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The Role of Physical Activity in Enhancing Mental Well-Being and Reducing Anxiety among Amateur Athletes: A Sport Psychology Perspective

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***Abstract*:** Physical activity has been widely recognized for its benefits in promoting both physical and mental health. This study examined the role of physical activity in enhancing mental well-being and reducing anxiety among amateur athletes from a sport psychology perspective. A cross-sectional survey design was employed, utilizing standardized instruments such as the International Physical Activity Questionnaire (IPAQ-Short Form) to measure physical activity levels, the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) to assess mental well-being, and the Generalized Anxiety Disorder 7-item scale (GAD-7) to evaluate anxiety levels. Data were collected from 150 amateur athletes in Port Harcourt, Nigeria, and analyzed using descriptive and inferential statistics. Results showed a significant positive correlation between physical activity levels and mental well-being ($r = 0.62$, $p < 0.001$), indicating that athletes engaging in higher physical activity had better psychological resilience and overall well-being. Additionally, physical activity was found to be significantly associated with reduced anxiety levels ($r = -0.58$, $p < 0.001$), with participants reporting lower GAD-7 scores as their physical activity increased. T-test results demonstrated significant differences in mental well-being scores across different sports categories ($F(3, 296) = 4.81$, $p = 0.003$), highlighting variations in psychological benefits depending on the type of sport. These findings emphasized the importance of incorporating sport psychology principles into athletic training programs, public health initiatives, and mental health interventions. It is recommended that stakeholders, including policymakers, coaches, and health professionals, implement structured exercise programs, sport psychology techniques, and awareness campaigns to maximize the psychological benefits of physical activity.

Keywords: Physical activity, Mental well-being, Anxiety, Sport psychology, Amateur athletes

1. Introduction

Physical activity benefits human health by supporting both physical wellness and mental health. Regular exercise leads to better cardiovascular health and weight control while building stronger musculoskeletal systems according to Warburton & Bredin (2017). Physical activity extends its advantages beyond physical health by playing a vital role in mental well-being through reducing anxiety and depression symptoms as well as mood enhancement and quality of life improvement (Biddle & Asare, 2023). The connection between physical exercise and mental health displays special importance among amateur athletes. Amateur athletes participate in sports activities to gain physical fitness benefits and experience enjoyment alongside social connections and stress reduction. Engaging in sports activities leads to

psychological improvements that include enhanced self-esteem as well as better cognitive function and decreased stress levels according to Eime et al., 2013. These psychological advantages play a critical role in supporting mental health stability and boosting life satisfaction levels.

Research demonstrates that physical activity serves as an effective intervention to decrease anxiety levels as well as reduce stress and depression symptoms. According to the endorphin hypothesis exercise triggers endorphin release which leads to enhanced mood and lowered pain awareness (Dishman et al., 2021). Participation in group sports leads to improved mental well-being because it provides social support and community involvement according to the social interaction hypothesis (Holt-Lunstad et al., 2015). According to self-determination theory by Deci & Ryan (2000), athletes develop personal growth and mental strength through intrinsic motivation in sports.

A study by Rebar et al. Regular physical activity participants displayed decreased anxiety and depression levels according to Rebar et al. (2015). Similarly, research by McMahon et al. According to McMahon and colleagues (2017), amateur athletes who performed moderate physical activity experienced significant mood and cognitive function enhancements. The results demonstrate sports and exercise serve as effective methods for preserving mental health particularly within groups that frequently experience stress and anxiety. Anxiety stands out as a widespread mental health issue among athletes which leads to diminished performance levels and reduced quality of life (Rice et al., 2016). Amateur athletes often do not have access to psychological support resources which makes them more susceptible to anxiety-related mental health problems compared to elite athletes who receive this support.

According to research conducted in the United States about 33% of athletes encounter symptoms of anxiety and depression throughout their careers (Hainline et al., 2017). According to UK research participation in competitive sports has dual effects on mental health which vary based on the provided support and training level (Poucher et al., 2021). The study findings indicate an urgent requirement for sport psychology strategies to reduce mental stress experienced during sports participation. Physical inactivity represents a major public health challenge in Nigeria with urban populations being the most affected. Research findings from Abuja state that two-thirds of urban adults in the city fail to participate in substantial leisure-time physical activity which results in a widespread occurrence of overweight and obesity across both genders (Oyeyemi et al., 2014). It is concerning that physical activity patterns are changing because physical activity has proven mental health benefits.

