CHAPTER 42

PHYSICAL EDUCATION AND SPORTS SCIENCE

Doctoral Theses

01. AMINUR RAHAMAN
Effect of Yogic Practices on Selected Hematological, Bio-chemical, and Physiological Variables among College Students.
Supervisor: Prof. Tarak Nath Pramanik
Th 29181

Abstract

Background: Yogic practices are widely recognized for promoting physical and mental well-being. However, their integrated effects of yogic practices on hematological, biochemical, and physiological parameters among young adults remain relatively underexplored. Purpose: The present study aimed to investigate the effects of yogic practices on selected hematological, biochemical, and physiological variables among college students. Methods: Twenty-four male students aged 17–22 years from Shyampahari Government Primary Teacher Training Institute, Birbhum, West Bengal, India, were randomly assigned to an experimental group (n = 12) and a control group (n = 12). The experimental group participated in a structured yogic program consisting of relaxation techniques, asanas, pranayama, and suryanamaskar for 1 hour per day, 6 days per week, for twelve weeks, while the control group continued their usual daily activities. Hematological variables included RBC, WBC, neutrophils, eosinophils, basophils, lymphocytes, monocytes, and platelets. Biochemical variables comprised total cholesterol, triglycerides, HDL, and LDL. Physiological parameters included resting pulse rate, systolic and diastolic blood pressure. Blood samples were analyzed using automated hematology and biochemical analyzers. Statistical analysis was performed using IBM SPSS (Version 25), employing descriptive statistics, paired t-tests for within-group comparisons, at $\alpha = 0.05$. Results: The experimental group demonstrated significant improvements in monocyte count, platelet count, HDL levels, and reductions in total cholesterol, triglycerides, pulse rate, systolic and diastolic blood pressure. Significant decreases in total white blood cell count and lymphocytes suggested reduced systemic inflammation. No significant changes were observed in RBC count, neutrophils, eosinophils, basophils and LDL. The control group showed no significant changes in any variables. Conclusion: A twelve-week structured yogic intervention positively influenced hematological status, lipid metabolism, and cardiovascular function, supporting yoga as an effective non-pharmacological strategy for improving physiological health among college students.
Keywords: Yoga, Hematological Parameters, Lipid Profile, Cardiovascular Function, College Students.

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02. AMIT
Discriminant Model for Talent Identification in Volleyball.
Supervisor: Prof. Sandeep Tiwari
Th 29194

Abstract

The present study aimed to develop a discriminant model for classifying male volleyball players into different playing positions based on selected physical and psychological variables. It also examined the performance characteristics of players according to their respective positions. Since positions such as Setter, Libero, Outside Hitter, Opposite Hitter, and Centre Blocker have different physical and psychological demands, identifying the variables that distinguish these positions was considered important. The study was conducted on 125 senior male volleyball players aged 18–32 years, with 25 players representing each playing position. Participants were selected from highly competitive teams, including the Haryana Indian Railway, Indian Navy, Indian Army, LNIPE, and the 19th Asian Games Camp. The variables studied included physical factors such as Speed, Agility, Explosive Strength, Flexibility, Single Block Jump, Standing Reach, Vertical Jump Reach, and BMI. Psychological variables included Sports Motivation, Anxiety, Aggression, Group Cohesion, and the Big Five Personality traits. Standardized and validated tests and questionnaires were used to assess all variables. Discriminant analysis using SPSS was employed to develop classification models. The results identified six significant predictor variables: Single Block Jump, Standing Reach, Agility, Verbal Aggression, Anger, and Flexibility. Since five playing positions were studied, four discriminant functions were generated. Among them, Function 1 emerged as the most effective, with an eigenvalue of 17.683 and a canonical correlation of 0.973, explaining 94.678 percent of the variation in player classification. The discriminant equation for Function 1 included all six significant variables and demonstrated a high ability to distinguish players according to their positions. The study concluded that both physical and psychological characteristics are important in position-specific classification. The developed model provides a scientific tool for talent identification, player selection, and performance enhancement in competitive volleyball.

