangible and intangible parts. The two categories include transport systems (air, rail, water, road), catering services (accommodation, food and beverages, walks, souvenirs) and related services (banking, insurance, security and safety). Unlike the tangible categories, the untouchable categories include vacation, culture, various adventures and recreations, etc. Over time, tourism has become a very important sector due to rapid changes in tourist behavior, flexibility of structures, development of transport, information technologies, etc.

Keywords: IT system, tourism, hospitality, development.

THE DEGREE OF POLITICAL PRAGMATISM APPEARING IN ELECTRONIC VOTING

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Abstract

Voting, as a very important social and political process and its Electronic spectrum, which is believed to be applied in every governmental system and structure due to the rapid development of Technology, has obviously occupied every sector of every society. The reader will be able to learn about the history of Electronic Voting, more specifically about all the previous versions which have been a strong base to the current ones, the reasons why Electronic Voting should or should not be part of Election Process, they will also be able to judge the urge of Politics related to this expedite change and create their own perspective whether it is a positive step in upgrading the traditional process or be loyal to it. The importance of this research paper is undoubtedly the fact that thanks to it, there will finally be no age limit when it comes to Politics, youngsters will be able to learn and spread their interests and also they'll find the desire to participate in this process due to Technology implementation as never before. Lastly, the attitude of North Macedonia youngsters towards this issue has been presented through questionnaire survey.

Keywords: eVoting, political pragmatism, North Macedonia, youngsters.

RAPID APPLICATION DEVELOPMENT VS AGILE METHODOLOGIES, CASE STUDY: CREATING AN ALUMNI APP FOR UNIVERSITY OF TETOVA

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Abstract

The main idea of this paper is proposing and implementing an application which will allow us to post various events which are organized within the University of Tetova, various job competitions where students of our university can find themselves, and various courses that students can attend if they are interested. On the other hand this application will contribute to all students of the University of Tetova, who have completed the first cycle of studies to be assisted by the university for employment as well as for attending various courses and at the same time to be assisted with each other.

Considering that one of the biggest risks of this application is choosing the unsuitable method for its construction, the best method of solving the problem is to get an opinion from some existing IT companies.

AlumniUT is a web-based application that will greatly contribute to the communication of all students who have completed their studies at the University of Tetova. This application is built using C # programming language for coding, ASP.NET web technology, HTML, CSS, JavaScript, and Bootstrap for its design.

The paper also will be explained from the beginning what is the development of applications, the software development life cycle as a result a survey was conducted to which 25 IT companies responded, and thus it was decided which model should be used, RAD or Agile.

Keywords: SDLC, application, time, cost, quality, model.

DEVELOPMENT OF MOBILE BANKING INTERFACES USING THE TECHNOLOGY ACCEPTANCE MODEL

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Abstract

The need to improve customer service and provide efficient banking services has resulted in a dramatic increase in the use of Information and Communication Technology (ICT) based solutions in financial institutions.
Mobile Banking is a mobile computing application which provides customers with the support they need to access their bank accounts and banks anywhere, anytime using a mobile device such as a mobile phone. Mobile Banking removes space and time constraints from banking activities such as checking account balances, or transferring money from one account to another.
E-banking is a tool in which banking transactions are performed using automated processes and electronic devices such as personal computers, telephones, fax machines, internet, card payments, machine automation (ATMs) and other electronic channels. Research and studies have found that Mobile Banking Applications have become popular in many different countries and regions, however they are not yet widely used. The model of this study is mainly based on the Technology Acceptance Model presented by the factors that affect the use of banking services and continue to deal with electronic banking services.
A questionnaire divided into seven dimensions was created to assess the factors that affect the banking services, the opinions of 204 users were analyzed and finally we published the statistics of the results of the analysis of descriptive factors.

Keywords: mobile banking, Technology Acceptance Model, banking services, e-banking.

CHALLENGES OF DISTANCE EDUCATION DURING THE COVID-19 PANDEMIC IN PROFESSIONAL HIGH SCHOOL

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Abstract

The Covid-19 pandemic, which became global in spring of 2020, was the cause that most educational institutions needed to interrupt the classical way of learning – learning by presence. This event caught the world so prepared, causing big and unpredictable challenges. This paper intends to add an insight over the fact of Covid-19 pandemic in education and the importance of distance learning as an alternative of education without physical and social barriers. This paper uses facts and numbers from global statistics, especially from Western Balkans, related to the effect of the pandemic in the educational process. The results of the survey completed by professional high school students, aged between 16-18 years old, represent two main areas of impact from the pandemic: the impact of the interruption of learning by presence in their social life and the overall impact of distance learning. These results show that distance learning, in some form, has become a normal routine in both, educational and social development of the students, when combined with learning by presence. Finally, the recommendations will be an opportunity for the reader to gain new perspectives on how the quality of learning can be improved by integrating distance learning in normal or extraordinary – isolation conditions.

Keywords: Pandemic, Covid-19, Challenges, Education.

CHEMISTRY

DETERMINATION OF HEAVY METALS ON THE EARTH'S SURFACE, SILT, WATER AND FISH MUSCLE IN THE RADIKA AND MAVROVA RIVERS BY THE SAA METHOD

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Abstract

A high content of heavy metals in the earth's surface, silt and water might cause serious damage to the environment and can be a threat to the health of the surrounding population. Heavy metals constitute an ill-defined group of inorganic chemical hazards, and those most commonly found at contaminated sites are lead (Pb), chromium (Cr), arsenic (As), zinc (Zn), cadmium (Cd), copper (Cu), mercury (Hg), and nickel (Ni).

This paper presents the results of research that focused on analyzing the content of Pb, Cd, Cr, Fe and Zn in the earth's surface, silt, water and fish muscles by the atomic absorption spectrometry in the rivers Radika and Mavrovo in North Macedonia.

The obtained results showed that the concentration of Pb, Cd, Cr and Fe in the soil, silt, water and fish muscles are within a normal range, where only the zinc metal present in the silt, water and fish muscles was higher than the allowed amount, according to COUNCIL DIRECTIVE 86/278/EEC.

The acquired knowledge can help in planning and realization remediation measures and improve the state of the environment.

Keywords: soil, silt, rivers water, fish muscle, heavy metals, atomic absorption spectroscopy, Radika, Mavrovo.

APPLICATION OF INFRARED SPECTROSCOPY AND GRAVIMETRIY FOR EXAMINATION OF ORGANIC SUBSTANCES IN SOIL FOR FORENSIC PURPOSES

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Abstract

For forensic purposes it is necessary to do gravimetrical analysis of the soil. The soil occurs in almost all places where the crime could be committed. It is known that the soil is made up of a very large number of organic and inorganic constituents.
In this work are analyzed 144 soil samples were analysed using gravimetry. 80 soil samples were taken from 5 locations in the city of Tetovo. From each location total number o 16 samples were collected. The remaining 64 samples were collected from the four location placed in the vicinity of Tetova.
In order to perform the gravimetric analysis around 1.0000 g of soils were measured on a analytical balance. All these samples were dried at a temperature of 110 °C in order to remove the water. Then from sample were heated at a temperature of 430 °C in order to remove the entire organic matter from the soil.
The content of the inorganic matter obtained using this procedure varied in the samples between around 3 and 11%. This was not enough large mass difference which could help in discrimination of the of the soils from different locations.
The results obtained in this work show that it was not possible to discriminate the samples from different locations based only on this type of analysis. In order to obtain better results these were coupled with spectra–structural correlaction based on analysis of their infrared spectra.

The results obtained using this combined approach show that these two techniques, coupled, could be successfully used for discrimination of soils for forensic purposes.

Keywords: soil, forensic chemistry, analytical chemistry, infrared spectroscopy, gravimetry.

THE PROTECTIVE EFFECTS OF CAFFEINE FROM UV RAYS IN DIFFERENT SOLUTIONS AND SUSPENSIONS

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Abstract

Long exposure to UV rays often causes skin diseases such as skin cancer. There are a lot of substances dedicated to protecting against UV rays. In this article we are going to be focused on the protective ability of Caffeine against UV rays. For this goal we have used various Caffeine solutions and suspensions and we have measured the transmission of these solutions and suspensions in a range of λ= 190, 210, 230, 250, 270, 290, 310 nm. For these measurements we have used UV- VIS spectrophotometer.

Keywords: UV rays, Caffeine, Transmission, Spectrophotometer.

OPTIMIZATION OF SEPARATION OF THE STAGES AT THE EXTRACT PETASITIDIS RADIX BY UNDERGOING THE PRE-PROCESSING WITH GLYCERIN AND LACTIC ACID

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Abstract

The gained extract from the roots of Petasitidis Radix is in the group of very complex extracts as a consequence of appearing of a two-phase or three-phase solvent during the process of separation after the extraction process and the concentration, where is present pyrrolizidine which is a part of the group of toxic and poisonous materials. This was the reason that the gained extract, until the phase separation, had e lower than 0.1 % mass in its phase content of Pyrrolizidine, in order to remove the remaining amount of pyrrolizidine. This is achieved by using a different chemical adsorbent –of Lewatit, or bio absorbent – diatomaceous earth, pharmaceutical Zeolite, etc. This partition is done by separation of the phases, but not always is reached a complete partition, therefore a large amount is removed and is thrown in order to have a clear extract. In this paper work it is performed a pre-processing with Glycerin and lactic acid, a method which gives a very good results and the extract losses are at minimum.

