





Book of Abstract

The 9th International Research Conference on Sport Science and Physical Education

Theme on:

Innovative Sport Science and Physical Education for Excellence: Advancing Sustainable Development through Research & Collaboration

Bahir Dar University Sport Academy in collaboration with Ethiopian Sport Academy

June 2025







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The Bahir Dar University Sport Academy was first established as a physical education department. In order to plan and carry out co-curricular activities, the department worked under the supervision of the dean of students from 1974 until 1981 E.C. In 1982 E.C., it was upgraded to a full-fledged unit with the status of an academic and service-providing department under the name of the department of health and physical education.

In 1993 E.C., the department began to award diplomas next to Kotebe College of Education for the first time in Ethiopia's history of professional training in sports science. In 1996 E.C., the department became the third institution after Kotebe and Addis Ababa Universities to provide a bachelor's degree in physical education. The Ethiopian Universities Sport Festival was hosted by the Department of Physical Education and Sport in 2003 E.C., which led the department being promoted to a sport academy.

The sport academy is also quite active in both research and community services. The sport academy has well-equipped sports facilities and is now offering quality instruction to more than 350 project trainees in various athletic disciplines and age categories in order to successfully complete its objective.



By 2030, Bahir Dar University Sport Academy hopes to rank first in Ethiopia and be one of Africa's premier sports hubs.



- Produce graduates with relevant knowledge, skills, and attitudes.
- Enhance research on sport science.
- Deliver relevant and scientific youth development and sport training on the basis of national interest.
- Promote and ensure the community's participation in sport, health, and physical exer-
- Provide relevant and necessary capacity-building and certification programs in sport coaching.



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THE ROLE OF SPORTS PARTICIPATION IN FOSTERING SOCIALIZATION AND YOUTH DEVELOPMENT IN NAMIBIA

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Abstract

Sports serve as a crucial mechanism for youth socialization and development, fostering leadership, personal growth, and community integration. This study examines the role of sports in shaping social behaviors, promoting leadership, and addressing gender disparities among Namibian youth while assessing economic implications. Using a mixed-methods approach, the study combined quantitative surveys and qualitative interviews, targeting youth participants aged 15-45, coaches, and policymakers across diverse Namibian regions. Findings indicate a strong positive correlation (r = 0.72, p <0.01) between sports participation and leadership skill development. Regression analysis revealed that structured sports programs significantly predict improvements in social behavior ($\beta = 0.65$, p < 0.01). However, financial constraints, gender biases, and inadequate infrastructure emerged as major barriers to participation. These challenges disproportionately affect youth from marginalized communities, limiting their access to developmental opportunities through sports. The study highlights the transformative potential of sports in fostering self-confidence, resilience, and social cohesion. It calls for targeted policy interventions, improved community-based initiatives, and the integration of life skills education into sports programs to enhance inclusivity and accessibility. These findings hold significant implications for policymakers, educators, and sports organizations seeking to leverage sports as a tool for youth empowerment and socioeconomic development.

Keywords: Gender equality, life skills, socialization, sports participation, youth development



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IMPACT OF EXERCISE MODALITIES ON BLOOD GLUCOSE, BLOOD PRESSURE AND BODY COMPOSITION IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

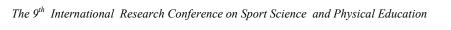
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Abstract

Background: Physical activity has been recommended as an important non-pharmacological therapeutic strategy for the management of type 2 diabetes mellitus (T2DM). The aim of this study was to investigate the effects of 12 weeks of strength, aerobic, and a combination of aerobic and resistance training on blood glucose level, blood pressure, and body composition in patients with T2DM. Methods: From Debremarkos referral hospital, 40 subjects with T2DM (mean age 42.45 years, 29 men, 11 women) were randomly assigned to one of three intervention groups or the control group. The following variables were measured: body mass index (BMI), fasting blood glucose (FBG), systolic blood pressure (SBP), diastolic blood pressure (DBP), and body fat percentage (BFP). Paired sample T-test and one-way ANCOVA were applied whilst controlling for diet, gender, and age. Results: All intervention groups showed improvement in a mean difference of FBG -13.03 (t=-5.55, df=39, p<0.001), SBP -21.63 mmHg -17.6 mmHg (t = -6.51, df = 39, p < 0.001), DBP -11.86 mmHg (t = -5.47, df = 39, p < 0.001) and BFP -9.14 (t = 7.49, df = 39, p < 0.001). There was a significant difference in mean BMI reduction when diet, gender, and age were controlled in a one-way ANCOVA (F (3, 33) =11.79, p < 0.001), SBP (F (3, 33) = 13.383, p < 0.001), DBP (F (3, 33) = 7.830, p < 0.001), FBG (F(3, 33) = 6.337, p < 0.001), BFP(F(3, 33) = 24.29, p < 0.001) between the exercise intervention groups and control group. Additionally, the estimated marginal means indicate that the combined strength and aerobic exercise intervention group experienced the greatest improvements. Conclusion: Body composition, blood pressure, and fasting blood glucose were significantly lower in the combined (aerobic plus strength) treatment than in the individual treatment, indicating that the combined exercise intervention was more successful in altering these parameters.

