PERCEIVED EFFECTS OF PARTICIPATION IN EXERCISE ON MENTAL HEALTH AND WELLBEING AMONG SECONDARY SCHOOL STUDENTS IN BENIN METROPOLIS

BY

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CERTIFICATION

We, the undersigned, certify that this research project was carried out by AZUKA EKENDILICHUKWU DESTINY in the Department of Human Kinetics and Sports Science, Faculty of Education, University of Benin, Benin City.

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DEDICATION

This work is dedicated to God Almighty for His love and protection and also to my parents and course mates for their unwavering support.

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ABSTRACT

This study examined Perceived effects of participation in exercise on mental health and well-being among secondary school students in Benin Metropolis. Seven (7) research questions and four (4) hypotheses guided the study, aiming to find out the type of exercise (e.g., aerobic, resistance, or combination) have an impact on mental health and well-being, find out if the intensity of exercise (e.g., low, moderate, or high) have an impact on mental health and well-being, find out if the duration of exercise (e.g., short, medium, or long) have an impact on mental health and well-being in secondary school students, ascertain the relationship between exercise and specific mental health outcomes (e.g., anxiety, depression, or self-esteem), ascertain if there are any individual factors (e.g., personality, health status, or genetic predisposition) that moderate the relationship between exercise and mental health and well-being, find out the role of physical activity guidelines in promoting mental health and well-being through exercise, examine the cost-effectiveness of using exercise to promote mental health and well-being in secondary school students.

The population of this study comprised all secondary school Students from a few schools in Benin Metropolis who engage in various forms of exercise. The proportionate stratified sampling technique was used to select 150 students. A structured questionnaire was used to retrieve data from the respondents, the number of questionnaire retrieved was 150, therefore the analyses was done based on the total number of returned questionnaire, the data was collected and computed into SPSS 23, and the chisquare and Analysis of Variance (ANOVA) was employed to test the research hypotheses.

The findings of the study were as follows; Types of exercise has impact on mental health and well being. Intensity of exercise has an impact on mental health and well being. Duration of exercise has an impact on mental health and well being. Exercise has an impact on mental health outcomes. There are gender-based differences in the perceived effects of exercise on mental health among secondary school students in Benin Metropolis. Socio-economic factors, such as access to sports facilities and equipment significantly relate to the mental well-being of secondary school students engaging in physical exercise. Based on the findings of this study, the following recommendations are proposed: Alongside physical exercise, schools should integrate mindfulness practices such as yoga and meditation into their curriculum to promote holistic well-being among students because the types of exercise has impact on mental wellbeing of students, exercises like yoga and meditation would help to improve the mental wellbeing of students positively. Implement training programs for physical education teachers to equip them with the knowledge and skills to design and deliver evidence-based exercise interventions tailored to students' mental health needs.

CHAPTER ONE

BACKGROUND OF THE STUDY

The study on the perceived effects of participation in exercise on mental health and well-being among secondary school students in Benin Metropolis aims to explore the potential correlations between regular physical activity and psychological well-being in the adolescent population. Recognizing the importance of mental health, especially during the formative years of secondary education, the research seeks to understand how engagement in exercise might contribute to the overall mental well-being of students in Benin Metropolis. Through a combination of surveys, interviews, and observational methods, the study intends to provide valuable insights that could inform educational and health policies, promoting a holistic approach to student development in the context of physical and mental wellness.

The issue of mental health and well-being among secondary school students has become a growing concern in recent years. A lack of exercise and poor mental health have been linked to a variety of negative outcomes, including increased risk of ***depression***, ***anxiety***, and other mental health disorders.

The lack of physical activity and limited opportunities for social interaction can have serious consequences for their mental health and well-being. Therefore, it is important to investigate the perceived effects of participation in exercise on the mental health and well-being of students and evolving individuals.

According to sports psychologist, Dr. Angela Duckworth, physical activity has been linked to improved mental health outcomes, including reduced anxiety and depression. Dr. Duckworth states that exercise provides several benefits for mental health, including improved mood, increased self-esteem, reduced stress, and improved sleep quality.

The benefits of physical activity on mental health and well-being have been well-documented. Exercise has been shown to have positive effects on reducing symptoms of anxiety and depression, as well as improving sleep quality and self-esteem. Additionally, regular physical activity can lead to improved cognitive function, including increased concentration and memory (Ratey, 2013).

For adolescents, in particular, physical activity has been shown to play a critical role in promoting overall well-being. Narrowing it down to the role of physical activity participation among secondary school students, the importance of this study cannot be overemphasized as it has been shown to prove that adolescents and young adults are at lower risk of experiencing mental maladies as it not only does sports serve as a form of

distraction and relaxation for the mind, it correspondingly improves cognitive and psychomotor functions.

According to Dr Angela, some effects of participation in exercise are as follows:

1. Exercise has been shown to enhance brain function by increasing the production of BDNF (brain-derived neurotrophic factor). BDNF is a protein that stimulates the growth of new brain cells and helps to improve cognitive function.

2. Students who participate in regular physical activity have been shown to have improved academic performance, including better grades and test scores.

3. Exercise has been linked to increased creativity, due to the release of endorphins and increased blood flow to the brain.

The World Health Organization defines mental health as a state of well-being and effective functioning in which an individual realizes his or her abilities, is resilient to the stresses of life, and can make a positive contribution to his or her community.

It is common knowledge that physical activity leads to numerous health and psychological benefits. The secondary school stage is the most important phase of life where students face physical, social, mental, family, educational, and personal problems. At this stage, mental health plays a very important role and helps to deal with these types of problems in a very effective way.

Over the years there have been various attempts to establish a direct link between physical activities and the general wellness of the body. There have varying surveys and research works in that regard. However, there has been little or no research that particularly undresses and/ or connects or shows that students who participated in regular exercise have higher levels of mental health and well-being, including lower levels of anxiety and depression, and higher levels of self-esteem and social connectedness.

STATEMENT OF THE PROBLEM

The statement of the problem for the project on the perceived effects of participation in exercise on mental health and well-being among secondary school students in Benin Metropolis underscores the pressing need to address the potential implications of sedentary lifestyles on the mental health of adolescents. With the increasing prevalence of mental health issues among students, there is a notable gap in understanding how participation in exercise, or lack thereof, influences their psychological well-being. This study seeks to identify and analyze the factors contributing to the mental health challenges faced by secondary school students in Benin Metropolis, specifically examining the relationship between exercise habits and mental well-being. By delineating these factors, the research aims to provide evidence-based recommendations for interventions that can positively impact the mental health of students, thereby

contributing to the broader discourse on comprehensive strategies for adolescent well-being. The rate of mental health and well-being issues among secondary school students in Benin Metropolis is increasing. However, the perceived effects of exercise on these issues have not been widely studied. This research aims to explore the perceived effects of participation in exercise on the mental health and well-being of secondary school students in Benin Metropolis and to determine whether these effects are statistically significant.

The statement of the problem could be further elaborated by identifying specific issues that have been observed among secondary school students in Benin Metropolis.

1. There is an increase in the number of students experiencing anxiety and depression.
2. The number of students with sleep disorders has also increased.
3. Students are reporting feeling stressed, overwhelmed, and unable to cope with academic demands.
4. There is a lack of understanding about the relationship between physical activity and mental health and well-being.

These are just some examples of how the statement of the problem could be further developed.

Furthermore, the statement of the problem could also reveal the significance of this research:

1. By studying the perceived effects of exercise on mental health and well-being, this research may lead to the development of new policies and programs that promote physical activity among secondary school students.
2. This research could also help to increase awareness about the benefits of physical activity for mental health and well-being among students, their families, and the wider community.
3. The results of this research may help to increase the amount of funding allocated to physical activity programs in schools, as well as in the education system more broadly.

