

## EXTRAMURAL SPORTS PROGRAMME PARTICIPATION AND STUDENTS' HEALTH-RELATED INDICES IN TERTIARY INSTITUTIONS

<sup>1</sup>Abass Ayobami Salaam & <sup>2</sup>Jeptha Olaniyi Ogunsanya

<sup>1</sup>Department of Human Kinetics and Health Education,  
Emmanuel Alayande University of Education, Oyo, Oyo State;  
E-mail: salaamaa@eaueido.edu.ng)

<sup>2</sup>Department of Human Kinetics and Health Education,  
Emmanuel Alayande University of Education, Oyo, Oyo State; E-mail:  
ogunsanyajo@eaueido.edu.ng)

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### Abstract

*Participation in extramural sports activities has become an integral component of tertiary education due to its contributions to students' holistic health development. This paper examined the health-related indices of students' participation in extramural sports activities in tertiary institutions, using biopsychosocial, cognitive-behavioural, and physical fitness models as theoretical foundations for conceptualising health outcomes across physiological, psychological, and social indices. Physiological indices which include cardiorespiratory endurance, muscular strength and endurance, flexibility, and body composition; Psychological indices which include stress management, emotion regulation, self-esteem, and motivation, and social indices such as teamwork, social integration, and institutional identity were discussed. This paper also highlighted potential risk-related indices such as sports injuries and academic-sport conflicts. The review concluded that structured participation in extramural sports significantly enhances students' physical fitness, mental well-being, and social functioning when properly planned and managed.*

**Keywords:** extramural sports, physiological indices, psychological indices, social indices, sports injuries.

### Introduction

Every man, after his daily activities, needs time to recreate to bring about the metabolic energy for a refresh of more liveliness needed for healthy living. In the school setting, where students attend classes from morning till dusk, as the case may be, much energy is lost, and there is a need for recreation or participation in sporting activities. Recreation within the school context ranges from participation in sports such as volleyball, basketball, football, and athletics, among others. Any student who develops an interest in such games may intensify efforts to engage at a

competitive level, which might result in representing his or her institution at a competitive level of interscholastic sports like the Nigeria University Games (NUGA), Nigeria Colleges of Education Games (NICEGA) and Nigeria Polytechnics Games (NIPOGA).

The human body is designed for movement for it to be in good health. Exercises are structured physical activities one engages in to develop fitness. Exercise is essential for good health (Moronkola, 2020). Extra-mural sports competition is more strenuous, energy-sapping, and requires more sustainable health and fitness

for successful participation. Extramural sports are sports competitions between different institutions in a friendly manner. Participants represent their own institution and compete against teams from other schools, colleges, universities, or clubs. Extramural sports engagement has numerous benefits, such as social benefits, mental alertness, development of gross motor skills, and the maintenance of physical health. In the context of this paper, extramural sports participation will be discussed in relation to health-related indices to enhance the overall well-being of the school athletes and to aid sports participation.

### **1.0. Extramural Activities and Sports**

Sports have double-edged effects on health. The positive effects of sports are achieved through physical activities which constitute the main body of most sports. Sports are beneficial in terms of the psychosocial development of individuals and their personal development, among others (Fraser-Thomas, 2015). More so, physical activities refer to all movement; it is physiological body movement that increases energy beyond resting level (WHO, 2026). The concept of extramural sports transcends the four walls of a school or an organisation. Extramural sports are competitive sports that involve participation between institutions. They are sports organised based on inter-school and tertiary sport programmes outside an institution (Olanipekun and Akintudire, 2017). The health and fitness benefits that students gain from participating in these sports are of greater value. Participation in extramural sports activities and exercise is of great importance as they not only serve in the interim, but also in the long term. Participation in extramural sports reduces cardio-metabolic risks and improves life quality (Hong et.al., 2016). Guévremont et.al. (2014) asserted that to participate in extramural sports, there must be available, serene and injury-free sports facilities

to bring about the positive psychological health of athletes.