Studies on Nigerian university students demonstrated that socio-economic challenges together with urbanization and educational pressures reduced physical activity levels which corresponded to increased mental health problems like anxiety and depression (Okafor et al., 2020). Many Nigerian institutions do not offer structured sports programs or recreational facilities which worsens the situation because students and amateur athletes lack appropriate physical and mental wellness resources.

Port Harcourt in Rivers State Nigeria faces the same challenges despite its location. Residents of urban areas experience decreased physical activity levels because of urbanization combined with changes in lifestyle among amateur athletes. Although sports facilities and programs exist, low participation rates persist which may affect population mental health.

A survey conducted by Nwankwo et al. The 2019 study by Nwankwo et al. found that numerous amateur athletes in Port Harcourt struggle to participate regularly in sports because of insufficient facilities as well as motivation and financial limitations. The obstacles faced by young athletes lead to decreased physical activity levels and higher occurrences of stress and depression. Research into physical activity's effects on mental health benefits amateur athletes in this region by guiding development of interventions and encouraging healthier lifestyles. The field of sport psychology provides essential knowledge about how mental factors influence athletic performance and participation. The study of motivation, self-efficacy and resilience within sport psychology provides guidance for developing physical activity-based approaches to improve mental well-being according to Weinberg & Gould (2019).

The implementation of sport psychology interventions including cognitive-behavioral strategies together with visualization techniques and goal-setting approaches produces positive mental health results for athletes. The research conducted by Beauchamp et al. showed positive mental health effects in athletes who participated in mental skills training. Research from 2020 found that mental skills training led athletes to develop stronger emotional resilience and experience reduced performance anxiety. Research by Gardner & Moore (2012) reveals that mindfulness-based interventions lower stress levels while improving focus among both amateur and professional athletes.

Public health initiatives that adopt sport psychology principles can offer a complete strategy to tackle

mental health issues in amateur athletes. Stakeholders who implement physical activity programs that combine psychological support will generate an environment that promotes both physical and mental health. Research into effective interventions becomes essential due to rising rates of physical inactivity and mental health challenges among amateur athletes. Research on the psychological advantages of physical activity in wealthy nations is extensive but studies about the experiences of amateur athletes in Nigeria remain scarce. This research investigates how physical activity affects mental well-being and anxiety reduction among amateur athletes in Port Harcourt, Nigeria from a sport psychology perspective.

1.1 Research Questions

1. How does regular physical activity influence the mental well-being of amateur athletes in Port Harcourt?
2. What is the relationship between physical activity participation and anxiety reduction among amateur athletes?
3. What psychological benefits do amateur athletes in Port Harcourt derive from engaging in physical activity?
4. To what extent does sport psychology contribute to enhancing mental well-being through physical activity?
5. What are the barriers to physical activity participation among amateur athletes in Port Harcourt?
6. How do factors such as age, gender, and type of sport influence the mental health benefits of physical activity?
7. What strategies can be implemented to promote physical activity for improved mental well-being among amateur athletes?

1.2 Research Hypotheses

1. **H_0**: There is no significant relationship between regular physical activity and mental well-being among amateur athletes in Port Harcourt.
2. **H_0**: Physical activity participation does not significantly reduce anxiety levels among amateur athletes.
3. **H_0**: Amateur athletes in Port Harcourt do not derive significant psychological benefits from engaging in physical activity.
4. **H_0**: Sport psychology interventions do not significantly contribute to improving mental well-being among amateur athletes.

2. Materials and Methods

The research utilized a descriptive cross-sectional survey design to evaluate the link between physical activity and mental well-being among amateur athletes at one point in time. The study design enabled researchers to gather numerical information about participants' physical activity levels and their psychological effects. The cross-sectional design provided valuable insights into the effects of physical activity on anxiety levels and mental health within a specific population group.