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03. BARIS RIANG
Effect of Speed Training and Combination of Speed and Plyometric Training on Selected Variables in Boxing.
Supervisor: Prof. (Dr.) Anil Kumar Vanaik
Th 29189

Abstract

The purpose of this study was to investigate the effect of speed training and a combination of speed and plyometric training on selected physical fitness variables among boxers. The selected variables included speed, explosive strength, agility, flexibility, endurance, and strength endurance. These fitness components play a crucial role in boxing performance, as the sport requires quick movements, powerful punches, rapid changes of direction, and sustained physical effort throughout competition. Therefore, the identification of effective training methods is

essential for enhancing the overall performance of boxers. A total of 75 male boxing students were selected as subjects for the study. The participants were randomly divided into three groups of 25 subjects each: Speed Training Group (STG), Combined Speed and Plyometric Training Group (SPTG), and a Control Group (CG). The experimental groups underwent their respective training programs for a period of twelve weeks, while the control group continued with their regular activities without any specialized training intervention. Training sessions were conducted according to a systematic schedule designed to improve the selected physical variables. Data on speed, explosive strength, agility, flexibility, endurance, and strength endurance were collected before and after the training period using standardized testing procedures. The collected data were analyzed using appropriate statistical techniques to determine the significance of changes among the groups. The results of the study revealed significant improvements in all selected variables among the experimental groups following the twelve-week training program. The Combined Speed and Plyometric Training Group demonstrated greater improvements compared to the Speed Training Group, particularly in explosive strength, agility, and speed-related performance measures. The Control Group showed no significant changes in the selected variables. It was concluded that both speed training and combined speed and plyometric training are effective in improving the physical fitness characteristics of boxers. However, the combined training approach was found to be more effective in enhancing overall boxing-related physical performance.

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04. HARIS K

Impact of Different Modes of Strength Training on Selected Physical, Physiological and Performance Outputs among Soccer Players.

Supervisor: Prof. (Dr.) Sarita Tyagi

Th 29183

Abstract

Abstract The present study examined the impact of different modes of strength training on selected physical, physiological, and soccer performance variables among male soccer players. Soccer is a high-intensity intermittent sport that requires the integration of several physical and physiological capacities such as speed, endurance, agility, strength, and cardiorespiratory fitness. In modern sports training, resistance-based conditioning has become a widely adopted method to enhance athletic performance. However, limited research has compared different strength-training modes within a single experimental framework, particularly among Indian soccer players. Therefore, this study aimed to evaluate the effects of strength endurance training, explosive strength training, and maximum strength training on selected physical, physiological, and performance variables. Eighty male soccer players aged 18–21 years from Malappuram district, Kerala, were selected as participants. The subjects were randomly divided into four groups: strength endurance training group, explosive strength training group, maximum strength training group, and a control group, with twenty subjects in each group. The experimental groups underwent a structured twelve-week training program conducted four days per week, while the control group continued their routine activities without additional training intervention. Selected physical variables (speed, endurance, agility, and explosive

strength), physiological variables (resting heart rate, cardiovascular endurance, vital capacity, and cardiorespiratory fitness), and soccer performance variables (dribbling, trapping, passing, and kicking) were measured using standardized tests before and after the training period. Statistical analysis was performed using descriptive statistics and Analysis of Covariance (ANCOVA) at a 0.05 level of significance. The results indicated that strength-oriented training produced mixed effects on the selected variables. Improvements were observed primarily in explosive strength and certain physiological parameters. However, speed and agility performance declined in the experimental groups compared with the control group, and endurance variables showed only marginal improvement. In addition, soccer-specific performance variables such as dribbling, passing, trapping, and kicking did not demonstrate substantial improvement following the strength training interventions. The study concluded that isolated strength training alone may not sufficiently enhance soccer-specific performance. Effective performance development in soccer requires an integrated training approach that combines strength training with speed, agility, and sport-specific skill training.

