



Abstract Book

**The 4th International Conference of Sport
Science - AESA**

March-2021

DOI: <https://doi.org/10.30472/AESA-CONF.VI4>

Welcome Message

Every loss of life is a tragedy. Now we are at the second years of pandemic and we lost several peoples during previous months. We would like to respect to all people whom lost their family in this tragedy.

On behalf of Asian Exercise and Sport Science Association and conference organization, it is my great pleasure and honor to welcome all of researcher and scientists to this event at this moment. Also, a worm welcome to all our participants from everywhere, hoping the most benefits from this online conference.

Nowadays sport science is developing and growing faster than previous. Improving healthy lifestyle, developing ability of work, preventing several chronic diseases and improving athlete's performance at the highest level of competition all are resulted by developing all aspects of sport science. Because of these we need to share researches result at any time. This event is the place for knowledge sharing at area of sport science.

Much thanks are endorsed to our valuable teams, and colleagues in our Association and from outside who spend much time and efforts and are dedicated to the success of this conference.

Dr. Ali Reza Amani
President of Conference



Organized by: Asian Exercise and Sport Science association

Tehran, Iran

March, 2021

Website: www.aesasport.com

DOI: <https://doi.org/10.30472/AESA-CONF.VI4>

ISSN: 2588-4832

Email: info@aesasport.com

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

Physical training for Goalkeepers: Gym-based training methods for performance improvement and injury prevention

Iason Vasileiadis

Academy Fitness Coach at Xanthi FC (Greece)

Goalkeeper's position is probably the most crucial position inside the football pitch and as a result of that keeping them healthy and always ready to play is a great challenge for every strength and conditioning and goalkeeper coach. In order to achieve that, coaches should apply the wright principles and tactics to improve their performance and avoid injuries. **PURPOSE** : This study reviews the most efficient contemporary injury prevention and performance encashment training strategies for goalkeepers and the scientific evidence behind them. It also aims to determine the benefits and the applicability of these strategies in youths and men, at all performance levels. **METHODS**: Standard systematic review methodology was modified and adopted for this review and electronic-searching tools were used to locate the papers needed. **RESULTS**: A total number of 44 studies were analysed. We have isolated 4 injury prevention strategies developed by researchers as the most effective to reduce the number of injuries (Foam rolling, Pre activation exercises, Balance Exercises, Specific warm-up routines) and 2 strength training strategies(Maximal Strength and Explosive Power training) that have been proved to help goalkeepers reach their performance potential. We evaluated these in relation to their scientific substrate and to their applicability in the training programs introduced by sports scientists as well as strength and conditioning coaches on the pitch. **CONCLUSIONS**: Our present systematic review revealed those injury prevention and performance improvement strategies as the most effective and popular today.

Key Words: Goalkeepers, Performance Injury Prevention, Strength Training, Maximal Strength, Power,

Peculiarities and Perspectives of Physical Rehabilitation Within High School System

Olena Dorofieieva¹, Kseniia Yarymbash¹, Iryna Skrypchenko², Marko Joksimović³, Aneliia Mytsak⁴, Nataliia Nesterenko⁴

¹Department of physical rehabilitation and sport medicine, National medical university of O.Bogomolets, Ukraine

²Department of Physical Education, Dnipropetrovs'k State University of Internal Affairs, Dnipro, Ukraine

³Football club National, Podgorica, Montenegro

⁴Faculty of Physical Culture and Sport, Prydniprovsk State Academy of Physical Culture And Sport, Ukraine

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

ABSTRACT:

The aim of the study was to substantiate the necessity of physical rehabilitation within the High School curriculum, individualized according to the assessment of health, physical development and physical fitness of the students from physical rehabilitation academic sport group (special medical group), in order to improve the students' life quality. The study engaged 362 students aged 18-20 years. Among those surveyed in the group of physical rehabilitation (PR) (special medical group) was attributed 143 students. The students from the PR academic group were divided into 4 subgroups according to their medical charts analysis, in order to differentiate rehabilitation physical education means and the activity regimen. The students of groups I and II were recommended sparing physical exercise regimen, groups III and IV – sparing and sparing-training physical exercise regimen. The implementation of the offered method improved both students' somatic health (the poor health level group decreased by 25.6% of the students, the average health group – by 9% of the students upon completing the study) and physical fitness level (the average health group increased by 18% of the students, 4.8% in the end of the study showed health level which exceeded the average one; the share of the students with poor physical fitness decreased by 22.9%). This made possible re-distribution of the students into different physical education groups (finally the physical rehabilitation group decreased by 13.2%). These data provide the basis for implementing physical rehabilitation into the High School curriculum within physical education classes.

KEY WORDS: Somatic health, Physical rehabilitation academic group students, Differentiation of physical education methods, Physical fitness.

Reference:

Dorofieieva O., Yarymbash K., Skrypchenko I., Pavlović R., Badicu G. (2019). The Effect of Recreational Swimming on the Health of Students with Poor Somatic Health in Physical Education Classes at University. *J. Funct. Morphol. Kinesiol.*, 4: 59.

Fotyntyuk V.G. (2017). Determination of first year students' physical condition and physical fitness level. *Physical education of students*. 21(3): 116-120.

Numerical analysis of the artistic swimming mixed duet free routine choreographies in world championships

Gökçe Akgün 1

¹*Istanbul University – Cerrahpaşa, Institute of Graduate Studies, Movement and Training Sciences, Turkey*

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

ABSTRACT:

Introduction: The aim of the research is to determine the general characteristics of artistic swimming mixed duet free routine choreographies. Artistic swimming competition and figures are analyzed from video recordings (1, 2). It is aim to examine the variety of movements in the competition choreographies due to the mixed duet world championship has been a new competition since 2015. In artistic swimming, male athletes have the right to participate only in mixed duet competitions at world champions. Therefore, it is important to analyze the mixed duet choreographies in order to contribute to the effective results of male athletes in artistic swimming. **Methods:** Since the mixed duet category at the FINA world championships has only been in 2015, 2017 and 2019, total of 32 mixed duets free routine choreographies analyzed. All official competition videos of 10 countries from 2015, 11 countries from 2017 and 11 countries from 2019 analyzed. Choreographies classified separately of jumping into the pool, acrobatic movements, connected actions, arm movements and leg movements. Arm movements were examined in 4 sections (single arm, double arms, single arm boost and double arms boost) and leg movements in 5 sections (single leg, double legs, turns, splits and barracuda). It was determined by whom (female athlete, male athlete or mixed) the movements made. **Results:** In 50% of mixed duet choreographies, athletes jumped the pool at the same time. Male athletes performed acrobatic movements in all choreographies. These acrobatic movements; 93.75% (in 30 mixed duets) is half body, 93.75% (in 30 mixed duets) is close to the whole body and 78.13% (in 25 mixed duets) is completely out of water. In 21 mixed duets (65.63%), these three types of acrobatic movements have applied. Each choreography has at least 4 connected actions. Barracuda movement in 71.88%, split movement by a male athlete in 78.13%, acrobatic movements for male athlete by female athlete in 43.75% used of all choreographies. The number and duration of double leg movements, rotation movements and spin movements increased in choreographies with higher competition scores. **Conclusion:** As a result of the research, movement classification of all mixed duet free routine choreographies that competed in the world championships made. The numerical values of commonly used movements determined. The preferred movement types in mixed duet choreographies have been determined to contribute to the training of male artistic swimmers.

KEY WORDS: Mixed duet, Artistic swimming, Synchronized swimming

Reference:

1. Alentejano, T., Marshall, D. & Bell, G. (2008). A time–motion analysis of elite solo synchronized swimming. *International Journal of Sports Physiology and Performance*, 3, 31-40.
2. Peric, M., Zenic, N., Mandic, G.F., Sekulic, D. & Sajber, D. (2012). The reliability, validity and applicability of two sport-specific power tests in synchronized swimming. *Journal of Human Kinetics*, 32, 135-145.