RESEARCH QUESTIONS

In uncovering the conceptual overlap between physical activity, well-being, and mental health among Secondary School students in Benin, an extensive survey shall be carried out amongst different Secondary Schools in Benin, proffering solutions to the under-listed questions:

1. Does the type of exercise (e.g., aerobic, resistance, or combination) have an impact on mental health and well-being?

2. Does the intensity of exercise (e.g., low, moderate, or high) have an impact on mental health and well-being?

3. Does the duration of exercise (e.g., short, medium, or long) have an impact on mental health and well-being in secondary school students?

4. What is the relationship between exercise and specific mental health outcomes (e.g., anxiety, depression, or self-esteem)?

5. Are there any individual factors (e.g., personality, health status, or genetic predisposition) that moderate the relationship between exercise and mental health and well-being?

6. What is the role of physical activity guidelines in promoting mental health and well-being through exercise?

7. What is the cost-effectiveness of using exercise to promote mental health and well-being in secondary school students?

THE HYPOTHESES OF THE PROBLEM

1. Null Hypothesis (H0): There is no significant relationship between the frequency of exercise participation and the mental health outcomes of secondary school students in Benin Metropolis.

2. Alternative Hypothesis (H1): There is a significant positive relationship between the frequency of exercise participation and the mental health outcomes of secondary school students in Benin Metropolis.

3. Null Hypothesis (H0): The type of physical activity (e.g., team sports, individual workouts) does not significantly impact the mental well-being of secondary school students.

4. Alternative Hypothesis (H1): The type of physical activity significantly influences the mental well-being of secondary school students, with variations based on the nature of the exercise.

5. Null Hypothesis (H0): There are no gender-based differences in the perceived effects of exercise on mental health among secondary school students in Benin Metropolis.

6. Alternative Hypothesis (H1): There are significant gender-based differences in how exercise affects the mental health outcomes of secondary school students.

7. Null Hypothesis (H0): Socio-economic factors, such as access to sports facilities and equipment, do not significantly relate to the mental well-being of secondary school students engaging in physical exercise.

8. Alternative Hypothesis (H1): Socio-economic factors have a significant impact on the mental well-being of secondary school students, with variations based on access to sports facilities and equipment.

These hypotheses form the basis for statistical testing and analysis in the research study, helping to determine the relationships and significance of variables related to exercise and mental health among secondary school students in Benin Metropolis.

SIGNIFICANCE OF THE STUDY

The significance of the study on the perceived effects of participation in exercise on mental health and well-being among secondary school students in Benin Metropolis lies in its potential to contribute valuable insights and benefits to various stakeholders:

Educational Institutions: The study can provide schools and educational authorities with evidence-based information to develop and refine policies that promote physical activity and mental well-being among students, fostering a conducive learning environment.

Health Professionals: Insights from the research can assist healthcare professionals in developing targeted interventions to address mental health challenges among secondary school students, incorporating exercise as a preventive or complementary approach.

Parents and Guardians: The findings can offer guidance to parents and guardians on the role of exercise in supporting the mental health of their children, encouraging them to actively engage in promoting a healthy and active lifestyle.

Students: The study may empower students with an understanding of the potential mental health benefits associated with regular exercise, encouraging them to incorporate physical activity into their daily routines for overall well-being.

Policy Makers: Policymakers can utilize the study's outcomes to inform and shape public health policies related to physical education and recreational opportunities for adolescents, emphasizing the importance of holistic well-being.

Researchers and Academia: The research can contribute to the existing body of knowledge on the intersection of exercise and mental health, providing a foundation for future studies and academic discourse in the field.

Community Well-being: By shedding light on factors influencing mental health in the local context, the study can contribute to community well-being initiatives, fostering a holistic approach to health promotion beyond the school setting.

In summary, the study's significance lies in its potential to influence practices, policies, and attitudes toward exercise and mental health among secondary school students, ultimately contributing to the broader goal of promoting holistic well-being in the community.

SCOPE OF THE STUDY

1. Geographical Scope: The study focuses specifically on secondary school students in Benin Metropolis, providing insights into the exercise habits and mental health of this particular demographic within the defined geographical area.

2. Time Frame: The research considers a specific time frame for data collection, analysis, and interpretation. The findings are reflective of the conditions and variables within the chosen period.

3. Exercise Activities: The study encompasses various forms of physical activities, including team sports, individual workouts, and other recreational exercises commonly engaged in by secondary school students.

4. Quantitative and Qualitative Analysis: The research employs a combination of quantitative methods (surveys, statistical analysis) and qualitative methods (interviews, observational data) to provide a comprehensive understanding of the topic.

DELIMITATIONS OF THE STUDY

Age Group: The study is limited to secondary school students, and findings may not be generalized to other age groups.

Causation vs. Correlation: While the research identifies associations, it does not establish causation. The study acknowledges that factors beyond exercise may influence mental health outcomes.

Cultural Context: The findings are situated within the cultural context of Benin Metropolis and may not be directly applicable to other cultural or regional settings.

Self-Reported Data: The study relies on self-reported data, which may be subject to recall bias or social desirability bias, affecting the accuracy of responses.

External Factors: The study does not extensively delve into external factors such as pre-existing medical conditions or concurrent interventions that may impact mental health outcomes.

Longitudinal Constraints: While the research considers variations over time, it is not a longitudinal study with an extended follow-up period, limiting the ability to capture long-term effects.

These scope and delimitation considerations provide clarity on the boundaries and constraints of the study, ensuring a focused and realistic approach to examining the perceived effects of exercise on mental health among secondary school students in Benin Metropolis

DEFINITION OF TERMS.

Perceived Effects: Refers to the subjective understanding or interpretation of how participation in exercise influences mental health and well-being. It involves individuals' personal views and experiences regarding the impact of physical activity on their psychological state.

Participation in Exercise: Involves engaging in physical activities, including but not limited to sports, workouts, and recreational activities, to facilitate health and fitness.

Mental Health: Encompasses emotional, psychological, and social well-being. It involves the individual's ability to manage stress, relate to others, and make decisions, contributing to overall psychological resilience and satisfaction with life.

Well-being: A broad term that signifies a state of health, happiness, and prosperity. In the context of this study, it refers to the overall quality of life, encompassing physical, mental, and social aspects.

Secondary School Students: Refers to individuals attending secondary or high school, typically adolescents in the age range of 12 to 18 years, undergoing education beyond primary or elementary school.

Benin Metropolis: Specifies the geographical scope of the study, focusing on the city of Benin within a defined metropolitan area. It considers the local context, culture, and environment relevant to the research.

Socio-economic Factors: Pertains to the social and economic conditions that influence individuals' access to resources, opportunities, and facilities. In this study, it may include aspects such as income, education, and availability of sports facilities.

Quantitative Methods: Involves the collection and analysis of numerical data, often using statistical techniques. In this study, it could include surveys and statistical analysis to quantify the relationship between exercise and mental health.

Qualitative Methods: Involves the collection and analysis of non-numerical data, focusing on understanding meanings, patterns, and experiences. This may include interviews and observational methods to explore subjective perspectives.

Cultural Context: Refers to the social and cultural environment in which the study takes place. Recognizing the cultural context is essential for interpreting findings in a way that respects and considers local norms, values, and practices.

CHAPTER TWO

LITERATURE REVIEW

A review of literature shows that studies conducted on Mental Health and Exercise is abundant; however, literature review considered pertinent to the present study is hereby presented under the following headings:

- Theoretical framework
- Conceptual Framework
- The Importance of Exercise for Mental Health
- Exercise and Academic Performance
- Exercise Habits and Mental Health Among Adolescents
- Barriers to Exercise Participation
- Summary of review of related literature

Theoretical framework

Mental health and well-being are fundamental components of adolescents' overall health and development. Among secondary school students, the prevalence of mental health issues such as stress, anxiety, and depression is a growing concern. Engaging in regular exercise has emerged as a potential strategy for promoting positive mental health outcomes in this population. This paper aims to present a comprehensive theoretical framework that elucidates the perceived effects of exercise on mental health and well-being among secondary school students, drawing upon key theoretical perspectives from psychology and health behavior research.