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05. JAMES (Joel I)
The Effect of Structured Pst Program on Skill Learning and Psychological Indicators among Football Players.
Supervisor: Prof. Lalit Sharma
Th 29184

Abstract

Psychological attributes such as mental toughness, anxiety regulation, and sports competitiveness are vital for sporting success. While Psychological Skills Training (PST) is well established in elite sport, its use in grassroots youth football in India remains limited. This study investigated the impact of a structured PST programme on football skills (Passing, Shooting, Dribbling, Receiving) and psychological indicators (Mental Toughness, Anxiety Regulation, Sports Competitiveness) among novice male players. A one-group pre-test/post-test design was employed with 30 footballers (aged 13-16, M = 14.5) from Delhi. None had prior PST exposure. The intervention comprised 15 sessions (10 minutes each) before practice, structured as 2 minutes relaxation, 2 minutes imagery, 2 minutes positive self-talk, and 4 minutes SMART goal setting. Standardized inventories (PPI, CSAI-2, SCI) and expert-validated skill tests were used. Data were analyzed using descriptive statistics, paired t-tests ($\alpha = 0.05$), and Cohen's d. Results confirmed all hypotheses. PST significantly improved football skills across all four domains. Mental Toughness increased across six subscales, with effect sizes ranging from large to very large ($d = 3.58$ for total MT). Cognitive and somatic anxiety decreased ($d = 1.37, 1.09$), while self-confidence increased ($d = 1.00$). Sports competitiveness improved, particularly mastery-focused orientations ($d = 2.41–3.21$), fostering intrinsic motivation and resilience. Cross-domain gains suggest PST creates a cascade effect, where enhanced psychological states facilitate technical skill acquisition. Even brief interventions (10 minutes daily) produced meaningful change. Researcher-developed skill tests demonstrated acceptable validity (CVR ≥ 0.60). In conclusion, structured PST is a powerful tool for enhancing both psychological and technical performance in youth football, underscoring its potential for broader application in grassroots sport in India.

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06. NEHA KUMARI

Validation and Psychometric Evaluation of Health Orientation Scale in Indian Context.

Supervisor: Prof. Sandeep Tiwari

Th 29185

Abstract

The present study entitled "Validation and Psychometric Evaluation of Health Orientation Scale in Indian Context" was undertaken to examine the reliability, validity, and psychometric adequacy of the Health Orientation Scale (HOS) among Indian college students. Health orientation is a multidimensional psychological construct that reflects individuals' beliefs, attitudes, motivations, concerns, and behaviours related to health and well-being. In view of the increasing prevalence of lifestyle-related diseases, mental health concerns, and the growing emphasis on preventive healthcare, the validation of a comprehensive instrument for assessing health orientation in the Indian context was considered necessary. A quantitative cross-sectional research design was adopted for the study. A total of 1,500 undergraduate and postgraduate students (905 males and 595 females) from different colleges in Delhi participated in the investigation through convenience sampling. The original 50-item Health Orientation Scale (HOS) developed by Snell et al. (1991) was administered to the participants. Prior to statistical analysis, the dataset was screened for missing values, outliers, straight-line responses, and normality. After data screening, 1,429 valid cases were retained for further analysis. The sample was subsequently divided into two independent groups comprising 856 participants for Exploratory Factor Analysis (EFA) and 573 participants for Confirmatory Factor Analysis (CFA). The psychometric evaluation included descriptive statistics, frequency distribution, Exploratory Factor Analysis, Confirmatory Factor Analysis, reliability assessment, and validity testing. Reliability was examined through Cronbach's Alpha, Test–Retest Reliability, and Differential Reliability, whereas validity was assessed using Discriminant Validity procedures, including the Fornell–Larcker Criterion and Heterotrait–Monotrait Ratio (HTMT). The findings revealed satisfactory reliability, validity, and factorial stability of the Health Orientation Scale. The results supported the applicability of the scale in the Indian context and confirmed its suitability for assessing health-related psychological orientations among young adults. The validated instrument may serve as a useful tool for researchers, educators, psychologists, and health professionals in promoting health-related research, preventive healthcare, and health behaviour interventions in India. Keywords: Health Orientation Scale, Psychometric Evaluation, Validation, Reliability, Validity, EFA, CFA, Indian Context.