The Relationship between Hamstring Flexibility with Functional disability , H: Q Co Activation Ratio and Pelvic Alignment of Recreational Athletes with Non-Specific Low Back Pain

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

L.R.N.D. Weeraratna 1 , G.W.C.R. Withnaga 2, Xia Nan 3, Xieling Fan 4 , Xu Tao 5

¹*Department of Rehabilitation Medicine and Physical Therapy , Tongji Hospital , Tongji Medical College , Huazhong University of Science and Technology, P.R.China*

ABSTRACT: Low back pain (LBP) has become one of the most widespread public health concern and majority of the worlds' population (80%) suffer from LBP at any point in their lives. Only 8-15% of patients with LBP have identified patho-anatomical diagnosis and the majorities (90%) of LBP cases diagnosed as “non-specific low back pain (NSLBP) .Nevertheless among athletic and physical active population NSLBP is one of common complain thus it accounts 1% to 30% of athletic injuries. Etiology of NSLBP is multi factorial and complicated. Impaired biomechanical factors of lower limbs and pelvis are the known causes for development of NSLBP.This study was conducted to identify whether hamstring flexibility has an impact on functional disability , hamstring to quadriceps co activation ratio and altering pelvic alignment of among recreational athletes.

This experimental cross-sectional study consisted with convenient sample of thirty five (35) collegiate recreational athletes from Tongji Medical College. 18 NSLBP athletes {(Female = 10(age =23.2±3.05 years, BMI= 23.26± 2.8) ; (Male= 08) (age =24.88 ±2.9 years, BMI= 22.56± 2.11)} engaged in recreational sports more than six (06) months , had LBP more than 4 weeks without any patho-anatomical origin and the pain score of > 2 on a 0 to 10 cm visual analogue scale (VAS scale) were recruited to the NSLBP group.17 asymptomatic healthy counterparts { (Female = 09(age =23± 2.59 years, BMI= 22.96± 1.77)}; (Male= 08(age =28.25±4.33 years, BMI= 24.97± 3.65) who engaged in recreational sports more than six (06) months and absence of lower limb injuries were in the healthy group. Demographic data were gathered and functional disability level was rated using self-administered questionnaire and Oswestry disability index respectively. Anthropometric measurements (height, limb lengths and body weight) were measured. Clinical tests were performed to identify the deformities, neurological lesions and muscle strengths of Gluteus maximus ,Gluteus medius and abdominal muscles .Active Knee Extension (AKE) test was performed to measure the hamstring flexibility of both limbs. Static pelvic alignment was assessed by photogrammetry technique using four postural photos of pelvis area taken from the Global Postural System (GPS).Maximum Voluntary Isometric Contractions (MVIC) of Hamstrings, Quadriceps ,MVIC H:Q ratio , H: Q co activation were assessed by surface electromyography.

According to the results, a strong positive linear relationship was shown of AKE angle and functional disability level (cc = 0.7941) among NSLBP men . A moderate positive linear relationship was shown of AKE angle and pelvic tilt(c = 0.3836) among NSLBP women. Moreover, AKE angle was shown moderate positive relationship with H:Q co activation ratio (cc = 0.3149) and moderate negative relationship with MVIC H:Q ratio (cc = -0.3567) among NSLBP men respectively . Within the confines of this study, Hamstring flexibility has an association on the development of NSLBP in male athletes. Moreover, level of hamstring flexibility has an positive effect on altering pelvic tilt of female athletes with NSLBP.

KEY WORDS : Hamstring flexibility, H: Q co activation ratio, Non -specific low back pain, Pelvic tilt , Recreational athletes

Reference:

1. R. N. Vilar Furtado, L. H. Ribeiro, B. de A. Abdo, F. J. Descio, C. E. Martucci Junior, and D. C. Serruya, “Nonspecific low back pain in young adults: Associated risk factors,” *Rev. Bras. Reumatol.*, vol. 54, no. 5, pp. 371–377, 2014.
2. T. Vos et al., “Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015,” *Lancet*, vol. 388, no. 10053, pp. 1545–1602, 2016.

Sports Performance Control on Race Skaters Through The TIVRE-Patín Field Test

PhD Rafael Enrique Lozano Zapata, MA. Ricky Alberto Blanco J, & BA. Huilli Manque Capdevilla

¹University of Pamplona, ²Argentine Skating Confederation

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

ABSTRACT:

Skating is a standing sport, but few scientific studies are addressing it. However, its evolution in recent years has made necessary to apply a performance control; in order to know the different physiological variables proper to the sport's discipline, and therefore to optimize its capacities. Considering the above, the author proposed to control the internal (physiological) and external (training load) variables with skaters from the Argentinean National Team. Since there is no appropriate laboratory test, specific, and real to the competition situation, the researcher decided to apply the field test TIVRE-patín, the only test worldwide validated, reliable, and reproducible; developed in the doctoral thesis (Lozano, 2010). The evaluations of the athletes were carried out in Cartagena (Colombia) before they participated in the 2016 World Cup in China. This field test is characterized by being continuous, maximal, and intervallic, achieving very objective and parameters at the time of optimizing performance. During the research, three men and three women, with an average age of 25.29 ± 3.41 years, participated. When analyzing the test results, the anaerobic threshold was found considering the heart rate at 184.67 ± 2.38 ppm, representing $94.54 \pm 1.23\%$ regarding the male gender. The female gender was found at 182.33 ± 1.15 ppm, being $95.70 \pm 3.26\%$ of the maximum heart rate and a travel speed in the anaerobic threshold of 31.73 ± 1.67 km/h. representing $88.79 \pm 0.51\%$ and 31.20 ± 0 km/h, being $87.96 \pm 0.83\%$. Respectively by gender; the maximum VO₂ was also determined, with an average value of 55.36 ± 2.73 ml/kg/min, managing to describe the characteristics of the athletes and highlighting the valuable fourth place obtained in the World Cup.

KEY WORDS: sport performance control, field test, physiological variables, external load.

Reference:

Lozano, R.E. (2010). Doctoral Tesis, entitled: TEST DE CAMPO (TIVRE Patín®) PARA VALORAR LA CUALIDAD AEROBICA DEL PATINADOR SOBRE RUEDAS. (FIELD TEST (TIVRE Patín®) TO ASSESS THE AEROBIC QUALITY OF THE SKATER ON WHEELS) Retrieved on 12/6/2017, <https://buleria.unileon.es/handle/10612/816>.

Carl Foster, Jos J. De Koning, Floor Hettinga, Joanne Lampen, Kerry L. La Clair, Christopher Dodge, Maarten Bobbert & John P. Porcari. Pattern of Energy Expenditure during Simulated Competition. *Medicine and science in sports and exercise*. 2002 (12)

Associations between vertical and horizontal jumps with power values during deadlift exercise among youth soccer (football) players**DOI: <https://doi.org/10.30472/aesa-conf.vi4>**

Vlade Bendic 1, Barbara Gilic 1, 2, Damir Sekulic 1

¹Faculty of Kinesiology, University of Split, ²Faculty of Kinesiology, University of Zagreb

Objectives: The similarity in joint angles and performance between the deadlift and vertical jumps was previously displayed (Malyszczek, K. K. et al., 2017). Additionally, the hexagonal barbell produces greater peak power compared to performance with traditional Olympic barbell. To optimally develop power and performance in explosive tasks in sport (such as jumps), training with the load that maximizes the power output is considered as ideal (Baker, D., Nance, S., & Moore, M., 2001). Therefore, the objective of this research is to investigate the relationship between jumps and power values during the deadlift exercise performed with a hexagonal barbell.