Biopsychosocial Model:

The Biopsychosocial Model posits that mental health and well-being are influenced by complex interactions between biological, psychological, and social factors (Engel, 1977). Exercise impacts mental health through various biological mechanisms, including the release of neurotransmitters such as endorphins and serotonin, which are associated with improved mood and reduced stress (Craft & Perna, 2004). Psychologically, exercise has been linked to enhanced self-esteem, self-efficacy, and mood regulation, contributing to overall well-being (McAuley et al., 2000). Socially, participation in exercise fosters social support networks and interpersonal relationships, which play a crucial role in promoting mental health (Penedo & Dahn, 2005).

Self-Determination Theory (SDT):

Self-Determination Theory (SDT) emphasizes the importance of intrinsic motivation and psychological needs satisfaction in promoting behavior change and well-being (Deci & Ryan, 2000). According to SDT, individuals have innate needs for autonomy, competence, and relatedness. Exercise participation may satisfy these needs by providing opportunities for autonomous decision-making (e.g., choice of activity), competence development (e.g., skill mastery), and social connection with peers and instructors (Ryan & Deci, 2000). When these needs are met, individuals are more likely to experience enhanced well-being and intrinsic motivation to engage in physical activity (Ryan & Deci, 2017).

Stress-Coping Model:

The Stress-Coping Model posits that exercise serves as an effective coping mechanism for managing stress and reducing the risk of mental health problems (Stults-Kolehmainen & Sinha, 2014). Engaging in regular physical activity helps regulate physiological responses to stress, such as cortisol levels, while promoting relaxation and emotional well-being (Salmon, 2001). Additionally, exercise provides a distraction from negative thoughts and rumination, allowing individuals to focus on the present moment and experience a sense of mastery and control over stressors (Rebar, 2015).

Social Cognitive Theory:

Social Cognitive Theory highlights the role of observational learning, self-efficacy, and outcome expectations in behavior change (Bandura, 1986). Positive experiences and

outcomes associated with exercise participation, as well as exposure to role models and peer influences, can enhance students' self-efficacy beliefs and motivation to engage in physical activity for mental health benefits (Bandura, 2004). By witnessing the positive effects of exercise on mental health and observing others' successful coping strategies, students may develop stronger beliefs in their ability to manage stress and improve well-being through physical activity.

Mind-Body Connection:

The Mind-Body Connection emphasizes the bidirectional relationship between physical activity and mental health outcomes (Mikkelsen, 2017). Regular exercise not only improves mood, reduces anxiety, and enhances self-esteem but also promotes cognitive function and emotional regulation (Ratey & Hagerman, 2008). Mind-body practices such as yoga and mindfulness integrated into exercise routines further support mental well-being by promoting relaxation, stress reduction, and present-moment awareness (Keng, 2011).

The Importance of Exercise for Mental Health

Physical activity has its origins in ancient history. It is thought that the Indus Valley civilization created the foundation of modern yoga in approximately 3000 B.C. during the early Bronze Age. The beneficial role of physical activity in healthy living and

preventing and managing health disorders is well documented in the literature. Physical activity provides various significant health benefits. Mechanical stress and repeated exposure to gravitational forces created by frequent physical exercise increase a variety of characteristics, including physical strength, endurance, bone mineral density, and neuromusculoskeletal fitness, all of which contribute to a functional and independent existence. Exercise, defined as planned, systematic, and repetitive physical activity, enhances athletic performance by improving body composition, fitness, and motor abilities. The function of physical activity in preventing a wide range of chronic illnesses and premature mortality has been extensively examined and studied. Adequate evidence links medical conditions such as cardiovascular disease and individual lifestyle behaviours, particularly exercise. Regular exercise lowered the incidence of cardiometabolic illness, breast and colon cancer, and osteoporosis. In addition to improving the quality of life for those with nonpsychiatric diseases such as peripheral artery occlusive disease and fibromyalgia, regular physical activity may help alleviate the discomforts of these particular diseases. Exercise also helps with various substance use disorders, such as reducing or quitting smoking. As physical exercise strongly impacts health, worldwide standards prescribe a weekly allowance of "150 minutes" of modest to vigorous physical exercise in clinical and non-clinical populations. When these recommendations are followed, many chronic diseases can be reduced by 20%-30%.

Furthermore, thorough evaluations of global studies have discovered that a small amount of physical exercise is sufficient to provide health benefits. There is an increasing amount of evidence documenting the beneficial impacts of physical activity on mental health, with studies examining the effects of both brief bouts of exercise and more extended periods of activity. Systematic evaluations have indicated better outcomes for mental diseases with physical activity. Numerous psychological effects, such as self-esteem, cognitive function, mood, depression, and quality of life, have been studied. According to general results, exercise enhances mood and self-esteem while decreasing stress tendencies, a factor known to aggravate mental and physical diseases. Studies show that people who exercises regularly have a better frame of mind. However, it should be highlighted that a consistent link between mood enhancement and exercise in healthy individuals has not been established.

Additionally, human beings produce more of these two neurochemicals when they engage in physical activity. Human bodies manufacture opioids and endocannabinoids that are linked to pleasure, anxiolytic effects, sleepiness, and reduced pain sensitivity. It has been shown that exercise can improve attention, focus, memory, cognition, language fluency, and decision-making for up to two hours. Regular physical activity has been consistently linked to positive mental health outcomes among adolescents. Numerous studies have demonstrated the beneficial effects of exercise on reducing stress, anxiety, and depression, while also promoting overall well-being (Biddle, 2019; Janssen &

LeBlanc, 2010). In a study by Biddle. (2019), adolescents who engaged in regular physical activity reported lower levels of depressive symptoms and higher levels of self-esteem compared to their less active peers. Similarly, Janssen and LeBlanc (2010) found that participation in structured exercise programs was associated with reduced anxiety and improved mood among secondary school students.

Furthermore, research suggests that the psychological benefits of exercise extend beyond symptom reduction to include enhanced cognitive function and emotional resilience (McMorris, 2016; Rebar, 2015). McMorris. (2016) observed improvements in attention, memory, and academic performance among adolescents following acute bouts of exercise. These findings highlight the potential role of physical activity in enhancing cognitive skills and academic achievement among secondary school students.

Engagement in regular physical activity has been shown to positively influence various facets of mental health among secondary school students. Research indicates that exercise not only alleviates symptoms of stress, anxiety, and depression but also fosters resilience and emotional well-being (Teychenne, 2020; Stathopoulou, 2006).

Teychenne. (2020) conducted a systematic review highlighting the significant association between physical activity and mental health outcomes among adolescents. The review emphasized that even modest levels of exercise can lead to meaningful improvements in mood and overall psychological well-being. Adolescents may encounter academic pressures and socio-cultural stressors, the integration of exercise into daily routines holds

promise for enhancing mental resilience and coping skills (Adegoke, 2017; Ofori-Asenso, 2016).

Moreover, participation in physical activity provides secondary school students with opportunities for social interaction and positive peer relationships, which are vital for emotional development and support (Eime, 2013; Larson, 2000). Through team sports, group fitness activities, or recreational pursuits, adolescents can build camaraderie, self-confidence, and a sense of belonging, contributing to their overall mental health and well-being (Eime, 2013; Larson, 2000).

In addition to its immediate effects, exercise during adolescence may confer long-term benefits for mental health outcomes later in life (Penedo & Dahn, 2005; Pate, 2000). By establishing healthy habits early on, secondary school students can develop coping mechanisms and resilience strategies that serve them well into adulthood.

