CHAPTER 36

PHYSICAL EDUCATION & SPORTS SCIENCE

Doctoral Theses

01.　ASHISH KUMAR
Effect of Recreational Games on Selected Psychological Variables on Prisoners.
Supervisor: Prof. Dinesh P. Sharma
Th 27677

Abstract

This study investigates the effect of recreational games on selected psychological variables i.e. depression, anxiety and stress of among prisoners, emphasizing the importance of mental health in correctional settings. The research involved 60 male prisoners from Tihar Jail, divided into Non-Recurring and Recurring Groups. The study aimed to assess depression, anxiety and stress levels and personality profile, evaluate the impact of recreational games, and observe changes over a 12-week period using repeated measure design and the DASS-42 questionnaire and Eysenck Personality Questionnaire-Revised (Short Version). Initial levels of selected variables i.e. depression, anxiety and stress were extremely severe for both groups but decreased to moderate levels by the end of the study. The data were collected from all the subjects of Non-recurring and Recurring Groups taken at the beginning, i.e. pre-test and thereafter every three weeks i.e. 1st follow-up (after three weeks), 2nd follow-up (after 6 weeks), 3rd follow-up (after 9 weeks) and post-test (after 12 weeks). Statistical analysis using Repeated Measures ANOVA showed significant reductions in depression, anxiety and stress ($p < 0.05$), highlighting the therapeutic benefits of recreational activities. The study underscores the potential of recreational games to improve psychological well-being, aiding in rehabilitation and reintegration. It suggests that incorporating such activities into prison programs can enhance cognitive functioning, control weight, and reduce anxiety and depression. Despite limitations like uncontrolled lifestyle factors and the use of self-report measures, the research contributes valuable insights and recommends further studies with larger populations and additional mental health variables to deepen understanding and refine interventions. Key words: Depression, Anxiety, Stress, Recreation.

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1. Introduction 2. Review of Related Literature 3. Research Methodology 4 Result of the Study 5. Summary Conclusions and Recommendations. Bibliography and Appendices.

02.　BHISHT (Mohit)
Validation of the Perceptuo-Motor Skill Assessment in Young Table Tennis Players.
Supervisor: Prof. Man Singh
Th 27679

Abstract

The purpose of the study was validation of the Perceptuo Motor Skills Assessment in young table tennis players. For the compilation of the study a total 100 male and 100 female table tennis players aged ranged between 12-18 years were selected as a subject for the study. Perceptual motor skill test developed by Irene R Faber et.al (2014) was used for data collection process. This perceptual skill includes eight test items i.e. speed, agility, eye-hand coordination, aiming at target, throwing a ball, ball skills, vertical jump, and speed while dribbling was selected as perceptuo-motor skills. Discriptive statistics was used to analyze the data initially. The validity of the test battery was determined by factor analysis in which CFA were used to confirm the test items from their respective test battery, Cronbach Alpha Coefficient was used to assess the reliability of the perceptual-motor skill test. Results showed that all the Perceptuo-Motor Skill Test with their batteries loading for the proposed skill test and values ranged from 0.467 to 0.709 which are more than 0.4. Whereas, two of the test batteries' loadings were very low i.e., Aiming at target and its loadings were 0.205, Ball skill and its loading were .092 while computing the first order of Goodness of Fit model and accordingly, two of them removed from the model. After run Second order of Goodness of Fit model values increased the model fit after eleminating the two test i.e. Aiming at Target and Ball Skill Cronbach's alpha coefficient of reliability value obtained was 0.820 for the Perceptuo-Motor Skill Test of 6 items. The value indicates a good internal consistency for the 6 test battery items with the present sample of 200 subjects playing at the national level. The index of reliability (validity) for all the six test battery has shown the values towards the excellent side. So, The findings of the present study validate the Perceptuo Skill Test of table tennis players on young Indian origin athletes with only six test items i.e. sprint, agility, vertical jump, speed while dribble, throwing the ball and eye-hand coordination . As this study is validate in Indian origin it can be used in a talent identification programme.