### **2.0. Theoretical Models of Sports Participation in Relation to Health**

Several theories have been postulated in relation to sports participation and health; some of these theoretical models are the biopsychosocial model, cognitive-behavioural model and physical fitness model, among others. The three models of the biopsychosocial model, the cognitive-behavioural model, and the physical fitness model will be considered in the study because they collectively explain how sports engagement contributes to the physical, psychological, and social health outcomes of an individual.

#### **3.1 Biopsychosocial Model**

The biopsychosocial model (BPSM) was proposed by George Engel in 1977. The central idea is that illness and health are the result of an interaction between biological, psychological, and social factors (Wade et.al. 2017). In the context of extramural sports participation, the model provided a holistic explanation of athlete or student health outcomes in sports, viz:

- i. Biological dimension: It is postulated that structured, regular exercise training and competition improve cardiovascular endurance, muscular strength, and flexibility, which are all elements of the overall physiological makeup of a student-athlete.
- ii. Psychological dimension: The model affirmed the psychological aspect of athletes' health. It explained that participation in extramural sports enhances and boosts self-esteem, stress management, and mental resilience through competitive exposure.
- iii. Social dimension: Participation in team sports promotes social interaction, peer

support and a sense of belonging. These factors are all elements of social interaction.

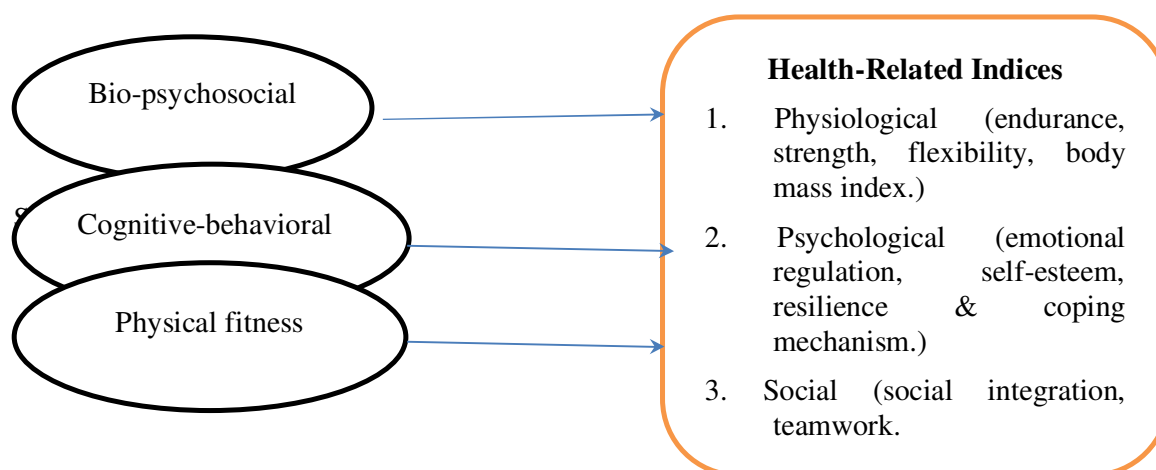
### 3.2. Cognitive- Behavioural Model

The cognitive-behavioural model stressed that athletes' thoughts, emotions, behaviour and physical sensations improve athletic performance, mental well-being, and physical health. It depicts that participation in structured exercise and extramural sports encourages self-control, discipline, goal setting, adaptive coping strategies, and positive reinforcement from success/failure which increases motivation and mental well-being.

### 3.3. Physical Fitness Model

The physical fitness model has a direct impact on physical activities and physiological health. It pointed out that sports participation is key to improved cardiorespiratory fitness and reduced risk of chronic diseases, increased muscular strength and endurance for prevention of injuries, enhanced flexibility, and coordination with reduced fatigue.

The three models have their interconnectivity in cultivating a healthy behavioural lifestyle through sports participation in order to enjoy good physical, mental and social health, which are essential ingredients for engaging in extracurricular activities.



