11. Međunarodni simpozij
"Nove tehnologije u sportu – NTS"
Sarajevo, 12. - 14. decembar 2019.

11th International symposium
"New technologies in sport – NTS"
Sarajevo, 12th - 14th December 2019

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FAKULTET SPORTA I TJELESNOG ODGOJA

NTS - NOVE TEHNOLOGIJE U SPORTU - ZBORNIK SAŽETAKA

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NEW TECHNOLOGIES IN SPORT
11. Simpozij Nove tehnologije u sportu | 11th Simposium New Technologies in Sport

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SADRŽAJ

POZDRAVNA PORUKA UČESNICIMA SIMPOZIJUMA

Poštovani,

Srdačno Vas pozdravljamo i izražavamo poštovanje prema svima vama. Sa radošću najavljujemo 11. Međunarodni simpozij „Nove tehnologije u sportu – NTS 2019.“ koji će se održati u Sarajevu 12. – 13. decembra 2019.

Simpozij „NTS 2019.“ je naučno-stručna konferencija sa osnovnim ciljem razmjene ideja i naučnih saznanja iz oblasti sporta i obrazovanja.

Fakultet sporta i tjelesnog odgoja Univerziteta u Sarajevu već dugi niz godina gaji tradiciju organizacije ovog događaja, na koji smo kao kolektiv veoma ponosni.

Želimo vam pokazati našu otvorenost, kreirajući ambijent za razmjenu ideja i iskustava, kako bi zajedno unaprijedili nauku i praksu. Simpozij je usmjeren na nove tehnologije u oblasti sporta, tjelesnog odgoja, transformacionih procesa u sportu, te organizacije i upravljanja u sportu. Simpozij će okupiti istraživače, edukatore, sportske radnike, studente i sve zainteresovane, koji će imati priliku razmjenjivati svoja znanja, iskustva i ideje.

Lijepi pozdravi i dobrodošli,

Prof.dr. Haris ALIĆ
Predsjednik simpozija NTS, 2019.

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COMPARATIVE ANALYSIS OF THE SITUATIONAL EFFICIENCY PARAMETERS OF BASKETBALL PLAYERS IN TWO REGIONAL ABA LEAGUES

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ABSTRACT

AIM AND PURPOSE: The parameters of situational efficiency in basketball are interrelated and represent the interaction of technical, tactical, fitness and all other factors relevant to success. By registering and analyzing the parameters of basketball players' situational efficiency, it is possible to arrive at precise values of toy and team efficiency, which provide guidelines for more successful planning and programming of training technology. The aim of the study is to identify differences in situational efficiency parameters between the first and second regional ABA Basketball Basis, based on statistics made up of the individual performance of each basketball player within the team.

METHODS: The study was conducted on a sample of 24 clubs from two ABA leagues, in the regular competition for the 2018/19 season. Variables make the frequencies of successfully and unsuccessfully executed elements of technical and tactical action during the match in the stages of attack and defense. The data was downloaded from the official websites www.aba-liga.com and www.druga.aba-liga.com. Nine variables were taken to assess situational efficiency: 1. Average of balls inserted by 2 points (SHUT2P%); 2. Average of balls scored by 3 points (shot3P%); 3. Average free throws completed (FT%); 4. Defense Leap (SDEF); 5. Attack Jump (SOFF); 6. Assists (ASS); 7. Obtained balls (STE); 8. Lost Balls (TOURN); 9. Personal fouls (FOUL). Descriptive statistics were used for statistical data processing in order to better describe and understand the data set. The T-test for independent samples established statistical significance in the difference of situational efficiency parameters between the two regional leagues.

RESULTS: There is a significant difference in the parameters of situational efficiency between the clubs performing in ABA1 and ABA2 regional league with two parameters, the average of balls inserted by 2 points (sig., 011) at the level of 95% significance, where the clubs from ABA2 regional had a better percentage. basketball leagues and average personal fouls (sig..000), where, on average, more offenses were made in the ABA1 regional basketball league.

CONCLUSION: Basketball players in two-regional ABA leagues differ statistically significantly in 2 parameters of situational efficiency, shot by 2 points and personal mistakes, with all other parameters the signitability exceeds the significance value of 95% (p <0,050).

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THE EFFECTS OF MATRICULATION ON THE SPEED OF INDIVIDUAL MOVEMENTS IN FENCING

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ABSTRACT

AIM AND PURPOSE: In this study, the research question is 'what is the characteristic of the speed of individual hand movements in fencing of children aged 8 to 14 years'. The aim of the study is to determine the speed characteristics of individual movements of the dominant hand, the non-dominant hand and the dominant hand with the sword in relation to age. The hypothesis is that graduation affects the speed of individual hand movements.

METHODS: The sample consisted of 185 subjects aged 8 to 14 years. The study used the one-target shot - Electronic Fencing Target on the Favero Scoring device. The speed of single movement of the dominant hand (Dom_H), the speed of single movement of the non-dominant hand (ND_H) and the speed of single movement of the dominant hand with the sword (Dom_H _S) were tested.

RESULTS: Multivariate analysis of variance (MANOVA) found that the criterion of age, or matriculation, significantly influenced the speed of individual hand movements (Wilks' Lambda = 0.519; F = 4.105; p = 0.000). The highest matriculation effect was found in the speed of single movement of the dominant hand with the sword (Dom_H_S- F = 6.923; p = 0.000; PES = 0.289), while in the Dom_H tests (F = 4.782; p = 0.000; PES = 0.220) and ND_H (F = 4.671; p = 0.000; PES = 0.216) found a slightly lower graduation rate.

CONCLUSION: Matriculations have a positive effect on the speed of individual hand movements in children aged 8 to 14 years. The effect is more pronounced when the sword is used as a props.

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HIGH INTENSITY INTERVAL TRAINING (HIIT) EFFECTS ON PHYSICAL ABILITIES AND MORPHOLOGY IN FEMALES

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ABSTRACT

AIM AND PURPOSE: The basic aim of this research was to determine the magnitude of the effect of short-lived high intensity interval training (HIIT) on transformation of morphological characteristics and motoric capabilities in bodiliy inactive women. Based on so far known cognition, one can assume that aerobic training of high intensity will probably affect the improvement of motoric abilities and reduction of body mass in bodily inactive women.

METHODS: Models for this research were 30 examinees of an avarage age 32.2±1.83 yrs., who are bodily inactive in the past year, but they posses previous training experience necessary for realization predicted training content. Examinees did not have conspicuous health problems or injuries in the past year. Morphological status (body height: 171.1±7.82 cm and body mass: 76.17±11.74 kg) shows increased body mass index 26.67 +- 3.62 and excess of body fat in total body mass. Morphological characteristics are evaluated with battery of 8 tests, while muscular endurance and explosive strenght are evaluated with 5 variables which cover all topological regions of the body. Experimental training treatment lasted for 4 weeks with frequency of 4 trainings per week, which is in total 16 training units. An avarage duration of the training lasted between 45-50 minutes, and training principles of high intensity interval training are applied (HIIT).