Key Word: Type 2 diabetes mellitus, body composition, fasting blood glucose, blood pressure, resistance, and aerobic training









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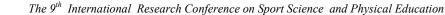
Abstract

Football development in Liberia faces major challenges, including poor infrastructure, weak coaching, and inadequate youth programs, alongside the longstanding underperformance of the Liberian Football Association (LFA). This study analyzes the demographic, socioeconomic, and institutional factors affecting football development and LFA performance using Newey-West regression on data from 2000 to 2023. The findings show that urbanization positively influences football development in Liberia, while a growing youth population has a negative impact. Active football players' Life expectancy among active football players has a positive impact but statistically insignificant. Socioeconomic factors reveal that inflation hinders football growth, whereas GDP per capita growth and income inequality support development but insignificantly harm LFA performance. On the other hand, institutional factors are crucial, with strong budgetary and financial management fostering football growth, while corruption, lack of transparency, and poor accountability hinder progress. The study recommends that by promoting urbanization, improving players well-being, controlling inflation, and strengthening financial management can enhance football development and LFA performance in Liberia.

Keywords: Socioeconomic factors, football development, Liberia football association.

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WOMEN LEADERSHIP, STATUS, CHALLENGE AND PROSPECTIVE IN NATIONAL SPORT ORGANIZATIONS OF ETHIOPIA

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Abstract

The purpose of the Current study was to investigate the Women leadership status, challenge and prospective in national sport organization of Ethiopia. Data were collected through questionnaires, in-depth, face to face semi structured interviews, observations and document analysis from 216 men and women leaders and experts in national sport organizations. Qualitative and quantitative data was used to determine the status and challenges of Women's in decision making and in Leadership's in the organizations. Because the nature of this study was narrative, data analysis focused on the groups that emerged from the collected data. Therefore, thematic analysis was used to accomplish main goals. And Descriptive statics like percentage, mean, standard deviation and Pearson Chi-Square were used to analyze the result. This entails the use of frequency distribution tables and a percentage was used to summarize data on the closed ended items in the questionnaire. Analysis of data employed Statistical Package for Social Scientists (SPSS) version 20 software where used describe the result. The findings showed that the status of women in the organization is very low. The Challenges that hinder Women's participation in national sport organizations Includes, personal limitations; Lack of Professional Networks, Lack of budget, Family Responsibilities and society's perceptions In conclusion, the result discloses that Weak participation of women's was found and there is the shortage of gymnasium equipment in terms of number & qualities. In addition, the researcher has confirmed this during the time of observation.

Keywords: challenge, decision making, Leadership, Sports organization, women s.



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EXPLORING THE DYNAMICS OF FINANCING, FAN INFLUENCE, AND LEADERSHIP AND GOVERNANCE IN SOCCER CLUB PERFORMANCE

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Abstract

Introduction: Managing football clubs is a challenging and rewarding experience, requiring a combination of leadership skills and strategic decision-making. Objective: to examine the dynamics of financing soccer clubs, fan influence, leadership, and governance on Ethiopian Premier League soccer club performance. Methodology: A correlational study was conducted. Twenty-one seven-point linker Amharic version questionnaires, known for their validity and reliability, were used from a sample of 307 participants selected through the simple random sampling method. Frequency, percentage, correlation, and multiple linear regression analyses (with a significance level of P < 0.05) were performed. Results: The main finding revealed that football clubs (M = 5.55, SD = 1.28), leadership and governance (M =5.21, SD = 1.62), and fan influence (M = 3.74, SD = 1.31). There is no significant association between fan influence (r = 307), .074, p > .005) and soccer club performance; unlikely financing has a significant correlation (r = 307), -.348, p < .001) with football club performance; and leadership and governance (r = 307), -.626, p > .005), with soccer club performance and All dependent variables can make a 45.4% prediction Discussion: These findings suggest that fan influence and financing soccer clubs play a crucial role in predicting the success of soccer clubs. The study highlights the importance of effective leadership and governance in driving club performance. Conclusions: Fan influence and financing of football clubs play a significant role in predicting soccer club performance, while leadership and governance also have a strong impact.

Keywords: Fan influence; financing soccer clubs; governance; leadership; soccer club performance

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JOB SATISFACTION AMONG SECONDARY SCHOOL TEACHERS IN BAHIR DAR CITY ADMINISTRATION

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Abstract

Job satisfaction is a much disputed issue in the field of education, because it affects productivities and achievements of an organization. In the study area lack of job satisfaction is ruthless reality that matters the schools' communities in general and physical education teachers in particular. This descriptive study aimed to find out, the nexus between level of teachers' job satisfaction and current status of their commitment, to examine the major determinant factors, and demographic variables in relations with job satisfaction and commitment by employed mixed research approach. The study was conducted by using simple random and purposive sampling techniques with the participation of 101 teachers, 11 principals and 4 supervisors in the Bahir Dar City Administration. The data were collected via interview; focus group discussion and five-point Likert scale adopted version of questionnaire and analyzed by using descriptive and inferential statistics, one way ANOVA and independent sample t-test respectively. The result showed that, most of the teachers were not satisfied in the aspects of management, supervision, salary and in the other aspects teachers were undecided in their job and also there is a strong relationship in teacher's job satisfaction and commitment were significant at 1% and 5% level of significance. In addition to this, there was positive correlation between teachers' job satisfaction and their commitment. On the other hand, the study revealed that the demographic variables did not show significant relationship with teachers' job satisfaction and commitment. This implies that, teachers' job satisfaction and commitment have positive relationship.