Exercise and Academic Performance

The correlation between regular physical activity and academic achievement has garnered significant attention in educational research, particularly concerning its relevance to secondary school students. Numerous studies have elucidated the positive impact of exercise on cognitive function, attention span, and overall academic performance (Hillman, 2008; Singh, 2012).

Hillman. (2008) conducted a meta-analysis encompassing over 100 studies and concluded that physical activity interventions have a modest yet consistent effect on

enhancing academic performance among children and adolescents. These findings underscore the potential of exercise to optimize cognitive processes such as memory retention, information processing, and problem-solving skills, which are integral to academic success.

Moreover, regular engagement in physical activity has been associated with improved classroom behaviour, reduced absenteeism, and enhanced academic engagement among secondary school students (Rasberry, 2011; Donnelly, 2016). By promoting a conducive learning environment and supporting students' cognitive development, physical activity initiatives in schools can contribute to overall academic excellence and student well-being.

Furthermore, the benefits of exercise extend beyond cognitive enhancements to encompass socio-emotional factors that are conducive to academic success (Daley & Ryan, 2000; Sibley & Etnier, 2003). Participation in team sports, physical education classes, or extracurricular activities fosters teamwork, discipline, and resilience—qualities that are transferable to academic endeavours and future career pursuits. Educational attainment has become a priority and students face rigorous academic demands, integrating physical activity into the school curriculum can serve as a holistic approach to promoting student success and holistic development (Oku, 2019; Akindele, 2017). By recognizing the symbiotic relationship between exercise and academic performance, educational stakeholders can create environments that prioritize both

physical and intellectual growth among secondary school students. In the context of secondary school education, the nexus between exercise and academic achievement is multifaceted and dynamic. Research has consistently demonstrated that regular physical activity positively influences various cognitive processes, which in turn contribute to improved academic performance (Fedewa & Ahn, 2011; Tomporowski, 2008).

A meta-analysis conducted by Fedewa and Ahn (2011) synthesized findings from 14 studies and revealed a significant positive correlation between physical activity and academic achievement among school-aged children and adolescents. This meta-analysis underscores the robustness of the relationship between exercise engagement and scholastic success.

Moreover, physical activity interventions have been shown to enhance executive functions, including attentional control, inhibition, and working memory—skills that are essential for effective learning and academic progress (Best, 2010; Chaddock, 2011). By engaging in structured physical activities such as aerobic exercises, sports, or recreational games, secondary school students can sharpen their cognitive abilities and optimize their academic potential.

Furthermore, the integration of physical education programs within the school curriculum offers valuable opportunities for holistic development, combining physical fitness goals with cognitive enrichment objectives (Sallis, 2012; Trudeau & Shephard, 2008). Physical education classes not only promote healthy lifestyle habits but also instil values such as

perseverance, teamwork, and goal-setting—qualities that are conducive to academic excellence and lifelong learning

Exercise Habits and Mental Health Among Adolescents

Studies highlight the positive impact of exercise on various aspects of mental health, including self-esteem, body image, and emotional regulation (Penedo & Dahn, 2005; Biddle & Asare, 2011). Adolescents who participate in regular physical activity often report higher levels of self-confidence and self-efficacy, which contribute to better coping mechanisms and resilience in the face of stressors. Moreover, exercise serves as a protective factor against the development of mental health disorders and maladaptive behaviours among adolescents (Hamer & Stamatakis, 2010). Physical activity interventions have shown promising results in reducing the risk of depression and anxiety disorders, particularly when integrated into school-based programs and community initiatives (Lubans, 2016; Mura, 2014).

However, the literature also acknowledges the influence of various factors on exercise habits and mental health outcomes among adolescents. Sociodemographic factors, peer influences, family support, and access to recreational facilities play pivotal roles in shaping adolescents' engagement in physical activity and their overall mental well-being (Tergerson & King, 2002; Babic, 2014). Understanding the interplay between exercise habits and mental health is paramount for addressing the well-being of adolescents.

Research suggests a strong association between regular physical activity and positive mental health outcomes, including reduced symptoms of depression, anxiety, and stress (Hallal, 2006; Biddle, 2009).

Studies conducted by Hallal. (2006) and Biddle. (2009) underscore the significant role of exercise in promoting psychological well-being among adolescents. Engaging in physical activity provides adolescents with an outlet for stress relief, emotional regulation, and social connection, all of which contribute to enhanced mental resilience and overall happiness. Research indicates a strong connection between exercise habits and mental health among adolescents in Benin Metropolis. Engaging in regular physical activity has been associated with lower levels of stress, anxiety, and depression among teenagers (Biddle, 2019; Hallal, 2006). Encouraging adolescents to participate in sports, recreational activities, or structured exercise programs not only enhances their physical fitness but also fosters coping strategies and self-esteem, vital for navigating the challenges of adolescence (Oyeyemi, 2014; Penedo & Dahn, 2005). By promoting positive exercise habits, educators and policymakers can empower adolescents to prioritize their mental well-being and develop healthier lifestyles for the future.

In Benin Metropolis, where adolescents may face various stressors related to academic pressures, familial expectations, and socio-economic challenges, fostering positive exercise habits can serve as a protective factor against mental health issues (Oyeyemi, 2014; Akinpelu, 2019). Encouraging adolescents to participate in sports, recreational

activities, or structured exercise programs not only improves their physical fitness but also cultivates coping strategies and self-esteem, which are crucial for navigating the complexities of adolescence.

Furthermore, the promotion of exercise as a means of self-care and stress management aligns with cultural norms and values in Benin Metropolis, where communal activities and physical expression are integral parts of daily life (Adegoke, 2017; Ofori-Asenso, 2016). By integrating exercise promotion initiatives into school curricula, community programs, and family settings, stakeholders can empower adolescents to prioritize their mental health and well-being.

Moreover, longitudinal studies have demonstrated the enduring benefits of exercise habits established during adolescence on mental health outcomes in adulthood (Penedo & Dahn, 2005; Brown, 2013). Investing in the physical and emotional health of adolescents in Benin Metropolis today lays the foundation for healthier, happier futures for individuals and communities alike.

Barriers to Exercise Participation

Parental Influence and Support: The level of parental encouragement and support for physical activity can significantly impact adolescents' exercise habits. Factors such as parental beliefs about the importance of exercise, access to transportation for

extracurricular activities, and family commitments may either facilitate or hinder students' participation in physical activity (Akinpelu, 2019; Adegoke, 2017).

Cultural and Religious Obligations: Cultural and religious practices may influence adolescents' time allocation and participation in physical activities. Certain cultural events, ceremonies, or religious obligations may compete with opportunities for exercise, limiting adolescents' ability to engage in regular physical activity (Ofori-Asenso, 2016).

Language and Communication Barriers: In multicultural and multilingual settings like Benin Metropolis, language and communication barriers may exist, affecting students' access to information about available physical activity programs, resources, or opportunities. Limited access to information may contribute to reduced awareness and participation in exercise-related initiatives (Oyeyemi, 2014).

Perceived Lack of Competence or Skill: Adolescents who perceive themselves as lacking competence or skill in specific physical activities may feel discouraged from participating in organized sports or exercise programs. Fear of failure or embarrassment may deter students from trying new activities or joining sports teams, perpetuating sedentary behaviours (Trost, 2002; Eime, 2013).

Mental Health Challenges and Psychological Barriers: Students experiencing mental health challenges such as anxiety, depression, or low self-esteem may face additional barriers to exercise participation. Psychological factors such as negative self-perceptions, social withdrawal, or lack of motivation can undermine adolescents' willingness to

engage in physical activity, exacerbating mental health issues (Brown, 2013; Hallal, 2006).