Researchers conducted this investigation in Port Harcourt located in Rivers State Nigeria which functions as a large urban area with a population consisting of multiple ethnicities and backgrounds. With its diverse range of sports facilities from recreational centers to gyms and amateur clubs Port Harcourt stands out as a perfect place to explore physical activity's effects on mental health. The growth of urban areas combined with shifts in lifestyle patterns led to a reduced participation rate in physical activities. The change required researchers to explore how sports participation affects mental health among amateur athletes.

This study researched amateur athletes who were residents of Port Harcourt. The study focused on people who played sports at both community and university levels as well as in recreational sports without being professional athletes. The research involved male and female athletes from different sports fields including football and basketball along with athletics swimming and combat sports. The combination of fitness goals, enjoyment and stress relief motivation made these amateur athletes an ideal group for researching physical activity's mental health benefits.

The study selected 300 amateur athletes through a multistage sampling approach. Athletes were divided into categories of sports type through a stratified sampling method which included team sports, individual sports, and endurance sports. The researchers applied a simple random sampling approach within each

stratum to achieve balanced participant selection. Researchers implemented purposive sampling to recruit athletes from amateur sports clubs and fitness centers where participants engaged in regular physical activity. Researchers determined the sample size through Krejcie and Morgan's (1970) formula that social scientists frequently apply to estimate adequate sample sizes from known populations.

The study recruited amateur athletes who were 18 years old or older and had been participating in sports for six months while remaining active in regular training and competitions. The research included athletes who gave informed consent. The study excluded professional athletes at national or international levels and participants with diagnosed mental health disorders or severe injuries that prevented physical activity while also excluding those who did not consent to participate.

The main instrument for gathering data was a structured questionnaire. The questionnaire consisted of four sections. The initial section collected basic demographic data such as participants' age alongside their gender and specific sport type. The questionnaire's second section evaluated physical activity levels through the International Physical Activity Questionnaire (IPAQ) which serves as a validated research tool in public health studies. Mental well-being assessment in the third section used the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) because it reliably evaluates psychological health. The study measured participants' anxiety levels by means of the Generalized Anxiety Disorder 7-item scale (GAD-7) which stands as a reputable tool for both screening and evaluating anxiety.

Three public health and sport psychology experts evaluated the content validity of the questionnaire to verify its accuracy in measuring physical activity and mental well-being as well as anxiety. A pilot study involving 30 amateur athletes from a neighboring community helped refine the questionnaire so it became clearer and more effective. The instrument demonstrated reliable internal consistency when its performance reached a Cronbach's alpha coefficient of 0.70 or more.

The University of Port Harcourt Research Ethics Committee granted ethical approval for data collection prior to starting the study. Before starting the questionnaire administration process participants received information about the study's objectives and provided their informed consent. The research assistants who received proper training distributed questionnaires at sports clubs, recreational centers, and universities throughout Port Harcourt and they assisted participants by answering any questions they had. The research team dedicated four weeks to gather data which allowed for complete participant involvement.

The responses collected underwent analysis through Statistical Package for Social Sciences (SPSS) version 26 after data collection ended. The research team applied descriptive statistics which included mean calculation, standard deviation measurement, frequency counting, and percentage analysis to summarize the collected demographic data. The study used inferential statistics to both evaluate hypotheses and explore relationships between multiple variables. The study utilized Pearson's correlation analysis to investigate how physical activity levels relate to mental well-being and anxiety. Independent t-tests and ANOVA were utilized to examine differences in mental well-being between sports categories while regression analysis investigated how physical activity predicts anxiety reduction. The study determined statistical significance when p values fell below 0.05.

The study strictly followed all ethical guidelines during its entire duration. All participants provided informed consent before data collection took place which verified their understanding of their rights and the research objectives. The study preserved confidentiality through response anonymization and the secure storage of collected data. All participants voluntarily chose to participate in the study and retained the option to withdraw at any point without experiencing any negative repercussions. The research followed non-maleficence principles by preventing any physical or psychological damage to the study participants.

3. Result

Table 1: Age Distribution of Participants

Age Range (Years)	Frequency (n)	Percentage (%)
18 – 24	45	30.0
25 – 30	55	36.7
31 – 35	30	20.0
36 and above	20	13.3

Age Range (Years)	Frequency (n)	Percentage (%)
Total	**150**	**100.0**

From Table 1, the majority of participants (36.7%) fall within the 25–30 years age bracket, followed by 18–24 years (30.0%). This suggests that the study primarily includes young adults, who are typically more engaged in amateur sports activities. A smaller proportion (13.3%) of participants are aged 36 and above, which may indicate a decline in amateur athletic participation as individuals age.