Keywords: Job Satisfaction, commitment, management, promotion, supervision







ENHANCING ATHLETIC PERFORMANCE THROUGH STRENGTH AND ENDURANCE TRAINING: AN AI-POWERED ANALYSIS OF UNIVERSITY-LEVEL ATHLETES

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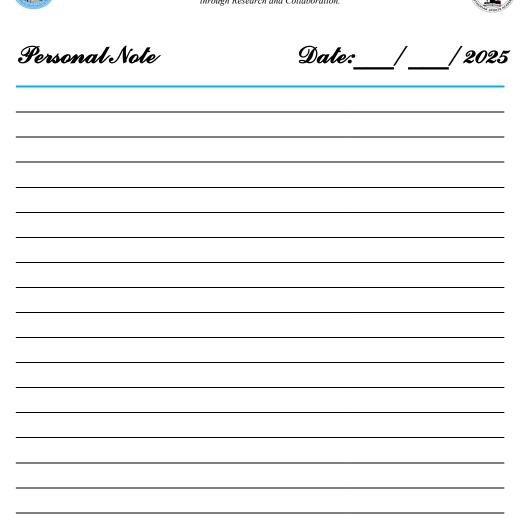
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Abstract

Artificial Intelligence (AI) is transforming sports science by enabling precise monitoring and analysis of athlete performance. This study explores the impact of two training programs Strength Training (ST) and Endurance Training (ET) on the athletic performance of university-level athletes, utilizing AI tools to collect and analyze performance data. Research Objectives: The primary objective of this study was to evaluate the effect of ST and ET on performance metrics, including sprint time, vertical jump height, and endurance time. Additionally, the study aimed to compare the effectiveness of the two programs and determine the significance of performance improvements using statistical analysis. Methods Used: Sixty university athletes were assigned to either the ST or ET group, with 30 participants in each. The training lasted for eight weeks, during which pre- and post-training performance data were collected using AI-based motion tracking and wearable sensors. SPSS was used for statistical analysis, including paired sample t-tests and independent sample t-tests. Results/Findings:The results showed significant improvements in both groups (p < 0.05). The ST group demonstrated greater improvements in sprint time and vertical jump height, while the ET group showed superior gains in endurance time. Qualitative responses indicated that athletes perceived both training programs as beneficial, with improvements in both physical performance and overall well-being. Conclusions: Both Strength Training and Endurance Training significantly enhanced athletic performance, with each program excelling in different areas of physical fitness. AI tools provided precise data collection and enabled deeper insights into performance changes. These findings offer valuable recommendations for coaches and athletes.

Keyword: artificial intelligence; AI; sports science; athlete; SPSS;











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UTILIZING INDIGENOUS RECIPES TO PROMOTE HEALTH AND PHYSICAL FITNESS: A CASE STUDY ON NORTH SHEWA ZONE COMMUNITIES

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Abstract

Traditional diets have a significant impact on physical performance and health, especially in communities where daily nutrition is based on indigenous recipes. This project investigates how communities in the North Shewa Zone might use traditional recipes to encourage physical fitness and wellness. The study looks into popular indigenous dishes, their nutritional value, and how traditional eating habits affect physical fitness and health. It also looks at how the public views these recipes' contribution to improving health and athletic performance and evaluates how best to tailor them for athletes and physically active people. A combination of quantitative and qualitative data collection approaches was used in a mixed-methods approach. In the North Shewa Zone, households, local health professionals, and community elders made up the research population. 150 participants were chosen using a stratified random sample procedure, guaranteeing representation from a range of age groups, genders, and socioeconomic backgrounds. Surveys, focus groups, and laboratory study of the nutritional value of particular recipes were used to collect data. The findings showed that injera, dabo, and shiro wot are often consumed meals that are high in vital elements such vitamins, proteins, and carbs. Their nutritional value is impacted by differences in cooking techniques, though. It has been discovered that traditional eating habits, which are defined by well-balanced meals and natural components, promote moderate physical fitness and good health. According to community attitudes, there is a significant conviction in the health benefits of using indigenous recipes, but there is little knowledge of how they can improve athletic performance. According to the study's findings, local recipes in the North Shewa Zone have a major positive impact on fitness and health. Creating community-based nutrition education initiatives and working with dietitians to modify classic recipes for athletes and active people are two suggestions. To investigate long-term effects on performance indicators and health outcomes, more research is advised. This study highlights how crucial it is to maintain indigenous culinary customs while utilizing their potential to satisfy modern demands for fitness and health