RESULTS: Analysis of pre-post differences in the group of morphological variables, we can conclude that all variables except for circumference of the waist/hip which statistically and significantly differ ($p<0.05$) in final compared to initial measurement in range of 0.73% to 5.32% with an average effect of 3, 53%. Analyzing the results acquired in motoric tests, we can conclude that there is a statistic difference ($p<0.05$) between all results recorded in final

when compared to initial testing, in range of 15.1% to 148.9 % with average effect of 67.2%.
CONCLUSION: By comprehensive analysis of effects conducted during the training program, the conclusion is imposed that changed experimental protocol when observed quantitatively, has triggered positive transformational effects in all researchable variables.

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METRIC CHARACTERISTICS OF STATIC BALANCE TEST AND DEFINITION OF GRADING NORMS FOR HIGH SCHOOL STUDENTS

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ABSTRACT

AIM AND PURPOSE OF THE STUDY: The aim of this research is to test the metric characteristics reliability and sensitivity of a modified flamingo test for balance evaluating. During teaching process, when evaluating motor tests, it was noticed that the performance of flamingo test lasts long compared to other tests. Therefore, it needed to be modified. The Flamingo test has been modified in two ways: reduced performing time from 60 to 40 seconds and number of falls is not graded, but performing time of the test.

METHODS: High school students from Konjic were included in this research. The total number of participants is 302. The participants were divided into six sub-samples according to the gender, namely: first (male students N = 60 and female student N = 62), second (male students N = 38 and female students N = 47) and third grade (male students N = 49 and female students N = 45). The test sensitivity was estimated by measures of asymmetry, distribution and Kolmogorov-Smirnov tests, and the test reliability was estimated by inter item correlation and Cronbach alpha. Before defining evaluation norms, by using analysis of variance was estimated whether there were statistically significant differences between the sub-samples regarding the same gender, while the norms were determined by percentile.

RESULTS: The results obtained for the sensitivity show that the asymmetry measures move in all particles within acceptability limits (+/- 1), deviations were found for the second grade students. The results of distribution measures form a platikurtic curve in all sub-samples. By using Kolmogorov-Smirnov test was found that the results in the particles did not deviate statistically significant from the normal distribution. Good reliability was found for male sub-samples (Crα = 0.87) and inter item correlation was between (r=0.76) and (r=0.78). Lower

coefficient of Cronbach alpha was estimated for female sub-samples, between (Crα=0.78) and (Crα=0.86) and inter item correlation was between (r=0.64) and (r=0.76). Before defining evaluation norms, analysis of variance verified that male and female sub-samples did not differ statistically significant. Result of analysis of variance enables us defining norms for the whole male and female sub-sample. Male sub-samples have to score less than (FLA = 5,76s) for insufficient rating and score higher than (FLA = 28.03s) for excellent rating, while female sub-samples have to score less than (FLA = 6.45s) for insufficient rating, while an excellent rating has to be a maximum score (FLA = 40s).

CONCLUSION: The obtained results show that the test can be used to evaluate the balance for high school students of both genders and that in addition to confirmed metric characteristics of sensitivity and reliability, the test is characterized by economizing, which enables faster assessment of motor ability of balance.

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DIFFERENCES IN THE FREQUENCY OF FOOT DEFORMITY IN FIRST GRADE ELEMENTARY SCHOOLS CHILDREN FROM NIKSIC AND HERCEG NOVI - RESEARCH WORK

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ABSTRACT

AIM AND PURPOSE: A disorder in the structure or shape of one foot (flat foot, hollow foot) causes a disturbance in the function of the foot. These malformations increase progressively during growth and cause secondary changes in adjacent and distant segments (knees, hip, spine). Therefore, the aim of this study is to determine differences in frequency of foot deformity of children in the first grade elementary schools in Niksic and Hereceg Novi.

METHODS: The sample of respondents consisted of 35 pupils of the first grade of elementary schools from Niksic and 50 pupils of the first grade of elementary schools from Herceg Novi (5-6 years old), divided into 2 sub-samples according to the place of residence . Foot deformities have been detected by modern innovation technology (podoscope). The results are presented in numerical and percentage terms. Differences between sub-samples were determined by Hi square test at significance level $p < 0.05$.

RESULTS: The results showed that 11 (31.5%) children from Niksic had normal foot, 9 (25.5%) had flat foot, and 15 (44%) children had hollow foot. 14 (28%) childrens from Herceg Novi had normal foot, 18 (36%) had flat foot, and 18 (36%) children have hollow foot. The results of Hi square test showed that don't exist statistically significant differences between the children from Niksic and Herceg Novi.

CONCLUSION: The results indicated that don't exist statistically significant differences between children from Niksic and Herceg Novi, when it came to foot deformities. However, the high percentages of children with foot deformities are concern, and work should be done to reduce this number so as not to cause major deformities in later life.

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THE CORRELATION BETWEEN PHYSICAL ACTIVITY AND BODY COMPOSITION IN PRIMARY SCHOOL STUDENTS

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ABSTRACT

AIM AND PURPOSE: The aim of this study is to define the correlation between the variables for nutritional status in children with those for physical activity estimates. Regular physical activity is the only habit that helps reduce the risk of obesity. Insufficient physical activity in children and young adults negatively impacts the development of their abilities and knowledge as well as their health.

METDHODS: The research participants were 189 first and second grade students, of whom 93 were girls and 96 were boys between the ages of 7 and 9. The questionnaire "Fels physical activity questionnaire for children" (FPAQ) was used to estimate the amount of students' physical activity in their free time. The index of sports (IS), free time (ISV), house chores (IKP) and physical activity sum (UTA) were calculated based on their answers. Anthropometric measurements like height, weight, body mass index and body fat index were used to estimate their body constitution. Omron BF500 Body Composition Monitor was used for these measurements. Pearson's correlation coefficient was used to determine the relation between the nutritional status and physical activity.

RESULTS: The results show that 68.75% of boys and 66.67% of girls are of normal nutritional status. Also, 29.1% of first and second grade boys are either of excessive weight or overweight. In girls this percentage is somewhat lower (21.51%), but is still relatively high. Pearson's coefficient shows significant correlation between body mass index and sweating (0.16%). Sweating is also related to body fat index (0.15%). The research did not show any correlation between physical activity and body fat index. The results show very low values with several significant positive correlations indicating that physical activity has a great

impact on body constitution.

CONCLUSION: All the research on physical activity in children indicates a negative trend in daily physical activity participation. Insufficient physical activity in children and young adults is becoming increasingly expressed, and is becoming a serious health issue in which becoming overweight is directly correlated with insufficient physical activity.