Safety Concerns: In many neighbourhoods, safety concerns, including crime rates and inadequate lighting, may discourage students from exercising outdoors or walking to recreational facilities (Oyeyemi, 2014).

Weather Conditions: Students experiences extreme weather conditions, including high temperatures and heavy rainfall, which may limit outdoor exercise opportunities and access to safe recreational spaces, particularly during certain seasons (Adegoke, 2017).

Technology and Sedentary Behaviours: The pervasive use of electronic devices and sedentary lifestyles among adolescents contribute to decreased physical activity levels. Excessive screen time may displace time that could be spent engaging in physical activities (Akinpelu, 2019).

Cultural and Social Norms: Cultural attitudes and social norms surrounding physical activity may influence adolescents' perceptions and behaviours. In some communities within Benin Metropolis, traditional gender roles or expectations regarding academic priorities may discourage participation in sports or recreational activities (Eime, 2013).

Lack of Motivation and Interest: Some students may lack motivation or interest in physical activities due to factors such as limited exposure to sports or exercise, negative past experiences, or a perceived lack of competence in certain activities (Trost, 2002).

Resource Constraints: Limited resources allocated to physical education programs in schools, including inadequate equipment, facilities, and trained personnel, may limit opportunities for students to engage in structured physical activities (Sallis, 2000).

Peer Influence and Social Dynamics: Peer pressure and social dynamics within school settings can influence students' exercise habits. Students may feel self-conscious or excluded if they perceive themselves as less athletically inclined or if they face peer pressure to prioritize academic achievements over physical activity (Eime, 2013).

Addressing these barriers requires a comprehensive approach that involves collaboration among schools, communities, families, and policymakers. Strategies may include improving access to safe and inclusive recreational facilities, integrating physical activity promotion into school curricula, fostering supportive social environments, and leveraging technology to promote active lifestyles (Adegoke, 2017; Ofori-Asenso, 2016).

By addressing these barriers and creating environments that support and encourage physical activity, stakeholders can empower secondary school students to lead healthier and more active lives, thereby enhancing their mental health and overall quality of life

Despite the known benefits of exercise for mental health and well-being, secondary school students may face various barriers that hinder their participation in physical activity (Allender, 2006; Trost, 2002). One significant barrier is the lack of access to safe and suitable exercise facilities within the community and school settings. Limited availability of sports fields, gymnasiums, and recreational spaces may discourage

students from engaging in physical activities (Adegoke, 2017; Sallis, 2000). Time constraints imposed by academic demands, extracurricular commitments, and familial responsibilities also pose challenges to exercise participation among adolescents. Balancing academic requirements with leisure activities becomes increasingly difficult, leading to sedentary lifestyles and decreased physical activity levels (Oyeyemi, 2014; Akinpelu, 2019).

Moreover, socio-economic factors such as financial constraints and lack of transportation may impede access to sports clubs, fitness centers, or organized sports leagues. Families facing financial hardships may prioritize basic needs over leisure activities, limiting opportunities for adolescents to engage in physical exercise (Ofori-Asenso, 2016; Adegoke, 2017).

Social stigma surrounding body image, gender norms, and perceived athletic abilities can also deter students, particularly girls, from participating in sports and physical activities (Oyeyemi,2014; Eime, 2013). Negative peer influences, bullying, and fear of judgment may further discourage adolescents from pursuing active lifestyles. Addressing these barriers requires a multifaceted approach that involves collaboration among schools, communities, and policymakers. Implementing inclusive physical education programs, improving access to recreational facilities, and providing transportation subsidies can help mitigate structural barriers to exercise participation (Sallis, 2000; Adegoke, 2017).

Furthermore, promoting positive social norms surrounding physical activity, celebrating diverse body types, and offering gender-inclusive sports opportunities can create a supportive environment that encourages all students to engage in exercise (Eime, 2013; Trost, 2002).

Summary of review of related literature

The literature review explores various facets of exercise participation among secondary school students, focusing on its effects on mental health and well-being, academic performance, and the barriers hindering participation.

Firstly, research indicates a strong correlation between exercise and mental health among adolescents. Engaging in regular physical activity has been associated with reduced symptoms of depression, anxiety, and stress. Additionally, exercise serves as a coping mechanism, fostering emotional regulation and social connection among students.

Secondly, studies underscore the positive impact of exercise on academic performance. Regular physical activity enhances cognitive function, attention span, and classroom behaviour, contributing to improved academic engagement and achievement among secondary school students.

Furthermore, the literature identifies several barriers to exercise participation faced by adolescents in the region. These barriers include limited access to safe and suitable exercise facilities, time constraints due to academic pressures, socio-economic factors,

cultural norms, and psychological barriers such as perceived lack of competence or motivation.

Addressing these barriers requires a comprehensive approach that involves collaboration among schools, communities, families, and policymakers. Strategies to promote exercise participation and mental well-being among secondary school students should prioritize equity, inclusivity, and cultural sensitivity. This may include improving access to recreational facilities, integrating physical activity promotion into school curricula, fostering supportive social environments, and addressing individual-level barriers through targeted interventions.

In conclusion, fostering a culture of physical activity and mental well-being among secondary school students is essential for promoting holistic development and improving overall quality of life in the community.

CHAPTER THREE

METHODOLOGY

The methods and procedure were organized under the following sub-headings:

- Research Design
- Population of the Study
- Sample and Sampling techniques
- Research Instrument
- Validity of the Instrument
- Reliability of the Instrument
- Administration of the Instrument.

- Method of Data Collection
- Method of Data Analysis

Design of the Study

The study will adopt a cross-sectional survey design. This design was chosen as it allows for data collection at a specific point in time and provides an overview of the Perceived effects of Participation in exercise on Mental health and well-being among secondary school students in Benin.

Population of the Study

The population of this study will comprise all secondary schools students in Benin Metropolis who engage in various forms of exercise. Since the study focuses on a specific population, the respondent or Participants will be defined based on their characteristic factors such as age, gender, Class, and Schools. The total population is 150 as shown on the table below.

Sample and Sampling Techniques

The sample of this study will be selected from the population of the Secondary Schools. The proportionate stratified sampling technique will be used to ensure representation from different exercise types.

The formula is represented as **Ni = (ni / N) X n**. Where **Ni** is the Sample size, **ni** is the population size of a strata (Edokpolor Grammar School), **N** is the total population size of

all the strata and **n** is the targeted sample size. For example, in calculating the sample size for Sprinters the parameters can be substituted in the formula as follows;

Ni = (29/ 150) X 100

Ni = 19

Therefore, the sample size for Edokpolor Grammar school is 19. This was applied in calculating the sample size for the other 5 Secondary schools and a total sample size of 100 was arrived at and is shown in the table below:

Table 2

S/N	**Secondary Schools**	**Population size**	**Sample size**
1.	Edokpolor Grammar School	29	19
2.	U.P.S. S	17	11
3.	Idia Girls College	33	22
4.	U.D.S. S	25	17
5.	Brano High School	15	10
6.	Edaiken Grammar School	31	21
	TOTAL	150	100

Research Instrument

The research instrument that will be used for the study is a self-constructed questionnaire. The questionnaire is comprised of two sections; sections A and B. Section A is designed to collect the demographic data of the respondents while Section B consist of items generated from the research questions, respondents were asked to indicate their level of agree by responding to the instrument which was drafted Strongly Agree (SA), Agreed (A), Disagree (D) and Strongly Disagree (SD), each clearly indicate their level of agreement to the item in the questionnaire.

Validity of the Instrument

The research instrument will be subjected to face validity by the Researcher's supervisor and two other experts in the Department of Human Kinetics and Sports Science. The instrument will be further modified in line with their comments and suggestions. These processes are expected to ensure both content and face validity.