Keywords: extract, pyrrolizidine, glycerin, lactic acid.

OPTIMIZATION OF THE EXTRACTION PROCESS AT HYPERICUM HERBA PERFORATUM FOR INCREASING THE COEFFICIENT OF EXTRACTION AND ESTABLISHMENT IN AN EFFECTIVE TECHNOLOGICAL PROCESS

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Abstract

Preparation of the plant-based raw material as well as adjusting the parameters of the process, has a high influence on the amount of the extract and the components of the pharmaceutical plant-based raw material. Even though there exist many extraction methods such as macerating, double maceration, percolation and the high pressure extraction, we have chosen double maceration extraction by making changes of some factors which influence the extraction process, such as: the size of granules of the grounded material, the percentage of the concentration of Ethanol which is used for extraction, the amount of the solvent – Ethanol in proportion with the plant-base raw material, the scale of mixing, the temperature of extraction and the extraction time. All these parameters directly influence on the following: the amount of the extract LP: Extract ratio, the amount of extracted components such as: Hypericin, Hyperforin, and Flavonoids and the quality and homogeneity of the gained extract.

Keywords: Extraction, hypericin, hyperforin, Flavonoid.

GEOGRAPHY

THE IMPACT OF COVID -19 ON DEMOGRAPHIC INDICATORS IN THE REPUBLIC OF NORTH MACEDONIA

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Abstract

Covid- 19 as a new global topic and of great interest to study in geographical space. The discussion of this important topic for the last two years, almost aroused great interest for treatment with geographical and demographic methods. It is of interest to us to be able to treat progress, demographic consequences, the loss of lives as a contagious pandemic disease. Through methods, tools and other research forms, the possibility of an overview of its knowledge is created in order to explain this morbid disease in the most professional and scientific way, which affects everyone, regardless of age, gender or ethnicity, as well as the unequal spread in the regions of the Republic of North Macedonia.

The purpose of this scientific work is the analysis or study of the most current issue in the last two years of the Covid-19 pandemic, which also aims at evolutionary evidence, the onset of the disease as an epidemic and its end in global pandemics, and the study of the state of demographic and socio-economic indicators in the given period.

Written sources, information provided in local institutions and outdoors, during consultations with specialists and residents, were used for the realization of the work. Analyzes, comparisons, graphic representations and syntheses have been made, in the form of conclusions and suggestions.

Keywords: Covid-19, epidemic, pandemic, population, demographic indicators, social-economic, health consequences.

ANALYSIS WATERS OF THE RIVERS FLOWING INTO LAKE OHRID

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Abstract

Water is one of the main existential conditions of life on our planet. It knows no borders, so it's a problem that belongs to all of us and we should all take care of it all together.
The permanent human being is used only to take things from nature not to contribute to ~~n~~ature". However human egoism in rapport with nature and the vital environment, which is exploited without control and without carefulness can destroy entire ecosystems. All of this is returned to the humans and seen in their life and health. We should leave as healthy and as useful an environment to the generations to come, as possible.
The aim of this paper was to analyze physical-chemical parameters, like pH, temperature, sulfates, chlorides, conductivity and suspendmateries. Water samples were taken in different locations of River Sateska, River Ezerka and River Velgozda and one lakeshore where the water of this river pours in the Ohrid Lake.
Clean Living Environment should be guaranteed to every citizen. Everyone is obliged to protect the living environment and nature, which means to protect the soil, the air and water.

Keywords: Ohrid, Lake, Inveronmental pollution, Protection mass.

THE MEANING OF THE DAYS OF THE WEEK

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Abstract

For human life everything is valuable and everything has its value in its time. The creation of the universe has its time, also other bodies as well as the Earth have their time of creation in all periods from the beginning until today. Whereas, man to live and plan his life in all aspects has made division or adaptation of his time by starting from the shortest time like seconds, minutes, hours, days, weeks, months, years, decades etc. He has also made units of measurement for his own needs, such as liters, kilograms and other units of measurement. He has named all these to distinguish them according to his needs. Seeing the movements of day and night as well as the seasons it was necessary to name the days, seasons and months with special names. As a result, today in the science of geography we learn about the universe, galaxies, the solar system, the rotation and revolution of the Earth, the internal construction of the Earth, the climate, etc. Therefore, naming the days of the week is necessary. Every nation has its own language and the naming of the days of the week is in its own language. The Albanian language, as one of the oldest Indo-European languages, has the days of the week named in its language that also have their meaning. Their name is as follows in the keywords and with explanation in this article.

Keywords: The universe, the didactics of geography, Saturday, Sunday, Monday, Tuesday, Wednesday, Thursday and Friday.

SPATIAL DISTRIBUTION OF THE POPULATION IN THE TERRITORY OF MOUNT ZEDEN IN TERMS OF TRAFFIC INFRASTRUCTURE

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Abstract

The subject of this paper is the spatial distribution of population in the territory of Zeden in terms of traffic infrastructure. The development of the population of the settlements depends on the influence of the different characteristics and conditions of the space where they are located. The paper analyzes the geographical distribution of the population in the settlements in Zeden in terms of traffic infrastructure, including the distance from the nearest cities, the distance from the headquarters of the municipalities belonging to the territory of Zeden etc. The descriptive, analytical, comparative method, statistical and cartographic method were used in the preparation of this paper. The analyzes and conclusions are based on the processing of data from the State Statistical Office of North Macedonia, from previous research and the literature on the studied area and field researches. The traffic is realized through highways, regional roads, local roads and railways. The obtained results indicate that the road network system provides efficient external and internal traffic. This shows the importance of the traffic network, through which the population communicates with other countries, and that in the future it is necessary to improve the situation in terms of interconnection of rural traffic. The purpose of this paper is to study the population of Zeden according to the traffic infrastructure as an important prerequisite for the development of the space, because it provides a connection between the settlements and their population, through which they can develop their economic activities.

Keywords: Zheden, population, traffic, municipalities, settlements.

NUMBER, DENSITY AND GEOGRAPHICAL DISTRIBUTION OF THE POPULATION IN THE MUNICIPALITY OF GOSTIVAR

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Abstract

This paper deals with the number, density and distribution of the population of the municipality of Gostivar, compared to that of Upper Polog. Particular attention is paid to the analysis of the process of changes in the number and density of the population during the period 1948-2020, at the municipal and regional level. The study aims to identify the growth rates of population and density in the municipality of Gostivar and Upper Polog. Population is the main factor of development and progress of any country. But even it itself changes and develops depending on natural, social and economic conditions. So, the population is the bearer of economic and social development, of the general development of the state or its specific regions, but it can not be studied in isolation, separated from the space where it is located and from the economic and social development in general. On the contrary, population, area and development are organically linked and interdependent, so they should be studied in an integrated way. Population is one of the main factors influencing socio-economic development. Demographic development is assessed as a complex process, which depends on economic, social, socio-psychological factors, etc. Population development is a complex process, in which both quantitative (number) and qualitative (structures) changes occur at family, community, settlement, region, state, levels, etc.

Keywords: population, density, municipality, region.

RECEPTIVE CAPACITIES AND TOURIST FREQUENCY OF THE SOUTH-WEST REGION OF THE REPUBLIC OF NORTH MACEDONIA

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Abstract

Tourism is the most recognizable development feature of the South-West Plan Region. This is due to the fact that it is the most developed tourist region of the Republic of North Macedonia. The basis for the dynamism of tourism in this area of our country is composed of natural features, rich cultural heritage, protected spatial entirety and long tradition.

Receptive capacities, frequency, material base and tourist turnover are the main indicators of tourism. These depend on the results achieved in tourism, through which we will see the tourist development of the South-West Region.

The material base consists of that part of the tourist offer that ensures the accommodation of tourists in one location, as well as all other necessary conditions, which allow for rest and recreation. This actually includes all elements of the offer in the broadest sense of the word, which in a direct or indirect way serve to meet the tourist's needs.

This research paper will process the existing receptive basis regarding accommodation capacities and complete infrastructure, as they are also the cause and determinant of the total tourist development of the South-West Region.

Keywords: Southwest region, receptive capacities, tourist frequency.

MATHEMATICS

IMPLEMENTATIONS OF FIRST-ORDER DIFFERENTIAL EQUATIONS

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Abstract

Differential equations have extremely high importance in different techniques and fields of science because through them they can be connected in relation to many different sizes and functions. The areas where they find the most application are engineering, physics, economics and other disciplines. Common and partial differential equations appear in physics as equations of movement or state.
In this paper we will give an application of differential equations of the first order in the field of engineering. To solve the problem, two steps are proposed. First, the differential equation is marked and secondly integrated to get the initial value solution.

Keywords: Kirchhoff's law, drop in voltage, initial load, first-order differential equations.

MOTIVATION IN MATHEMATICS: THE CASE OF A GYMNASIUM IN PEJA DISTRICT OF KOSOVO

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Abstract

Using the secondary data for 250 and primary data through a survey of 25 students from a gymnasium in Peja district, Kosovo, this paper finds good or appropriate curricula and fear of failure or repeating the year not a factor in better grades but on motivation mainly coming from the teacher. Compared to the rest of the subjects and overall student performance, mathematics still remains with the poorest results on average. This is in line with earlier PISA test findings which ranked Kosovo very low, with mathematics being even lower. The average result in mathematics of 2.95 (for the grades from 1 fail to 5 excellent) in this case study is below the overall success of the students. While the causes of poorer results in mathematics versus other subjects have been observed in the rest of Kosovo's upper secondary schools and gymnasiums, the contribution of this paper is in identifying the factors which work better as a driver of motivation for better results. The recommendation in this respect is dependent on fixing a number of lateral effects or constraints such as political, economic, and technological development as externalities which in one way or another impact the self-determination of the students, therefore, their overall results in mathematics as well. Given that self-efficiency by the students in this case study was not found to have any significant impact on motivation, the paper recommends tightening the criteria against easier passing grades in mathematics because of overall success.