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03.   BHAGI (Jupender Singh)
Cross Sectional Analysis of Selected Motor Fitness Components of Upper Primary and Secondary School Boys and Girls and Preparation of Norms for Grading their Performance.
Supervisor: Prof. Sarita Tyagi
Th 27678

Abstract

This study examined motor fitness components of upper primary (classes 6–8) and secondary (classes 9–10) school boys and girls, aiming to establish norms for grading their performance and identifying appropriate grades for instructional segregation and competitive participation. Motor fitness, encompassing speed, strength, endurance, agility, and flexibility, reflects a student's physical capability and developmental milestones. Data analysis using ANOVA and Post Hoc Tests (LSD) revealed notable patterns. Among boys, no significant differences were found in speed (50m sprint), strength (standing broad jump), and endurance (800m run) within either upper primary or secondary groups. However, secondary boys significantly outperformed upper primary boys in these components. Agility (4x10m shuttle run) and flexibility (sit & reach

test) showed no significant differences across grades. For girls, upper primary and secondary students did not differ significantly in agility and strength. However, secondary girls demonstrated superior speed, flexibility, and endurance compared to their younger counterparts. Findings highlight the critical influence of adolescence on motor fitness, shaped by physiological changes like increased muscle mass, neuromuscular efficiency, and improved motor control. These developmental changes align with puberty and contribute to predictable improvements in strength, speed, and endurance. The study also underscores the role of environmental and socio-cultural factors in shaping motor competence, influencing students' participation in physical activities. The study proposes age-specific norms and grading systems to objectively assess motor fitness, helping educators and coaches design tailored sports programs that align with students' developmental stages. These recommendations aim to enhance skill development, optimize performance, and promote active participation among students. The research emphasizes that structured physical activities during adolescence are pivotal in fostering motor skills, overall fitness, and long-term engagement in physical pursuits. This comprehensive analysis provides valuable insights for educational and sports frameworks to enhance student performance and well-being.

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04.　　DARBRAL (Anil Kumar)
Development of Normative Values for Health Related Fitness Components in School Going Girls Age 9 through 11 Years.
Supervisor: Prof. Man Singh
<u>Th 27680</u>

Abstract

The present study, titled "Development of Normative Values for Health-Related Fitness Components in School-Going Girls Aged 9 Through 11 Years," aimed to establish baseline fitness standards for girls in this age group. Given the growing emphasis on health and fitness in childhood, the research focused on developing age-specific norms for key fitness components, including cardiorespiratory endurance, body composition, muscular strength, muscular endurance, flexibility, and body mass index (BMI). The study involved 1,500 girls from the DAV Group of Schools in Delhi and NCR, divided evenly across the age groups of 9, 10, and 11 years. Data collection utilized field-based fitness assessments, which included a 1-mile run/walk test for cardiorespiratory endurance, BMI calculation from measured height and weight, body fat percentage and lean body mass analysis using an Omron Body Composition Analyzer, flexibility evaluation through a sit-and-reach test, muscular endurance assessment via a one-minute sit-up test, and muscular strength measurement using a chin-up test. Descriptive statistical techniques, including mean, standard deviation, minimum and maximum values, and percentile calculations, were employed to establish fitness norms. Graphical representations such as bar diagrams, percentile curves, and line graphs illustrated the findings. The results revealed age-related trends in fitness parameters. Cardiorespiratory endurance showed minimal variation across ages, with slight improvements in best performances as age increased. Height and weight displayed steady increases, reflecting consistent physical growth. Interestingly, body fat percentage peaked at age 10 before decreasing at 11, while lean body mass significantly increased by age 11, indicating notable muscular development. BMI remained relatively consistent across all ages, with minor

variations in average and upper ranges. Flexibility demonstrated progressive improvement from ages 9 to 11, while muscular endurance remained stable, with slight enhancements in higher performance levels at age 11. Muscular strength also showed gradual improvements, with older girls performing better at upper ranges. The study concluded that physical development among school-going girls follows a predictable pattern, with specific fitness components showing age-related progressions. The established normative values can serve as a benchmark for assessing and promoting fitness in school settings, guiding fitness programs, and informing health-related policies. The findings underscore the importance of consistent monitoring and tailored fitness interventions for children during critical developmental years.