Key words: Traditional diets, Physical fitness, Nutritional value, Indigenous recipes, Health and wellness







PHYSICAL INACTIVITY AND ITS ASSOCIATION WITH OBESITY AMONG ADOLESCENTS IN ETHIOPIA: ETHIOPIA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Abstract

Background: Physical inactivity is considered a pandemic that requires immediate attention. Higher levels of physical inactivity affect the environment, economic growth, community well-being, health systems, and quality of life. Adolescents who engage in more sedentary behavior have worse cardiometabolic health, fitness, greater adiposity (weight gain), and shorter sleep duration. Obesity is the most prevalent and serious health problem linked to physical inactivity. Adolescent obesity is a major risk factor for a number of severe non-communicable diseases in adulthood. The impact of physical inactivity on obesity was not investigated. Therefore, this study was done to assess the association between physical inactivity and obesity among adolescents in Ethiopia. Methods: Through March 2025, searches were conducted using Medline (PubMed), EMBASE, HINARI, Google Scholar, Science Direct, CINAHL, Cochrane Library, African Journals Online (AJOL), and grey literature. Crosssectional studies that examined the links between adolescent obesity and physical inactivity were analyzed. A standardized data extraction format created in Microsoft Excel was used to extract data from a chosen set of studies. I² statistics and the Egger test were used to evaluate between-studies heterogeneity and the presence of publication bias, respectively. Using a random-effects model, effect sizes were reported as odds ratios (ORs) with 95% confidence intervals (CIs). Results: A total of seven studies with 3992 study subjects were included in this systematic review and meta-analysis. The pooled prevalence of obesity among adolescents in Ethiopia was estimated to be 3% (95% CI, 2-4%) with a substantial level of heterogeneity as evidenced by I^2 statistics ($I^2 = 82.90\%$; p < 0.001). Physical inactivity in adolescence strongly predicted the risk for obesity (pooled odds ratio (POR) 3.56, 95% confidence interval (CI): 2.47-5.11). Conclusion: Physical inactivity in adolescence strongly and independently predicts obesity. Hence, physical activity should be seriously recommended for obesity prevention among adolescents. There is an urgent need for school-based obesity prevention that encourages environmental and legislative improvements linked to active living. Policymakers and community partners can use the study's findings to make well-informed decisions about how best to allocate funds for the development of suitable physical activity interventions and adolescent obesity prevention initiatives

Keywords: Adolescents, Ethiopia, Obesity, Physical inactivity, Systematic review



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The Effect of Cold-Weather Walking on Weight Loss: In Case of Ginba City Personal Note Dale: ____/___/2025 The Effect of Cold-Weather Walking on Weight Loss: In Case of Ginba City Administration, South Wollo, Amhara Region, Ethiopia

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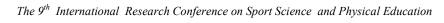
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Abstract

Some individuals believe that exposure to cold weather is detrimental to health or increases the likelihood of catching a cold. This study aimed to examine the effects of walking in cold weather on body weight loss and fat reduction. The study included twelve participants (n = 12; age: ± 21.67 years; weight: ± 74.33 kg; height: ± 1.56 m; BMI: ± 30.51 kg/m²), all of whom were young housewives residing in Ginba City, Amhara Region, Ethiopia. Participants were selected using a convenience sampling technique. The study employed a one-group pre-test post-test quasi-experimental design. After obtaining consent and agreement, baseline measurements—including body weight (kg), BMI (kg/m²), waist-to-hip ratio (cm), and four-site skinfold thickness (abdomen, suprailiac, thigh)—were recorded for each participant. The intervention involved walking in cold weather for 20 minutes, three times per week, over a two-month period (October and November). Following the intervention, post-test measurements were collected and compared to baseline data. Statistical analysis was conducted using a paired sample t-test in SPSS version 26, with a significance level set at 0.05. Results indicated a significant reduction in body weight and fat percentage (p = 0.00). Findings suggest that walking in cold weather can support weight loss and fat reduction by activating brown fat, increasing calorie expenditure, and stimulating the release of irisin.

Key words: White Fat, Brown Fat, Irisin, walking, Cold-Weather.











ASSESSING THE QUALITY OF PHYSICAL FITNESS INSTRUCTIONAL SERVICE AND ITS RELATIONSHIP WITH CONTEXTUAL FACTORS IN BAHIR DAR UNIVERSITY