Keywords: motivation, teaching, mathematics, performance, gymnasium.

EVALUATE THE BALANCE IN THE MARKET

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Abstract

The work paper presents the balance between supply and demand in the market in the case where the price of the product depends on the price of other products. Here, the quantities are presented with a linear function of many variables and in the special case presented with a function of the second order of many variables, or the function in the case where the conjunctions of the equations are resolved.
Beginning with relations of depending the quantity from the prices of some products presents with functions of many variable:
Supply $Q_{vi}^{o} = f_i^{o}(P_{v1}, P_{v2}, P_{v3}, \dots P_{vn})$,

Demand $Q_{vi}^{k} = f_i^{k}(P_{v1}, P_{v2}, P_{v3}, \dots P_{vn})$,

where , $i=1,2,3,\dots,n$ and Q_{vi}^{o} , Q_{vi}^{k} are value of quantity of products v_i depending from positive linear functions of many variable $f_i^{o}(P_{v1}, P_{v2}, P_{v3}, \dots P_{vn})$ and $f_i^{k}(P_{v1}, P_{v2}, P_{v3}, \dots P_{vn})$ presented for supply and demand of the market.

For balance of the market we get:

$Q_{vi}^{o} = Q_{vi}^{k}$, where i=$1,2,\dots,n$
presented a system of equations which the solution gives us the balance price of the products, from where we get the balance quantity for products. In the special case, is possible another form of the function when the system may find the result.

Keywords: market, demand, supply, balance, system etc.

SOME PROPERTIES OF SPECIAL SEMIGROUP PRESENTATIONS

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Abstract

Semigroup presentations have been studied for a long period. Since 1936 J. A. and H. S. M. have created Todd Todd – Coxeter algorithm for solving enumeration problems of presentations. Here we present some semigroup presentations in terms of generators and defining relations. The aim of this paper is to investigate some properties about the relationship among abstract generators defined on semigroup using computational methods.

Keywords: Semigroup presentations, Generators, Relations.

USING EULER'S METHOD TO APPROACH THE SOLUTION OF A FIRST-ORDER DIFFERENTIAL EQUATION

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Abstract

The objective of studying this paper is the use of Euler's method to approach the solution of a first-order differential equation at the interval. Euler's methods was the most fundamental and simplest of procedures used to find approximate numerical solutions of an ordinary first-order differential equation, provided his initial value is known. In Euler‘s method, we can approximate the curve of the solution by the tangent in each interval (that is, by sequence of short line segments) at steps of h. In general, if we use small step sizes, the accuracy of approximation increases.

Keywords: step h, approximate value, the Euler‘s method.

SPECIFIC NUMERICAL PROPERTIES OF B-SPLINE IN FUNCTION APPROXIMATIONS

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Abstract

B-splines are a class of functions with interesting and numerically useful properties. Spline functions are partial polynomials connected by the $\Delta = \{ a = x_1 < x_2 < ... < x_n = b \}$ distribution on the [a, b] segment in x_i nodes. *B*-spline is a combination of curves that pass through a certain number of points (control points) and form smooth curves. In this paper, we will consider *B*-splines as special partially nonnegative polynomials that disappear everywhere except in at several adjacent $[x_{i-1}, x_i]$ intervals. From a numerical point of view, it is important to define *B*-splines through divided differences, with the possibility of calculating higher-order *B*-splines recursively. *B*-spline approximations will be considered taking into account only the local behavior of the primitive function. We will use a numerically stable algorithm to efficiently calculate the estimate of the *B*-spline function. Some specific applications of *B*-spline calculated using the *Mathematica* program package and geometric interpretation of results are given.

Keywords: B-spline properties, Approximations via B-splines, Estimation of B-spline, Inverse function formula.

CHARACTERISATION OF ISOLATED POINTS IN T1 SPACES USING CHAINS

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Abstract

By the standard definition, a point x is an isolated point in a topological space if its corresponding one-element set is open. Here it is characterized by the notion of isolated points using chains and open covers of the space. Namely, x is an isolated point in a T_1 topological space if there exists an open covering of the space such that for any other point of the space, there is no chain in the covering joining it with the point x. Equivalently, it is provided a characterization of isolated point using the notion of pair of chain separated sets relatively a T_1 space, while when using the notion of pair of weakly chain separated sets relatively a T_1 space it is shown that only the sufficiency of the claim holds.
Using these results, a characterization of discrete topological spaces is provided and it is proven that every compact Hausdorff space without isolated points is uncountable.

Keywords: Isolated points, Chain connectedness, Chain separated sets, Open covers.

A PREDICTOR-CORRECTOR METHOD FOR SOLVING DIFFERENTIAL EQUATIONS OF FRACTIONAL ORDER

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Abstract

The story of the fractional calculus began with that letter in 1695, answered by Leibniz. Classical analysis is not always sufficient, for real problems, constructed by using mathematical expressions, for solving their applications in engineering, science, and many other fields. The aim of this paper is to show the effectiveness of the numerical predictor-corrector method known as Fractional Adams-Bashforth-Moulton method (FABM) by its application on solving different types of nonlinear differential equations of fractional order $0<a<1$. It contains a short survey of basic numerical methods (FABM) using the fractional derivative defined by Caputo. The equivalence between an ordinary differential equation of fractional order and a suitable Volterra integral equation is key to the approaches. The numerical results for the constructed method are compared with the exact solution for each equation by using absolute error (absolute difference between the exact and approximate solution at each integration point).The method is very simple and very much effective for solving differential equations of fractional order, it may be used. The behavior of the approximate time-series solutions are tabulated and plotted at different values of the fractional orders. During the work, it became necessary to use such symbolic software packages as Mathematica 12.1 in completing the required steps of the above procedures.

Keywords: Fractional initial-value problem, Caputo fractional derivative, Volterra equation, Fractional Adams-Bashforth-Moulton method, Exact solution.

DIFFERENT APPROACHES DEVELOPED TO SOLVE NONLINEAR FRACTIONAL DIFFERENTIAL EQUATIONS

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Abstract

Fractional calculus, particularly fractional differential equation (FDE), has significant applications, which thus plays a crucial role in various fields of science and engineering such as signal processing, control theory, modeling of materials and diffusion processes. In this paper, new approaches are developed to solve a class of nonlinear fractional differential initial value problems with fractional derivatives defined in Caputo sense. Two numerical methods have been presented, Fractional Adams-Bashforth-Moulton Method (FABMM) and Fractional Differential Transformation Method (FDTM) compared with Abdominal Decomposition Method (ADM), used for very specific types of nonlinear problems. The methods are used on two different nonlinear fractional differential equations of the form $D^a y(t) = f(y(t))$, with and without exact solutions for the same initial condition y(0)=0. We present new results that deal with the Adominal Decomposition Method (ADM), suitable to handle fractional calculus applications. The results are obtained with comparisons made between FDTM, FABMM and the exact solutions at each integration point, given, both graphically and tabularly, for different fractional orders 0<a<1, constant step-size h=0.01 and small time interval t E [0, 0.5] . Our work, using symbolic software packages as Mathematica 12.1, can be considered as an alternative to existing techniques, and will have wide applications in science and engineering fields.

Keywords: Nonlinear fractional differential problem, Initial value, Adominal Decomposition Method, Fractional Adams-Bashforth-Moulton method, Fractional Differential Transform Method, Exact solution.

METRIZABILITY OF TOPOLOGICAL SPACES

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Abstract

In this paper, we are going to analyze a wide class of topological spaces - the so-called metric spaces. These are sets in which the notion of distance between any two points. It is well known that the distance function or metric defined on a metric space X induces a topology on that space X.
In the second part of the paper, we are going to study well-known characterizations of the class of topological spaces, the topology of which is determined with the help of metrics - the so-called metrizable spaces.
The question here is when is a topological space metrizable?
The answer of this question is the main result of this research, which are some important criteria, which are necessary and sufficient, that topological spaces must possess in order to be metrizable.

Keywords: Topological spaces, Metric spaces, Metrizable spaces, T_3-space, Hilbert space.

THE RELATIONS BETWEEN MODES OF CONVERGENCE

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Abstract

In this paper, we are going to analyze the relations between different types of convergence of a random sequence, such as almost sure convergence, convergence in mean square, convergence in distribution and convergence in probability. The convergence in distributions says nothing about the relationship between the random variables and X, while for convergence in probability, the joint distribution of and X is relevant.

In the main part of the paper, we are going to prove the theorem which argues that the convergence in probability implies convergence in distribution, and the opposite is not true. But if $X \longrightarrow c$, where c is a constant, then $X \longrightarrow c$, which means that convergence in probability to a constant is equivalent to convergence in distributions.

Also, we give some interesting examples.

Keywords: random variable, random sequence, mean square, convergence, distributions.