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07. PANDEY (Buddhesh Mani)
Discriminant Model for Classification of Cricket Players in Limited Overs Game Based on Selected Variables at Different Levels of Players.
Supervisor: Prof. Ashok Kumar Singh
Th 29186

Abstract

The present study aimed to develop a discriminant model for classifying cricket players in limited-overs games based on selected psychological and physiological variables across different performance levels. Key psychological variables—mental toughness, emotional intelligence, motivation, and anxiety—and physiological variables—heart rate variability (HRV) and oxygen saturation (SpO_2)—were assessed among district-, state-, and university-level male cricketers using standardized instruments and testing procedures. Discriminant function analysis revealed that mental toughness, HRV, and competitive anxiety were the most significant predictors in differentiating players across levels, while other variables showed supportive contributions. The developed model demonstrated effective classification accuracy, emphasizing the combined role of psychological resilience and physiological regulation in limited-overs cricket performance. The findings offer practical implications for talent identification, player development, and selection.

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08. PRADHAN (Punam)
Analysis of Asymmetric Index on Selected Anthropometric Kinetic and Kinematic Parameters of Swimmers.
Supervisor: Prof. Tarak Nath Pramanik
Th 29187

Abstract

The purpose of the study was to analyze the asymmetric index on selected anthropometric, kinetic, and kinematic parameters of swimmers and to examine the influence of stroke specialization on asymmetry-related performance variables. Asymmetry refers to the difference between dominant and non-dominant. Such asymmetry may influence biomechanical efficiency and increase injury risk when one limb compensates for reduced capability of the other. For the purpose of the study, forty (n = 40) national-level male swimmers aged 18–30 years were purposively selected from the Delhi NCR region. The swimmers were categorized into four groups based on stroke specialization: freestyle (n = 10), backstroke (n = 10), breaststroke (n = 10), and butterfly (n = 10). The independent variable was type of stroke, while the criterion variables included anthropometric, kinetic, and kinematic asymmetry parameters. Anthropometric variables included arm length, hand length, hand breadth, leg length, foot length, foot breadth asymmetry, and ape index. Kinetic variables included maximal handgrip strength asymmetry, take-off force asymmetry, and lower extremities power asymmetry. Kinematic variables included flight time asymmetry, take-off velocity asymmetry, maximal jump height asymmetry, pelvic obliquity asymmetry, pelvic tilt asymmetry, and pelvic rotation asymmetry. Descriptive statistics were computed, and assumptions of normality and homogeneity of variance were verified using the Shapiro–Wilk and Levene tests. One-way analysis

of variance (ANOVA) determined differences among stroke groups, followed by Tukey HSD post hoc analysis. Effect size (η^2) was also calculated. Results revealed significant differences in hand breadth asymmetry, pelvic rotation asymmetry, flight time asymmetry, and take-off velocity asymmetry among stroke groups. Freestyle swimmers showed greater take-off velocity and maximal jump height asymmetry, whereas butterfly swimmers demonstrated higher pelvic tilt asymmetry. Findings indicate stroke specialization influences biomechanical asymmetry patterns in swimmers and highlight the importance of stroke-specific training and biomechanical monitoring to improve performance and reduce injury risk.