### 4.0. Health-Related Fitness Indices of Students' Participation in Extramural Activities

Health, as posited by the World Health Organisation (WHO, 1947), is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. In the same vein, fitness is the ability of an individual to perform their daily routine without undue fatigue or stress. This implies that how healthy one is can determine one's physical fitness level with engagement in structured exercise or physical

activities. Health- related fitness is classified under physiological indices (cardiovascular endurance, muscular strength, flexibility, body composition), psychological indices (stress management, emotion regulation, self- esteem), and social indices (teamwork, institutional identity, social capital, social integration)

#### **4.1. Physiological Indices of Students' Participation in Extramural Activities**

Moronkola (2020) outlined the physiological health indices of participating in extramural sports as follows:

##### **4.1.1. Cardiorespiratory Endurance**

Cardio has to do with the heart. How strong the muscles of the heart are depicts its endurance for sports performance. Cardiorespiratory endurance is the ability of the heart, lungs, and circulatory system of an individual athlete to supply oxygen ( $O_2$ ) to the muscles required for physical activities. Participation in extramural sports requires training from moderate to strenuous, which stimulates cardiovascular and respiratory adaptation,  $O_2$  uptake ( $VO_2$  max), pulmonary efficiency and blood circulation. Cardiorespiratory endurance is required by a student-athlete from a health perspective because it helps to reduce the risk of cardiovascular diseases, improve metabolic health and the overall well-being of the student (Moronkola 2020).

##### **4.1.2. Muscular Strength**

Muscular strength as a health-related index of extramural sports participation is the amount of force a muscle can produce with a single maximum effort, this depends on how powerful the muscles are to keep the skeletal system in shape and ensure good posture. Through well-structured exercise, the muscles develop more thereby enhancing their use for participation in competitive sports. An example is a shot putter, who, over a long period of training, builds up his muscles to effectively execute a throw. Improved muscular strength enhances functional independence, metabolic health, and musculoskeletal stability among students, it also reduces fatigue and improves posture. This serves as a key indicator of the health benefits of

extramural sports participation (Moronkola 2020).

##### **4.1.3. Muscular Endurance**

Muscular endurance is the ability of a muscle to apply strength. The muscles must have the ability to store fuel (energy stored from food) needed for performance, and there must be a free flow of blood supply to the muscle. Muscular endurance helps improve body posture or alignment, tolerance for physical exertion, and improved functional ability in day-to-day chores. All these advantages show muscular endurance as a significant physiological health-related index of long-term involvement in extramural activities (Moronkola 2020).

##### **4.1.4. Flexibility**

Flexibility is the ability of the joints and muscles to bend through a full range of movement. For an athlete to bend swiftly with ease, the muscles must be elastic and well-connected with the nervous system. From a health point of view, improved flexibility supports proper posture, reduces muscular tension, and enhances functional movement in daily activities. These validate flexibility as a meaningful health-related index that indicates the positive physical adaptations associated with sustained participation in extramural sports (Moronkola 2020).

##### **4.1.5. Body Composition**

Body composition is the proportion of fat, muscle, bone and water in the body. It gives a clear picture of assessing the health and fitness of a student-athlete; students with optimal body composition are better enabled to perform sport-specific skills, maintain agility, and cope with the physical demands of competition, while also experiencing reduced risk of fatigue and injury. Body composition as a health-related index of

extramural sports involvement for students helps to improve metabolic health, increase physical well-being, and decrease the risk of obesity-related illnesses, which are physical health requirements for sports participation (Moronkola, 2020).

## **4.2. Psychological Indices of Students' Participation in Extramural Activities**

Engaging in extramural activities is a function of good mental state, which requires efficient management of stress, regulation of emotion, positive self-esteem, and motivation, among others.