DISTRIBUTIONS GENERATED BY THE BOUNDARY VALUES OF FUNCTIONS IN SMIRNOV SPACES

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Abstract

We characterize the distributions generated from the boundary values of functions from Smirnov spaces We obtain necessary and sufficient conditions for a distribution generated from an element of the Smirnov class to be the boundary value of analytic functions on upper half space. The boundary values are taken in the distributional sense.

Keywords: Boundary values of distributions, Distributions, Smirnof spaces.

SOME OSCILLATION CRITERIA FOR SECOND ORDER NONLINEAR DIFFERENTIAL EQUATIONS

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Abstract

We present new oscillation criteria for certain nonlinear differential equations of second order with damping term

$$\big(r(t)x'(t)\big)' + p(t)x'(t) + q(t)f\big(x(t)\big) = 0 \qquad t \geq t_0 \qquad (1)$$

to used the oscillatory solutions of differential equations

$$\big(a(t)x'(t)\big)' + \beta(t)f\big(x(t)\big) = 0 \qquad (2)$$

and

$$\big(a(t)x'(t)\big)' + \beta(t)f\Big(g\big(x(t)\big)\Big) = 0 \qquad (3)$$

where that is different from most known ones. Our results extend and improve some previous oscillation criteria and cover the cases which are not covered by known results. In this paper, by using the generalized Riccati technique we get a new oscillation and nonoscillation criteria for (1). The theorems prove to be efficient in many cases and give the results in the literature.

Keywords: differential, equations, interval, criteria, damping, second order.

PHYSICS

INFLUENCE OF PHASE COMPOSITION ON PHOTOCATALYTIC ACTIVITY OF TIO2 THIN FILMS BY MEPIIID

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Abstract

TiO_2 thin films were produced by metal plasma immersion ion implantation and deposition at room temperature, 200^0C and 300^0C with the voltage pulses, accelerating the ions towards the substrate, ranging from 0 kV to 5 kV and a duty cycle of 9%.
Phase formation, texture and morphology are investigated using SEM, TEM and X-ray diffraction. The photocatalytic activity was examined by exposing the samples to UV light, generated from an actinic tube with a spectral range of 300 nm – 460 nm with the maximum at 365 nm, at an intensity of 1 mW/cm^2, for up to 3 hours. The photocatalytic activity of the samples was investigated by the decolorization of Methylene blue, which is used as a standard substance also in the literature. In this case, it can be assumed that the photocatalytic activity is strongly correlated with the superhydrophilic activity. As a corollary, the phase composition is more important than the microstructure for the photoactivity. The nanocrystalline or amorphous film obtained at 5 kV and RT is photoactive, similar to the columnar structured film at 5 kV and 200 °C. In contrast, the film deposited with 5 kV pulse voltage at 300 °C, which is structurally nearly identical except for slightly smaller grains, is not photoactive at all.

Keywords: TiO2, PIII, SEM, TEM, Photoactivity.

LOW-ENERGY ION BEAM INDUCED PATTERN FORMATION ON SI SURFACES

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Abstract

The fabrication of regular nanostructures on the nanometer length scale builds the basis for many technological applications in variety of fields, from optics to optoelectronics, to biological optics, to templates for the deposition of functional thin films, and to data storage industry. One effective method is the low-energy ion beam erosion of solid surfaces that is a widespread technique used in many surface processing applications. For particular sputtering conditions, due to self-organization processes, the surface erosion process can lead into well ordered nanostructures on the surface like ripples or dots.

Typically, during ion sputtering, the surface of the solid is far from equilibrium and a variety of atomistic surface processes and mechanisms become effective. It is the complex interplay of these processes that either tends to roughen (e. g., by curvature dependent sputtering or incorporation of surface contaminations) or smoothen (e. g., by surface diffusion or viscous flow of surface atoms) the surface, which, finally, can result in a rich variety of surface topographies.

In this talk the current status of self-organized pattern formation by low-energy ion beam erosion is summarized. In detail it will be shown that a multitude of patterns can evolve on the surface with a periodicity from 30 nm to 100 nm.

Keywords: Ion beam, nanostructures, self-organization.

SURFACE COATING OF STAINLESS STEEL WITH A ZINC LAYER BY HOT DIP GALVANIZING

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Abstract

Metallic materials during their use in different technologies show corrosive properties that lead to changes in the properties of bulk materials and fatigue. For the protection of these materials, usually one uses the method of surface coating with materials that are resistant against corrosion and at the same time have little effect on the properties of the bulk material. In this work the coating of Stainless Steel used in construction with a layer of Zinc will be presented. Zinc as a metal has some properties like the ability to build dense films with high adhesion properties where the corrosion is much lower than the ferric materials. This is enabled by the Zinc carbonate layer that is resistant against corrosion that on the other side is created through the combination of Zinc with the Oxygen, Zinc oxide with the water molecules in air, then Zinc hydroxide with the atmospheric carbon dioxide. This layer of Zinc carbonate adheres very well with the inner zinc layer protecting it from further corrosion. The Steel coating is performed through the process of putting in a hot bath at temperatures between 440 ªC and 450 ªC. The texture and morphology of the samples have been studied using the Scanning electron microscopy.

Keywords: Zinc, HDG, SEM, XRD, EDAX.

MONITORING AND ANALYSIS OF PM10, PM2.5 PARTICLES AS AIR POLLUTANTS IN THE CITY OF TETOVO, REPUBLIC OF NORTH MACEDONIA

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Abstract

In recent years, Tetovo has been one of the most polluted cities in the world in terms of air quality. This paper aims to study the air quality in the city of Tetovo in North Macedonia, in terms of PM2.5, PM10 particles and the chemical analysis of heavy metals for PM2.5, PM10, and particles with SEM (Scanning Electron Microscopy). We have selected eight reference points for the study in Tetovo. PM2.5 particles were collected in the period (23 April – 05 May, 2021) with PPM Systems equipment, Espoo, Finland, with standards EN 12341: 1998, using nitrocellulose and quartz filters with pore size such that the particles PM2.5 are collected in the filter. The results of chemical analysis by SEM has shown that PM2.5, PM10, particles are composed of Carbon, Oxygen, Silicon, Calcium, Iron, Fluorine and more rarely of Sulfur, Aluminum, Zink, Barium and Titanium.

Keywords: $PM_{2,5,}$ PM_{10} Element analysis, Scanning Electron Microscopy (SEM), Energy Dispersion X-ray Spectroscopy (EDX).

ELECTRODEPOSITION OF CHROMIUM IN ALUMINUM ALLOY AA6060

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Abstract

Chromium electrodeposits improve the hardness, wear resistance, and corrosion resistance of engineering components. These properties made chromium very acceptable for electroplating. Aluminum alloy AA6060 is used for enclosing constructions such as windows, facade construction, winter gardens, internal partitions, stairs, fences, rail, heating and cooling pipes, furniture, etc. These applications make this alloy extremely interesting for electroplating technology. In this work we have studied mass of electrodeposited chromium and its thickness in different five samples of aluminium alloy AA6060 which have undergone the galvanizing process. The galvanizing process is performed for different time intervals 20 min, 40 min, 60 min, 80 min and 100 min, respectively. Masses of the samples of aluminium alloy were measured before and after galvanizing with technical scale. The thickness of electrodeposited chromium in different samples was defined from photographs obtained with metallurgical optical microscope with magnification 500X. For the electrolysis process samples were prepared with abrasive papers while for optical microscope observation was used a polishing machine. The solution used for the electrolysis process was potassium dichromate. The methods used during work of this paper have been: electroplating, metallographic specimen preparation and optical microscopy. The key process of this work is

galvanizing process while the main law in accordance with which galvanizing process takes place is Faraday‘s first law of electrolysis.

Keywords: Aluminum Alloy 6060, Electroplating, Mass of electrodeposited chromium, Thickness of electrodeposited chromium.

PHET SIMULATIONS VS TRADITIONAL BASED TEACHING FOR BETTER UNDERSTANDING OF MECHANICAL MOTIONS

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Abstract

In this research, we have investigated the advantages and disadvantages of using traditional teaching and Phet simulations in developing students‘ knowledge and skills to learn and understand better mechanical motions. The investigation samples consist of 10th-grade students from ―Maarif International Schools" Macedonia. The students were divided into two groups: The Traditional group and Phet group. Phet simulations were applied in the classes of the Phet group and traditional based teaching was applied in the Traditional group. Comparison of the two sections were based on the students‘ exam after the topic was finished. The research showed that each of the approaches gives different contributions to the knowledge and understanding of the processes and concepts of teaching. At a traditional based teaching group there is a constant need to look for new ways to motivate students. The traditional classroom teaching environment increases interaction among students and provides a conducive environment to learn from fellow students. It also encourages a higher level of competitiveness among students. On the other hand, Phet simulations give opportunity to the students to spend more time thinking about the results, phenomena, give contribution to the skills related to cooperation, teamwork and relations, as well as better understanding of the phenomena.

Keywords: Phet simulations, traditional teaching, high school students, mechanical motions, cooperation.

PROPERTIES OF FLOUR OBTAINED FROM MALTED GRAINS – REVIEW

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Abstract

Germination as part of the malting process produces malt flour, which can be obtained from various grains (e.g., barley, sorghum, wheat, and rye). Malting is a technological process that involves several operations: steeping, germination, kilning and cleaning, resulting in malt as the final product, which is usually used for brewing. Further milling of the malted grain produces malt flour, which is often used as an additive to wheat flour to enrich it and obtain better technological properties in the production of bread and bakery products. Information on malt flour with high enzyme content can be found in the literature. However, the literature lacks data on the general changes during germination in the malting process, affecting both carbohydrates and protein complexes. The aim of this review is to present the changes in grains during the germination process and to use malt flour for the production of new functional products.