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05.   GUPTA (Sandeep Kumar)
Association Between Selected Health Markers, Functional Fitness and Quality of Life of Physically Active and Sedentary Senior Citizens.
Supervisors: Prof. Sandhya Tiwari
<u>Th 27681</u>

Abstract

This study investigated the association between health markers, functional fitness, and quality of life among physically active and sedentary senior citizens aged 60-69. A total of 350 male volunteers from Delhi participated, stratified into two age groups (60-64 and 65-69) and two categories (physically active and sedentary). Method: Health markers, functional fitness components and Quality of Life were selected as the variables for assessment in selected age groups and categories (Physically active and Sedentary) in this study. Results: Using descriptive statistics and independent t-tests, significant differences were found between physically active and sedentary individuals across various health markers, functional fitness components, and quality of life domains. The study highlights disparities in blood pressure, strength, flexibility, endurance, psychological well-being, and overall quality of life between physically active and sedentary 60- to 64-year-olds and 65- to 69-year-olds. Positive correlations were observed between selected health markers, functional fitness components, and quality of life domains in the studied age group. Notably, higher resting systolic and diastolic blood pressure, as well as resting pulse rate, correlated negatively with physical and psychological health, social relations, and overall perception of quality of life and health among 60- to 69-year-old male senior citizens. Conclusions: These findings underscore the importance of physical activity in maintaining health and quality of life among senior citizens. They suggest that encouraging and promoting physical activity may not only improve health markers and functional fitness but also enhance overall well-being and perception of quality of life in this demographic.

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06.   KUSHWAHA(Lakhan)
Gender-Related Differences among Tennis & Badminton Players: A Psychological Approach.
Supervisor: Prof. Prof. (Dr.) Sarita Tyagi
Th 27682

Abstract

This study examines psychological variables among 200 athletes, aged 18-25, engaged in tennis and badminton. The participants were selected through a meticulous random process, ensuring a diverse and representative sample. Athletes were selected based on their demonstrated sporting talent and experience in competitive events at various levels, including inter-university championships, state-level competitions, and inter-college tournaments. The research aimed to explore gender-related differences in sports aggression, competition anxiety, personality traits, mental toughness, emotional intelligence, and social factors. Key measures included the Buss Perry Aggression Questionnaire (BPAQ) for sports aggression, the Sports Competition Anxiety Test (SCAT) for anxiety, the Big Five Inventory (BFI) for personality traits, the Psychological Performance Inventory (PPI) for mental toughness, the Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF) for emotional intelligence, and scales for family support and home environment. Descriptive statistics and histograms indicated differences in mean scores for psychological variables between males and females. A 2-way ANOVA revealed significant gender-related differences ($p < 0.05$) in most variables, except for family support and home environment. Specifically, significant differences were found in sports aggression, sociability (a component of emotional intelligence), aspects of mental toughness (attention control, positive energy control, and attitude control), competition anxiety, and personality traits (extraversion, agreeableness, and openness). The findings support hypotheses that gender-related differences exist among tennis and badminton players in these psychological variables, except for family support scale and home environment where no significant differences were found. These insights contribute to understanding the psychological profiles of athletes and highlight the importance of considering gender in sports psychology research. Keywords: Badminton, Tennis, Gender Differences, Sports Aggression, Competition Anxiety, Mental Toughness, Emotional Intelligence, Family Support Scale, Family Climate Scale.