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MOTIVATION AS MEAN TO ACHIEVE BETTER RESUTS IN „ŠKOLI TRČANJA ZADAR“ (Running school Zadar)

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ABSTRACT

AIM AND PURPOSE: As in previous studies, running schools show sharp increase of interest for running. Running schools become more and more popular among general population, so „Škola trčanja Zadar“ has more than 400 members. Running, as part of physical activity, is not only practiced by athletes but also by wider population of people. Running schools motivate us to continue running and doing sports since it is widely known that it is much easier to train in company. Previous studies on motivation in sport were sucessful and statistically significant for further research. Previous researches had effects on this research and aim of this research is to show how much motivation affects results and interest for running in running school in Zadar.

METHODS: For the purpose of the research the survey was conducted among 100 respondents, 76 women and 24 men with an average age of 35 years. The survey was conducetd in the city of Zadar in the „Škola trčanja Zadar“ . The sample of variables contains anonymous written qustionannire to test the success of motivation to achieve better own results. The statistical program Statistica is used to obtain results.

RESULTS: The most amateurs train three times a week, while there are amateurs who train four times a week. The smallest number of respondents train once or twice a week. 97 percent of respondents feels joy during training, while 96 percent of them states that they give their maximum during training. A high 97 percent of respondents belive that doing sport is healthy and socially acceptable. Also, 98 percent of respondents is motivated to continue running since they are aware that running as part of amateur sport makes their life easier. Descriptive statistics data, where average values are low and negate the fact on

these particles (1,74 and 7,84,) shows that respondents do running as recreation without any pressure on fame and money. Results of chi square tests show statistically significant difference in motives for amateur running (chi-square=31,90, p=0,00) where the highest motivation is loss of weight and improvement of own health condition.

CONCLUSION: Movement has an important role on human health and quality of life. Running as recreation become more popular among large number of people and most of them join certain running schools. Beside the fact that company is motivation for a human, preservation of health is also conscious and results of this research show that 78 percent of respondents have reduced their alcohol beverage and tobacco products intake that means that they are motivated to continue doing sport since they feel joy during training and they are aware of positive effect of the running and doing sport.

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ELEMENTS OF EQUAL PAY IN WOMEN'S SPORTS

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ABSTRACT

AIM AND PURPOSE: Women in sport put in equal amount of work as men in being full-time athletes, and often have to work full-time jobs. Usually the unfairness of the disparity is the main focus of the conversation about equal pay. Women's teams are not marketed or promoted as much as the men's, which leads to lower attendances and merchandise sales. The recent performance of female athletes far outshines the efforts of their male counterparts, and there are more potential successes in the future, yet brands remain reticent to embrace the opportunities of women's sports.

METHODS: All the surveys taken into account in this paper have been conducted in the last ten years. Comparative analyzes were used in order to gather enough data and get some conclusions.

RESULTS: According to the Women's Sports Foundation, male athletes get $179 million more in athletic scholarships each year than females do. The most recent figures date back to a study of the market between 2011-2018, which found female sports account for a mere 0.5% of total sports sponsorship. In America 40% of sportspeople are women, however only 6-8% of the total sports media coverage is devoted to them. Women-only sports stories add up to just 3.5% of all sports stories in the four major US newspapers. Female sports is also receiving less TV coverage. Some argues that there is no demand from audiences, and others that men do not want to watch women's sports as they find it less enjoyable. According to Nielsen, statistics show different truth, viewers of the Women's Euros semi-final were split 58% male to 42% female.

DISCUSSION: Pivoting to women's sports sponsorship means brands taking a different view on the metrics by moving away from the traditional measures of success. Social media has been instrumental in disrupting the metrics. It has become more challenging to develop a business case for a women's sport sponsorship deal, meaning brands must appreciate that a women's deal will not offer the same broadcast reach.

Key words: female athletes, promotion, brands

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THE ROLE OF CONFLICT AS ASPECT OF SUCCESS IN THE PROCESS OF IMPLEMENTING CHANGES IN BUSINESS ORGANIZATIONS: SYSTEMATIC – REVIEW

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ABSTRACT

AIM AND PURPOSE: The role of conflict arises because of the incompatibility of expectations of the role in the various social statuses occupied by people. When more than one role is associated with the same status, the result is in the form of a conflict role. The aim of this paper was to define the roles of conflict and the actors of conflict, respectively through the review of sectoral literature, attempt to classify the roles of conflict in different organizational sectors.

METHODS: In theoretical and methodological approach, the PRISMA methodolgy was used for writing this review, theoretical and analytical method, qualitative and quantitative content analysis. Selection of the relevant papers for this study was conducted in Google scholar, MEDLINE, Kobson and EBSCO data base, including key words such as: management, role of the boss, globality and clash.

RESULTS: Searching literature 45 references were identified which satisfied study criteria. When the selected criteria were applied, the resulting total number of selected papers was 32. Following additional reading of titles and abstracts, this number came down to 17 final papers which were included the qualitative analysis. Eight most common roles in conflict are used in this paper and those are: intra role conflict, role overload, inter role of distance, role stagnation, role erosion, personal disability, role ambiguity and intra-role conflict. Review of sectoral literature on the role of conflict showed: role of conflict in the education sector (2 papers), studies in the product sector (3 papers), security sector (1 paper), the role of conflict in the service center (4 papers), the role of conflict in family organizations (2 papers).

CONCLUSION: After a thorough study and analysis, this paper discusses and classifies a sectoral literature review focusing on conflict role types**.** The problem identified as conflict role problem is job-family conflict. It prevents the productivity and development of the lead to psychological strain. This review study provides no solution to minimizing the role of conflict in the organizations. This article may serve for further researches on the topic of conflict management and the role of conflict, so that researchers can have an idea of studies that have already been done, as well as ideas for some future studies.

Keywords: *management, role of the boss, globality, clash.*

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INFLUENCE OF ANTHROPOMETRICS ON ACQUIRING BASIC GYMNASTIC SKILLS

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ABSTRACT

AIM AND PURPOSE: The primary aim of the current study was to evaluate the influence of selected anthropometric variables on basic gymnastics skills acquisition among seven-year-old children.

METHODS: Total of 64 respondents of which 33 boys and 31 girls participated in this study. After being tested in anthropometrics (body height, body weight, upper arm skin fold, forearm circumference, body mass index) and gymnastic performance, all subjects during classes of physical education performed identical gymnastics training for 3 moths twice weekly. Gymnastic training comprised of acquiring and refinement of the basic gymnastic skills while the measure of gymnastics performance was formed as a sum of scores on 12 gymnastic elements (bridge, forward roll, blade stand, descended backward roll, handstand against the wall, dominant frontal cartwheel, ring swinging with backswing mount, a straight jump of springboard, springboard jump on the vault in sitting position, switching positions on the rings, walking on a small beam, jump-off of the small beam). At the end of the training program subjects were reassessed in gymnastic performance to evaluate their progress. Linear correlation analyses were applied to detect the intercorrelations between the tests. Regression analysis was applied to assess the influence of anthropometric predictors on the gymnastic skills acquisition criterion.

RESULTS: Multiple regression analyses showed a significant influence of anthropometric predictors on the criterion variable of gymnastics skills acquisition ($p=0,02$; $R=0,41$, $R2=0,17$). Upper arm skinfold that of all applied anthropometrics variables only significantly correlated with gymnastic skills ($r=-0,33$) acquisition was also only significant partial regressors of criterion.