Keywords: germination, grains, malt flours, functional products.

DEVELOPMENT OF BLACK MULBERRY, RED GRAPE AND BLACKCURRANT JUICE

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Abstract

Raw materials from black mulberry, red grapes and blackcurrants, rich in biologically active components and secondary metabolites (polyphenols), were studied to participate in the development of model prototypes of fruit-based juices.

Based on the analyzed fruits varieties and genotypes, showed of our previous publications technologies juices were developed.

Model prototypes of monocomponent, bicomponent and multicomponent juices from the listed raw materials, received by cold pressing, were developed.

We used a simplex zitroid plan, based on which they are prepared juices based on fruits (black mulberry, red grape and blackcurrant).

Characterization of the developed prototypes was performed on the basis of the conducted biochemical, sensory and spectral studies on the day of their receiving.

As a result of the obtained mathematical models for the content of total polyphenols, antioxidant capacity, estimated by determining the radical scavenging ability (DPPH-test), sensory evaluation and color parameters, the composition of developed test samples of fruit-based juices was optimized and the following composition was recommended: black mulberry from 60 to 75%, red grapes up to 40% and blackcurrants from 30 to 90%.

The products are rich in bioactive substances and polyphenols as the content of total polyphenols ranging from 130 to 360 mg% and anthocyanins from 180 to 750 mg% .

Different content of biologically active substances determines the different antioxidant activity of products whose values are from

4417 to 5242 μmolTE/100g. It was found that the antioxidant ability of the tested samples was mainly due to the antioxidants acting as electron donors and the synergistic and antagonistic effects of other components in the system as the physical interaction between the phenolic compounds.

Keywords: total polyphenols, color, antioxidant activity, sensory evaluation.

CONTINUOUS MAIZE PROCESSING IN A BEER PRODUCTION FACTORY "BIRRA PEJA", IN PEJA

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Abstract

The experiments conducted at "Birra Peja" examined the influence of continuous and batch procedures of maize processing on wort and beer qualities. Continuous maize mash processing was carried out in the injector (mashing) system with the addition of thermostability bacterial *α amylase (termamyl)*, and batch processing was carried out classically in a micro mash tun with the addition of malt.
According to the analysis performed in the central laboratory of "Peja beer", worts produced by continuous maize processing had higher color and were richer in nitrogenous constituents. The worst' differences were noticeable until the end of the beer production process. It was also noticed that beers produced from continuous maize mashing had lower transparency and were richer in volatile aroma constituents.

Keywords: maize, mash, nitrogen, termamyl, wort.

TESTING OF WORT AND BEER COMPOSITION PRODUCED FROM GREEN AND DRY MALTS IN "BIRRA PEJA" BREWERY

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Abstract

The paperwork presents laboratory tests on green malt influencing beer and worst qualities. The test beer grist contained green malt, and the control sample was produced of the same green malt previously dried to 4 % humidity in laboratory conditions in the central laboratory in "Birra Peja" brewery. Special attention was paid to carbohydrate composition change during the mash dissolving process to determine the difference between green and dry malts' amylolytic enzyme activities.

Though green malt mash contained more active amylolytic enzymes than dry malt mash, both had almost the same fermentability sugar content at the end of the mashing process. Comparative analysis of test and control beer samples qualities shoved negative green malt influence on beer filterability. But both of these beers were rated positively by the tasting group.

Keywords: dry malt, enzymes, green malt, mash, wort.

HOW PERIPARTURIENT DISEASES AFFECT MILK COMPOSITION OF DAIRY COWS: SHOULD WE BE CONCERNED?

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Abstract

Milk is a very rich product used for both animal and human consumption. In a recent study we identified and measured 2,355 metabolites with a whole variety of essential nutrients including amino acids, lipids, free fatty acids, organic acids, vitamins, minerals and biogenic amines. All these nutrients are very important for human children and adults. In this study we aimed at analyzing whole raw milk from dairy cows affected by mastitis and healthy ones. We used DI/LC-MS/MS and NMR to analyze milk from 6 lame cows and compared those with the milk of 20 healthy cows. In total we were able to identify and quantify 168 metabolites (132 with DI/LC-MS/MS and 36 with NMR). A total of 35 of the identified metabolites decreased versus control cows. Results showed that at the week of lameness diagnosis (+2 wks postpartum), a total of 37 metabolites were altered in the milk of those cows. A total of 35 of the metabolites identified were decreased in comparison to CON cows. Among the decreased metabolites, 11 were phosphatidylcholines (PCs), 8 amino acids AAs), 7 sphingomyelins (SMs), 4 acylcarnitines (ACs), and 3 biogenic amines (BAs), The most decreased metabolites in lameness cows were Trp and Met with -4.18- and -3.43-fold decreases, respectively. Overall, data showed major changes in metabolites in the milk of lame cows versus the healthy controls. It seems like lame cows are deflecting their metabolites toward immune response and healing of the inflamed hoofs. Metabolites affected are very important because they play important roles in immunity, growth of offspring, synthesis of milk fat globules and proteins, and milk yield. More research to investigate how the altered milk metabolites could affect the growing calves or children would be warranted.

Keywords: Milk, dairy cow, lameness, metabolomics, alterations.

INFLUENCE OF GARLIC HERB (ALLIUM SP.) ON COLOR, FREE FATTY ACIDS, CHEMİCAL AND SENSORY PROPERTIES OF HERBY CHEESE

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Abstract

Herby cheese is one of the popular cheeses traditionally produced from milk of sheep, goat and cow or mixture of them in Turkey. About twenty-five kinds of herbs are used for the production of the cheese "Otlu peynir" translated as "Herby cheese." The herbs commonly used in cheese are as follows; *Allium* sp., *Ferula* sp. and *Prangos* sp. The other important characteristic of the cheese is that it is firmly filled in a plastic container and stored underground during ripening. The flavor becomes highly acceptable after three months of ripening. Recently, it has also been produced in industry pickled and vacuum packaged form. The objective of this study was to investigate the effect of wild garlic (*Allium* sp.) on FFA, color values and sensory properties of Herby-pickled cheese. The free fatty acids (FFA) are known to play an important role in flavors of many varieties of ripened cheese. The increase in herb levels in cheese resulted in a significant increase in total free fatty acids value. While the caproic, capric, lauric, myristic, palmitic acid levels of cheese were significantly increased by herb addition, stearic and oleic acids values significantly decreased. Herb addition only significantly affected the body and texture of cheese samples. Sensory scores determined in cheeses during ripening showed significant differences.

Keywords: Herby cheese, Allium sp., color values, free fatty acids.

IDENTIFYING TRAINING NEEDS USING BORICH NEED ASSESSMENT MODEL IN THE BEEKEEPING PRACTICES IN DEVELOPING COUNTRIES: THE CASE OF KOSOVO AND ALBANIA

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Abstract

Honey has the image of being natural and healthy; however, beekeeping practices can pollute it. In developing countries, different types of contaminants related to beekeeping practices occur because the beekeepers do not receive accurate information on the linkage between best practices, honey quality and health issues. This study analyzes the gap between honey attributes importance linked to beekeeping practices such as filtration, heating, additives, honey improvement, antibiotics and the information level on the attributes mentioned above. The discrepancy between the importance and information level is used to proxy future training needs. The latter is a discrepancy analysis that identifies two polar positions, following Borich-type discrepancy scores. The two most commonly reported in the agricultural education literature are importance/ability or what is/what should be. The discrepancy between these two poles can be used to 1) create an index of the training programs and their further improvements 2) prioritize the importance of the needed information to achieve the training goals. The beekeepers are asked first to rate the importance of honey production practices (named in this study attributes) and second the level of their information on each practice. A response of one will indicate that the attribute is not important, and five indicates that it is very important for the honey quality. The respondent will also rate the perceived level of

information using a five-point Likert Scale again. A discrepancy score for each respondent on each professional competency will be calculated by taking the importance rating minus the information level rating.
The results show a statistically significant gap in all the considered honey beekeeping practices that we name here attributes. The discrepancies between the importance-info level were higher on antibiotics use, colorant and additives, improving the honey characteristic and honey heating/conservation practices. Nevertheless, the study shows that beekeepers need additional information on all considered attributes. The novelty of this study is that beekeepers are not asked how much they want to know but the level of information they have and the importance that they confer to each of the honey beekeeping practices. The policymakers and universities can use this information to craft and prioritize the training curricula based on beekeepers' needs.

Keywords: beekeeping practices, honey quality, training needs, Borich need assessment.