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Abstract

In recent years, there is continuous promotion and implementation of physical fitness and related activities around the globe. However, a few pieces of research have been done on quality physical fitness instructional service and its perception across contextual groups of students. The purpose of this study was to examine the quality of physical fitness instructional service and compare its perception across contextual groups of 1st-year students at Bahir Dar University. The cross-sectional research design used for the study consisted of 323 students sampled from the total population of 1860. The age of the majority of students (n=216, 66.9%) was 20. The quality of physical fitness instructional service and the perception of contextual groups towards the same were assessed using the adapted Service Quality Assessment Scale (SQAS) and analyzed descriptively. Findings showed that the overall mean quality of physical fitness instructional service was below the average (2.62). This implies that the quality of the service was not up to the standard and could negatively affect the activity and personal goals of the students. This could lead to dissatisfaction, reduced sense of well-being and performance, and also influence their lifestyles. It could also result in loss of goodwill, image, and market shares of the university. The mean scores of most quality variables did not show significant statistical differences across age, gender, educational stream, residence area, and sports experience of students as a player (p<.05). However, there was a statistically significant quality perception difference between male and female students in two quality variables: dressing room and workout facility (p < .01). Similarly, there was also a statistically significant difference between students who come from families living in big cities and those living in woreda towns in only one quality variable: workouts facility (p < .01). As far as experience of students as a player was concerned, there was a statistically significant quality perception difference in only one quality variable: instructor performance (p < .01). The university under discussion and other higher educational institutes of the country have the opportunity to implement quality physical fitness instructional service. Yet, much more effort is needed from the concerned bodies. Future studies also need to investigate situations in other universities and include the influence of some other contextual factors.

Keywords: Quality, Physical fitness, Instructional Service, Contextual factors, Ethiopia

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THE EFFECT OF ALTITUDE TRAINING ON PHYSIOLOGICAL VARIABLES OF ENDURANCE ATHLETES IN ETHIOPIA

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Abstract

Study purpose. This study aims to identify the effect of varied altitude training on physiological variables at varied altitudes in young project trainees in Ethiopia. Materials and methods. A quasi-experimental particularly counter-balanced study design was employed using 15 male endurance project trainees for 6 months 5 individuals from each training center whose age ranged from 16 to 20 years. Pre and post-tests on Vo_{2max}, heart rate at rest, breath holding time, systolic blood pressure, and mean arterial pressure were made in early morning sessions in their training centers using standardized instruments from 6:00 -8:00 AM. Results. The moderate-altitude trainees had better mean scores in Vo_{2max} systolic blood pressure, and breath-holding capacity but in resting heart rate and mean arterial pressure the low-altitude trainees were better than the moderate-altitude trainees. However, all training centers showed an improvement in mean score difference but the result indicates no significant difference (P>0.05) between the moderate as well as low altitude project training trainees. Conclusions. The results show that training at various altitudes has distinct effects on endurance athletes' Vo_{2max}, systolic blood pressure, breathholding capacity, resting heart rate, and mean arterial pressure. This emphasizes how crucial it is to create customized training plans to maximize output and recuperation. These findings are very important for athletes and coaches who want to use altitude training techniques to improve the results of endurance training.

Keywords: Vo_{2max} , resting heart rate, breath holding time, systolic blood pressure, mean arterial pressure



ELITE DISTANCE RUNNERS AND THEIR MANAGEMENT: THE STATE AND NATURE OF ATHLETE MANAGERS CONTRIBUTION

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Abstract

Athlete managers are becoming crucial in facilitating competition opportunities and providing various forms of support to athletes, including technical support related to training, logistical support for training and competition materials, and social support encompassing psychological and life skill assistance. Ethiopian distance runners dedicate significant time and energy to excel in their chosen athletic discipline; in doing so, they prefer to work with athlete managers. To this end, this particular study aimed to assess the state and nature of athlete managers contribution to Ethiopian distance runners participating in elite level by employing concurrent-mixed method. The study was conducted in Addis Ababa, involving a sample of 248 athletes. 60.9% of the respondents were men, and 31% were female elite athletes, with the majority enrolled in longdistance running (68.9%) and government-owned clubs (69%). A 5-point Likert scale questionnaire was developed and used to collect quantitative data from athletes, and a semi-structured interview was employed to purposively selected athletes, coaches, and officials from the Ethiopian Athletics Federation for the qualitative data. Statistical package for social science version 27 (SPSS27) statistical tools were used to process the collected data. For the descriptive statistics, frequency and percentage were used. and non-parametric tests, specifically the Mann-Whitney and Kruskal-Wallis tests, were employed to assess the group difference. The internal consistency for the subthemes of technical, logistic, and social supports was found to be $0.90 \le \alpha \ge 0.70$. The findings of the study indicated that club setting and running discipline of an athlete significantly influence the support athletes get from their athlete managers; consequently, logistic support and technical support were found to be significantly favored at the expense of social support. Dealing with athlete managers helps athletes get scientific training access and international race opportunities; however, early specialization and overused injury are threats. Hence, emphasis should be given to all aspects of support to help an athlete become fruitful and remain successful.