Methods: 14 youth soccer players (16-18 years old) were tested on the sargent jump test, broad jump test, one repetition maximum (1RM) using the PUSH 2.0 band that was used for displaying the power values at 45, 55, 65, 75, 85, and 95% of 1RM. Correlations between jumps and power values at different percentages of 1RM were evaluated by Pearson's correlation coefficients.

Results: The significant correlation ($p < 0.05$) was evidenced between sargent jump test and power value at 45, 55, 65, 75% 1RM ($r = 0.75$; $r = 0.60$; $r = 0.56$; $r = 0.53$, respectively), and between broad jump and power at 45, 55, 65% 1RM ($r = 0.71$; $r = 0.51$; $r = 0.54$, respectively).

Conclusion: Power values at moderate loads were significantly correlated with vertical and horizontal jumps. Therefore, it could be expected that training at moderate loads that produce the greatest power values will lead to greater development of jumping performance, which can be important also for improving soccer performance.

Keywords: power, performance, team sports, adolescents

Reference:

Malyszczek, K. K., Harmon, R. A., Dunnick, D. D., Costa, P. B., Coburn, J. W., & Brown, L. E. (2017). Comparison of Olympic and Hexagonal Barbells With Midthigh Pull, Deadlift, and Countermovement Jump. *Journal of strength and conditioning research*, 31(1), 140–145. <https://doi.org/10.1519/JSC.0000000000001485>

Baker, D., Nance, S., & Moore, M. (2001). The load that maximizes the average mechanical power output during jump squats in power-trained athletes. *Journal of strength and conditioning research*, 15(1), 92–97.

The Effects of Reduced Breathing on Swimming Performance and on Blood Lactate Concentration in 25 and 50 m Breaststroke Swimming at Maximal Intensity

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

Iasonas Zompanakis¹, Konstantinos Papadimitriou², Tsalis Georgios³, Loupos Dimitrios³

1. MSc. School of Physical Education and Sports Science, Laboratory of Sports Medicine, Aristotle University of Thessaloniki, Greece

2. PhD. School of Physical Education and Sports Science, Laboratory of Evaluation of Human Biological Performance, Aristotle University of Thessaloniki, Greece

3. Professor. School of Physical Education and Sports Science, Laboratory of Evaluation of Human Biological Performance, Aristotle University of Thessaloniki, Greece

ABSTRACT:

In Freestyle and the Butterfly stroke, swimmers use the least possible breaths in order to keep their hydrodynamic position and maintain a higher swimming velocity. The purpose of this study was to determine the duration of reduced breathing when swimming Breaststroke affects the hydrodynamic position and preserves the high swimming speed in relation to the production of blood lactate. In this study, 16 swimmers, aged 15.6 ± 3.2 participated. They swam 25 and 50 m Breaststroke, with breathing frequency for both distances, one breath every stroke (1 on 1) and one breath every three strokes (1 on 3) at high intense. Blood lactate concentration, performance, and efficiency parameters were measured. From the results, swimmers' blood lactate concentration and the time in 25 m between the two breathing frequencies 1 on 1 and 1 on 3, showed a statistically significant difference 10.1 ± 1.8 vs 9.3 ± 1.5 mmol/L ($p = 0.02$) and 19.5 ± 1.6 vs 19.3 ± 1.6 sec ($p = 0.03$) respectively. In conclusion, in the 25 m distance at maximum intensity, it is preferable to use the 1 on 1 breathing frequency in order to maximize blood lactate concentration, the 1 on 3 breathing frequency in sets of 25 m is more effective at the rate of distances of 100 and 200 m.

Key words: Swimming, hypoxic, Breaststroke, performance

CHALLENGES OF 10M AIR GUN SHOOTING AMONG ELITE JUNIOR LEVEL ATHLETES IN SRI LANKA: CURRENT PRIORITIES AND FUTURE INTERVENTIONS

K K S T Perera* A A L Madhushani* and D S L Perera*

*Department of Sport Sciences and Physical Education
Sabaragamuwa University of Sri Lanka, P.O.Box 02, Belihuloya

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

This research study has discovered the challenges of 10m Air Gun Shooting among elite junior level athletes in Sri Lanka respective to the current priorities and future intervention. Two specific objectives for instance to identify the physical, social, and economical challenges for developing 10-meter Air Gun shooting among elite junior level athletes in Sri Lanka and to identify current priorities then suggest future interventions. A Conceptual model of the study was accomplished by the comprehensive literature assessment.

A quantitative research approach was applied for the study. Sixteen IOC - Solidarity level coaches and thirteen shooters who had achieved the highest National recognitions were selected as sample which was selected by a purposive sampling method. Semi structured and in depth interview method was used as the main data collection method. The interview has consisted of different items with three subsections as economic factors, physical factors and sociological challenges affecting 10m Air Gun Shooting among elite junior level athletes in Sri Lanka. The study has provided conclusions after thematic analysis was used to analyze data and focus on examining themes within data.

Based on the analysis, the economic factor has characterized under three themes: "Cost of equipment and facilities; Shooting range, Equipment, limited school facilities and technology, lack of financial assistance and contingency taxes". Physical factor is divided under the theme of "Physical fitness level". Lastly, the sociological factor is categorized under five themes: "Parental support, school support, private shooting community, media support, and government support". The results has revealed that the economic and sociological factors have significantly influenced the sport of 10m air shooting in Sri Lanka out of the three major factors. The study has provided important suggestions to be implemented by the government, private and different sector. Finally, the study stated important facts to be implemented by National Shooting Sport Federation and stakeholders to help abridging the knowledge gap of the research area.

Key words: 10m Air gun Shooting, Elite junior level, Economic, Physical, Sociological

Doping Knowledge and correlates of potential doping behavior in kinesiology students

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

Šime Veršić¹, Dora Marić^{1,2}, Damir Sekulić¹,

¹ Faculty of Kinesiology, University of Split, 21000 Split, Croatia

² Department of Psychology, Educational Science and Human Movement, Sport and Exercise Sciences Research Unit, University of Palermo, 90100 Palermo, Italy

ABSTRACT:

Introduction: Consumption of banned performance-enhancing substances and prohibited techniques, presents one of the most essential problems in modern sport (Sajber, Maric, Rodek, Sekulic, & Liposek, 2019). Previous researches indicated alarmingly poor knowledge on doping issues in athletes (Devcic et al., 2018). The aim of this study was to evaluate the level of knowledge on this topic on students of Kinesiology, future coaches, and sport practitioners.

Methods: Study included 130 kinesiology students (19.45±1.31 years) from the University in Split both female and male (53 female). Students were tested during the second semester of 2019/2020 academic year. Variables were collected through questions about socio-demographics, and doping-related factors. Descriptive statistics were calculated for age, sports experience, knowledge of doping, and subjective knowledge of doping. The Pearson correlation was used to assess the relationship between variables collected in the study.

Results: Descriptive statistics is indicating low doping knowledge with an average score of 1.98±1.79: while 61% of students declared negative doping attitudes. Correlation analysis identified a statistically significant correlation between KD and potential doping behavior (PDB) (-0.32).

Conclusion: Considering the fact that students of Kinesiology are future sports coaches, very low level of their doping knowledge and negative associations between KD and PDB, indicate a clear need for systematic education on doping among them.

KEY WORDS:

doping, students, knowledge, kinesiology

Reference:

Devcic, S., Bednarik, J., Maric, D., Versic, S., Sekulic, D., Kutlesa, Z., Liposek, S. (2018). Identification of factors associated with potential doping behavior in sports: a cross-sectional analysis in high-level competitive swimmers. *International journal of environmental research and public health*, 15(8), 1720.

Sajber, D., Maric, D., Rodek, J., Sekulic, D., & Liposek, S. (2019). Toward prevention of doping in youth sport: cross-sectional analysis of correlates of doping tendency in swimming. *International journal of environmental research and public health*, 16(23), 4851.