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09. PRAVEEN KUMAR
Effects of Suryanamaskar on Selected Physiological Variables and Motor Fitness Components of School going Students of Delhi.
Supervisor: Prof. Anil Kumar Vanaik
Th 29366

Abstract

The present study investigated the effect of a six-month Suryanamaskar training programme on selected physiological variables and motor fitness components of school-going students of Delhi. A total of 160 students (80 boys and 80 girls), aged 13 to 16 years, from Navyug School, New Delhi, were randomly divided into an Experimental Group (n = 80) and a Control Group (n = 80). The Experimental Group underwent daily Suryanamaskar training for six months while the Control Group continued routine school activities without structured physical training. Data were collected at four time points (0, 2, 4, and 6 months) on five physiological variables — Cardiorespiratory Endurance, Resting Heart Rate, Vital Capacity, Systolic Blood Pressure, and Diastolic Blood Pressure — and six motor fitness components — Muscular Strength, Muscular Endurance, Flexibility, Speed, Agility, and Reaction Time. Mean and Standard Deviation, Independent Samples t-test, one-way ANOVA, and post-hoc paired comparisons (Bonferroni correction) were applied across six training intervals at $\alpha = 0.05$. The baseline t-test confirmed group equivalence before the intervention. Post-training, the Experimental Group showed statistically significant improvements across all eleven variables ($p < 0.05$), while the Control Group showed no significant change. All six training intervals yielded significant differences, with the 0–6 months interval producing the largest mean differences. Both Experimental Boys and Girls improved significantly across all variables, confirming gender-neutral training benefits. The study concludes that Suryanamaskar produces significant, progressive improvements in physiological health and motor fitness in school-going adolescents and recommends its inclusion in school physical education programmes. Keywords: Suryanamaskar, physiological variables, motor fitness, school students, ANOVA, Delhi.

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10. REKHA
Effects of Stress on Mental Health and Sports Performance.
Supervisor: Prof. (Dr.) Gauri Chakraborty
Th 29188

Abstract

Stress is an insurmountable part of life and affects countless facets of everyday living, including sports performance. Depending on its extent, graciousness, and coping strategies, stress may both stimulate and hinder athletes from performing at their best. It is crucial to comprehend the psychological and physiological effects of stress in the high-stakes world of sports, where players are under continual pressure to perform well. Stress in sports can arise from various triggers, including physical exertion, high performance standards, competitive anxiety, and external factors such as financial concerns or media scrutiny. Excessive stress frequently has negative effects, including diminished attention, poor decision-making, and even bodily harm, while moderate amounts of stress can increase drive and focus. Players, coaches, and sports psychologists must comprehend how stress affects athletic performance. By analyzing its physiological, psychological, and behavioral aspects. understood stress as a process that involves a person`s engagement with their surroundings, when the person determines that the demands of a circumstance are either too much for them or are exhausting their particular coping mechanisms. Sport psychologists frequently use this paradigm, sometimes referred to as the transactional model of stress and coping, to comprehend how athletes view and respond to stressful circumstances.

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11. SHUKLA (Akash)
Effect of Selected Yogic Practices on Physiological Variables and Skill Learning of College Going Badminton Players.
Supervisor: Prof. Taraknath Pramanik
Th 29192

Abstract

The present study examined the effect of selected yogic practices on physiological variables and badminton-specific skill performance among college-going badminton players. Two primary hypotheses were formulated to assess whether a structured yogic intervention would significantly influence selected physiological parameters and skill learning outcomes. To test these hypotheses, a 12-week yogic training programme consisting of asanas and pranayama was administered to an experimental group, while a control group continued with their routine activities without yogic intervention. The findings of the study revealed that the yogic intervention produced statistically significant improvements in key physiological variables, including vital capacity, resting heart rate, systolic blood pressure, diastolic blood pressure, and body mass index in the experimental group, whereas the control group showed minimal or no changes. These results indicate that regular yogic practice positively influences pulmonary efficiency, cardiovascular health, and body composition. Consequently, the first hypothesis was accepted. The second hypothesis, which proposed significant enhancement in badminton-specific