Key words: club enrollment, elite athletes, running discipline, support

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METHODOLOGICAL AND AEROBIC CAPACITY ADAPTATIONS OF HIGH INTENSITY INTERVAL
TRAINING AT DIFFERENT ALTITUDES IN DISTANCE RUNNERS: A COMPREHENSIVE METAANALYSIS

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Abstract

High-intensity interval training (HIIT) in hypoxia has demonstrated superior increases in aerobic capacity (VO2 max) adaptations, but this has not been explored in distance runners. This study examined the methodological and VO2 max adaptations of HIIT under different altitude conditions in distance runners. We searched the PubMed, ProQuest, Europe PMC. ScienceDirect and Cochrane databases until August 2024. Among the 1,183 reviewed studies, six randomized controlled trials involving 122 middle- and long-distance participants were included. The PEDro score determined the methodological quality and a metaanalysis was performed using Jamovi software. The results revealed that VO2 max improved more in hypoxic (4.4%-13%) HIIT than in normoxic (1%-8.3%) HIIT. The metaanalysis results revealed that the effect of HIIT under hypoxia on the VO2 max overall standardized mean difference (SMD) was 0.68, with a 95% confidence interval [0.3,1.06], p < 0.001. Conversely, the pooled SMD was not related to the type of hypoxia (p=0.4), training status (p=0.36), intervention week (p=0.82), and sex (p=0.32). In conclusion, HIIT under hypoxia achieves a greater VO2 max improvement than normoxia. Endurance athletes and coaches could plan to benefit from such training. However, studies on females, using different HIIT protocols and participants at different natural altitudes are limited. This review is registered under the PROSPERO CRD42024578473.

Keywords: hypoxia, high-intensity training, endurance running, training metho ology.







EFFECTS OF INTERVAL AND POWER TRAINING ON TRAINED DISTANCE RUN-NERS' PHYSICAL, PHYSIOLOGICAL, AND TRAINING CHARACTERISTICS

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Abstract

Background: Previous research has individually investigated how training affects the physical, physiological and training characteristics of distance runners. However, there is a lack of studies that collectively investigate the effects of interval and power training programs on physical, physiological and training characteristics in trained distance runners. Objectives: This study seeks to provide a more comprehensive and current understanding of how combined training approaches may impact the physical, physiological, and training characteristics of competitive distance runners. Methods: A census sampling approach was employed, with 108 athletes (100%) participating in the study. Participants were divided into three parallel training groups: the interval training group (ITG), the power training group (PTG), and the control training group (CTG). Each group contained 36 participants, and a randomized block design was used within each group, with 12 athletes in each block. The intervention lasted for 32 weeks, comprising 3 sessions per a week, with participants training 3 nonconsecutive days per week for 45-60 minutes per session at sequential manner in one place. The intensity of the training sessions was maintained between 50-70% of the participants' exercise capacity. The measured physical characteristics include demographic and anthropometric variables such as age, sex, height, weight, body mass index, fat and fat-free mass, and various circumferences. The measured physiological characteristics include resting heart rate, exercise heart rate, maximum oxygen consumption, measures of leg strength and power, endurance performance metrics such as time trials and aerobic thresholds. The measured training characteristics include, living and training altitude, training habits, training experience, training volume, training sessions, recovery practices and nutritional intake were assessed, sig value (P < 0.05) and effect size ($\eta^2 > 0.14$) calculated. **Results** and discussions: Interval and power training improved several physical characteristics such as chronological age (p = 0.02), body mass index (BMI) (p = 0.03, fat-free mass (p = 0.001), and maximum thigh circumference (P = 0.001), but not indicate significant change in certain physical characteristics such as sexes, fields, and weight (P = 1.000). Interval and power training increased several second sub group analysis of physiological characteristics such as 400m sprint performance (P = 0.001), 1.5km Kosmin (P = 0.001), 3km maximum speed time trial (P = 0.000), leg strength (P = 0.001), 1.5km Kosmin (P = 0.001), 3km maximum speed time trial (P = 0.000), leg strength (P = 0.001), 1.5km Kosmin (P = 0.001), 3km maximum speed time trial (P = 0.000), leg strength (P = 0.001), 3km maximum speed time trial (P = 0.000), leg strength (P = 0.001), 1.5km Kosmin (P = 0.001), 1.5km Kosmin (P = 0.001), 3km maximum speed time trial (P = 0.000), 1.5km Kosmin (P = 0.001), 1.5km Kosmin (P = 0.001(0.001) and sprint bounding index (SBI) (P = (0.001), and maximum exercise heart rate (P = (0.001)). In contrast post test result of ITG and PTG compared to CTG no significant difference showed in certain areas of physiological characteristics such as BalkeVO₂Max (P = 0.001), leg press (P = 0.001), and squat (P = 0.001). Regarding the third sub group analysis of training characteristics except habit of sleeping (P = 0.04) the rest post-test result decreased. In general the post test result of the CTG demonstrated less change in all sub group analysis of performance indices compared to ITG and PTG. Conclusion: Our key findings highlight that the importance of combined interval and power training group compared to the control group improves VO₂Max and overall strength endurance, speed endurance, running economy and muscle adaptation which is vital for physical and physiological characteristics. Future research should investigate additional factors, such as nutrition and psychological needs that may influence athletic performance.