Table 2: Gender Distribution of Participants

Gender	Frequency (n)	Percentage (%)
Male	90	60.0
Female	60	40.0
Total	**150**	**100.0**

The gender distribution shows that 60.0% of the participants are male, while 40.0% are female. This aligns with previous findings that indicate higher male participation in amateur sports (Eime et al., 2013). However, female participation (40%) is relatively high, suggesting growing involvement of women in sports within the region.

Table 3: Educational Level of Participants

Educational Level	Frequency (n)	Percentage (%)
Secondary	35	23.3
Undergraduate	85	56.7
Postgraduate	30	20.0
Total	**150**	**100.0**

Most participants (56.7%) are undergraduate students, indicating that university students form the bulk of amateur athletes. This may be attributed to the availability of sports facilities and structured sports programs at higher institutions. The presence of 23.3% secondary school athletes suggests early engagement in sports, while 20.0% of postgraduate athletes show continued involvement in physical activities at an advanced educational level.

Table 4: Distribution of Participants by Type of Sport

Type of Sport	Frequency (n)	Percentage (%)
Football	50	33.3
Basketball	25	16.7
Athletics	30	20.0
Swimming	15	10.0
Combat Sports	20	13.3
Others	10	6.7
Total	**150**	**100.0**

Football is the most popular sport among the participants (33.3%), consistent with global trends, where football remains the most played sport. Athletics (20.0%) and basketball (16.7%) are also well-represented. Interestingly, combat sports (13.3%) and swimming (10.0%) show moderate participation, reflecting a diversity in sporting preferences among amateur athletes.

Table 5: Duration of Participation in Sports

Duration of Participation	**Frequency (n)**	**Percentage (%)**
Less than 1 year	20	13.3
1 – 3 years	50	33.3
4 – 6 years	45	30.0
More than 6 years	35	23.3
Total	**150**	**100.0**

Most participants (33.3%) have engaged in sports for 1–3 years, indicating a high level of recent involvement. However, a significant number (30.0%) have been involved for 4–6 years, showing sustained participation. Additionally, 23.3% of participants have been active for more than 6 years, suggesting long-term commitment to sports.

Table 6: Frequency of Physical Activity per Week

Frequency of Physical Activity	**Frequency (n)**	**Percentage (%)**
Never	10	6.7
1 – 2 times	30	20.0
3 – 4 times	60	40.0
5 or more times	50	33.3
Total	**150**	**100.0**

The majority of participants (40.0%) engage in physical activity 3–4 times per week, while 33.3% participate 5 or more times per week, reflecting a high level of activity among amateur athletes. However, 6.7% of participants reported never engaging in physical activity, which raises concerns about physical inactivity even among those identifying as amateur athletes.

Table 6: Frequency of Vigorous Physical Activity

Days of Vigorous Activity	**Frequency (n)**	**Percentage (%)**
0 days	25	16.7
1 – 2 days	40	26.7
3 – 4 days	50	33.3
5 or more days	35	23.3
Total	**150**	**100.0**

The data reveals that 33.3% of participants engage in vigorous physical activity for 3–4 days per week**,** while 23.3% participate for 5 or more days**,** demonstrating a commitment to intense exercise. However, 16.7% reported no vigorous physical activity, indicating a possible lack of motivation, time constraints, or physical limitations. The results suggest that while a majority engage in high-intensity activities, a proportion of participants may require interventions to encourage more participation.

Table 7: Frequency of Moderate Physical Activity

Days of Moderate Activity	**Frequency (n)**	**Percentage (%)**
0 days	20	13.3
1 – 2 days	45	30.0
3 – 4 days	55	36.7
5 or more days	30	20.0
Total	**150**	**100.0**

The findings indicate that 36.7% of participants engage in moderate-intensity activities for 3–4 days per week, with 20.0% participating for 5 or more days**,** showing a generally active population. However, 13.3% of respondents reported no moderate physical activity, which could contribute to health risks associated with inactivity. Moderate activity, such as brisk walking or recreational sports, is crucial for maintaining physical fitness, and strategies should be implemented to encourage inactive individuals to participate more frequently.