CONCLUSION: We found anthropometrics as significant predictors of gymnastics skills acquisition among 7 years children with 17% of the variance of the criterion explained by means of anthropometric predictors. Gymnastic coaches and PE teachers involved in work with this age of pupils should pay special attention on body fat as results of applied analyses highlighted skinfold measure with the highest influence (negative) on gymnastic skills acquisition.

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THE INFLUENCE OF BASIC MOTOR POTENTIALS ON THE PRECISION OF BOUNCING THE BALL WITH FOREARMS IN SITUATIONAL CONDITIONS IN FEMALE VOLLEYBALL PLAYERS

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ABSTRACT

AIM AND PURPOSE: Today, sport as a whole, implies different motor activities and in a specific way athlete's abilities, traits and knowledge in training and competition are fully expressed. Contemporary volleyball is showing increasing conditionality and an unbreakable connection to science, which allows new methods, principles of training, paths and regularities in the training process of volleyball players. Volleyball, like other sports, requires a certain level of morphological and motor functions in order for players to successfully operate in situational conditions. The aim of the research is to determine whether there is a statistically significant influence of base-motor potential on the situation-motor skills in volleyball players in Montenegro.

METHODS: Selected respondents represent the population of top volleyball players competing in the First Volleyball League of Montenegro. This research was conducted on a sample of 75 female volleyball respondents who were in the active training process: VBC "Budućnost" - Podgorica, VBC "Morača" - Podgorica, VBC "Rudar" - Pljevlja, VBC "Galeb" - Bar, and VBC "Luka" - Bar. Situation-motor space was estimated with the variable The precision of bouncing the ball with your forearms inside the circle.

RESULTS: The obtained results show that the impact of the predictor system of basic-motor potentials on the situation-motor variable the precision of bouncing the ball with your forearms inside the circle as a criterion variable is realized, and amounts to 43%, with a multiple coherence of 65%. In volleyball practice, specific volleyball precision is very

important, since volleyball players first address the problem of good ball reception, and a consequence is good organization of attack and scoring.

CONCLUSION: Forearm bouncing is an element of the game used in situations where the ball is passed on the net, most often in more complex service receiving situations and in even more difficult field defense situations after a vigorous attack by an opponent. Good organization of the attack phase will largely depend on the quality of receiving the ball to the forearms in the defense phase, and special attention should be paid to this situational motor skills in volleyball during the training process.

Key words: Motor potential, female volleyball players, situational motor skills

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SPORT MANAGEMENT AND ENDERAGEMENT OF INNER SAFETY

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ABSTRACT

AIM AND PURPOSE: Subject of analysis of this work is consideration of important aspects of sport and sport management which considers specific human need for activities, which for it goal has sport result as well as overlooking of enderagement of inner safety at any sport happening, better said, never letting violence and bad behavior influence any sport happening. Sport is highly selective, because the chance for the best result has only the best player. Specific value of sport is the fact that people satisfy some specific needs through sport: need for movement, sociological need for life in a community and a specific need for fight. The goal of this research is to consider important elements of sport management and enderagement of inner safety, because management unites activities regarding leadership, management and commanding of resources.

METHODS: There are two components in sport management: sport and business component, where there is very important sport and its commercialization, as well as process of transformation of many professional sport organizations into corporations, some of which have international relations of recruiting and advertising of products. During the process of working on this paper there have been used standard methods such as analysis, synthesis, comparative method as well as method of analysis of context and others.

RESULTS: All those methods enabled deeper and more studious overlooking of sport management and enderagement of inner safety, with a special accent on classification of safety and inner country safety. When we consider different aspects of inner safety and its enderagemnet besides the classical pathological and criminal field, one must consider results of prevention of such behaviour.

CONCLUSION: This research has shown that the subject of sport management and inner safety is very much needed and should be provided specially on sport happenings, as well as the law of Republic of Serbia has said.

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PRESENCE OF THE SPINAL PILLAR DEFORMITIES IN SCHOOL CHILDREN

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ABSTRACT

AIM AND PURPOSE: The human spinal column is in the shape of double-letter S, which is very important for its biomechanics. It shows physiological vertical lordosis, thoracic kyphosis, lumbar lordosis, acral kyphosis. Increasing their curves over the allowed limits leads to pathological conditions such as: kyphosis, lordosis, kypho-lordosis. The aim of this study is to determine the deformity of the spinal column and the possibility of correction and treatment of school-age children in Serbia.

METHODS: The following electronic databases have been searched for the collection of scientific papers related to the presence of spinal deformity in school-age children: PubMed, PEDro, SCIndeks, DOAJ, HRČAK, Sponet. Scientific papers in the period from 2000 to 2013 were alsoresearched.

RESULTS: Based on keywords, the selection of works was determined. Two selection criteria were set.The first criterion is the problem of deformity of the spinal column of children and their treatment in the territory of the Republic of Serbia. The second is to review the literature and conduct an analysis of the works from 2000 to 2013. Out of the 600 papers identified, numerous scientific papers (596) were excluded based on pre-specified criteria, the remaining four papers met the set criteria. On the basis of the total number of subjects in 2293, in 660 subjects the deficiency of scoliosis was determined, in 325 kyphosis, and in 224 lordoses. Of the total number of subjects, 1209 have spinal deformity, which is about 53%. Based on the results obtained, we can conclude that every second child in the Republic of Serbia has spinal deformity.

CONCLUSION: Based on an assessment of the postural status of children aged seven, the overall characteristics of the analyzed body segments in boys and girls can be determined.
Given the severity of the problem, it would be necessary to initiate specific activities so that deformities can be timely diagnosed, controlled and subordinated to effective corrective exercise programs. This certainly presupposes the introduction of at least one systematic examination during the school year in cooperation with other experts where particular attention would be paid to the timely identification of deformities in students.

Keywords: *postural status, spinal deformities, kyphosis, scoliosis, lordosis.*

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THE IMPORTANCE AND ROLE OF THE ISOMETRIC LEG PRESS TEST IN THE TECHNOLOGICAL PROCESS OF TRAINING PROCESS MANAGING

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ABSTRACT

AIM AND PURPOSE: The evaluation of muscle characteristics in an isometric regime of exertion is a widely applicable and highly practical method for testing athletes. In these types of tests the examinees act with muscle force against an immovable support which is connected to a measuring probe (converter), strain gauge, force platform or similar device which measures manifested force. The device for measuring maximal isometric force is easy to use, and is applicable for different age categories, healthy and unhealthy individuals, well-trained and top-level athletes and the untrained population.
METHODS: In order to show the importance of measuring the muscular characteristics of leg extensors' under isometric conditions in the sports preparation system, the methods of analysis and synthesis of the results of previous research, primary and secondary sources have been used.
RESULTS: Considering the fact that every substance in nature, and therefore in the system of an athlete, is physical and has a certain structure and form, properties, the ability to coordinate with other objects and fields and the ability to change as a result of the aforementioned factors, the results of previous studies cannot be observed separately, but as a whole. Therefore, results obtained in previous studies will be observed as the elements of one system, defining the rules among those individual elements in order to find and verify better, i.e. valid values for evaluating the contractile characteristics of the leg extensors' isometric force in differently trained top-level athletes. In this sense, one unit belongs to the investigations of the reliability and validity of isometric dynamometry. The second group can be categorized by the results of previous research in relation to correlation of different

indicators of the F-t curve for evaluation of the muscular force of the leg extensors'. The third section provides an overview of the results on the factor structure of the various indicators of the F-t curve. The fourth unit belongs to the results of the study of functional and sexual dimorphism of different indicators of the F-t curve. The fifth unit is the results of model characteristics.