PHYSICOCHEMICAL AND MICROBIOLOGICAL CHARACTERISTICS OF COMMERCIAL GOAT WHEY FERMENTED WITH KEFIR GRAINS

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Abstract

The goat milk whey becomes more interesting for the consumers of healthy and functional food. Whey nutritive value, better protein digestibility than the casein, participation in immune system activation, bactericide characteristics as well as positive influence in allergic reaction inhibition makes this beverage to be in demand in the market. The dairy industry who create large amounts of whey have to introduce processes to recover all of the milk solids and these processes need to be cost-effective and environmentally friendly. The aim of the present study was to evaluate the nutritional value of commercial goat whey and the possible changes as a result of whey fermentation using kefir grains. The samples of goat whey were collected from a market. The fermentation was carried out at a room temperature (25 C) in time of 24 hours. The fermentation of the whey was performed with different quantities of kefir grains (2%, 5% and 10%). The examined physico-chemical characteristics of whey were not significantly changed except the pH value and titratable acidity. The antioxidant capacity of fermented whey was also analyzed. The microbiological examination showed a tendency of decreasing in the number of all investigating groups (total aerobic count, Lactobacillus sp., yeasts and molds, coliform bacteria and *Staphylococcus aureus*). After 24 hours incubation at 37 C no strains of *E.coli* ATCC 8739 and coagulase positive *Staphylococcus aureus* ATCC 9610 additionally added were recorded in whey

fermented with 10% kefir grains. The bactericidal effect of kefir grains over the used bacterial strains needs further investigations.

Keywords: goat whey, kefir grains, microbiological characteristics, physico-chemical characteristics.

NOVEL FOODS IN NORTH MACEDONIA: REGULATION, ROLE AND PERSPECTIVES OF FOOD OBTAINED WITH INNOVATIVE TECHNOLOGIES

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Abstract

The evolution of the dietary habits of populations opens up new opportunities for food operators, who in recent years have been interested in developing new products but also in enriching available products with new ingredients. Food or food ingredients obtained with innovative technologies and food that had not been consumed to a significant degree by humans before 15 May 1997, are considered as novel food. For easier use and characterization, novel foods have been categorized into four groups. A key aspect for its approval and marketing is for it to be safe and not to pose a risk to human health, not to mislead consumers, all of which is confirmed by relevant scientific evidence. The regulation and approval of novel foods in Europe after 2018 must comply with EU Regulation 2015/2283, which regulates the manner of its authorization and presentation. According to EFSA, the number of applications for novel foods has increased with the setting of the new regulation. Any novel food that is approved is placed in the European Novel Food Catalogue and this is regularly supplemented in accordance with the food operators' claims. The list of approved foods and food ingredients produced with innovative technologies in the Republic of North Macedonia has so far numbered 532 food or novel food ingredients and over the years it has increased. Assessing the value

and importance of novel food in the modern food industry, this paper will review the approved novel foods in the Republic of North Macedonia, its presence and role in obtaining new innovative products. This paper shall also make it possible to inform consumers, food operators, the academic community and the food industry about the future prospects of novel foods when creating innovative products with increased nutritional and functional characteristics.

Keywords: novel foods, North Macedonia, food ingredients, innovative technologies, food safety, new innovative products.

FORMULATION, PRODUCTION AND DETERMINATION OF PHYSICAL-CHEMICAL AND SENSORY CHARACTERISTICS OF THREE DIFFERENT FUNCTIONAL OHRID TROUT PÂTÉS

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Abstract

The aim of this research is to formulate and produce functional pâté made of Ohrid trout with different percentages of meat in its content, (40%, 50% and 60%). The functionality of the pâté is improved by using olive oil as fat and vegetable proteins and pea fibers to stabilize the emulsion. The three pâté formulations were produced without using any E-label additives. The pâtés are characterized with good and stable emulsion and fulfill technological and sensor characteristics of a pâté. The physical-chemical analyses prove that the final product has a low percentage of fats: 19%, 18.5% and 16.5% for pâtés A, B and C, respectively.

Keywords: Ohrid trout, functional pâté, olive oil, vegetable fibers.

DIAGNOSIS OF MYASTHENIA GRAVIS THROUGH ANTIBODIES ANTIACETYCHOLINE AND ANTIMUSC

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Abstract

Myasthenia gravis (my-us-THEE-nee-uh GRAY-vis) is characterized by weakness and rapid fatigue of any of the muscles under your voluntary control, which is caused by a breakdown in the normal communication between nerves and muscles. In the most common cases, muscle weakness is caused by circulating antibodies that block nicotinic acetylcholine receptors at the postsynaptic neuromuscular junction. By blocking the ability of the neurotransmitter acetylcholine to bind to these receptors in the muscle, these antibodies keep motor neurons from signaling the muscle to contract. Alternatively, in a much rarer form, muscle weakness is caused by a genetic defect in some portion of the neuromuscular junction that is inherited at birth as opposed to developing through passive transmission from the mother's immune system at birth or through autoimmunity later in life. The disease is diagnosed in 3 to 30 people per million per year. Diagnosis is becoming more common due to increased awareness. The condition occurs more frequently in women than in men and begins most commonly between ages 20 and 40 years of age.

Keywords: Myasthenia gravis, neurotransmitter, diagnosed, disease.

INFLUENCE OF STAGE DEVELOPMENT AND AGROCHEMICAL COMPOSITION OF SOIL ON MOLYBDENUM (MO) CONTENT IN ALFALFA (BANAT ZMS II)

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Abstract

Alfalfa cultivation (Banat ZMS II) was carried out in the plots of four localities: Saraj, Radusha (outskirt of Skopje), Jegunovce (Tetovo) and Kodjilari (Veles) with known content of nitrogen, phosphorus, potassium, iron and pH value.

The developmental phase showed a significant impact on the molybdenum (Mo) content in the dry matter (MTh) of the experimental alfalfa (leaves and stems), whereas in the stage of flowering the average Mo values were lower by 20.45% (1.44mg/kg MTh), while in the two stages of development the average content of Mo in the mass of leaves (1.90 mg / kg) along with that of stems (1.28 mg / kg MTh) was higher by 65.89%. Also, the quantities of Mo uptake or absorption in cultivated alfalfa variants were correlated with the different nitrogen, phosphorus and iron contents found in the experimental plots, a ratio especially expressed in the alfalfa of the Radusha and Kodjilari localities.

Keywords: alfalfa, dry matter, molybdenum, stage of development, localities.

INFLUENCE OF DIFFERENT FLOURS ON THE RHEOLOGICAL AND SENSORY PROPERTIES OF BISCUITS

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Abstract

Biscuits are flour-based food products that are consumed by all age groups as they have a very good and attractive taste and aroma, with high calorie content due to the addition of sugar and fat, while poor in dietary fiber, minerals and other nutrients. Our study deals with the addition of chickpea, soybean and flaxseed flours in amounts of 20% and their impact on the rheological properties of the dough and the sensory properties of the biscuits. The obtained results of rheological qualities with farinograph showed that with the addition of flours the water absorption increases, the dough development time increases where it is higher in soy flour biscuits with 6.43 minutes, the stability of the dough is weakened, while the degree of softening of the dough also is weaker except in soy flour dough which is the same as wheat flour dough with 27 FU. Rheological properties with an extensograph showed that the maximum resistance of the dough increases, where it is highest in flaxseed dough with 613 EU, but the extensibility and energy of the dough are significantly reduced. On the other hand, the sensory properties of flour-added biscuits are generally poorer than wheat flour biscuits, except for soy-flour ones which are similar to wheat flour biscuits.

Keywords: soy flour, sensory properties, farinograph, biscuits.

COMPARISON OF SOME QUALITY AND MICROBIOLOGICAL SAFETY PARAMETERS IN PEACH JUICE WITH DIFFERENT FRUIT CONTENTS

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Abstract

In the fruit and vegetable processing industry an important branch is the technology of juice production. Fruit juices are becoming an important part of the modern diet in many communities. It acts as a nutritious drink and can play an important role in a healthy diet because they provide good taste and a variety of nutrients found naturally in fruits. Juices are available in their natural concentrations or in processed forms. Juices are fat-free, nutrient-rich beverages that are rich in vitamins, minerals and natural phytonutrients that contribute to good health.

The demand for quality and safe juices from the raw material, processing and final product is of paramount importance. Samples for the study were taken with different fruit percentages 35% and 50%, the packaging of the samples was the same in Tetra Pak packaging. Peach nectar, produced from concentrated peach juice 50% fruit content, ingredients are: concentrated peach puree, water,

sugar, acid (citric acid), antioxidant (ascorbic acid). Peach juice with 35% fruit content, ingredients are: water, peach puree, sugar, acid (citric acid), pectin, flavor, vitamin C, and sweetener. After sampling, the same were prepared for testing in the laboratory, immediately after taking microbiological analysis was performed (TNM, yeasts and molds), in order not to contaminate the product or load with aerobic microorganisms, then from the same samples were performed, sensory analysis by 4 tasters (color, taste, smell and homogeneity), physical and chemical analysis (pH, electrical conductivity, total acidity, °Brix), in the laboratory.

Keywords: sensory analysis, peach juice, pH, °Brix, total acidity, TNM, yeasts and molds.

EFFECT OF NON-THERMAL METHODS ON MICROBIOLOGICAL, PHYSICOCHEMICAL AND SENSORY PROPERTIES OF FERMENTED BEVERAGES

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Abstract

Fermented foods are defined as "foods exposed to the effect of microorganisms", and bacteria, molds, and yeasts play an important role in the realization of fermentation. Lactic acid bacteria, in the production of many fermented products, change the acidity, aroma, and texture of the product, making the product more durable and healthier. Hardaliye, which is traditionally produced from red grapes in Thrace, the European side of Turkey, and Shalgam which is a traditional Turkish drink with a purplish red color, produced from black carrot are lactic acid fermented beverages. The processing of Hardaliye and Shalgam, like other juices, requires the use of an appropriate processing technique because excessive yeast growth is a potential risk for unprocessed fermented products. Therefore, the synergistic technique used to protect both products against microbial spoilage is pasteurization and the use of permitted additives. Pasteurization causes some undesirable effects on physical and chemical properties due to high temperatures. In order to avoid both the use of chemical additives and the undesirable effects of heat treatment, to prevent spoilage and growth of pathogenic microorganisms, and to take under control quality loss such as flavor, color, and nutritional value of fermented beverages (as Hardaliye and Shalgam etc.), novel technologies which are ultraviolet-C, high hydrostatic pressure and ultrasound are applied.