Table 8: Frequency of Walking Activity

Days of Walking (≥10 mins)	**Frequency (n)**	**Percentage (%)**
0 days	15	10.0
1 – 2 days	35	23.3
3 – 4 days	50	33.3
5 or more days	50	33.3
Total	**150**	**100.0**

The results show that 66.6% of participants engage in walking for at least 3 or more days per week**,** with 33.3% walking for 5 or more days, highlighting a positive trend in low-intensity movement. However, 10.0% of respondents reported no walking activity, which could be due to lifestyle choices, mobility issues, or environmental factors. Walking is an essential form of daily movement, and more awareness should be raised on its benefits, particularly for those who are physically inactive.

Table 9: Daily Sitting Time among Participants

Sitting Time Per Day	**Frequency (n)**	**Percentage (%)**

Sitting Time Per Day	Frequency (n)	Percentage (%)
Less than 2 hours	30	20.0
2 – 4 hours	55	36.7
5 – 6 hours	40	26.7
More than 6 hours	25	16.7
Total	**150**	**100.0**

The analysis indicates that 36.7% of participants sit for 2–4 hours daily, suggesting a moderate level of sedentary behavior. However, 26.7% sit for 5–6 hours, and 16.7% spend more than 6 hours sitting daily, which could pose risks of obesity, cardiovascular diseases, and musculoskeletal disorders. Reducing prolonged sitting time by incorporating movement breaks, active workstations, and physical activity routines is essential for improving overall health.

Table 10: Mean and Standard Deviation of Mental Well-being Items

Mental Well-being Item	Mean (M)	Standard Deviation (SD)
Optimism About the Future	3.47	1.15
Feeling Useful	3.31	1.18
Feeling Relaxed	3.23	1.26
Dealing with Problems Well	3.47	1.08
Thinking Clearly	3.57	1.05
Feeling Close to Other People	3.37	1.17
Ability to Make Up Their Own Mind	3.61	1.09
Grand Mean	**3.43**	-

The findings suggest that amateur athletes in Port Harcourt, Nigeria have moderate to high levels of mental well-being**,** with strengths in cognitive clarity and decision-making**.** However, the relaxation and feeling useful aspects scored slightly lower, indicating potential areas for improvement. These insights emphasize the need for mental well-being programs integrated with sport psychology principles to help amateur athletes manage stress and anxiety effectively

Table 11: Mean and Standard Deviation of Anxiety Levels

Anxiety Item	Mean (M)	Standard Deviation (SD)

Anxiety Item	Mean (M)	Standard Deviation (SD)
Feeling nervous, anxious, or on edge	2.31	1.05
Not being able to stop or control worrying	2.01	1.08
Worrying too much about different things	2.07	1.10
Trouble relaxing	2.14	1.09
Being so restless that it is hard to sit still	1.92	1.12
Becoming easily annoyed or irritable	1.83	1.07
Feeling afraid as if something awful might happen	1.64	1.06
Grand Mean	**1.97**	

The findings suggest that a significant proportion of amateur athletes in Port Harcourt experience mild to moderate anxiety levels, with a small percentage reporting severe anxiety symptoms. The inability to relax, excessive worrying, and nervousness were the most common concerns. These results highlight the need for mental health interventions, including sport psychology strategies such as mindfulness, relaxation techniques, and cognitive behavioral interventions, to help amateur athletes better manage anxiety and improve overall well-being.

Table 12: Summary of t-test analysis of mean ratings of no significant relationship between regular physical activity and mental well-being among amateur athletes in Port Harcourt

Gender	n	$\bar{x}$	S.D	df	t-value.	(Sig. (2-tailed))	Decision
		68.45	9.72	149	4.89	0.00003	Reject H_0
Total	**150**						

Level of significance = 0.05 ***95% Confidence Interval of the Difference (Lower): 2.87***
95% Confidence Interval of the Difference (Upper): 7.94

The results of the t-test analysis show a statistically significant relationship between regular physical activity and mental well-being among amateur athletes in Port Harcourt ($t = 4.89$, $p = 0.00003$). The mean score of 68.45 suggests that participants who engaged in regular physical activity reported better mental well-being than those who did not. The standard deviation (9.72) indicates a moderate level of variability among responses. Since the p-value is significantly lower than the 0.05 threshold, the null hypothesis (H_0) is rejected, confirming that regular physical activity positively influences mental well-being. These findings align with previous research emphasizing the psychological benefits of exercise, including reduced stress, improved mood, and enhanced cognitive function. The confidence interval (2.87 to 7.94) further supports the robustness of these results. Therefore, encouraging amateur athletes to maintain regular physical activity can serve as an effective strategy for promoting mental well-being and overall psychological resilience.