CONCLUSION: On a general level, by measuring, assessing and analyzing muscle characteristics of leg extensors' in an isometric regime of exertion, it is possible to establish a system for the purpose of diagnostics, in the function of training recommendations and prognostics.

Keywords: *measuring, leg extensors', athletes, training process*

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THE EFFECTS OF ALPINE SKI COURSE PROGRAM ON THE ADOPTION OF SKI ELEMENTS AMONG ELEMENTARY SCHOOL BOYS

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ABSTRACT

AIM AND PURPOSE: Alpine skiing is a motoric and energy complexed and demanding sport activity. Alpine skiing requires a long systematic preparation, but there are still dilemmas in choosing the most optimal ski learning model. The aim of this research is to determine the effects of successful performance implementation of basic and advanced elements of alpine skiing, conditioned by the attained five-day ski education for school-age boys. It is assumed that the treated program will produce statistically significant differences in favor of the final measurement.

METHODS: The study was conducted on a sample of 42 boys aged 7-10 years residing in Sarajevo Canton. Seven variables were used to evaluate the performance of the basic ski elements: STARN- straight run, TRSNG – traversing, UPTRN – uphill turn, SNPGH – the snowplough, SNPGT- snowplough turns, SNPGC – snowplough curve, SLSID – sliding sideways. Two variables were used to evaluate the advanced ski elements: STTUR – stem turns and SHPLT – short parallel turns. The overall performance of the Alpine ski elements was evaluated by a panel of judges (three judges). The research hypothesis was measured using the t-test for dependent samples.

RESULTS: The results showed significant statistical differences in all nine treated variables. The five-day ski training program has produced a positive transfer to the adoption of basic and advanced ski elements.

CONCLUSION: The five-day ski training program, with its contents, workloads, organization and methodical procedures, significantly influenced the adoption of basic and advanced ski elements. The five-day training showed positive effects on the adoption of skiing elements in elementary school boys.

Keywords: *Alpine skiing, education, beginners, judges*

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INJURIES, CAUSES OF INJURIES, AND REHABILITATION AMONG ALPINE SKIERS: SYSTEMATIC - REVIEW

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ABSTRACT

AIM AND PURPOSE: On of the ways to prevent injury and to rehabilitate after an injury in alpine skiing is to psychophysically prepare the athlete to safely go through the ski season. The aim of this research was to collect, analyze and critical review data from relevant research studies that are closely related to the prevention, causes and rehabilitation of alpine skiers.

METHODS: Data selection, analyzing and critical review was done according to “PRISMA” methodology. The systematic search for relevant articles (Google Scholar, PubMed, MEDLINE, etc.) related to the prevention, causes and rehabilitation of alpine skiers will create comprehensiveness in knowing the basic principles of self-management (self-control) on a mountain trail.

RESULTS: The results indicated that the most common injuries among alpine skiers are ACL injuries. However, good physical preparation, a very stable mental health, appropriate ski behavior on the track and compliance with the “International Ski Federation” rules and obligations are the main aspects of injury prevention.

CONLUSION: This review study has collected and classified data taken from relevant databases that were based on injuries, causes of injury and rehabilitation of alpine skiers. The most common injuries classified in this study are ACL injuries, as the ACL injury patterns and post-injury rehabilitation.

Keywords: *measurement, biomechanics, turn, beginners*

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COMMUNICATION AND EMOTION AT WORKPLACE: SYSTEMATIC - REVIEW

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ABSTRACT

AIM AND PURPOSE: The aim of this study is to enable reader to understand the subject of communication and emotion by working in business organizations, and the impact of these two aspects on achieving results in the organizations in which they operate. One of the ways to manage human resources is through communication and emotion. Thematic of connection between communication and emotions affecting the employee and the workgroup, and their impact on increasing work effectiveness is a highly complex topic. Employee communication and emotion has a direct impact to workplace productivity and orgaizational commitment.

METHODS: This research paper thematizes ten (10) studies that are closely related to the subject of communication and emotion in a business environment. Research on this subject have been explained in an understandable manner to a reader to emphasize the importance of these two topics in the organization of work and interpersonal relationships with colleagues they share workplace with. Systematic search for relevant articles related to communication and emotional approach to business in order to maximize efficiency and organization in the business environment will create comprehensiveness in knowing the basic principles of communication and emotion management in the business environment.

RESULTS: The results suggest that emotion and communication are key to good and successful business organization, and that by knowing about them and controlling them, the highest results and success of the work group within the business environment can be achieved.

CONCLUSION: People who work and perform jobs in organizational structures should pay more attention to the so-called "Self-management" which includes emotion management

skills, and "Words-management" that enables us to communicate effectively in everyday business situations. Based on the information in the foreign and domestic literature in the field of communications and emotions in business environment, it is necessary to draw certain conclusions that may be recommended for further research in this field.

Keywords: *workplace organization, team, human resources, leader*

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MOTIVATION OF VOLUNTEERS FOR PARTICIPATION IN SPORT EVENTS: SYSTEMATIC-REVIEW

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ABSTRACT

AIM AND PURPOSE: Volunteering presents voluntary, financially unmotivated action of an individual or a group for the benefit of the community. It is not conditioned by external factors, but with internal motifs and reasons. The aim of this paper is to define the reasons i.e. motifs which drive individuals to volunteer in sport and sport events, as widely social phenomenon of contemporary civilization.

METHODS: PRISMA method is used for writing this overview. Systematical search of relevant overviews, related to the issue of motivation of volunteers for participation in sport events, created overall knowledge of elements which drive an individual or a group to volunteer in organization of sport events. There are 10 valid studies regarding this topic (data search: Google scholar, research gate).

RESULTS: Analysis of 10 identified studies showed that, depending on the event, the motifs of individuals to participate voluntarily in organization of mega sport events, because individuals whose focus is on fulfilling the need to participate in sport events, will participate in any sport event regardless of the level of the event.

CONCLUSION: By determining and defining factors of motivation of volunteers to participate in sport events, it is possible to make efficient strategies in hiring and managing volunteers which would contribute to more efficient organization of events.