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07.   MOLA (Dessalegn Wase)
The Emergennce of Athlete Managers and its Impact on Athlete Development: The Case of Ethopian Athletics.
Supervisor: Prof. Dhananjoy Shaw
Th 27683

Abstract

This study investigated the significance and impact of athlete managers on athlete development (talent development, talent identification, and managerial skills) in Ethiopian athletics. Using a descriptive survey method, data were collected from five public clubs with 195 respondents randomly selected from a total of 483. The Long Talent Development

Environment Questionnaire (TDEQ), Talent Identification Questionnaire (TIQ), and Managerial Skill Questionnaire (MSQ) were used, showing reliability alpha values of 0.75, 0.808, and 0.826, respectively, in a pilot study. Hypotheses were tested at a 0.05 significance level. The original LTDEQ has seven dimensions: Long-term development focus (LTDF), Quality preparation (QP), Communication (CO), Understanding athlete (UA), Supportive network (SN), Challenge and supportive environment (CSE), and Long-term development fundamental understanding (LTDFU). After factor analysis, eight dimensions emerged: six hybrids and two independents, named: i) LTDF & LTDFU; ii) LTDF, CO & LTDFU; iii) LTDF & QP; iv) SN & LTDFU; v) LTDF & LTDFU; vi) LTDFU; vii) LTDF; viii) QP & CSE. The Ethiopian LTDEQ adaptation showed improved reliability (test-retest) and factor loadings (0.643-0.892 vs. 0.311-0.892), and higher correlation (0.142-1.000** vs. 0.018-0.869**). Cronbach`s alpha improved from 0.927 to 0.932. The original TIQ has five dimensions: anthropometry (ANTH), sociological predictor (SP), physiological predictor (PHYP), psychological predictor (PSYP), and technical skill predictor (TSP). Factor analysis resulted in six dimensions: five hybrids and one independent, named: i) SP, PSYP & TSP; ii) ANTH & PHYP; iii) SP & PSYP; iv) PSYP & TSP; v) SP & PSYP; vi) PSYP. The Ethiopian TIQ adaptation showed improved reliability (test-retest) and factor loadings (0.745-0.863 vs. 0.621-0.726), and higher correlation (0.194-0.890** vs. 0.134-0.873*). Cronbach`s alpha improved from 0.879 to 0.885. The original MSQ has five dimensions: Administrative Skill (ADMS), Interpersonal Skill (INS), Conceptual Skill (CONS), Communicational Skill (COMMS), and Supporting Skill (SUPS). Factor analysis resulted in six dimensions: four hybrids and two independents, named: i) ADMS, INS, CONS & COMMS; ii) INS, CONS & COMMS; iii) SUPS; iv) ADMS; v) CONS & SUPS; vi) ADMS & SUPS. The Ethiopian MSQ adaptation showed improved reliability (test-retest) and factor loadings (0.75-0.93 vs. 0.71-0.78), and higher correlation (-0.22 to 0.96** vs. -0.25 to 0.53**). Cronbach`s alpha improved from 0.791 to 0.831. In conclusion, this study recommends adopting Ethiopian adaptations of LTDEQ, TIQ, and MSQ due to their improved reliability and internal consistency compared to the original versions. These adaptations are deemed valid for future applications and administration within the Ethiopian population.

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08. DEEPAK M P
Psychological Attributes Associated with Optimal Athletic Performance: An Exploratory Study.
Supervisor: Prof. Lalit Sharma
Th 27684

Abstract

This study aims to develop and validate a questionnaire on emotion regulation strategies for athletes in different sports and games. The study was conducted in three phases: exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and Exploratory analysis. In the first phase, a total of 425 athletes for EFA of the Sports Emotion Regulation Questionnaire (SERQ). In the second phase, a total of 295 athletes were for CFA of the SERQ, in the third phase, a total of 531 athletes were selected for the exploratory study. The questionnaire was constructed using EFA and CFA. Two-way ANOVA was computed to analyze variables among athletes, gender, and the relationship between gender and game. Pearson correlation was computed to check the relationship between performance with selected