Match running performance in two different competitive standards of Croatian professional soccer

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

Toni Modric^{1,2}, Sime Versic^{1,2}, Damir Sekulic¹

¹ Faculty of Kinesiology, University of Split, Split, Croatia; ² HNK Hajduk Split, Split, Croatia

ABSTRACT:

The aim of this study was to compare team running performances (RP) in different competitive standards during official soccer matches. RP were obtained by the Global Positioning System (GPS) from thirty-one soccer matches played over the one-half season in Croatian national soccer competition. Data were analyzed in the matches at two competitive standards: Second division (n = 12) and First division (n = 19). Variables included total distance covered; and the distance covered by low-intensity running, running, high-speed running and sprinting. First division team (FDT) performed significantly higher total distance covered (F-test: 19.56, p < 0.01) compared to the Second division team (SDT) (110.5 km and 103.9 km, respectively). Distance covered in running zone was significantly higher for the FDT (F-test: 27.83, p < 0.01) when compared to the SDT (16.8 km and 13.5 km, respectively). Also, high-speed distance covered was significantly higher for the FDT (F-test: 5.98, p < 0.02) when compared to the SDT (5.8 km and 5.1 km, respectively). In Croatian national soccer competition, better competitive standards resulted in greater total distance covered, and distance covered at moderate and high speeds.

KEY WORDS: Team performance, GPS, First division, Second division, Soccer

Reference:

1. Aquino, R., et al., Effects of competitive standard, team formation and playing position on match running performance of Brazilian professional soccer players. *International Journal of Performance Analysis in Sport*, 2017. 17(5): p. 695-705.
2. Sæterbakken, A., et al., Match running performance on three different competitive standards in norwegian soccer. *Sports medicine international open*, 2019. 3(3): p. E82.

Reliability of the newly developed tests of handball specific change of direction speed and reactive agility

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

Vladimir Pokrajčić¹, Dora Marić^{2,3}, Nikola Foretić³, Ognjen Uljević³

¹ Faculty of Science and Education, University of Mostar – Bosnia and Herzegovina ² Department of Psychology, Educational Science and Human Movement, Sport and Exercise Sciences Research Unit, University of Palermo, ³ Faculty of Kinesiology, University of Split - Croatia

ABSTRACT:

Purpose: Agility is an important factor of success in handball. There is a lack of reliable specific tests for the evaluation of different agility components in handball. In this study we evaluated the reliability of the two newly developed tests of agility for handball.

Methods: The sample consisted of 6 senior male amateur handball players (age: 19,83 years) who were tested on anthropometrics (body height: 185,5 cm, body mass: 84 kg), newly developed tests of handball specific reactive agility (HS-RAGL) and change of direction speed (HS-CODSL). The relative reliability is evaluated by calculation of Intra-Class-Correlation coefficients (ICC), while the absolute reliability was evaluated by calculation of the coefficient of variation (CV). Further, systematic bias was checked by analysis of variance for repeated measurements (ANOVA). The associations between studied variables were evidenced by Pearson's correlation.

Results: The reliability statistic for CODSL L and RAGL L are shown in table 1. CA ranges from 0.92 to 0.95, IIR is 0.88, and CV ranges from 7.27% to 8.24%, while in CODSL and RAGL CA ranges from 0.91 to 0.93, IIR ranges from 0.78 to 0.80, and CV ranges from 7.98% to 8.75%. Correlation analysis of the CODSL test performance on the left and right side (three trials), identified a statistically significant correlation between; (i) CODSLD1 and CODSLL2 ($R=0.97$, $p<0.05$) (ii) CODSLD1 and CODSLD2 ($R=0.84$, $p<0.05$), (iii) CODSLD1 and CODSLL3 ($R=0.94$, $p<0.05$), (iv) CODSLD1 and CODSLD3 ($R=0.85$, $p<0.05$), (v) CODSLL2 and CODSLL3 ($R=0.98$, $p<0.05$), (vi) CODSLL2 and CODSLD3 ($R=0.83$, $p<0.05$). While the correlation analysis of the RAGL test performance on the left and right side (three trials), identified a statistically significant correlation between almost all test performances, and the most significant correlation coefficient was found between; (i) RAGLL1 and RAGLD1 ($R=0.97$, $p<0.05$) (ii) RAGLL1 and RAGLD2 ($R=0.96$, $p<0.05$), (iii) RAGLD1 and RAGLL2 ($R=0.95$, $p<0.05$).

Conclusion: Results showed appropriate reliability of the newly developed tests of handball specific change of direction speed and reactive agility. Therefore, here proposed HS-CODS and HS-RAG can be used as reliable measures of agility components in handball. Further studies should evaluate the discriminative validity of the here proposed tests (i.e. identification of position-

specific or performance-related differences), as well as reliability in different handball categories than those studied herein.

KEY WORDS handball, agility, sport-specific tests, reliability,

References:

1. Sekulic, D., Foretic, N., Gilic, B., Esco, M. R., Hammami, R., Uljevic, O., ... & Spasic, M. (2019). *Importance of agility performance in professional futsal players; Reliability and applicability of newly developed testing protocols*. International journal of environmental research and public health, 16(18), 3246.
2. Hammami, R., Sekulic, D., Selmi, M. A., Fadhloun, M., Spasic, M., Uljevic, O., & Chaouachi, A. (2018). *Maturity status as a determinant of the relationships between conditioning qualities and preplanned agility in young handball athletes*. The Journal of Strength & Conditioning Research, 32(8), 2302-2313.

Salivary biomarkers as a diagnostic tool for measuring stress response among athletes during the competition: a systematic review

Suvam Dasgupta 1, Dr. Ak. Joy Singh 2

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

¹PhD Scholar, Department of Physical Medicine & Rehabilitation, Regional Institute of Medical Sciences Imphal.

²Professor & Head, Department of Physical Medicine & Rehabilitation, Regional Institute of Medical Sciences Imphal.

ABSTRACT

Saliva is easily accessible body fluids due to its non-invasive method of collection. Some of the specific steroids, related to stress response, are found in oral fluid (saliva), which is commonly assayed in blood plasma. Secondly, during any sporting event viz. competition collection of blood sample, for analysis of athlete's homeostatic condition, is hard to collect in the sporting field or arena; and thus, a non-invasive method of collection of sample viz., saliva as a diagnostic tool for measuring stress response among athletes can serve as a suitable alternative. So, salivary biomarkers related to stress research in sport are now becoming the area of interest for sport and exercise science researchers. Considering that, the aim of the present study is to review the outcome of available previous stress related research studies on sports with the view to understanding the utility of salivary stress biomarkers, specifically, endocrine and inflammatory biomarkers, for assessing impact of stress in athletic performance. The present study also focuses on reviewing the sampling procedure and analytic methods for assaying salivary stress biomarkers as reviewed previous studies reveals, alteration of biomarker level for any individual performing athlete, can be due to some additional interfering factors like diurnal variation in hormonal levels and individual's average resting time span during competition other than psychological and physiological stress. So, the present study indicates salivary sample collection may be a better option for measuring stress biomarker level in competition. Thus, this review work may play a pivotal role in shaping the path of future of stress biomarker researches for assessment of sporting performance of athlete's during the competition as selection of salivary stress biomarkers requires a thoughtful and scheduled procedure.

Keywords: Salivary biomarkers, Stress, Athletes, Competition, Sporting performance.