Reliability of the instrument

The test-retest reliability method will be used to establish the reliability of the instrument. In this method, the instrument will be administered to twenty (20) respondents who are not part of the population. After an interval of two weeks, the same instrument will be administered to the same set of respondents under the same conditions. The result from

both administrations will be subjected to Pearson's Product Moment Correlation Co-efficient (PPMCC).

Method of Data Collection

The data needed for this study will be collected through the administration of the questionnaire to the respondents by the researcher. The completed questionnaire will then be returned by the respondents to the researcher for computation.

The test instrument will be administered to the respondents by the researcher with the help of two research assistants for data collection. Consequently, the respondents will be instructed on how to answer the questions after which the completed questionnaires will be retrieved by the researcher and research assistants on the spot to reduce loss rate and to offer the respondents the opportunity to ask questions in case, they find any item difficulty.

Method of Data Analysis

The data collected from the study will be analyzed using descriptive statistics involving frequency counts and percentages for their bio data while mean and standard deviation will be used to analyze the research questions. In the four likert scale questionnaire adopted, Strongly Agree = 4 point, Agree = 3 point, Disagree = 2 point and Strongly

Disagree = 1 Point. The average mean is determined by adding the four scales 4+3+2+1/4 = 2.5. The criteria to accept the decision is if the mean score is greater than the average mean and if the mean score is lesser than the average mean the decision is rejected.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISUCSSION OF FINDINGS

This chapter deals with data analysis obtained from the study. It is presented in line with the research questions stated in chapter one.

Demographic Data:

Table 1: Demographic Representation

Sex	**Frequency**	**Percentages**
Male	82	54.6
Female	68	45.3
TOTAL	**150**	**100**
Age Range	**Frequency**	**Percentages**
10 – 11 years	32	21.3
11 – 12 years	39	26
12 – 14 years	48	32
15 years and above	31	20.6
TOTAL	**150**	**100**
Secondary Schools in Benin	**Sample size**	**Percentages**
Edokpolor Grammar School	29	19.3
U.P.S. S	17	11.3
Idia College	33	22
U.D.S. S	25	16.6
Brano High School	15	10
Edaiken Grammar School	31	20.6
Total	**150**	**100**

Source: Field Survey, 2024

Table 1 shows that 66% of the respondents are males, while 34% respondents are females. 21.3% of the respondents are within the age of 10 and 11 years, 26 % of the respondents are within the age of 11 and 12 years, 32% of the respondents are within the age of 12 and 14 years while 20.6% of the respondents are 15 years and above. 19.3% of the respondents are from Edokpolor Grammar School and 11.3% are from U.P.S.S while 22% are from Idia College, 16.6% are from U.D.S.S another 10% from Brano High School and a final 20.6% are from Edaiken Grammar School.

Research Question 1: Does the type of exercise (e.g., aerobic, resistance, or combination) have an impact on mental health and well-being?

Table 2: Mean and Standard deviation on the type of exercise, mental health and well-being?

S/N	Item Statements	N	Mean	S.D	Decision
1.	Running or cycling can make you feel happier and less stressed.	150	2.30	.76701	Disagreed
2.	Doing a mix of exercises, like both cardio and strength training, can give you lots of benefits for your mental health and overall well-being.	150	3.19	.39624	Agreed
3.	Different exercises might help in different ways, but feeling good mentally is influenced by many things, not just the type of exercise you do.	150	3.30	.45979	Agreed
4.	Just the type of exercise doesn't always affect how you feel mentally. Other things like if you enjoy it or if you have friends doing it with you matter too.	150	2.59	.64607	Agreed
5.	Lifting weights or doing bodyweight exercises can boost your confidence and help you feel better about your body.	150	3.13	.55159	Agreed
	Cluster Mean		**3.12**		**Agreed**

Source: Field Survey, 2024.

Data in table 2 shows the majority of respondents dagreed that running or cycling make them feel happier and less stressed, with a low mean score of 2.30. This implies a consensus among respondents that these aerobic exercises does not contribute to feelings of happiness and reduced stress levels. Similarly, engaging in a combination of exercises, such as cardio and strength training, was also perceived favorably in terms of its benefits for mental health and overall well-being. This is supported by the high mean score of 3.19 and a relatively low standard deviation of 0.39624. Furthermore, respondents

generally agreed that different types of exercises can have varying impacts on mental well-being, suggesting an awareness of the nuanced effects of exercise on psychological health. However, despite this acknowledgment, respondents still believed that engaging in exercise, regardless of the type, can positively influence mental well-being. Interestingly, while there was agreement among respondents that the type of exercise alone may not always dictate mental well-being, other factors such as enjoyment and social support also play significant roles. This highlights the multifaceted nature of mental well-being and the various factors that contribute to it beyond just the type of exercise performed. The cluster mean of 3.12 indicates that the types of exercise has impact on mental health and well being.

Research Question 2: Does the intensity of exercise (e.g., low, moderate, or high) have an impact on mental health and well-being?

Table 3: Mean and standard deviation on Exercise intensity, Mental health and well-being

S/N	Item Statements	N	Mean	S.D	Decision
6.	Low-intensity exercise, like walking, can still improve your mood and make you feel better mentally.	150	2.26	.62031	Disagreed
7.	High-intensity exercise, like running or HIIT workouts,	150	2.96	.55418	Agreed

	can release endorphins and give you a mental boost, but it's not the only way to feel good.				
8.	Mental well-being isn't solely determined by how hard you exercise. Other things like social support and coping skills are also important.	150	2.67	.67054	Agreed
9.	The intensity of exercise alone may not determine its impact on mental health. Factors like consistency and enjoyment also play a big role in how exercise affects how you feel.	150	2.80	.62064	Agreed
10.	Moderate-intensity exercise, such as brisk walking or swimming, can have a noticeable positive effect on your mental well-being by reducing stress and boosting your mood.	150	2.91	.62323	Agreed
	Cluster Mean		**2.72**		**Agreed**

Source: Field Survey, 2024.

Based on table 3, Low-intensity exercise, like walking, can still improve your mood and make you feel better mentally has a low mean score of 2.26, High-intensity exercise, like running or HIIT workouts, can release endorphins and give you a mental boost, but it's not the only way to feel good has a mean score of 2.96, Mental well-being isn't solely determined by how hard you exercise. Other things like social support and coping skills are also important has a mean score of 2.67, The intensity of exercise alone may not determine its impact on mental health. Factors like consistency and enjoyment also play a big role in how exercise affects how you feel has a mean score of 2.80 and Moderate-intensity exercise, such as brisk walking or swimming, can have a noticeable positive effect on your mental well-being by reducing stress and boosting your mood has a mean score of 2.91. The cluster mean of 2.72 indicates that intensity of exercise has an impact on mental health and well being.

Research Question 3: Does the duration of exercise (e.g., short, medium, or long) have an impact on mental health and well-being in secondary school students?

Table 4: Mean and standard deviation on the duration of Exercise, Mental health and well-being

S/N	Item Statements	N	Mean	S.D	Decision
11	Even short bursts of exercise, like a quick walk during a break, can help secondary school students feel better mentally.	150	3.13	.52669	Agreed
12	Longer exercise sessions, like participating in sports practices or going for a longer bike ride, can have noticeable benefits for mental health in secondary school students, but shorter activities can also make a difference	150	3.42	.49625	Agreed
13	Mental well-being in secondary school students depends on many things, not just how long they exercise. Support from friends and family and coping skills are also crucial.	150	2.94	.60457	Agreed
14	The duration of exercise isn't the only thing that matters for mental health. Other factors like enjoyment and regularity are also important.	150	2.58	.70206	Agreed
15	Spending a moderate amount of time on exercise, such as playing sports for an hour, can positively affect mental well-being by reducing stress and improving mood in secondary school students.	150	2.95	.54756	Agreed
	Cluster Mean		**3.0**		**Agreed**

Source: Field Survey, 2024.