In this paper, the results of the research on this subject will be discussed.

Keywords: Fermented beverages, UV-C, Ultrasound, high hydrostatic pressure.

DIFFERENT VIEWS OF RESPONDENTS ABOUT HEALTHY FOOD, FAST FOOD AND NUTRITIONAL DIET

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Abstract

The object of the study and the purpose of this paper is to discuss the way of nutrition as well as opinions on healthy food and fast food, through the survey system. From the point of view of two groups of respondents, relatively young from two different countries (Gostivar and Tetovo) we got their opinions on various issues such as: weight problems, problems with dieting and fitness activities. The average age of the respondents about the above-mentioned problems and challenges is 15-35 years. From the results obtained from 30 surveys in the city of Gostivar show that most of the respondents have knowledge about the harms and benefits of food, and a large number of them are in favor of fitness activities and in terms of how many diets are necessary and important for our body a group of respondents has given a neutral opinion. In the city of Tetovo, the statistics on the above-mentioned issues and problems are the same as in the case of the city of Gostivar, with the exception of food regimes where the majority of respondents are pro of this issue.

Given the results obtained from the questionnaire, how young people are nourished in recent years and what they think about healthy food and fast food, we can say that we must continue to work even harder on these issues and challenges, providing solutions up to the population.

Keywords: healthy food, fast food, Tetovo, Gostivar, surveys, respondents.

ANTIBIOTICS IN HONEY- ANTIMICROBIAL RESISTANCE RISK

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Abstract

The use of antibiotics is among the most frequently cited factors in pollinator population decline, and their use poses a risk to bees and consumers. Many research shows that residues of antibiotics in honey originate from improper beekeeping practices rather than the environment. In this context, this paper aims to assess the beekeeping practices regarding antibiotics, specifically the knowledge of the risk posed by antibiotics. A structured online questionnaire was developed with beekeepers having bee-stabilized parks distributed in a wide geographical area in Albania. The results showed that many beekeepers (56.6%) use antibiotics for bee treatment. The majority of beekeepers (69.7%) are not aware of drug-resistant infections that may come from the consumption of honey obtained from hives treated with antibiotics. The results also showed that 37.4% of beekeepers use antibiotics without following the labeled instructions. About 40% of beekeepers obtained information on the Internet or other uncontrolled sources regarding the source of information on antibiotics use. These findings suggest a lack of knowledge on antibiotics among the beekeepers in Albania. Also, the potential antimicrobial resistance risk among consumers. This is an important food safety issue that needs to be tackled by Albania's food safety and quality policy.

Keywords: Honey, antibiotics, antimicrobial resistance, Albania, food safety.

MELLIFEROUS PLANTS- THE CASE STUDY OF ALBANIA

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Abstract

Bee is an inexhaustible source of value, is a biological indicator for nature, pollinate of plants and manufacturing of some products in the hive such as honey, royal milk, pollen, propolis, bee venom. Recognition of mellifer species has a great importance for the beekeeper, it helps them in identifying sources used for production of honey, in orientation of adequate pasture for bees, for their rational use. The variety of plant species that are grazed by bees is so wide that the overview presented in this paper aims to create a panorama on the possibility of grazing bees, to be at the service of beekeepers who apply migratory beekeeping. These data have indicative character because the real production depends on many factors: soil, climate, seasonal performance, humidity etc. The collection of information was done through online questionnaires, observation and discussions with beekeepers, about the melliferous plants in the places where their parks are located and based on the mellifer classification of plants according to melissopolenic analysis of honey (Pignatti (1982) and E. Crane (1975), which can fluctuate for areas with large geographical differences, and in our case apply to the Mediterranean region. The analysis of the results show that the interest for beekeeping is maintenance of main existing melliferous pastures as Trifolium spp, Thymus, Prunus L, Robina pseudoacacia L, Carduss L, and various medicinal plants, which are the pride of our honeys, and the increase of them harmonized with general human interest. In central and southern Albania there is no pasture predominance, the pasture is more diverse. Additional

melissopaynological studies are needed to complete the panorama of melliferous plants in Albania.

Keywords: bee, melliferous plants, climatic zone.

INFLUENCE OF THE ADDITION OF DIFFERENT ADDITIVES ON PHYSICO-CHEMICAL PROPERTIES OF WHEAT FLOUR AND RHEOLOGICAL PROPERTIES OF DOUGH WITH FARINOGRAPH

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Abstract

The aim of this paper is to evaluate the physicochemical properties and investigate rheological analysis with Pharynograph of wheat flours without additives and with several different additives. The rheological aspects of dough samples made from flour of three varieties of wheat and their combination with Fungal α-Amylase and Glycolipase-Xylanase were investigated by rheological methods using the Farinograph and Dynamic Rheology device. The results from the Farinograph showed that the best rheological qualities of the dough created from different types of flour with additive mixture have the test from the wheat variety Rakon (T 400S), while the test from the wheat variety Novosadska Rana (T 400) and Zvezdana (T500) have lower rheological quality. They have the same values in terms of physico-chemical analysis where based on protein and gluten, the Hungarian variety Rakon has higher values compared to other varieties. It is worth noting that the capacity for water absorption is increased in all types of mixtures, while the stability of the dough, as one of the important indicators of the fallinograph has different values after mixing different types of flour with additives. These results are useful for bakery manufacturers in order to

develop new products by mixing flour with additives to produce bread with a high gluten content. The addition of Fungal α-Amylase and Glycolipase-Xylanase additives can have a strong effect on dough rheology and increase the nutritional value of bakery products.

Keyword: rheological properties, Fungal α-Amylase, Glycolipase-Xylanase, physico-chemical analysis, kneading dough.

ANALYSIS ON THE PROTECTION AND SUPPORT OF LOCAL PRODUCERS AND CONSUMERS, AND FOOD CHAIN PROBLEMS IN TIME OF THE COVID-19 EPIDEMIC IN KOSOVO

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Abstract

The purpose of this study was to verify the functioning of the supply chain, production chain, consumer satisfaction, their support by state institutions, their protection along with the increase of prices of basic products, also the interviews that were conducted with the producers of the Republic of Kosovo with the challenges they went through at this stage in finding labor, selling basic products, institutional support, transportation, and the production-processing points of sale, up to the customer's table. As a result of Covid-19, the same had a great impact on all the above-mentioned points, the isolation of citizens changed several things, from the way they ate to the reservation of food during the period of isolation. The supply chain of retail outlets had successfully survived. Based on the analysis of questions and answers we found that outlets had remained supplied despite the difficulties in movement and high demand for food from the people, the majority citizens had been initially collecting essential products with a close percentage (80%) of them. Citizens during the development of the purchase of products said that they felt safe from the point of view of health safety because each point of sale was equipped with protective equipment to prevent the spread of the disease, so stated (58%) of citizens. State aid was the point where most of the citizens remained dissatisfied, a large percentage of them did not benefit (56.4%), and

for many of them the amounts received were insufficient (25.8%).In general, the chain from the manufacturer to the producer, from the transport to the seller, and then to the consumer, had remained in a stable condition and had been sufficient to meet the essential and luxury needs of the citizens.

Keywords: consumers, production chain, sales system operation, Covid-19, entrepreneurs, supply.

INDUCED SYNERESIS RATE OF COW'S AND EWE'S CURD AND CHEESE YIELD: EFFECT OF CALCIUM CONCENTRATION

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Abstract

During enzymatic coagulation of the casein matrix the process of whey separation (syneresis) induced by gel contraction results in restructured form. Many factors can impact the process of whey separation. The objective of the investigation is to study the influence of milk type (cow's and ewe's) and calcium concentration on the whey separation induced by the different intensities of centrifugal force. Coagulated samples were centrifuged at 1000, 2000 and 3000 rpm for 5 min, respectively.

Cow milk and ewe milk are coagulated at temperatures of 35 ºC, at pH values of 6.4, with the addition of 200 and 400 mg/l of CaCl2, respectively.

During centrifugation at 1000 rpm the amount of recovered sera from cow milk samples coagulated with 200 mg/l of added CaCl2 ranged from 76 % to 85 % of coagulum volume. The amount of recovered sera from ewe's milk samples coagulated at the same conditions and same centrifugation ranged from 34 % to 45 %.

Centrifugation at 3000 rpm of both control and experimental samples recovered the highest amount of sera, regardless of the applied CaCl2 quantity. This indicates that the intensity of centrifugal force was strong enough to disrupt the gel structure and cause syneresis. The degree of syneresis also was influenced significantly by the milk type and the quantity of CaCl2 added. It

was also noted that curd produced from ewe‘s milk and 400 mg/l of CaCl2 addition, released sera wasfewer.

Keywords: syneresis, cow‘s milk, ewe‘s milk, calcium concentration, cheese yield.