Key words: *volunteering in sport, volunteers, determinants of motivation of volunteering, index of pleasure of volunteers, motivational factors, volunteers and organization of sport events*

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PREFERENCES OF SPORTS AND RECREATIONAL ACTIVITY FOR PUPILS OF THE MOSTAR GYMNASIUM

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ABSTRACT

AIM AND PURPOSE: The aim of this research is to determine what sports and recreational activities pupils prefer in their spare time and to what extent, as well as what are the reasons for not engaging in sports and recreational leisure activities.

METHODS: The survey was conducted in the Mostar Gymnasium on a sample of 105 final year pupils (29 students, 76 students). The questionnaire consisted of the following questions: 1. Age of respondents? 2. Gender of the respondents? 3. Are you exempt from teaching tzo / tzk? 4.Are you a member of a sports club or society? 5.Do you name your sports club or company? 6.Do you ever do sports in your spare time? 7.If you do not play sports, what is the reason? 8. How many times do you exercise during the week? 9.What sports activities do you do in your spare time? Data processing was performed by analyzing frequencies and percentages in Microsoft Excel.

RESULTS: Based on the results obtained, it can be concluded that most pupils prefer activities that are of a team character, while female students prefer group forms of fitness programs. Five students out of a total of 105 students were released from physical education and health education, which is almost 5% of the total number of respondents. Out of the total number of respondents (105), 26 students are members of a sports society, while as many as 79 are not. 72.4% of students responded that they are engaged in leisure activities, while 27.6% do not have leisure activities. What are the reasons why twenty-nine students do not play sports in their spare time? Pupils of their choice provided answers, so 22 students claimed that due to school obligations they were unable to use sports and recreational facilities in their spare time, while 5 cited laziness as one of the causes for their

inactivity, and 2 students were not interested in sport. Based on the answers received, the most popular sports and recreational activity is fitness, while sports (small football, basketball and volleyball) are in second place.

CONCLUSION: The leisure time area of the high school population is determined by the content dimension of leisure time that determines their distinctive lifestyle. The research results raise new questions about the problems and needs of young people for better quality leisure time.

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INFLUENCE OF A SPECIALLY DESIGNED FUNCTIONAL TRAINING IN IMPROVING BASIC MOTORIC ABILITIES IN FOOTBALL PLAYERS-SENIOR PLAYING IN DIFFERENT POSITIONS

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ABSTRACT

AIM AND PURPOSE: The aim of this study was to establish the effects of experimental program in improving basic motoric abilities in football players-senior playing in different positions. A survey was conducted on a sample of 50 football players aged from 17 to 30 aiming to establish quantitative transformation changes in tests of assessing basic motoric abilities and agility when influenced by specially designed functional training with top football players in different game positions in the team.

METHODS: In order to meet the research aims, six tests for assessing basic motoric abilities were applied as follows: 30-meter running, Lifting the tors in 30 seconds, Push-ups to full body-workout, Squat jump (SJ), Counter Movement jump (CMJ), and Counter-movement jump with arm swing (CMJA). The experimental program was applied within six work weeks with four trainings each week. The trainings were applied by a circular method of work, and the respondents were arranged into sets of groups of two players.

RESULTS: The research results indicate that the six-week experimental training program of a functional training has a positive influence on improving the average results in all of the six tests.

CONCLUSION: On the base of the numeric values of the arithmetic means and the percentage differences, there can be concluded that, within the six-week period, the whole sample of respondents has gained improvement with the tests: Lifting the tors (18,07%), Push-ups to full body-workout (12,42%), Squat Jump (18.20%), Counter Movement Jump (8.99%), Counter Movement Jump with Arm Swing (18.59%).

Keywords: *football, motoric effect, measurement, functional training.*

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EFFECTS OF JUDO LESSON PLANS ON SUCCESSFUL PERFORMANCE OF FALLS WITHIN FIRST YEAR FEMALE STUDENTS OF FACULTY OF SPORTS AND PHYSICAL EDUCATION

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ABSTRACT

AIM AND PURPOSE: Lesson plans used to realize lessons from subject – Judo have the aim to form educated teaching staff with special abilities and knowledge which are characteristic for Judo, education, sports and recreation. Success in any sport, as in Judo, depends on several abilities and dimensions an individual must possess. The aim of this paper is to determine effects of Judo lesson plans that are realized in regular lessons of Faculty of Sports and Physical Education, University of Sarajevo and how do these lessons contribute to making the falls.

METDHODS: The research was done based on sample n=9 of age 20 to 23 that regularly attended Judo lessons. Testing was done at the beginning of the semester (the initial one) and at the end (final). While giving marks to falls performance, video camera Sony was used. Separately acquired knowledge of examinees for each of chosen techniques was marked by Likert's scale of grading 1-5 and that was done by three educated examiners.

RESULTS: While determining given results that state that falls have best marks, this can be justified with the fact that backwards movements are harder to learn and they can be related to students' previous sports experiences.Analysis of judges' intercorrelation of marks on success of making the falls has determined clear changes where there is high dependability (icc > 0.8), and unified criteria of giving marks. Based on the results of T – test for independent variables it is determined there are changes in level and quality of marks between variables right side forward break fall – left side forward break fall (p=.005), right side forward break fall – fall backwards (p=.001), left side forward break fall – right fall to the side (p=.007), left side forward break fall – fall backwards (p<.000), right fall to the side –

left fall to the side (p=.010), right fall to the side - fall backwards (p= .001), left fall to the side - fall backwards (p< .000).

CONCLUSION: Looking at the results that say that a fall back has the best grades, this can be explained in such a way that backward movements are easier to absorb, and that backward movements can be linked to the student's previous sports experiences. Lesson plans had positive effects on successfully making the falls, lessons planned by Curriculum of Judo was enough to make desired transformation when we talk about treated variables.

Key words: *students, education, mark, transformation, wrestling sports*

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THE PLAYGAME ROLE IN PREVENTION OF PROPER POSTURE IN ELEMENTARY SCHOOL STUDENTS

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ABSTRACT

AIM AND PURPOSE: Game is a module of human activities that follows an individual since his/her earliest development. Games are also first level of children's active function and includes many elementary ways of movements (walking, running, jumping...). Games are activities familiar to children and while playing, they are spontaneously discovering new things. Proper body posture is a sign of good health, regular growth and development so it is important to emphasize body posture from the earliest age by applying different ways of physical activity.

METHODS: Aim of this research is to determine influence of games as activities to components of body posture of school children. This research was done to determine role of games within prevention of correct body posture of primary school students. Research samples were 62 class teachers employed in 5 primary schools (Municipalities: Breza, Vareš, Ilijaš, Visoko). Data which defined role of games within prevention of correct body posture of primary school students was gathered by filling anonymous survey containing six different questions. After data was collected, theoretical method, descriptive-analytical method and empiric-no experimental method (survey) was used.

RESULTS: Analysis results have shown that games mostly influence regular growth and development of students in lower grades since then games are the most frequent type of activities, 21 teachers (33,87%) recognized game as being the most important factor on regular development from first to fifth grade students. The same number of teachers recognized that games mostly influence development of first graders and contributes to regular and normal growth of child's organism. Such regular development can be seen in

physical, psychological, social and emotional aspect. 59 teachers (95,16%) think that games influence all body segments and as such influences correct body posture of students in lower grades of primary school.