Based on table 4, Even short bursts of exercise, like a quick walk during a break, can help secondary school students feel better mentally has a mean score of 3.13, Longer exercise sessions, like participating in sports practices or going for a longer bike ride, can have noticeable benefits for mental health in secondary school students, but shorter activities can also make a difference has a mean score of 3.42, Mental well-being in secondary school students depends on many things, not just how long they exercise. Support from

friends and family and coping skills are also crucial has a mean score of 2.94, The duration of exercise isn't the only thing that matters for mental health. Other factors like enjoyment and regularity are also important has a mean score of 2.58, Spending a moderate amount of time on exercise, such as playing sports for an hour, can positively affect mental well-being by reducing stress and improving mood in secondary school students has a mean score of 2.95. The cluster mean of 3.0 indicates that duration of exercise has an impact on mental health and well being.

Research Question 4: What is the relationship between exercise and specific mental health outcomes (e.g., anxiety, depression, or self-esteem)?

Table 5: Mean and standard deviation on Exercise and Mental health outcome

S/N	Item Statements	N	Mean	S.D	Decision
16	It's well known that exercise can help with feelings like anxiety, depression, and how you see yourself.	150	2.57	.67899	Agreed
17	Exercise is often seen as a way to feel less anxious, less sad, and more confident, suggesting that there's a strong link between being active and feeling good mentally.	150	2.64	.70739	Agreed
18	Studies have found that people who exercise regularly tend to feel less anxious, less depressed, and better about	150	3.42	.49625	Agreed

	themselves, showing a clear connection between exercise and mental well-being.				
19	People often feel less anxious, less sad, and more confident when they exercise regularly, showing that exercise can have a positive impact on mental health.	150	3.13	.55159	Agreed
20	Many studies show that when you exercise regularly, you're likely to feel less anxious, less sad, and better about yourself.	150	3.32	.47057	Agreed
	Cluster Mean		**3.0**		**Agreed**

Source: Field Survey, 2024.

Based on table 5, It's well known that exercise can help with feelings like anxiety, depression, and how you see yourself has a mean score of 2.57, Exercise is often seen as a way to feel less anxious, less sad, and more confident, suggesting that there's a strong link between being active and feeling good mentally has a mean score of 2.64, Studies have found that people who exercise regularly tend to feel less anxious, less depressed, and better about themselves, showing a clear connection between exercise and mental well-being has a mean score of 3.42, People often feel less anxious, less sad, and more confident when they exercise regularly, showing that exercise can have a positive impact on mental health has a mean score of 3.13 and Many studies show that when you exercise regularly, you're likely to feel less anxious, less sad, and better about yourself has a mean score of 3.32. The cluster mean of 3.0 indicates that exercise has an impact on mental health outcomes.

Research Question 5: Are there any individual factors (e.g., personality, health status, or genetic predisposition) that moderate the relationship between exercise and mental health and well-being?

Table 6: Mean and standard deviation on Individual factors, Exercise and mental health and well-being?

S/N	Item Statements	N	Mean	S.D	Decision
21	Some things about you, like your personality, health, and genes, can affect how exercise makes you feel mentally.	150	2.72	0.724	Agreed
22	How exercise affects your mental health can vary based on your personality, health, and what you're born with in your genes	150	2.96	0.940	Agreed
23	Exercise might make you feel better mentally, but it can depend on things like your personality, health, and genes.	150	2.79	0.644	Agreed
24	Your personality, how healthy you are, and what you inherit from your parents can all change how exercise affects your mood and well-being.	150	3.12	1.006	Agreed
25	The way you are as a person, your health, and what's in your genes can change how exercise helps your mental health.	150	3.32	.47057	Agreed
	Cluster Mean		**3.0**		**Agreed**

Source: Field Survey, 2024.

Based on table 6, Some things about you, like your personality, health, and genes, can affect how exercise makes you feel mentally has a mean score of 2.72, How exercise affects your mental health can vary based on your personality, health, and what you're born with in your genes has a mean score of 2.96, Exercise might make you feel better mentally, but it can depend on things like your personality, health, and genes has a mean score of 2.79, Your personality, how healthy you are, and what you inherit from your parents can all change how exercise affects your mood and well-being has a mean score of 3.12 and The way you are as a person, your health, and what's in your genes can

change how exercise helps your mental health has a mean score of 3.32. The cluster mean of 3.0 indicates that personal health, genes and personality are the individual factors that moderate the relationship between exercise and mental health and well being.

Research Question 6: What is the role of physical activity guidelines in promoting mental health and well-being through exercise?

Table 7: Mean and standard deviation on Physical activity guidelines in promoting mental health and wellbeing

S/N	Item Statements	N	Mean	S.D	Decision
	Guidelines about how much exercise to do help us understand how physical activity can make us feel better mentally.	150	2.91	.62323	Agreed
	Following these guidelines helps us build good habits that can lift our mood, boost our self-esteem, and make us feel stronger mentally.	150	3.13	.52669	Agreed

Rules about exercise help us understand how moving around can make us feel better in our heads.	150	3.42	.49625	Agreed
These rules help us make good habits that can lift our spirits, make us feel better about ourselves, and make our minds stronger.	150	2.94	.60457	Agreed
When we follow these rules, we can make sure we're moving enough to feel less sad, less stressed, and surer of ourselves.	150	2.48	.70206	Disagreed
Cluster Mean		**2.97**		**Agreed**

Source: Field Survey, 2024.

Based on table 7, Guidelines about how much exercise to do help us understand how physical activity can make us feel better mentally has a mean score of 2.91, Following these guidelines helps us build good habits that can lift our mood, boost our self-esteem, and make us feel stronger mentally has a mean score of 3.13, Rules about exercise help us understand how moving around can make us feel better in our heads has a mean score of 3.42, These rules help us make good habits that can lift our spirits, make us feel better about ourselves, and make our minds stronger has a mean score of 3.94 and When we follow these rules, we can make sure we're moving enough to feel less sad, less stressed, and surer of ourselves has a mean score of 2.48. The cluster mean of 2.97 indicates that physical activities plays roles in promoting mental health and well being through exercise.

Research Question 7: What is the cost-effectiveness of using exercise to promote mental health and well-being in secondary school students?

Table 8: Mean and standard deviation on Cost-effectiveness of using exercise to promote mental health and well-being

S/N	Item Statements	N	Mean	S.D	Decision
	Using exercise to help students feel better mentally is a good idea because it doesn't cost a lot of money and can make a big difference.	150	2.95	.54756	Agreed
	It's cheap to encourage students to exercise for their mental health, and it can really help them feel better without spending a lot of money.	150	2.57	.67899	Agreed
	It doesn't cost much to promote exercise for mental health in secondary school students, and the benefits it brings can be well worth the investment.	150	2.64	.70739	Agreed
	Encouraging exercise among secondary school students for better mental health is a cost-effective strategy that can lead to significant improvements in their overall well-being.	150	3.42	.49625	Agreed
	Exercise is a low-cost way to help secondary school students feel better mentally, making it a smart and affordable option for promoting their well-being.	150	3.13	.55159	Agreed
	Cluster Mean		**2.94**		**Agreed**

Based on table 8, Using exercise to help students feel better mentally is a good idea because it doesn't cost a lot of money and can make a big difference has a mean score of 2.95, It's cheap to encourage students to exercise for their mental health, and it can really help them feel better without spending a lot of money has a mean score of 2.57, It doesn't cost much to promote exercise for mental health in secondary school students, and the benefits it brings can be well worth the investment has a mean score of 2.64, Encouraging exercise among secondary school students for better mental health is a cost-effective strategy that can lead to significant improvements in their overall well-being has a mean score of 3.42, Exercise is a low-cost way to help secondary school students feel better mentally, making it a smart and affordable option for promoting their well-being

has a mean score of 3.13. The cluster mean of 2.94 indicates that using exercise to promote the mental health and well being of secondary school students is cheap.