THE EFFECT OF ENVIRONMENTAL FACTORS ON THE MICROBIOLOGICAL QUALITIES OF FLOURS

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Abstract

The flours that are obtained through the grinding process have different qualities which affect the safety aspect of the flours. During the grinding process, an attempt is made to remove the outer layer of the grain which from a microbiological point of view is contaminated by the conditions of cultivation, harvesting, transport and storage. Because it is a part that is in direct contact with the environment, this layer, even though it is rich in nutritional values, must be removed to ensure the safety of the product. Along with the outer layer the aleurone layer and the embryo are also removed, the embryo is a structure rich in fat, for this reason is removed so it extends the shelf life of the product, because a number of microorganisms have lipolytic action and change the organoleptic qualities of the final product. Our study is focused on the microbiological qualities of different flours and the moisture of the product which has a very significant effect on the development of microorganisms. The samples taken during this study were random in the market, different flours were analyzed: Whole-wheat flour X1, X2 and flour type 400 X1, X2. The study analyzed the ratio of product moisture to the total number of microorganisms, molds and yeasts. The results obtained show a close correlation between the percentage of moisture and the number of microorganisms. The moisture content was higher in whole-wheat flours than in type 400 flours which is also reflected in the number of microorganisms

where the largest number of microorganisms is in whole-wheat flours.

Keywords: Whole-wheat flour, type 400 flour, % H, mesophilic aerobic bacteria, molds and yeasts.

EFFECT OF ROASTED PUMPKIN SEED OIL ON THERMAL STABILITY OF FISH OIL -STUDY BY FTIR SPECTROSCOPY

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Abstract

The present study investigates the thermal stability of the commercial fish oil rich with unsaturated fatty acids. Compare the sensory properties of the pure fish oil and mixture of them with added rosemary oil, roasted and unroasted pumpkin seed oil at only 1%. All samples were monitored by FTIR Spectroscopy, specific absorptivity of CDs and CTs at 232 and 270 nm and finally by GC/FID to evaluate the oxidative degree of the fish oil and antioxidative effect of the pumpkin seed oil especially roasted pumpkin seed oil compare with rosemary oil. For this purpose, oil stability was optimized by comparing oxidation levels of fish oils which are exposed to high temperatures *ie*., 23°C, 50°C, 70 °C 90 °C and 110 °C in the presence of low percent of rosemary oil, unroasted and roasted pumpkin seed oil.
Based on obtained results from there is clear difference with blended samples especially with roasted pumpkin seed oil based UV chemical parameters, GC especially optimized FTIR vibrational bands such as ratio of intensity peaks 3473/2854, 1745/2854 and 3010/2854 as important biomarkers for detection the chemical changes and lipid oxidation in edible oils. As a result, it is revealed that pumpkin seed oil as one high healthy oil composition can successfully be applied to fish oil for improving the thermal and oxidative stability of the fish oil lipids.

Keywords: fish oil, roasted pumpkin seed oil, FTIR Spectroscopy, oxidative stability.

NUTRITIONAL HABITS OF SCHOOL CHILDREN AGED 8-9 IN THE MUNICIPALITY OF GOSTIVAR

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Abstract

Going to school makes children independent about nutrition. Children at this age either continue with the habits of healthy eating, or the bad habits become even more prominent due to the possibility of feeding outside the home, respectively, outside the care of the parents. This study is based on research into some nutritional habits of school students aged 8-9 years. Until now there has been a lack of research in this field of nutritional habits of school children aged 8-9 in the Municipality of Gostivar, but for us this is a great advantage to explore deeply this phenomenon of nutritional habits.

The research was conducted through a survey of second and third grade students of the Primary school –Bashkimi" in Gostivar where a total of 67 students participated. Of the respondents, 38 (57%) were female and 29 (43%) were male. In some of the questions posed by students who have given these answers, for the consumption of fruits and vegetables, most children consume about 68% per day, regardless of gender, while for the consumption of meat we have a significant percentage who consume red meat a times a week. When asked to take food from home, a significant percentage of children with 35.82% do not take food from home, which means that children have the opportunity to eat fast food, sweets and snacks or are skipping a meal, which in this question is observed that there are a certain number of children.

Keywords: nutritional habits, children, fruits and vegetables, fast foods.

EXAMINATION OF THE PRESENCE OF CERTAIN SPECIFIC BACTERIA IN RAW COW MILK

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Abstract

The aim of this paper is to evaluate the quality of raw cow's milk at the level of individual milk producers, which is considered as the first step for the production of safe and high quality milk. For testing raw milk for the presence of certain specific bacteria, 45 samples of fresh raw cow's milk were taken. Raw cow's milk samples are analyzed for the possible presence of certain specific pathogens such as: ***E. coli*, coagulase-positive staphylococci, *Enterobacteriaceae*, and total Coliform bacteria.** An increase in the total number of bacteria and the number of somatic and contamination with some specific pathogenic bacteria, leads to a change in organoleptic markers in raw milk. The changes that occur in raw milk are conditioned by the number and type of microbiological agents. Most often these changes refer to just one mistake, a mistake in the taste, smell, aroma or consistency of the dairy product. However, in cases of greater microbial contamination, all organoleptic errors can occur simultaneously. In addition, every slightest change due to the presence of microbiological causes of spoilage reduces the nutritional value of the product. Despite its importance for overall quality, control of spoilage microorganisms is not mandatory for the dairy industry, and the products are controlled by an insignificant number of producers. These tests aim to prove the presence of certain specific types of pathogenic bacteria in raw milk.

Keywords: raw milk, *E. coli*, coagulase positive staphylococci, *Enterobacteriaceae*, and total Coliform bacteria.

TREATMENT OF OSTEOPOROSIS IN THE NUTRITIVE ASPECT

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Abstract

The aim of this research is to see how proper diet and physical activity affect the well-being of body bones. On the contrary, poor nutrition causes bone diseases such as osteoporosis, a disease treated in this study. Osteoporosis is a disease that mainly affects women. For women, the risk of getting a fracture caused by osteoporosis in a lifetime is 30 - 40%. For men, the risk of getting a fracture caused by osteoporosis in a lifetime is 13%. 1 in 8 women over the age of 50 will break a vertebra in their lifetime. (The printing of the brochure is financially supported by the Foundation Open Society Institute Macedonia - FOSIM). Women have smaller bone mass and smaller bones than men. They also lose bone mass faster than middle-aged men due to the dramatic drop in estrogen levels that occurs with menopause as explained in the previous section. White women as well as Asian women are at greatest risk (Dempster, 1989). Physical activity includes exercise, training and competition, intense professional work, homework and other activities that require physical effort. It is traditionally associated with health and longevity (Vesna, 2019). Many of the nutrients and components in the food we consume as part of our daily diet potentially have a positive or negative impact on bone health. They can affect bone through a variety of mechanisms, including alteration of bone structure, bone metabolism, endocrine and / or paracrine system, and calcium homeostasis and possibly other bone-active minerals (Cashman, 2004). The nutrients we get from food build and protect the skeletal system.

Keywords: osteoporosis, nutrition, bone mineral density, female population, physical activity.

CORRELATION BETWEEN THE CONTENT OF SEVEN HEAVY METALS IN CERTAIN SPECIES OF FUNGI AND THEIR CONCENTRATION IN SOILS NEAR TEPP OSLOMEJ-KICHEVO, NORTH MACEDONIA

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Abstract

The aim: The main goal of this study was to evaluate the extent of heavy metals accumulation in the fruiting bodies of selected fungi in relation to soil concentrations in a polluted area around thermo electric power plant Oslomej (North Macedonia).
A field research on 12 sites in the region of Kicevo valley during the period of April 2012 to May 2014 were conducted at different distances from the Thermoelectric Power Plant (TEPP) Oslomej.
Methods: All of the analyzed heavy metals were determined by flame atomic absorption spectrometry on Agilent 55A. The concentration of heavy metals was calculated and corrected by subtracting the blanks.The Bio Accumulation Factor (BAF) was calculated as metal concentration in fungi/metal total content in soil. Research included determination of total and exctactable concentration of seven heavy metals: nickel (Ni), copper (Cu), zinc (Zn), iron (Fe), manganese (Mn), cadmium (Cd) and lead (Pb) in soil samples and fungi. A total of 15 species of fungi (*Amanita rubescens, Amanita vaginata, Boletus aestivalis, Armillaria mellea, Cantharellus cibarius, Marasmius oreades, Russula cyanoxantha, Suillus granulatus* and *Suillus luteus*, *Gymnotus dryophillus, Laccaria laccata, Stereum hirsutum* and *Trametes hirsutum*, *Amanita pantherina* and *Hypholoma fasciculare*) were analyzed, 11 being terricolous fungi and four lignicolous fungi.

Results and discussion: In general, analyzed fungi species tend to accumulate Cd, Zn, Cu and Ni (BAF >1). Most of the species tend to exclude Fe, Mn and Pb (BAF<1). The highest bioaccumulation potential for Cd has *A. pantherina* as well as *A. melea, G. dryophilus* and *R. cyanoxantha*. The contents of total and extractable forms of heavy metals Ni, Cu, Zn, Fe and Cd in soils was correlated with their content in fruiting bodies of *Amanita pantherina*.
Conclussion: Many mushrooms‘ species from the Kichevo valley (Republic of North Macedonia) are consumed by the human population regardless of the heavy metals content and uptake in the human body.

Keywords: Heavy metals, correlation, fungi, concentration, coal mine.

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