The Examination of Sport Science Faculty Students' Covid-19 Fears and Their Frequency of Getting The Covid-19 Virus According to Some Variables

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

Alper Kartal

Aydın Adnan Menderes University Sport Science Faculty

ABSTRACT:

The aim of this study examination of sport science faculty students' covid-19 fears and their frequency of getting the covid-19 virus according to some variables. COVID-19 virus, which is transmitted very quickly through the respiratory tract, has affected the whole world (Tutal et al.) Methods such as isolation and quarantine have been applied to prevent the spread of the virus. In these processes, restrictions made to protect public health can be effective in students' fear mechanisms also some variables can be effective to catch Covid-19.

Volunteer 270 Sport Science Faculty students' between the age 18-24 participated. SPSS (20.0) package program was used for analysis. In this study Descriptive statistics (frequency, number, average) and t test was used analysis for examination some variables. As a result no significant differences was found on this study between the department of students', team sport athletes and individual sport athletes, active or not active athletes and link of sport branch of athletes students' fear and frequency of getting the Covid-19 virus.

Key Words: Covid-19, Sport Science Faculty, Athletes

Reference: Tutal, V., Efe, M. (2020). Examining Individuals Psychological Resilience and Covid-19 Fears According to Various Variables. *The Journal of International Social Research*, 13(74): 319-325.

FACTORS INFLUENCING THE MOTIVATION OF NATIONAL LEVEL VOLLEYBALL COACHES IN SRI LANKA.

R.M.M.I.Rathnayake*, A. A. Lakshika Madushani * and K. R. D. C. Rathnamudali**

*Department of Sports Sciences and Physical Education, Faculty of Applied Sciences,
Sabaragamuwa University of Sri Lanka, P.O. Box 02, Belihuloya.

** Sri Lanka Volleyball Federation, No.33, Torrington Place, Colombo 7.

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

This study was investigated the factors influencing the motivation of National level Volleyball coaches in Sri Lanka. This study was undertaken by focusing on the matters that were recognized from the National Volleyball tournaments which were held in the last five years and through the records of the Sri Lanka Volleyball Federation.

A quantitative research approach was used to achieve the research objectives. This research consists of four different objectives. A questionnaire survey was carried out to strengthen the findings and amassed from 46 National level Volleyball coaches which were in the last five years by using a total population sampling method. The questionnaire consists of 56 items with three subsections as demographic questions, motivational factors and coach motivation. The design model was analyzed by coefficients to accentuate the provision which is independent variables such as, remuneration, training and education and adequate facilities with standard equipment were prescient the dependent variable of coach motivation with the proposed model. The study has provided conclusions after wearing out detail scientific analyses of data using IBM SPSS statistical tool. Widen a hypothetical variant and to formulate hypotheses of the study were identified to achieving the research objectives.

The result has shown that, 91.30% male and 8.7% were female in the respective sample. 28.26% of coaches has represented from 40-44 and 45-49 age categories in the entire sample. Based on the findings, all the hypotheses were accepted including remuneration, education/training and facilities/ equipment impact on coach motivation of National level Volleyball coaches in Sri Lanka. This study provided valid and important facts to be implemented by the Sri Lanka Volleyball Federation, Volleyball coaches association and main stakeholders to the development of the National game and also other games in Sri Lanka. This study is helpful in bridging the knowledge gap of the respective research area.

Key Words: Adequate Facilities, Motivation, National level Volleyball coaches, Remuneration, Training and Education

References

1. MCLEAN, K. N. & MALLETT, C. J. 2012. What motivates the motivators? An examination of sports coaches. *Physical Education & Sport Pedagogy*, 17, 21-35.
2. OKORO, Z. G., NAYAWO, Z. M., MOHAMMED, M. A. & MUSA, B. 2016. Factors Influencing the Motivation of Sports Coaches in the Organization and Management of Sports Competition in Owerri Municipal Council of Imo State. *American Journal of Sports Science*, 4, 38-42.

The Effect of Post-activation Potentiation Warm-up on 1-Km Sprint Cycling Time-trial Performance

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

Alireza Iri^{*1}, Bahare Asadollahi²

¹MSc Exercise Physiology, University of Shomal, Amol

²Cycling Science Researcher

ABSTRACT:

INTRODUCTION: 1-Km cycling is one of the fastest track cycling disciplines. Cyclists in this course travel one kilometer and their time are recorded. Performance is very important in this sport and cyclists and coaches use a lot of strategies so that the cyclist has the best performance in this competition so that he can record a better time. One of these strategies is a pre-race warm-up, with coaches using a variety of methods. Post-activation Potentiation (PAP) is a method used today before or during warm-up. It has been shown that strength training performed as a preconditioning activity to sprint events acutely improves sprint performance. This method is typically referred to as post-activation potentiation (PAP) and has also been shown to increase performance and power development. **METHODS:** Our statistical community is our cyclists and our statistical sample ten male cyclists, that were tested in two stages. In the first stage, they were randomly divided into two equal groups, one group performing standard protocol warm-up and the other group performing standard warm-up with Post-activation Potentiation (PAP) method. And in the next step, they did the opposite. First, the standard cycling warm-up protocol was 20 min with 70% MHR on the spool, followed by 2 repetitions of 30 sec of half-squat movement and 30 sec of rest in 4 sets, one minute of rest between sets. And after 10 min, the record of 1-km was done. The mean of the results was also calculated by the Paired-Samples T Test method. **RESULTS:** Examination of the research results showed that relationship between performing warm-up with Post-activation Potentiation (PAP) on improvement during the 1-Km sprint cycling time-trial performance, there was a significant difference in the scores for Standard Warm-up (M=72.3, SD=2.13) and Standard Warm-up with Post-activation Potentiation (PAP) (M=73.8, SD=1.75) conditions; $t(9)=-7.90$, $p= 0.001$ ” **DISCUSSION:** The statistical results of the study showed that there is a significant relationship between the performance of Post-activation Potentiation (PAP) movement and the performance of speed cyclists. According to the results of the study, to improve the performance of speed cyclists and their better performance in the 1-Km race, it is recommended to cycling coaches assign a warm-up program along with the implementation of a special Post-activation Potentiation (PAP) protocol.

KEY WORDS: Sprint Cycling, Warm-up, Post-activation Potentiation (PAP), Performance

Reference: 1. Rønnestad BR, Falch GS, Ellefsen S. The effect of whole-body vibration on subsequent sprint performance in well-trained cyclists. *International journal of sports physiology and performance*. 2017;12(7):964-8.

Biomechanical analysis of some variables and EMG of the muscles during the performance of the snatch lift in weightlifting

Prof. Dr.Safaa A. Ismaeel Dr.safaa@uodiyala.edu.iq

Asst.prof. Dr. Rafid Habib Qadori rafidhabeb@gmail.com

Dr.Gazwan Faisal ghazwanalabassi@gmail.com

Iraq , Diyala University , collage of physical education and sport science

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

abstract

objective: The research aims to identify the relationship between some indicators of the electrical activity of the muscles (EMG peak) recording over skin (sEMG) . This research is an important experiment in the field of producing high physical strength with perfect body performance for weightlifters as a final result of physical work characterized by strength and accurate performance. **Design:** The research subject was eight of best regional and national weightlifters (21years \pm 0.63),(79 kg \pm 2.3) for record their experimental data with descriptive way.

Methods: The researchers using the four-channel wireless device produced by the Canadian company (Noraxon) for EMG, The research targeted the muscles (quadriceps femoris left and right) and (large dorsal muscle left and right). Also used high speed video recording (210 f/s) Exillime Japanese camera for movement analyze. Force platform was used, Germany Zebris product, for recording the force transfer from foot to ground during the lift phases.

Results: The results showed significant symmetry relations between force and dorsal muscle. Also, the amount of force product is directly proportional with quadriceps EMG (left and right) and correspondingly with back dorsal muscle. The results showed that the increase in the speed of the lift (the end of the acceleration phase) is offset by a decrease in the amount of force on the ground and EMG of quadriceps. At the last phase (braking and fixation phase) the force and EMG came at the highest level.