Keywords: Anthropometric, Biomechanical, Demographic, Physiological Parameters, Training Modality

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UNLOCKING THE POTENTIAL OF SPORTS TO DRIVE PEACE AND SOCIAL TRANSFORMATION: THEORETICAL AND EMPIRICAL PERSPECTIVES

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Abstract

This study examined the role of sports in peacebuilding and social transformation in diverse contexts of Ethiopia, touching upon both its promise and its challenges in different settings. To explore and examine the study, a webbased qualitative research design was used to get qualitative empirical data. The qualitative data was categorized and analyzed thematically. The major findings indicate that unlocking the potential of sports to drive peace and social transformation in Ethiopia is instrumental to reconciliation and peacebuilding. Moreover, sports in Ethiopia offer an immense opportunity for fostering peace, social inclusion, and economic development. However, despite its potential, the role of sports in peace building and social change is not without challenges. The difficulties emanating from inadequate infrastructure and finance, political and ethnic divisions, gender disparities, few trained human resources, and program continuity. A significant barrier is the lack of sports facilities and inadequate funding for grassroots programs. The majority of sports facilities are located in urban areas, and rural communities lack adequate access to organized sports programs. Ethiopia's political and multi-ethnic situation could affect the efficacy of peacebuilding via sports. Ethnic conflicts and provincial rivalries could at times be channeled into sports competition, leading to separation or exclusion rather than unity. Therefore, I suggest that by promoting cross-cultural interaction, building local capacity, and empowering marginalized groups, sports can be harnessed to break down social barriers and create more harmonious communities. The support of NGOs, community organizations, and international partners is crucial in ensuring the sustainability and success of sports -for-peace programs in Ethiopia.







EXERCISE PRE-PARTICIPATION HEALTH SCREENING: KNOWLEDGE, AT-TITUDE AND PRACTICE OF FITNESS CENTER COACHES

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Abstract

Exercise pre-participation health screening is a filter or 'safety net' to help protect trainees from high intensity physical activity injuries. The study aimed to investigate the knowledge, attitude and practice of fitness center coaches for implement exercise preparticipation health screening and exercise grouping in some selected towns of the Amhara region. To achieve this objective, basic research questions were formulated related to knowledge, attitude and practice of fitness center coaches, grouping of trainees and infrastructure of fitness centers. This study was employed a cross-sectional survey research design; The total participants were 87 (49 body building and 38 floors aerobic exercise) fitness center coaches were selected purposively and used as a sample by using whole sampling technique. Data was collected from 87fitness center coaches through questionnaires and observations respectively; Descriptive and inferential statistics-correlation and t- test at 0.05 significant levels were used. Body building fitness center coaches better than floor aerobic exercise fitness center coaches for utilizations of exercise pre-participation health screening, most fitness center coaches were not fulfilling the standards of fitness center. There were significance difference between knowledge with infrastructure, department and grouping trainees at p < 0.05 (p = 0.03, 0.043 and 0.045 respectively), and there was a significance difference between practice with experience and grouping trainees at p<0.05 (p=0.03 and 0.00 respectively). Generally the majority of fitness center coaches have positive attitude, but the knowledge and practice were poor about exercise pre-participation health screening.

Keywords: Exercise pre-participation health screening, fitness center, fitness center coaches and trainees

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PRIMARY AND MIDDLE SCHOOL PHYSICAL EDUCATION TEACHERS AND THEIR PROFESSIONAL ENGAGEMENT, AMHARA REGION, ETHIOPIA

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Abstract

The main purpose of this study was to examine the status of professional engagement competencies (PEC) of physical education teachers in the primary and middle school in Amhara Region, Ethiopia. The study further explored differences in professional competencies on the bases of teachers' demographic characteristics (gender, qualification, experience, and location). To this end, an explanatory sequential mixed method design was used. A multistage sampling technique was employed to 405 participants. Moreover, both descriptive and inferential statistics were used to examine the quantitative data. Cross-case analysis through descriptions and narrations was also used to analyze the qualitative data. The findings of the study revealed that PE teachers appeared incompetent in their professional learning (PL), engaging professionally with colleagues (EPwC), and over all professional engagement(OPE) due to lack of need based teachers' in-service training and shortage of budget. In terms of location, rural school teachers exhibited low competence on professional learning (PL) and overall professional engagement (OPr.E) than urban school teachers, but no difference showed in their engaging professionally with colleagues (EPwC). Likewise, female teachers exhibited better competence in PL, EPwC and OPE than their counterparts. Again, diploma teachers showed better competence in PL and OPE than degree holders. Also novice teachers outperform better than their counterparts in PL, EPwC, and the OPE. The major factors affecting the implementation of PE curricula were categorised into school/institution related, teacher related and training related. Accordingly, the concerned personnel at all levels (MoE, REBs, TEIs, zones, woredas, and schools) should take corrective measures to tackle the identified gaps and challenges investigated in this study.