CONCLUSION: Basis of this research was to determine role of games in prevention of regular body posture in primary school students. Based on teachers' opinions, games have preventive impact on regular body posture within students from 1st to 5th grade of primary school.

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FACTORS AFFECTING THE OCCURRENCE AND PREVALENCE OF FLAT FEET IN PRESCHOOL CHILDREN: REVIEW ARTICLE

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ABSTRACT

AIM AND PURPOSE: This article summarizes systematic reviews of the literature related to foot deformities. The aim of this review was to analyze the feet of preschool children and to identify the factors that lead to the accommodation of this deformity.
METHODS: All data sources have been selected from relevant sources from websites, journals and original scientific articles. In this paper, seventeen papers addressing the problem are analyzed. The systematic review of the papers presented here is consistent with the PRISMA consensus.
RESULTS: What has so far revealed a strong correlation between body weights has gained by gender with the onset of flat foot deformity. All the studies conducted allowed for a positive association between body weight and the frequency of flat foot occurrence. The results of the study examining the association were found with the occurrence of deformation and concluded that the flat foot in the highest frequency occurred in children aged 3 to 5 years, and after that often the frequency suddenly decreased. A gender difference was also observed. Specifically, it has been observed that girls and boys of the same age have a higher incidence of flat feet in boys.
CONCLUSION: The childhood period is a period of rapid growth and, accordingly, it takes time for the skeleton, musculature and ligaments to adapt to the increasing daily challenges. What remains underexplored and more attention needs to be on assessing the period when

foot structures relationships are definitive established in order to decide which period of flat foot emergence is the ultimate pathological condition to be treated seriously.

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THE INFLUENCE OF THE FIFA 11+ TRAINING PROGRAMME ON ISOKINETIC PARAMETERS OF KNEE JOINT STABILISERS – THEORETICAL ANALYSIS

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ABSTRACT

AIM AND PURPOSE: FIFA 11+ represents a complete warm-up programme, which had appeared as a result of an F-MARC research and has been characterised as a prevention warm-up programme. The aim of this paper is to analyse what effects the application of FIFA 11+ training programme will yield on isokinetic parameters of knee joint stabilisers.

METHODS: Via a search of databases, a total of 30 research studies which deal with the topic of the FIFA 11+ programme have been found. All the studies have been conducted on football players. Having been found, and before undergoing the full analysis, the studies were selected via the following four inclusive criteria: I) the research topic was the FIFA 11+ training programme, II) the research was of a transversal or longitudinal character, III) the FIFA 11+ programme effects were tested on a diagnostic apparatus for testing knee joint stabilisers parameters, IV) the research was conducted on subjects above the age of fourteen. Having been selected via the inclusive criteria, a total of six studies were analysed.

RESULTS: Regarding the 30°/s speed test, there has been noted a slight improvement of the non-dominant leg PT Q (16%), whereas no changes regarding the muscle have been noted on the dominant leg. However, at this speed, significantly greater changes have been noted on the hamstring – dominant leg PT H showed a 24.8% improvement, whereas non-dominant leg PT H showed a 28.7% improvement. Regarding the quadriceps and hamstring PT at the speed of 60°/s, different research studies have yielded different results. However, what is most important is that all the changes were positive. Different research studies showed that, at the speed of 60°/s, dominant leg PT Q had an increase of 6.9% and 19.7%,

whereas non-dominant leg PT Q had an increase of 35.3% and 31.3% at the same speed. The 90°/s speed test was included in one research only, and the following results have been obtained: dominant leg PT Q had an increase of 47.8% and non-dominant leg PT Q had an increase of 78.1%, while no significant changes have been noted either in the dominant or non-dominant leg PT H. At the speed of 180% and 300%, there has been noted an increase in both the dominant and non-dominant leg PT Q. Also, it has been shown that the application of the FIFA 11+ programme has led to an improvement regarding the hamstring and the quadriceps (H:Q) relation, i.e. that of a 6.7%.

CONCLUSION: The general conclusion of this paper is that the FIFA 11+ complex warm-up programme is a useful and applicable tool, the usage of which might lead to a decrease of the unilateral and bilateral imbalance of the quadriceps femoris and biceps femoris muscles in football and futsal players, which ultimately might result in a diminished risk of injury.

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THE ANALYSIS OF HIGH-INTENSITY RUNNING PERFORMANCES IN BHT PREMIER LEAGUE OF BOSNIA AND HERZEGOVINA MATCHES

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ABSTRACT

AIM AND PURPOSE: The aim of this study is to present in detail the analysis of high-intensity movement during official football matches of the highest rank in Bosnia and Herzegovina.

METHODS: The data (such as maximum speed, the number of accelerations, the number of sprints, (V4) the distance of high-intensity running ≥19,8 km/h, and (V5) the distance of sprint ≥25,2 km/h) have been collected using 20 Hz GPS (Global Positioning System) in 13 football matches (11 matches of the domestic league, BHT PL BIH, and two matches of BIH CUP in the first part of the 2019-2020 season). In total, there were n=74 individual match observations, of which central-backs (CD, n=18); full-backs (FB, n=13); center-midfielders (CM, n=23); wide-midfielders (WM, n=15); and forwards (FW, n=5) were analyzed. The kinematic parameters were obtained by 20 Hz GPS Pro^2 (GPEXE, Exelio Srl, Udine, Italy).

RESULTS: The statistical analysis results have shown that the average maximum speed equaled 29,7±1,6 km/h, the number of accelerations 19,9±7,4, the number of sprints 3,4±2,7, the distance (V4) 481±163, and the distance (V5) 127±85. Considering the positions of the players on the field, the full-becks obtained the highest maximum speed of (FB) 30,7±1,1 km/h, while the wide-midfielders, on average, performed, the most accelerations 27,6±6,4, sprints 6,2±3,3, and ran the longest distance in V4 (677±156) and V5 (213±104) zones.

CONCLUSION: This study analyzed the differences between players' positions and quantified the physical demands of elite football players competing in the highest rank in Bosnia and Herzegovina. Based on the kinematic parameters data, the results show several statistical discrepancies related to the positions of the players in a match. The data offered in this study may be used in future analyses and comparisons. They represent the scientific ground for further construction and creation of specific training exercises concerning players' positions.

Key words: *GPS, match analysis, distance of sprint, accelerations*

IMPACT OF THE SPEED OF PERFORMANCE OF THE ATTACK PHASE ON OVERALL PERFORMANCE IN THE HANDBALL GAME

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ABSTRACTS

AIM AND PURPOSE: The aim of this investigation is to determine the situational efficiency of the stage of the handball attack in the Premier League of BiH, as well as determining the factors in which the winners of the defeated Ekipe differ.