Conclusions: Focusing work on one side more than the other may cause back damage or injuries. Synchronization between muscle groups is important to reach a final, productive outcome. The peak is not a true expression of the outcome of power.

PPARGC1A rs8192678 polymorphism and physical fitness in children and adolescents.**The UP&DOWN study.**

Garcia-Garcia L (1), Yvert T (2), Marcos A (3), Castro-Piñero J (4), Veiga OL (5), Gómez-Gallego F (6), Santiago C (2).

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

¹Escuela de enfermería. Cruz Roja de Madrid, ²Universidad Europea de Madrid, ³Instituto de Ciencia y Tecnología de Alimentos y Nutrición (ICTAN). CSIC. Madrid. ⁴Universidad de Cadiz, ⁵Universidad Autónoma de Madrid, ⁶Facultad de Ciencias de la Salud. Universidad Internacional de la Rioja

Introduction

The physical fitness related to health is defined as the ability to carry out basic daily vigorous activities associated to a lower risk of chronic illnesses and premature death. PGC1 α is a protein coded by the *PPARGC1A* gene which plays an important role improving physical fitness through the regulation of glucose and fatty acids oxidation, mitochondrial biogenesis and the conversion of muscle fibres. In *PPARGC1A* gene, the rs8192678 (Gly482Ser) polymorphism is known to influence physical fitness and health in adults, although very few is known about its role in children or adolescent.

Objectives

The objective of this study was to determine the potential interactions between the *PPARGC1A* rs8192678 polymorphism and the physical fitness in Spanish children and adolescents from the UP&DOWN study (1).

Methodology

Alpha fitness test (was applied in order to collect data of upper- and lower-limb strength, aerobic capacity and motor ability in 1173 Spanish children (7.6+1.5 years, girls n=565) and 919 adolescents (13.6+1.7 years, girls n=439). *PPARGC1A* rs8192678 polymorphism was analyzed from genomic DNA, using Taqman probe (ID: C_1643192_20). Alpha test results were compared to the *PPARGC1A* rs8192678 genotypes by ANOVA, using Bonferroni post-hoc contrast.

Results

We found significant differences between the three genotypes for long jump in adolescents (p=0.029). We observed a significant difference for the long jump test, comparing Gly/Gly+Gly/Ser genotypes carriers with Ser/Ser genotype carriers (160.1 \pm 31.7 cm vs. 151.9 \pm 30.8 cm, respectively) (p=0.026). Significant differences were also observed in adolescents

in motor-coordination test ($p=0.010$) although these results did not represent functional relevance (only few milliseconds of difference between genotypes). No significant differences were found in children for any of the studied variables and no significant differences were observed for handgrip and aerobic capacity in adolescents.

Discussion

Our results indicate a possible relation of *PPARGC1A* rs8192678 Gly allele with higher lower-limb explosive strength in adolescents. These results are partially in accordance with recent meta-analyses (2) showing greater incidences of the Gly allele and Gly/Gly genotype in both endurance and power adult athletes compared to controls.

KEY WORDS: PPARGC1A polymorphism, adolescents, physical fitness, UP&DOWN study

Bibliography

1. Castro-Piñero J et al. (2014). Public Health; 14(1):1–12.
2. Chen Y et al. (2019). Biol Sport; 36(4):301–9.

Changes of Fiber-type Distribution and Myonuclei Content Preceding 9-weeks of Low Load Blood Flow Restriction Resistance Training vs. High Load Resistance Training in Trained Individuals

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

Tore Christian Næss
Norwegian School of Sports Sciences

ABSTRACT:

INTRODUCTION: The quest to develop an efficient training modality to achieve muscular hypertrophy has led to the foundation of several resistance training methods during the last decades, among those the methodology of application of blood flow reduction to the exercising muscle. This training modality has been studied the last three decades with proven efficiency for its muscular hypertrophic effects, despite the use of low (10-40%/1RM) exercising loads (Lixandrao et al., 2018). However, only a few studies from the literature have used muscle biopsy sampling preceding and proceeding a training intervention with blood flow restriction exercise. Thus, this study will bring further insight into muscular adaptations from this training modality compared to traditional resistance training. **METHODS:** Twenty-one strength trained participants (males n=9, females n=12 and age 24±3) were recruited to participate in the study. All participants performed a 9 weeks training-block with thrice weekly sessions of either HL-RT (high load resistance training, 4 set x 8 rep, 10 RM) or BFR-RT (blood flow restricted resistance training, 30-15-15-15 rep, ~30%/1RM) with the same exercises: Barbell back squat, leg press, bulgarian split squat and leg extensions. Before and after the training-block, muscle biopsy sampling was performed from the m. vastus lateralis. Additionally, MRI of the m. quadriceps was used to evaluate muscle hypertrophy. **RESULTS:** Quadriceps CSA increased with BFR-RT (6.8±4.3%, p=0.003) and HL-RT (4.7±2.9%, p=0.007) with no differences between groups (p=0.296). BFR-RT showed a tendency (p=0.07) in muscle fiber area increase for type I fibers pre (4909±1425 μm²) to post (4977±1451 μm²). For type II fibers, BFR-RT showed a significant (p=0.02) increased muscle fiber area (pre: 5437±1831 μm², post: 6148±2269 μm²). HL-RT did not significantly (p=0.829) increase type I muscle fiber area from pre (5018±879 μm²) to post (5104±1132 μm²). For type II fibers, HL-RT showed a tendency (p=0.08) to increase in type II muscle fiber area pre (5664±1615 μm²) to post (6619±2140 μm²). However, there was no significant changes between the two training modalities (p>0.05). Myonuclei content per fiber did not increase in either type I or type II fibers from pre to post for the BFR-RT (type I: 2.80±0.62 (pre) to 2.82±0.54 (post), (p=0.88), and type II: 3.07±0.67 (pre) to 3.28±0.67 (post), (p=0.50)). Further, HL-RT showed an increase in myonuclei content per fiber in both fiber types (type I: 2.95±0.45 (pre) to 3.36±0.33 (post), (p=0.048), and 3.10±0.64 (pre) to 3.75±0.75 (post) (p=0.037). However, there was no significant changes between the two training modalities (p>0.05) regarding percentage changes in myonuclei content per fiber of either fiber types. **CONCLUSION:** Similar muscle growth was observed from the two different training protocols. In addition, the present study reports no significant alterations in either fiber-type distribution or the changes in myonuclei content between the two training modalities after a 9-weeks training block.

KEYWORDS: Occlusion Training, Blood Flow Restriction, Resistance Training, Myonuclei, Fiber-type

Reference: Lixandrao, M. E., Ugrinowitsch, C., Berton, R., Vechin, F. C., Conceicao, M. S., Damas, F., . . . Roschel, H. (2018). Magnitude of Muscle Strength and Mass Adaptations Between High-Load Resistance Training Versus Low-Load Resistance Training Associated with Blood-Flow Restriction: A Systematic Review and Meta-Analysis. *Sports Med*, 48(2), 361-378. doi:10.1007/s40279-017-0795-y

A single set of exhaustive resistance exercise combining with plyometric and sprint training improves running abilities of soccer players

Apichai Narawong¹, Arphat Tiaotrakul², Thanatpong Sukwong³

DOI:

<https://doi.org/10.30472/aesa-conf.vi4>

¹Sports Authority of Thailand, ²Department of Physical Education and Exercise Science, Faculty of Education, Naresuan University, THA.