Keywords: professional learning, engaging professionally with colleagues, physical education







EFFECT OF SELECTED RESISTANCE EXERCISE ON MUSCULAR FITNESS OF MALE GYMNASTS IN YIMAM FITNESS CENTER; SOUTH WOLLO ZONE, AMHARA REGIONAL STATE, ETHIOPIA

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Abstract

This study was designed to find out the effect of selected resistance exercise on muscular fitness of male gymnast in Yimam fitness center. To achieve the purpose of the present study, 30 male samples were selected as study subjects. The subjects were selected purposively and were assigned into two equal experimental (15) and control (15) group through randomly. The experimental group participated in individualized and supervise moderate intensity resistance training program 3 days/week for 12 weeks. The control group did not participated in training program but the tests were conducted for both groups. The ages of samples were ranged from 16-17 years. The collected data were analyzed by SPSS to determine the differences, if any among the adjusted posttest means on selected dependent variables separately. In all the cases, 0.05 level of confidence was fixed to test the level of significance. The results showed that experimental group had better performance on selected physical fitness components of Yimam fitness center of male subjects. The parameters selected for the study were: muscular fitness (muscular strength, muscular endurance, and power) and Data were analyzed by using SPSS. The result of the study found that, muscular strength (9), muscular endurance (63.1), and power (16.8) showed significant improvements of mean difference at (p<0.05). RM tests were analyzed by paired sample T-test and it was found that, push up test, abdominal curl and power were improved by mean differences of 51.1%, 81.2% and 66.8 respectively. This study showed that resistance exercise program significantly improved the selected variables of muscular fitness of male gymnasts.

Key words: gymnasts, muscular strength, muscular endurance, power, resistance training, study sample.

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STRATEGIES FOR ADAPTING RESPONSIVE POLICIES FOR ACCELERATING ANTI-DOPING INNOVATIONS FOR SUSTAINABLE SPORTS DEVELOPMENT IN ETHIOPIA

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Abstract

The Policy Framework for the Sustainable Development of Sport in Africa situates sport within the broader African Union Agenda 2063 to contribute towards achieving the continental aspirations of "The Africa We Want". The main goal of this research is to inform anti-doping policies and promote participation, build capacity and enhance excellence of African athletes while fostering the ideals of the African Renaissance, promoting social cohesion and stimulating nation building through sport. The methodologies used are article reviews, surveys and key informant interviews with 30 policy makers and 50 African Athletes, Coaches and researchers. The study analysis on 2024 Africa Games competition shows that the population prevalence for chronic medication use was 33.7% male and 11.4% of females participants used medication that is on the World Anti-doping Agency. The policy further incorporates aspirations of the African governments, sports actors and other role players drawn from wide consultations at various levels for the greater good of the African athlete and African sport. The study shows the ethical deterrence made by the International Paralympic Committee (IPC) that has banned Para athletics athlete Clement Nyoni of Zimbabwe for a period of two years for committing an anti-doping rule violation (ADRV), in breach of the IPC Anti-Doping Code is the right move. The World Anti-Doping Agency (WADA) has banned three Ethiopian athletes from participating in any sports competitions for two years due to violations of doping regulations in 9 December 2024 is an encouraging show case of anti-doping laws enforcement commitments by sports communities. It's crucial that we secure funding for anti-doping initiatives and adhere to international standards, including the World Anti-Doping Agency (WADA) code. Therefore, strengthening national laws and utilization of AI- generative technologies for testing potentially suspected sport participants shall reverse the challenge of doping drug use in the sustainable development of African sports. The Ethiopian government in general and the Ethiopian Athletics Federation has to effectively implement the proactive anti-doping policies to ensure sustainable sports development in Ethiopia.

Key Words: Responsive, Policies, Anti-Doping, Sustainable, Sports, Development, Ethiopia









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YOUTH EMPOWERMENT, AND INCLUSION IN THE ETHIOPIAN CONTEXT

Abstract

Presently, Ethiopia is wrestling with considerable challenges in the form of ethnic, diverging political attitude, and separations. The cumulative effects of this chaos have been leading to localized, regional and nationwide conflict. A country with noteworthy history and diversified population is currently in bitter struggle because of the mentioned "curses". In reality none of these should have been a curse, but regrettably became so due to misuse of these energies. This study examines the potential of sport as a multidimensional tool for conflict management, peacebuilding, youth empowerment, and nurturing social inclusion within the Ethiopian context. It briefs the nature of conflicts, the root causes of the turmoil, and the influence on the different populations throughout Ethiopia. The study then puts its specific objectives, including identifying opportunities for sports-based interventions, evaluating their practicability, and suggesting methodologies for putting into practice. Mainly the methodology employed qualitative interviews, a case study analysis and literature review. The essential findings of the study are then presented, showcasing tangible examples of how sports have been, or could be, used to bridge divides, promote dialogue, and build trust among conflicting bodies. The result section deals with the implications of these findings. It analyzes the explicit strategies through which sport can contribute to peacebuilding. This can be justified in the form of, for example. promoting shared identity, fostering cooperation, and developing leadership skills. In order to provide context and learn from international experiences, a case study of South Africa's post-apartheid use of sports for nationwide reconciliation is presented. Here the successes and challenges are examined. The paper concludes with a set of applicable recommendations for policymakers and other concerned bodies concerning the effective utilization of sports programs to promote peace, youth development, and social inclusion throughout Ethiopia.

Keywords: peacebuilding; sports; youth development; social inclusion; shared identity

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