skills, was also supported. The experimental group demonstrated significant improvements in short serve, forehand overhead clear, and forehand overhead smash performance following the intervention, while no significant changes were observed in the control group. These improvements may be attributed to yoga-induced gains in flexibility, balance, core strength, coordination, concentration, and neuromuscular efficiency, all of which are essential for effective skill execution in badminton. In conclusion, the study provides strong empirical evidence that selected yogic practices are effective in simultaneously improving physiological efficiency and sport-specific skill performance in college-going badminton players. The findings support the inclusion of yoga as a complementary and holistic training modality in collegiate sports programmes.

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12. SINGH (Ajit)
Effect of Training Program on Physical and Physiological Variables of State Level Kabaddi Players.
Supervisor: Prof. Ashok Kumar Singh
Th 29190

Abstract

Abstract The statement of the problem was framed as: “Effect of Training Program on Physical and Physiological Variables of State Level Kabaddi Players.” A total of sixty male Kabaddi players aged 18–25 years (average age was 21.5 years) from Ghaziabad, Uttar Pradesh, were randomly assigned into two groups: an experimental group (n=30) and a control group (n=30). The experimental group participated in a structured physical training program three days per week on Mondays, Wednesdays, and Fridays over a period of twelve weeks. The control group did not engage in any additional physical training beyond their routine activities. Pre-test and post-test data for selected variables were collected at JBS Kabaddi Academy, DLF Ankur Vihar, using standardized tests. Physical variables included Body Mass Index (BMI), shoulder strength, leg strength, grip strength, movement speed, and reaction ability. Physiological variables assessed were resting heart rate, blood pressure, vital capacity, respiratory rate, and anaerobic capacity. ANCOVA was used to analyze the data, with the level of significance at 0.05. The findings revealed that the training program resulted in significant improvements in most of the physical variables. Shoulder strength, leg strength, movement speed, and reaction ability showed statistically significant enhancement among the experimental group. However, BMI and grip strength did not exhibit significant changes, indicating that certain physical attributes may require longer or more specialized training stimuli. These results partially supported the first hypothesis. With respect to physiological variables, the training program produced substantial improvements in resting heart rate, blood pressure, vital capacity, respiratory rate, and anaerobic capacity. These findings fully supported the second hypothesis, demonstrating that systematic training influences physiological functioning. The study holds considerable significance for coaches, trainers, and sports scientists. The outcomes provided scientific evidence for designing effective training programs that focus on improving physical parameter and physiological efficiency among Kabaddi players.

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13. SINGH (Rohit Kumar)
Comprehensive Approach to Assess Selected Physical and Psycho-Physiological Profile of U-19 Football Players.
Supervisor: Prof. (Dr.) Sandhya Tiwari
Th 29191

Abstract

The present study was conducted to adopt a comprehensive approach to assess selected physical, physiological, and psychological profiles of U-19 football players across different playing positions. A total of 210 male U-19 football players were selected as subjects and categorized into three groups based on their playing positions: Forwards, Midfielders, and Defenders. The selected physical variables included Speed, Agility, and Flexibility. Speed was measured using the 50-yard dash test, agility was assessed through the shuttle run test, and flexibility was measured using the sit-and-reach test. The physiological variables comprised cardiorespiratory endurance, body composition, anaerobic power, and basal metabolic rate (BMR). Cardiorespiratory endurance was measured using the Cooper 12-minute run/walk test. Body composition was assessed with the help of the Omron body composition analyzer. Anaerobic power was measured using the vertical jump test, and BMR was estimated using the Harris-Benedict equation. The psychological variables focused on mental skills, which were assessed using the Mental Skills Questionnaire (MSQ) developed by Bull et al. (1996). The selected mental skill components included imagery ability, mental preparation, self-confidence, concentration, anxiety and worry management, arousal regulation, and motivation. Descriptive statistics were calculated to determine the mean and standard deviation of each variable. One-Way Analysis of Variance (ANOVA) was applied to examine significant differences among the three playing positions, and the level of significance was set at 0.05. Where significant differences were found, appropriate post hoc tests were conducted to identify pairwise group differences. The findings of the study are expected to reveal positional variations in physical, physiological, and psychological characteristics among U-19 football players. The results may provide scientific evidence to support position-specific training, performance enhancement strategies, and scientific talent identification in competitive football.