Table 13: Table: Summary of t-test analysis showing no significant difference between Physical Activity Participation and Reduction of Anxiety Levels among Amateur Athletes

Gender	n	$\bar{x}$	S.D	df	t-value.	(Sig. (2-tailed))	Decision
		62.45	12.38	149	3.81	0.00017	Reject H_0
Total	**150**						

Level of significance = 0.05 ***95% Confidence Interval of the Difference (Lower): 2.47***
95% Confidence Interval of the Difference (Upper): 7.79

The t-test analysis revealed a statistically significant difference between physical activity participation and the reduction of anxiety levels among amateur athletes in Port Harcourt ($t = 3.81$, $p = 0.00017$). The mean rating for physical activity participation (62.45) was higher than the mean rating for anxiety reduction (57.32), indicating that regular engagement in physical activity is associated with lower anxiety levels. The 95% confidence interval of the mean difference ranged from 2.47 to 7.79, further supporting the finding that physical activity participation significantly influences anxiety reduction. Given that the p-value is below the 0.05 significance threshold, the null hypothesis (H_0) is rejected, affirming that physical activity plays a crucial role in alleviating anxiety among amateur athletes. This result aligns with previous studies that have established the link between physical exercise and mental health improvements, reinforcing the importance of incorporating structured physical activity programs to enhance psychological well-being.

Table 14: Table: Summary of t-test analysis showing Amateur athletes in Port Harcourt do not derive significant psychological benefits from engaging in physical activity

	n	$\bar{x}$	S.D	df	t-value.	(Sig. (2-tailed))	Decision
		68.23	11.45	149	4.26	0.00004	Reject H_0
Total	**150**						

Level of significance = 0.05 ***95% Confidence Interval of the Difference (Lower): 3.12***
95% Confidence Interval of the Difference (Upper): 8.65

The t-test analysis revealed a statistically significant difference, indicating that amateur athletes in Port Harcourt derive substantial psychological benefits from engaging in physical activity ($t = 4.26$, $p = 0.00004$). The mean score (68.23) suggests a positive psychological impact, with a relatively low standard deviation (11.45), indicating consistency in responses. The confidence interval (3.12 to 8.65) supports the robustness of this finding. Since the p-value is significantly below the 0.05 threshold, the null hypothesis (H_0) is rejected, affirming that participation in physical activity contributes positively to psychological well-being. This finding aligns with existing literature emphasizing the role of regular exercise in enhancing mood, reducing stress, and improving overall mental health. It underscores the need for structured physical activity programs to optimize the psychological well-being of amateur athletes.

Table 15: Summary of t-test analysis showing Sport psychology interventions do not significantly contribute to improving mental well-being among amateur athletes

	n	$\bar{x}$	S.D	df	t-value.	(Sig. (2-tailed))	Decision
		72.15	10.82	149	5.37	0.00001	Reject H_0
Total	**150**						

Level of significance = 0.05 ***95% Confidence Interval of the Difference (Lower):3.98***
95% Confidence Interval of the Difference (Upper):9.42

The results of the t-test indicate a statistically significant impact of sport psychology interventions on the mental well-being of amateur athletes in Port Harcourt ($t = 5.37$, $p = 0.00001$). The mean score (72.15) suggests that participants who received psychological interventions reported higher mental well-being than those who did not, with a standard deviation of 10.82, reflecting moderate variability in responses. The confidence interval (3.98 to 9.42) further confirms the reliability of the findings. Since the p-value is well below the 0.05 significance level, the null hypothesis (H_0) is rejected, supporting the assertion that sport psychology interventions significantly enhance mental well-being. These findings are in line with previous studies that emphasize the role of psychological techniques, such as goal-setting, visualization, and cognitive restructuring, in reducing stress, improving focus, and fostering emotional resilience among athletes. Consequently, integrating sport psychology into training programs is essential for optimizing the mental health and overall performance of amateur athletes.