psychological attributes. Linear regression backwards was employed to analyse the fit model among performance and other variables. EFA was used to examine the SERQ, which consisted of 25 questions. All three factors had a good association. The CFA model`s fit was excellent, with a CFI of.956, RMSEA value of.033, and NFI of.844, indicating 22 questions in Sports emotion regulation strategies. The questionnaire had a Cronbach`s Alpha of.789 for initiating action,.707 for inhibition control, and.752 for modulating response. The results showed excellent sampling adequacy and a good correlation between initiation action, inhibition control, and modulating response. The results showed no difference in gender differences in selected psychological variables. However, there was a significant difference in intrinsic motivation between games. Competitiveness, empathy, and motivation showed a significant difference in gender differences in different games. The relation between perceived performance on self-confidence and empathy was also found to be positive. Performance`s self-assessed efforts positively correlated with self-confidence, self-awareness, and empathy. Psychological factors predict perceived performance, and the study provides valuable insights into the factors that influence athletes` performance in various sports.

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09. NEGI (Geeta)
Development of Structural Equation Modeling for Selected Precursors as Mediating Effect on Sports Performance Among Volleyball Players.
Supervisor: Prof. Lalit Sharma
Th 27685

Abstract

While reviewing the literature, it was revealed that various studies have presented several attributes that are essential for volleyball players to excel in the sport. This piqued the scholar`s interest in determining the most significant component or set of elements. By investigating how and how much each aspect influences volleyball players` performance, coaches might be able to create more performance-specific training programs. This would also assist athletes and coaches in understanding how psychological and social aspects influence player performance so that they may concentrate on mitigating these elements to improve rather than degrade player performance. After having done a thorough extensive literature search it was found that researchers have been proving the importance of physical, anthropometric, physiological, social and psychological factors for volleyball performance. The present study was confined to 312 volleyball players (168 male & 144 female) with average age of 16.43 ± 2.38 SD, with a minimum training age of 1 years was considered. A total of 8 volleyball academies all over Delhi state were approached for sample collection. The researcher has developed a theoretical model to identify the most closely related aspects that may have a direct or indirect influence on performance. Structural equation modeling is an advanced statistical technique that incorporates confirmatory factor analysis, regression, and path analysis. The result revealed that, psychological and social factors were positively affecting the perceived performance.

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10.   MD. HAMIDUR RAHMAN
Hand Strength with Selected Hand-Armanthropometry and Skill Performance in Ball Game Players.
Supervisor: Prof. J.P. Sharma
Th 27686

Abstract

In ball sports, physical traits such as grip strength, hand size, and finger proportions, along with arm strength and power, are crucial for effective ball control and performance. This study compares and examines the relationship between hand grip strength, upper body strength, endurance, hand-arm anthropometric variables, and digit ratio on skill performance among 135 university-level basketball, handball, and volleyball players (45 from each sport) in Bangladesh. Participants were aged 17 to 24 and had competed in inter-university tournaments. In SPSS, descriptive statistics, t-tests, ANOVA, Pearson correlation, and regression analysis were employed to analyze the data, with significance set at $p < 0.05$. Results indicated substantial differences in height, weight, hip circumference, and waist-to-height ratios among the groups. Basketball players also had longer arm dimensions and significantly distinct hand index values, illustrating unique physical attributes. Finger lengths and 2D:4D digit ratios showed no significant differences between across all sports. Handball players exhibited the highest hand grip strength and outperformed in medicine ball throw and push-up test, indicating superior upper body strength and endurance. Low digit ratio had significantly better dominant hand grip strength across sports, superior hand index scores in basketball, and better performance in basketball (free throw) and handball (front throw, passing), with no effect on volleyball performance. Correlation analyses show that in basketball, hand dimensions and digit ratios affect performance; in handball, lower 2D:4D ratios improve throwing while higher ratios aid passing; and in volleyball, larger hand dimensions and lower digit ratios enhance volleying and serving. Regression analyses showed weak predictive value for skill performance across basketball, handball, and volleyball, with no significant predictors found among physical measurements or strength metrics. The study concludes that physical traits such as hand size, grip strength, and digit ratios influence specific skills but do not consistently predict overall performance across basketball, handball, and volleyball.