³Faculty of Science, Chandrakasem Rajabhat University, THA. Corresponding Author: Apichai Narawong (9apichai.n@gmail.com)

ABSTRACT:

Elite athletes need to develop physical fitness especially muscular performance to improve running abilities that need to transfer muscular strength to maximum velocity and repeated sprints. The purpose of this study was to investigate the effect of a single set of light load resistance training until exhaustion combining with plyometric and sprint training on running abilities of soccer players. The subjects were 30 young male soccer players (16.01 ± 0.8 years) who divided into 3 groups: Prior exhaustive exercise group (PEG) Traditional sprint training group (TG) and control group (CG) followed only the soccer training. Both the PEG and TG addition sprint training twice a week (Monday and Thursday) using the same training protocol by practicing plyometric jumps 5-6 times continuously, 30 meters sprint and 20 seconds active resting between laps. The only difference was that PEG performed an additional set of 20% 1RM barbell half-squat until exhaustion for stimulated type I fibers before each training session. The running test includes SEMO agility test (SEMO), sprint time in 10 and 40 m (T10, T40) and running based anaerobic sprint test (RAST) were measured before and after 6 weeks training. The PEG showed greater gains ($p < 0.05$) in SEMO, T10, T40 and RAST than CG. In addition, PEG found likely improves (percentage change, $\Delta\%$) a decrease in sprint time compared TG and CG in SEMO (-2.17 ± 2.56 vs -2.13 ± 2.06 vs $-0.34 \pm 0.88 \Delta\%$), T10 (-3.67 ± 2.77 vs -1.76 ± 1.80 vs $-0.35 \pm 0.57 \Delta\%$), T40 (-2.41 ± 0.91 vs -1.26 ± 1.71 vs $0.14 \pm 0.82 \Delta\%$), and RAST (21.54 ± 7.41 vs 9.11 ± 7.45 vs $-0.16 \pm 6.79 \Delta\%$). These results show slight difference between experimental groups. But PEG found a greater improvement than TG and CG that showed the inclusion of light load resistance training until exhaustion combined plyometric and sprint training can be a strategy for develop running abilities of soccer player.

KEY WORDS Complex training, sprint training, post activation potentiation, principally of type I fibers

Reference:

1. Pinillos, F., Martínez-Amat, A., Hita-Contreras, F., Martínez-López, E. J., & Latorre Román, P. (2014). Effects of a Contrast Training Program Without External Load on Vertical Jump, Kicking Speed, Sprint, and Agility of Young Soccer Players. *Journal of strength and conditioning research/National Strength & Conditioning Association*, 28. doi:10.1519/JSC.0000000000000452
2. Rodriguez-Rosell, D., Torres-Torrel, J., Franco-Marquez, F., Gonzalez-Suarez, J. M., & Gonzalez-Badillo, J. J. (2017). Effects of light-load maximal lifting velocity weight training vs. combined weight training and plyometrics on sprint, vertical jump and strength performance in adult soccer players. *J Sci Med Sport*, 20(7), 695-699. doi:10.1016/j.jsams.2016.11.010

The effect of endurance exercises according to the theory of kinetic energy and its relationship to some psychological manifestations. Physical measurements of people with excess mass ages (20-40) years After the end of (2019-nCoV)

Prof. Dr. Akram Hussein Jabur Al-Janabi, College of Physical Education and Sports Sciences / University of Al-Qadisiyah / Iraq

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

One of the most important goals of physical education and sports science is to spread the love of sports and practice it in order to prepare a strong and healthy generation that will be able to serve its country and its people and as a result of the current conditions that all countries are going through from the exposure of the world to the disease of (2019-nCoV) and the compulsory attendance of citizens, their lack of activity and their weight increased and this is considered a problem Great in terms of movement and health, and the difference in the citizen's weights in terms of the amount of excess fat in their bodies (15-30 kg) is a great burden on the functional devices, including the heart, lungs, muscles and bones, so they must be disposed of scientifically free from side effects, and most gym trainers use One exercise method, especially stretching exercises in a constant speed method of (4-8 km / hour), which is a regular speed on the treadmill, did not take into account the weight of citizens and the pressure that this weight exerts on the functional organs, especially the heart, lungs, bones and joints, including (the ankle and knees) and so on. It is accompanied by side effects that may be dangerous, and this is the problem of the research that the researcher set out to develop exercises according to the theory of kinetic energy that takes into account the mass of citizens about setting rates of speed, which may be The best way to maintain the integrity of a person's functional apparatus is about training and weight loss, taking into account the most important psychological manifestations, including the anxiety that accompanies a person when overweight.

The impact, Opportunities and post-coVID-19 Development strategies of China's sports industry

Jinxin Jiang 1, Sang Keon Yoo 2, Jingmiao Ma 3

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

¹Ph. D. Student, Department of Physical Education, Sangmyung University Seoul, Korea and Lecturer, Department of Physical Education, Bozhou University Bozhou, China ²Assistant Professor, Dept, of Sport Information, Communication and Technologies, Sangmyung University Seoul, Korea, ³Ph. D. Student, Department of Physical Education, Sangmyung University Seoul, Korea

ABSTRACT

1. Research Purpose

In order to promote the high-quality development of China's sports industry and meet the people's needs for a better life in sports, this paper adopts the method of literature and logical analysis to analyze the impact and opportunities of the development of China's sports industry after the coVID-19 epidemic, and proposes the development strategies of China's sports industry after the epidemic.

2. research results

The results show that: The negative impact of the epidemic on China's sports industry is the serious loss of income in many areas of the sports industry, the damage to the rights and interests of sponsors, the absence of media broadcasting and the business difficulties of small and medium-sized sports enterprises. However, the epidemic has also provided opportunities for China's sports industry: promoting new forms of online and offline sports consumption, enhancing people's awareness of sports health, local government policy support, stimulating the vitality of sports consumption market, and accelerating the integration of sports and health industries; In the post-epidemic situation, the development of China's sports industry needs to vigorously promote the supply-side structural reform of the sports industry, develop the digital sports industry, accelerate the transformation and upgrading, strengthen the organic integration of sports and various industries, optimize the structure of sports industry, accelerate the upgrading of sports industry and other development strategies.

KEY WORDS: Intelligent Wear, Health, Smart Watch, Sports

Fund program: University humanities and social sciences planning project in anhui province (SK2018A0856)

ANTHROPOMETRIC AND PHYSIOLOGICAL CHARACTERISTICS OF SRI LANKAN NATIONAL LEVEL FEMALE SOCCER PLAYERS

D.M.D.N Bandara¹ Dr. S Joniton²

^{1,2}*Department of Sport Sciences and Physical Education, Faculty of Applied Sciences, Sabaragamuwa University of Sri Lanka, P.O. Box 02, Belihuloya.*

¹*Corresponding Author: E-mail- dnilankani@gmail.com*

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

Abstract

This is focused on anthropometric and Physiological characteristics of Sri Lankan National female soccer players with a view to establishing their roles within talent detection, identification and development programmes. Top-class soccer players have to adapt to the Physiological demands of the game, which are multifactorial. Players may not need to have an extraordinary capacity within any of the areas of Physiological performance but must possess a reasonably high level within all areas. This explains why there are marked individual differences in anthropometric and Physiological characteristics among top players. Various measurements had used to evaluate specific aspects of the Physiological performance of female national soccer players. Seventy female national soccer players (goalkeeper: 10, defender: 20, midfielder: 25, and forward: 15) participated in this study. Players were selected by using a multistage sampling technique. The age of the players ranged from years 20-30 (± 1). The playing ability was selected as the dependent variable and it was assessed by ratings of a judge's panel. Physiological variables taken were VO₂ max, Resting Heart Rate, Breath Hold Time. The anthropometric measurements used were Height, Weight, Wrist Girth of wrist, Chest, Thigh, Calves & Ankle, Length of Arm, hand, leg & foot, Circumferences of upper arm, Forearm, waist & hip. To examine the relationship between performance ability and selected independent variables, a cluster analysis and Pearson correlation was calculated with SPSS 25 software. The findings of the research are mentioned below. Significant correlations were obtained for resting heart rate and Dribbling playing ability. The research concluded that there are significant correlations with the anthropometric variables namely; Height, Weight, Thigh girth and Calves circumference with the Dribbling playing ability of Soccer. This study concludes that there are impacts of anthropometric and Physiological characteristics of Sri Lankan national level female soccer players.