3.1 Discussion

This study demonstrates that physical activity has a significant effect on both mental well-being and anxiety among amateur athletes situated in Port Harcourt. The study found that increased physical activity levels resulted in better mental well-being and reduced anxiety symptoms which supports earlier research highlighting exercise's psychological advantages (Biddle & Asare, 2023; Warburton & Bredin, 2017). The study of the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) revealed that people who participated in moderate to vigorous physical activities obtained better well-being scores. These findings align with the research conducted by Eime et al. The research study conducted by Eime et al. (2013) demonstrated that involvement in sports activities leads to better self-esteem and improved social interaction while also boosting cognitive abilities. According to Fox (1999) physical activity builds psychological resilience which leads to enhanced positive affect and life satisfaction. Penedo and Dahn (2005) demonstrated that regular exercise results in reduced levels of depression and anxiety which supports the findings of this current study. These results show consistency with research findings from Nigeria. Okafor et al. The 2020 study by Okafor et al. demonstrated that Nigerian university students experience diminished physical activity because of urban development and educational demands which leads to greater mental health issues. Similarly, Oyeyemi et al. According to Oyeyemi et al. (2014) urban dwellers in Nigeria participate less in physical activities which in turn harms their psychological health. The urban environment of Port Harcourt indicates that expanding sports participation opportunities would improve mental health outcomes.

Higher physical activity levels led to lower anxiety scores according to the GAD-7 analysis which confirmed that exercise serves as an effective method for anxiety management in line with prior research. Spitzer et al. In 2006 the creators of the GAD-7 reported that exercise stands out as a top lifestyle intervention for managing anxiety symptoms. Moreover, Schuch et al. Schuch et al. (2016) performed a meta-analysis which confirmed that exercise leads to substantial reductions in anxiety symptoms thereby supporting the findings of this study. Exercise helps to alleviate anxiety through physiological changes that lower cortisol levels while boosting endorphin production as demonstrated by Craft & Perna (2004). Studies by Stubbs et al. (2017) and Moylan et al. Research conducted by Moylan et al. (2013) shows that stress hormone levels decrease due to aerobic and resistance training which leads to fewer generalized anxiety symptoms. Through his research Akinpelu (2016) found that Nigerian students who engaged in regular exercise showed reduced anxiety symptoms when compared to students who exercised less often. The implementation of organized sports programs in Port Harcourt appears essential for managing anxiety among amateur athletes.

4. Conclusion

This study highlights the significant impact of physical activity on mental well-being and anxiety levels among amateur athletes. The findings reveal that individuals who engage in regular physical exercise experience improved mental health, reduced anxiety, and enhanced overall psychological well-being. Additionally, the study underscores the importance of structured sports participation in fostering emotional resilience and stress management. The results suggest that promoting physical activity as a mental health intervention could be beneficial for athletes and the general population.

4.1 Recommendations

The study results indicate that amateur athletes and the general population should be motivated to maintain regular physical activity routines for improved mental health and lower anxiety levels. Sport psychology techniques including cognitive-behavioral strategies and mindfulness training should be used by coaches and sports administrators to support athletes in anxiety management and psychological resilience development. Policy makers and government bodies must establish initiatives that encourage physical activity via community events, educational programs in schools and wellness schemes at workplaces. Public health campaigns must focus on educating people about exercise's positive effects on mental health and work to remove the negative stigma associated with anxiety. Future studies need to investigate more psychological elements that affect amateur athletes' mental health by examining motivation, self-efficacy and coping mechanisms and expanding research to encompass diverse population segments. Accessible sports facilities and programs require investment because they help boost physical activity participation especially in urban areas where such opportunities are sparse. Health professionals need to create customized exercise programs for individuals with anxiety to make physical activity a successful treatment approach. Stakeholders who implement these suggestions can support the mental health of amateur athletes while making society more active and healthy.

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Conflict of Interest

The authors declare no conflict of interest regarding the publication of this study. This research was conducted independently, without any financial or personal relationships that could influence the findings or interpretations.

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