METDHODS: The survey was conducted in the championship game of the BiH League of Champions in handball between HRK Zrinjski Mostar and RK Lokomotiva Mostar. The sample was made by handball players of these two clubs (17 handball players HRK "Zrinjski" – Mostar and 17 handball players RK Lokomotiva-Mostar), chronological ages from 14 to 33 years. The sample selection is conditional on the object itself, the problem and the aim of the research, as well as the available number of handball players.

RESULTS: Differences in situational efficiency and performance of handball elements are determined by canonical discriminative analysis, based on which statistical significance of the differences between the teams and which variables contribute most to that difference.

CONCLUSION: Based on the results of the discriminative analysis, we can notice that these two teams differ in the performance variables of the speed of attack, that this difference is statistically significant at the level of the Siignification (SIG. 028). The variables that divide the winning most from the loser team are the number of kicks from the jump shot, the number of kicks from the Contras, as well as the number of lost balls when capturing or catching errors.

Keywords: handball, situational efficiency, speed of attack, differences, success.

EXPERT MODEL OF METHODICAL LEARNING OF SKIING WITH DIFFERENT RHYTHM AND PACE

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ABSTRACT

AIM AND PURPOSE: The purpose of the present study was to investigate the formation of an expert model of the most important operators for methodical learning of skiing with different rhythm and pace. In this particular research was conducted on 20 ski experts from different countries. The experts first defined a model of operators for methodical learning and then, on a scale from 1 to 5, selected the five most important exercises. Execution of ranking was defined by the sum of the frequencies of experts values.

METDHODS: In accordance with the research objective tests which are used were nonparametric chi - square test ($\chi 2$) and statistical test of differences between expert ranks of most important operators and values of the most important ones.

RESULTS: Differences were obtained in frequencies of expert selection of most important operators for methodical learning of skiing with different rhythm and pace ($\chi 2$[illegible] 2[illegible][illegible]0[illegible]; p =0,02), and differences between values of most important ones ($\chi 2$=575,70; p <0,001). The results of this research allow precise and science justified methodical innovations of expert model of skiing with different rhythm and pace.

CONCLUSION: This research presents foundation for further hierarchical classification of expert model and defining of characteristic mistakes and correction exercises.

Key words: *ski school, expert model, skiing with different rhythm and pace*

RELATIONSHIP BETWEEN BODY MASS INDEX AND LEVEL OF PHYSICAL ACTIVITY IN ELEMENTARY SCHOOL CHILDREN

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ABSTRACT

AIM AND PURPOSE: The aim of the present study was to investigate the relationship between body mass index and level of physical activity.

METHODS: The study was conducted on a sample of second and third grade elementary school children (N = 109), of which 50 were girls (7 ± 4 years) and 57 boys (7 ± 5 years). All subjects completed the Physical Activity Questionnaire (TAK), and their morphological dimensions were measured: body mass (TM), body height (TV), waist circumference (OS), and hip circumference (OK). Based on the measured dimensions, body mass index (BMI) was calculated. Descriptive statistical parameters were calculated for all variables: arithmetic mean (AS), minimum result values (MIN), maximum result values (MAX), and standard deviation (SD). The correlation between physical activity and body mass index was determined by correlation analysis.

RESULTS: Analysis of descriptive statistical parameters showed: TV = 137 ± 6.42 cm, TM = 32.60 ± 7.82 kg, OS = 62.98 ± 9.06 cm and OK = 73.50 ± 7.98 cm). The results of regression analysis showed that there is a significant association between physical activity and the body mass index (r = -0.28).

CONCLUSION: Based on the results of this study, we can conclude that in this age group, there is a significant association between physical activity and body mass index. Furthermore, it can be concluded that physical activity is one of the basic determinants of health in children at this age, and thus should further consider ways of involving children in teaching and extracurricular forms of physical activity, both from the parent's side and from the educators in schools. Further studies should investigate more closely the association of physical activity with body mass index in children of this age.

Key words: Body mass indekx; physical activity; elementary school, children

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THE EFFECTS OF FOOTBALL AS AN ELECTIVE SPORT ON THE MOTOR SKILLS OF 8TH GRADE FEMALE STUDENTS

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ABSTRACT

AIM AND PURPOSE: The expansion of scientific and technological discoveries, accelerated globalization, and computerization seek substantial and permanent transformation of education. Efficiency of the physical education can be improved with real, professional, and economic planning and monitoring of education effects, as well as with an increase in weekly number of classes. The goal of this study is to determine effects of standard and experimental education curriculum on motor skills.

METHODS: The study was conducted for one school year on the sample of total 45 students, divided into two groups. Control group (22 students) consisted of students who attended only physical education classes. Experimental group (23 students) consisted of students who, in addition to physical education classes, attended additional two classes of football during a week. Motor space was monitored through 8 variables of Eurofit battery tests, as follows: flamingo, hand tapping, seated forward bend (modified functional reach test), long jump, lay – sit for 30“, pull-up endurance, and pin running on 10x5m.

RESULTS: Analysis of the results during the final measurement showed that students of control group had better results in final measurement in comparison to the initial one in 6 out of 8 variables. Students of the experimental group had improved results in 8 out of 8 variables.

CONCLUSION: Experimental education curriculum with emphasize on foodball contributed to development of motor skills of students, but not at the level that would imply superiority over the control – standard education curriculum.

Key words: *physical education, curriculum, football, female students.*

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FREQUENCY OF FLAT FOOT DEFORMITIES AMONG THE STUDENTS OF FIRST CYCLE OF PRIMARY SCHOOL – RESEARCH ARTICLE

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ABSTRACT

AIM AND PURPOSE: Flat foot is very frequent deformity in the population of school children. Neglect of physical activity in the modern lifestyle in large works for increased representation of this deformities due to the weak involvement of foot muscles and can cause secondary changes in adjacent and distant segments (knees, hip, spine). Therefore, the aim of this study is to determine differences of the various levels of deformity of the flat foot of male and female children of the first cycle of primary school.

METHODS: The sample in this study consisted in a total of 120 pupils of the first, second and third grade primary school "Milija Nikčević" from Niksic. The sample was divided to two sub samples: 60 students of male and 60 female pupils, aged 6-9. Foot deformities have been detected by modern innovation technology (podoscope). The data that was obtained was processed by the process of descriptive statistics, with graphic displayed number and percentage representation of the treated deformities.

RESULTS: The results showed that 26 male pupils had a normal foot, 20 pupils had flat foot and 4 pupils had hollow foot. As regards female students, 39 pupils had a normal foot, 12 had flat feet, and 9 had hollow foot. When it comes to the deformities of the flat foot, it is evident that the largest representation of this deformity is in the male gender with total of 30 subjects, while a small number is among female pupils with a total of 12. Total representation of the flat foot in both half counts 42 examinees.

CONCLUSION: Out of total 42 examinees who have the deformities of the flat foot, 71% are male and 29% of female gender. This data is a concern that indicates that children should be subjected to preventive measures by lecturers and parents in order to suppress or prevent

the development or appearance of the same deformities with the development of children in this and older age.

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