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11.   SHARMA (Yatendra Kumar)
National Sports Policy a Road Map to Target Olympic Podium: A Review.
Supervisor: Prof. Ashok Kumar Singh
Th 27687

Abstract

Abstract The study explores the challenges and opportunities in India`s sports ecosystem by analyzing responses from players and coaches. Key findings include disparities in sports infrastructure, accessibility of equipment, and integration of scientific support across training levels. Players face barriers in affording advanced sports equipment, while rural and grassroots levels lack adequate infrastructure. Coaches highlight administrative burdens, outdated facilities, and limited access to competitive training opportunities. The integration of sports with education and career development remains underdeveloped, with limited awareness of diverse career opportunities beyond traditional roles. National Sports Federations (NSFs) play a role in talent identification and athlete development but face criticism for perceived biases in selection processes and limited transparency. Scientific support is concentrated at national levels, leaving grassroots athletes underserved. Programs like Target Olympic Podium Scheme (TOPS) and Khelo India are beneficial, but awareness and accessibility need improvement. Recommendations emphasize making sports equipment affordable, enhancing grassroots infrastructure, promoting diverse career paths in sports, and expanding scientific and technological support. Ensuring transparency in selection processes and fostering continuous professional development for coaches and officials are critical. Leveraging sports tourism, globalization, and media can further enhance visibility and sponsorship opportunities for athletes. Addressing these challenges can strengthen India`s sports ecosystem, ensuring equitable support for athletes at all levels and improving global competitiveness.

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12.   SINGH (Somveer)
Reliability and Validity of the Basketball Jump Shooting Accuracy Test (Bjsat) in U18 Basketball Players.
Supervisor: Dr. Dharmander Kumar
Th 27688

Abstract

This study focuses on the development and evaluation of the Basketball Jump Shooting Accuracy Test (BJSAT) for U-18 male and female basketball players of Indian descent. A convenience sample of 180 players, aged 14 to 18 years, was selected from zonal, state, and national teams. The BJSAT involved eight jump shot attempts from predefined positions on outdoor basketball courts. Two assessors evaluated the examination using a scoring system ranging from 0 to 3. The collected data underwent analysis employing various statistical techniques, including descriptive statistics, one-way ANOVA, correlation analysis, and reliability analysis. The outcomes demonstrated significant disparities in shooting accuracy across different player skill levels. The BJSAT exhibited substantial internal consistency and reliability, with a strong positive correlation between the two assessors. The one-way ANOVA results provided support for the construct validity of the BJSAT, as it effectively distinguished between players of varying skill levels. Boxplots were employed to visually represent the score distribution. In conclusion, this study highlights the development and evaluation of the BJSAT as a reliable and valid tool for assessing jump shooting accuracy in Indian U-18 basketball players. The test encompasses both two-point and three-point distances to capture the demands of

in-game shooting. These findings contribute to the understanding of basketball shooting performance and offer a valuable resource for player assessment and development.

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13.   ABIYRA (Ahmed Jabbar)
A Comparative Field Study on Selected Psychological Variables (Psychological Skills–Aggression–Emotionality Control) between Delhi and Baghdad University Sports Majors.
Supervisor: Prof. Sandeep Tiwari
Th 27689

Abstract

This study examines and compares the psychological variables of psychological skills, aggression, and emotionality control among sports majors at Delhi University and Baghdad University. Using a sample of 300 athletes (150 from each university, equally divided by gender), the research explores the influence of player type and gender on these variables. Standardized tools, including the Psychological Skills Inventory, Aggression Scale, and Emotional Control Questionnaire, were used for data collection. Statistical analysis employed a 2x2 factorial design, with ANOVA and Pearson's correlation to assess differences and relationships among variables. Findings revealed that Delhi University athletes demonstrated superior psychological skills, notably in achievement motivation, goal setting, and confidence, compared to Baghdad University athletes. Gender-based analysis showed females exhibiting higher anxiety control and concentration than males. Delhi athletes also displayed higher aggression levels, with assertiveness being more pronounced, while male athletes showed a tendency for foul play. Emotionality control showed no significant differences across universities or genders, though Delhi athletes demonstrated better benign control. Positive correlations were observed between psychological skills and aggression, while emotional control showed a weak negative correlation with aggression. The study highlights cultural and training differences influencing psychological development, providing a basis for targeted interventions. Recommendations include exploring diverse samples, employing mixed-method approaches, and investigating cultural and training influences to enhance psychological competencies in athletes. These findings contribute to understanding the psychological attributes critical for optimizing sports performance, particularly within the Delhi University sports ecosystem.