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14. THAPA (Shivam)
Assessing and Comparing the Prevalence of Bullying Behaviour in Sports.
Supervisor: Prof. Meenakshi
Th 29193

Abstract

Bullying is widely recognized as a harmful experience during adolescence, while sports are often viewed as environments that promote positive personal and social development. This study aimed to assess and compare the prevalence of bullying behaviour among sportspersons and non-sportspersons. A triangulation method was employed, combining qualitative and quantitative approaches. Initially, focus group interviews with 21 participants were conducted to develop a structured questionnaire. This questionnaire was then administered to 756 participants, followed by in-depth interviews with 23 individuals for qualitative analysis. The findings revealed that sportspersons were more likely to engage in bullying compared to non-sportspersons. Among different types of sports, participants involved in team sports showed a higher tendency toward bullying behaviour. Additionally, individuals with more than five years of training experience were more prone to bullying than those with lesser experience. District-level players exhibited higher involvement in bullying compared to recreational players and non-sportspersons. Furthermore, private school students were found to be more engaged in bullying behaviours than their counterparts in government schools. The study concludes that bullying within sports environments is a significant and concerning issue. While sports are generally associated with positive development, these findings highlight contradictions that warrant further research to better understand and address bullying in sports contexts.

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15. VERMAA (Rajan)
Study of Health-Related Fitness of College going Students of Delhi.
Supervisor: Prof. Jaiparkash Sharma
Th 29195

Abstract

Physical fitness is a fundamental determinant of health, functional efficiency, and overall well-being. In modern society, rapid urbanisation, technological advancement, and sedentary lifestyles have contributed to declining physical activity levels, particularly among young adults. Health-related physical fitness (HRPF), comprising cardiovascular endurance, muscular strength, muscular endurance, flexibility, and body composition, plays a vital role in preventing chronic diseases and promoting physical and mental health. College-going students represent a critical population, as health behaviours developed during this stage often persist into adulthood. Despite the availability of sports and fitness facilities, evidence suggests suboptimal fitness levels among college students, highlighting the need for systematic assessment. The present study aimed to assess the health-related physical fitness status of college-going students of Delhi and to examine gender-wise differences across major fitness components. A descriptive cross-sectional research design was adopted. The sample consisted of 200 undergraduate students (100 males and 100 females), aged 18–25 years, selected through stratified random sampling from colleges affiliated with the University of Delhi. Standardised fitness tests were administered to evaluate cardiovascular endurance, muscular strength, muscular endurance, flexibility, and body composition. Anthropometric measurements, including height, weight, and body mass index (BMI), were also

recorded. Data were analysed using descriptive statistics and normative fitness classifications. The findings revealed that both male and female students demonstrated high levels of cardiovascular endurance, with males falling in the excellent category and females in the superior category. Muscular strength was above average among males, while females showed average strength levels, indicating scope for improvement. Muscular endurance levels were comparatively lower, particularly among female students, who largely fell in the below average to poor categories. Flexibility emerged as a strong component for both genders, with females demonstrating slightly superior performance. BMI analysis indicated that the majority of participants were within the normal weight range, reflecting generally healthy body composition. The study concludes that while college students in Delhi exhibit favourable cardiovascular fitness, flexibility, and body composition, deficiencies in muscular strength and endurance—especially among females—require targeted intervention. The findings underscore the need for structured physical education and fitness programmes in colleges to promote balanced and lifelong health-related fitness.

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