### **4.2.1. Stress**

The tertiary institution environment is designed with numerous activities that are challenging, demanding, and triggers of elevated stress levels. Meanwhile, regular participation in extramural activities plays a significant role in managing stress. The use of sports as a method for stress reduction is premised on the fact that regular physical exercise has a positive impact on well-being and fosters the development of supportive interpersonal relationships, which is an essential trait of a student-athlete (Dawid, 2025).

### **4.2.2. Emotion Regulation**

Emotion regulation refers to the ability of individual student-athletes to understand, manage, and appropriately express their emotions in response to the internal and external demands of their daily routine (Macrae and Gross, 2020). Participation in extramural sports and activities provides structured environments that foster emotional control, self-awareness, and adaptive coping strategies (Feifei et.al. 2024). Through training, competition, teamwork, and goal pursuit, students learn to manage excitement, frustration, pressure, and disappointment in constructive ways (Macrae et.al. 2020). Improved emotion regulation is associated with

reduced emotional distress, better interpersonal relationships, and enhanced overall psychological well-being. These outcomes highlight emotion regulation as a meaningful psychological index reflecting the positive influence of students' participation in extramural activities.

### **4.2.3. Positive self-esteem**

Positive self-esteem is an individual's sense of worth, confidence, and the value an individual places on themselves. Involvement in physical activities gives students ample opportunities to develop their sport skills, achievement, and social recognition. Through sport participation, students set goals and get feedback from their coach or trainer, this contributes to their self-worth and gives them a feeling of accomplishment. With positive self-esteem, students' motivation, social adjustment, and emotional well-being are improved, which is a key index of their involvement in extracurricular activities (Rice, et.al. 2020).

### **4.2.4. Motivation**

Motivation is a drive or an impetus to action. It is what pushes one to behave in a particular way. Motivation could be intrinsic (the inner drive or interest or will to engage in an activity without expecting a reward), while extrinsic motivation is an impetus to engage in an activity based on the reward to be gained from it. The reward could be an award reward or a popularity reward. Engaging in extracurricular activities comes with a drive. When a positive reward is given, esteem is boosted, and this has a positive impact on social health which is a key driver of extracurricular activities (BYTYQI, 2020).

## **4.3. Social Indices of Students' Participation in Extramural Activities**

As a social being, man is meant to positively interact with his immediate environment. Doing

this requires good communication skills, teamwork, institutional identity, social capital, among others. Social indices are important dimensions of health that provide insight into the social benefits related to students' involvement in extramural activities. Through training sessions, athletic competition and sports, students develop social skills such as leadership (team captain), individual differences, and respect for others. Positive social relationships come with an improved psychological well-being and healthy social functioning, which are key indicators of social indices of students' participation in extramural activities (Philip et.al. 2022).

### 5.0. Risk-related Indices of Students' Participation in Extramural Activities

Involving in extramural activities among students gives ample opportunities for skill development, better physiological make-up, improved psychological state, and positive social interaction. Yet, some risk-related factors make students shy away from engaging in extra mural activities. Risk-related indices refer to indicators that reflect potential physical, psychological, and academic challenges that are associated with students' participation in extramural activities, such as susceptibility to sport-related injuries like muscle strain, sprain, fractures and fatigue, which are high-risk factors (Samuel, 2021). Also, the time associated with training and travelling, if not properly managed, will affect the students academically.

### 6.0. Conclusion

The paper examined participation in extramural sports programmes and its impact on students' health-related indices using biopsychosocial, cognitive-behavioural, and physical fitness models as theoretical foundations. Extramural sports significantly contribute to students' physiological health through improved

cardiorespiratory endurance, flexibility, and healthy body composition. All these indices enhance students' physical fitness, functional capacity, and overall well-being.

### 7.0. Recommendations

Based on the foregoing conclusion, it is recommended that:

- (i) Even though certain risk-related factors exist in extramural sports engagement, they can be reduced through proper planning and institutional support.
- (ii) Tertiary institutions should prioritise structured, safe, and inclusive extramural sports programmes to enhance students' comprehensive development.

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