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14.   VINOD KUMAR
An Assessment of Psychological Profile of Athletes in Selected Combat Sports.
Supervisor: Prof. (Dr.) Anil K. Vanaik
Th 27690

Abstract

The purpose of the study was to assess of psychological profile of athletes in selected combat sports. The objective of the study was to figure out the personality, aggression, and mental skill profiles of athletes belonging to combat sports. To figure out the difference between male and female combative sports athletes in selected psychological variables and also compare selected psychological variables among selected combat sports persons. The study was delimited to selected psychological variables namely Personality, aggression, and Mental Skill. The study was delimited to the players belonging to selected combat sports namely Boxing, Judo, Taekwondo, and Wushu. The study was delimited to 100 subjects in each combative sport. The study was delimited to 50 males and 50 females in each combative sport. The study was also confined to the subjects who have minimum state level competition medalist. For the study total number of 400 (50 male & 50 female athletes in each sport) sportspersons belonging to selected combat sports namely Taekwondo, Judo, Wushu, and Boxing were selected as subjects for this study. The age of the subjects was 17 to 25 years old. The selection of the subjects was chosen by using a snowball sampling technique. For the study Psychological variables namely Personality, Aggression, and Mental skill were chosen. For this purpose, the questionnaires have been used to collect data Big Five Inventory (personality) by Goldberg(1993), the Sports Aggression Inventory (Aggression) by Anand Kumar & Prem Shankar Shukla(1998) and OMSAT-3 (Mental skill) by Durand Bush & Salmela (1999). The complete data analysis and study findings were categorized into descriptive statistics including psychological profiles of male and female athletes from various combat sports, independent t-tests for comparing the genders of combat athletes, and inferential statistics including one-way ANOVA (analysis of variance) for comparing psychological variables from four different sports.

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15.   YADAV (Tapesh)
Assessment of Validity and Psychometric Properties of the Indian Version of Physical Activity Enjoyment Scale (Paces) in College Girls
Supervisors: Prof. Yogesh Chander and Prof. Sandhya Tiwari
<u>Th 27691</u>

Abstract

Enjoyment of physical activity has been linked to intrinsic motivation to be active, self-efficacy and sustained engagement in physical activity programs. For the purpose of the study three hundred (N=300) college girls (minimum age 18years) were selected randomly from various colleges of Delhi University and NCR using random sampling. The purpose of the study was to validate the "Physical Activity Enjoyment Scale developed by, Kendzierski &DeCarlo, (1991) " on the Indian college girls . Descriptive statistics was used to analyze the data initially. Based on the internal consistency obtained (Cronbach's alpha) for the final questionnaire of Physical Activity Enjoyment Scale (PACES-15) was alpha = 0.857 with 15 items , it was concluded that the final Physical Activity Enjoyment Scale (PACES-15) is valid on the Indian College girls. Explanatory Factor Analysis (EFA) revealed a low factor loading of three items, which

gave three new factors from the questionnaire, and the three items were deleted from the final questionnaire. CFA was used following the extraction of the factors, in order to confirm the new three factors. After the elimination of the items having low factor loading, the CFA model revealed that all the values in the second order increased the model fit, which confirmed that all the factors are applied in Indian conditions. The index of reliability (validity) for all the three factors has shown the values towards the excellent side which enables us to conclude that the PACES-15 is valid on Indian College girls. The test-retest score based on the three trials on thirty (N= 30) college girls ranged from 0.746 to 0.825, which indicates that the PACES- 15 is reliable on Indian college girls.

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