Key words: Physiological, Anthropometric, Soccer Player

Psychological barriers faced by female sports players of Pakistan

Arfa Mubeen, Dr Nelofar Kiran Rauf

National Institute of Psychology, Centre of Excellence, Quaid-i-Azam University

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

ABSTRACT:

The research was aimed at exploring the psychological barriers faced by female sports players of Pakistan. In depth semi-structured interviews of female sports players (n=7), coaches (n=2) and sports psychologist (n=1) were conducted. Snowball purposive sampling technique was used to reach the sample. To fulfill the research objectives, thematic analysis by the pattern given by Clarke and Braun (2006) was conducted. Results revealed various prevailing barriers e.g. Negative attitudes of people, negative attitude of colleagues and its psychological impact, psychological state before debut, situational factors, personality of player, maladaptive behaviors, psychological castigation on players, social comparison, biased cognitions of players, defective emotions of players and lack of soft skills in players etc. The findings can help in developing a measuring tool for psychological barriers in performance of female sports players of Pakistan. Identification of psychological barriers faced by female sports players can be helpful in bringing attention on the fact of importance of mentally healthy sports players which indirectly may improve sports performance.

Keywords: psychological barriers, female sports players, personality of player, behavior, cognitions and emotions

The effect of Sustamine supplementation on performance and hydration of endurance cyclists

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

Alireza Iri 1, Taher Afsharnezhad 2, Mohammad Karegar 1

¹MSc Exercise Physiology, University of Shoma, Amol

²Assistant Professor of Exercise Physiology, Faculty of Sport Science, University of Yazd, Yazd

ABSTRACT:

This study aimed to investigate the effect of Sustamine supplementation on performance and metabolic parameters of young endurance cyclists in dehydration conditions. Road cycling is an endurance activity in which cyclists experience fatigue during long workouts and races, which causes changes in the physiological parameters of athletes. One of the causes of this fatigue is dehydration. Sustamine is a supplement with a dipeptide of the two amino acids L-glutamine and L-alanine. According to the history of taking sustamine supplement, we found that taking this supplement is effective in hydration and improvement in athletic performance. The considered variables were Maximum oxygen consumption (VO₂max), Minute ventilation (VE), Electrolyte (sodium) level, Maximum heart rate, Rating of Perceived exertion (RPE), and Peak output power. Our sample number was 8 young boy cyclists in the age group of 18 to 20 years. this research was performed in 2 stages. First, the samples were sampled from their urine at rest and performed the dehydration protocol, which was to walk on a treadmill to reach dehydration, and a second urine sample was taken and they took 3 grams sustamine supplement with 500ml of water. After 40 minutes of rest, the 5 km cycling protocol was performed with a cycle ergometer (Monark 839) and the desired data was recorded from the cycle ergometer and gas analyzer device, and the third urine sample was taken. were compared using a two-way repeated-measures ANOVA. Sustamine supplementation had no significant effect on maximal oxygen consumption (VO₂max)(p=0.663) and minimum ventilation (VE)(p=0.883). And showed a positive effect on the amount of electrolyte (sodium) in comparison with the placebo phase(p=0.000). At maximal heart rate (MHR), a decrease in maximal heart rate was observed in the sustamine supplementation phase(p=0.0001); In the sustamine supplement phase, the perceived effects (RPE) decreased compared to the placebo phase(p=0.000) and in the sustamine supplement phase, the peak production capacity increased compared to the placebo phase(p=0.000). taking 3 grams of sustamine supplement in 500 ml of water showed that after 40 minutes, it causes hydration, and this hydration also had a positive effect on improving the endurance performance of cyclists.

KEY WORDS: Sustamine, Cyclists, Performance, Hydration, Endurance activity

Reference:

1. Hoffman JR, Ratamess NA, Kang J, Rashti SL, Kelly N, Gonzalez AM, et al. Examination of the efficacy of acute L-alanyl-L-glutamine ingestion during hydration stress in endurance exercise. *Journal of the International Society of Sports Nutrition*. 2010;7(1):8.

CARDIOVASCULAR AND MUSCULAR RESPONSES TO ISOMETRIC HANGDRIP EXERCISE AMONG UNMEDICATED HYPERTENSIVE INDIVIDUALS.

DOI: <https://doi.org/10.30472/aesa-conf.vi4>

Wan Nor Syahirah Binti Nasaruddin¹, Dr. Hazwani Binti Ahmad Yusof @ Hanafi¹, Dr. Ahmad Munir Bin Che Muhamed¹ and Dr. Rohayu Binti Hami¹.

¹Cluster of Lifestyle Science, Advanced Medical and Dental Institute, Universiti Sains Malaysia, Bertam, 13200 Kepala Batas, Penang, Malaysia.

ABSTRACT:

As a result of high prevalence of hypertension in Malaysia that showed remain above 30% and higher than other countries, such as China and Singapore (Ab Majid *et al*, 2018), high blood pressure must be controlled. This study aimed to determine the cardiovascular and muscular responses to isometric handgrip exercise among unmedicated hypertensive individuals. Thirty (30) Malay subjects that consist of twenty-four (24) males and six (6) females in Penang was recruited to the study. After obtained written consent from the participants, they had been asked to complete a subject's information detail form and the Physical Activity Readiness Questionnaire (PAR-Q) to record of their health status and physical activity. Participant's body weight, body height, body mass index, and body fat also had been measured. A hand dynamometer had been used to measure the muscular variable. Cardiovascular (systolic blood pressure (SBP), diastolic blood pressure (DBP), mean arterial pressure (MAP), pulse pressure (PP), and heart rate (HR)), and muscular (handgrip strength (HGS)) variables had be measured on three consecutive days (at the same time (± 2 hours)) immediately prior to commencing training. During each visit, after 10 minutes of seated rest, all variables had been measured on the dominant arm hand (self-reported by the participant) in the sitting position for four successive times with 2-minute rest intervals. The first of the four measurements of all variables in each visit had be discarded (due to the white coat effect), while the remaining three measurements were averaged over the three visits to represent the pre-exercise value. One hour after exercise session, the cardiovascular and the muscular variables had been assessed based on 30% maximal voluntary contraction (MVC) in four bouts of two minutes of exercise with one minute rest periods between bouts to examine the acute effects of IHG exercise. For this assessment, the first and the second measurements had been discarded, while the last two measurements had been averaged to represent the post exercise value. The results demonstrate the cardiovascular and the muscular responses following a session of IHG exercise. SBP ($\Delta = -2.07 \pm 6.45$), DBP ($\Delta = -1.74 \pm 5.60$), MAP ($\Delta = -5.55 \pm 15.79$), PP ($\Delta = -0.32 \pm 5.63$) and HR ($\Delta = -0.63 \pm 9.23$) had been insignificantly decrease following a session of IHG exercise than at pre-training session ($p > 0.05$). Meanwhile, HGS ($\Delta = 1.17 \pm 3.96$) increase insignificantly after IHG exercise ($p > 0.05$). Therefore, in this research shown that isometric hand grip exercise in short term do not give any changes to cardiovascular and muscular variables.

KEY WORDS : isometric handgrip exercise, hypertension, blood pressure

Reference:

Ab Majid, N., Omar, M.A., Khoo, Y. *et al*. Prevalence, Awareness, Treatment and Control of hypertension in the Malaysian population: findings from the National Health and Morbidity Survey 2006–2015. *J Hum Hypertens* **32**, 617–624 (2018). <https://doi.org/10.1038/s41371-018-0082-x>