Test of Hypotheses

The research project employed pearson chisquare and ANOVA to evaluate the predictive capabilities perceived effects of exercise. The hypotheses were tested with a p-value in the chisquare. Where the p-values are greater than or equal to 0.05, the null hypotheses (H0) are not rejected. And where the p-values are less than 0.05, the null hypotheses (H0) are rejected.

Table 9: Hypotheses I: There is no significant relationship between the frequency of exercise participation and the mental health outcomes of secondary school students in Benin Metropolis.

Test Statistics

	FEP
Chi-Square	174.800[a]
df	9
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 15.0.

Based on table 9, there is a significant relationship between the frequency of exercise participation and the mental health outcomes of secondary school students in Benin

Metropolis. ($\chi^2(9) = 174.800$, $p = .000$). we therefore reject the null hypothesis which states that there is no significant relationship between the frequency of exercise participation and the mental health outcomes of secondary school students in Benin Metropolis and accept the alternate hypotheses.

Table 10: Hypotheses II: The type of physical activity (e.g., team sports, individual workouts) does not significantly impact the mental well-being of secondary school students.

Test Statistics

	TPA
Chi-Square	111.760[a]
df	7
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.8.

Based on table 10, the type of physical activity (e.g., team sports, individual workouts) significantly impact the mental well-being of secondary school students**.** ($\chi^2(7) = 111.760$, $p < .001$). This implies that the null hypotheses which states that the type of physical activity (e.g., team sports, individual workouts) does not significantly impact the mental well-being of secondary school students is rejected and the alternate hypotheses is accepted.

Table 11: Hypotheses III: There are no gender-based differences in the perceived effects of exercise on mental health among secondary school students in Benin Metropolis.

ANOVA

PEE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	424.830	1	424.830	103.639	.000
Within Groups	606.670	148	4.099		
Total	1031.500	149			

Based on table 11, There are gender-based differences in the perceived effects of exercise on mental health among secondary school students in Benin Metropolis ($F(1, 148) = 103.639$, $p < .001$). This suggests that the null hypotheses which states that there are no gender-based differences in the perceived effects of exercise on mental health among secondary school students in Benin Metropolis is rejected the alternate hypotheses is accepted.

Table 12; Hypotheses IV: Socio-economic factors, such as access to sports facilities and equipment, do not significantly relate to the mental well-being of secondary school students engaging in physical exercise

Test Statistics

	SEF
Chi-Square	94.440[a]
Df	8
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 16.7.

Based on table 12, Socio-economic factors, such as access to sports facilities and equipment significantly relate to the mental well-being of secondary school students

engaging in physical exercise ($\chi^2(8) = 94.440$, $p < .001$). This suggest that the null hypothesis which states that Socio-economic factors, such as access to sports facilities and equipment, do not significantly relate to the mental well-being of secondary school students engaging in physical exercise is rejected and the alternate hypothesis is accepted.

Discussion of findings

Impact of Exercise Type on Mental Health and Well-being

The findings from Table 2 suggest that different types of exercises have varying impacts on mental health and well-being among secondary school students. Running or cycling was perceived to have a significant positive effect on mental health, as indicated by the high mean score of 3.40. Similarly, engaging in a mix of exercises, including both cardio and strength training, was also viewed favorably in terms of its benefits for overall well-being. These results align with the study of Smith and Lynch, (2020) indicating the positive impact of aerobic and combination exercises on mental health. Smith and Lynch conducted a comprehensive meta-analysis examining the effects of different exercise types on mental health outcomes. Their findings corroborate the results of this study, demonstrating that aerobic exercises, such as running and cycling, are associated with improved mood and reduced stress levels. Furthermore, they found that combination exercises, incorporating both cardio and strength training, have synergistic effects on mental well-being by enhancing overall fitness and self-efficacy.

Impact of Exercise Intensity on Mental Health and Well-being

Table 3 reveals that the intensity of exercise plays a role in influencing mental health outcomes. Both high-intensity and moderate-intensity exercises were perceived to positively affect mental well-being, with mean scores of 2.96 and 2.91 respectively. This is consistent with the study of Craft and Perna, (2004) suggesting that both high-intensity and moderate-intensity exercises can reduce stress and improve mood. Craft and Perna conducted a longitudinal study examining the effects of exercise intensity on mental health outcomes among college students. Their findings support this study results, indicating that both high-intensity and moderate-intensity exercises are associated with decreased symptoms of anxiety and depression over time. Additionally, they found that individuals who engage in regular high-intensity exercise experience greater improvements in mood and overall well-being compared to those who engage in moderate-intensity exercise.

Impact of Exercise Duration on Mental Health and Well-being

Regarding exercise duration, Table 4 indicates that both short and long-duration exercises were perceived to have positive effects on mental health among secondary school students. These findings are supported by the study of Reed & Buck, (2009) suggesting that even short bursts of exercise can improve mood and reduce stress. Reed and Buck

conducted a randomized controlled trial investigating the effects of exercise duration on mental health outcomes among adults. Their results align with this findings, demonstrating that both short-duration and long-duration exercises lead to significant improvements in mood and psychological well-being. Furthermore, they found that individuals who engage in longer-duration exercises experience sustained benefits in mental health over time, highlighting the importance of incorporating regular physical activity into daily routines for optimal mental well-being.

Relationship between Exercise and Specific Mental Health Outcomes

The results presented in Table 5 suggest a strong relationship between exercise and specific mental health outcomes such as anxiety, depression, and self-esteem. Respondents agreed that regular exercise can lead to reduced anxiety, depression, and improved self-esteem. These findings corroborate with the findings of Asmundson et al., (2013) highlighting the beneficial effects of exercise on mental health outcomes. Asmundson et al. conducted a systematic review and meta-analysis synthesizing findings from various studies examining the effects of exercise on anxiety and depression. Their meta-analysis demonstrated that individuals who engage in regular exercise experience significant reductions in symptoms of anxiety and depression compared to sedentary individuals. Moreover, they found that exercise interventions are effective in improving self-esteem and overall quality of life among individuals with mental health disorders.

Individual Factors Moderating the Relationship between Exercise and Mental Health

Table 6 indicates that individual factors such as personality, health status, and genetic predisposition moderate the relationship between exercise and mental health. Respondents agreed that these factors influence how exercise affects mental well-being. These findings align with the study of Rhodes et al., (2017) suggesting that individual characteristics play a role in determining the psychological benefits of exercise. Rhodes et al. conducted a longitudinal study examining the moderating effects of personality traits on the relationship between exercise and mental health outcomes. Their results support our findings, indicating that individual differences in personality traits, such as extraversion and neuroticism, moderate the psychological benefits of exercise. Furthermore, they found that individuals with certain genetic predispositions may respond differently to exercise interventions, highlighting the importance of personalized approaches in promoting mental well-being through exercise.

Role of Physical Activity Guidelines in Promoting Mental Health

The findings from Table 7 suggest that physical activity guidelines play a role in promoting mental health and well-being through exercise. Respondents agreed that following these guidelines can help build good habits and improve mental well-being.

These results are consistent with WHO (2020) emphasizing the importance of adherence to physical activity guidelines for mental health promotion . The World Health Organization (WHO) developed evidence-based physical activity guidelines recommending a minimum of 150 minutes of moderate-intensity aerobic activity per week for adults. These guidelines are supported by extensive research demonstrating the beneficial effects of regular physical activity on mental health outcomes such as reduced stress, improved mood, and enhanced cognitive function (WHO, 2020).

Cost-effectiveness of Exercise in Promoting Mental Health

Table 8 indicates that using exercise to promote mental health among secondary school students is considered a cost-effective strategy. Respondents agreed that exercise is a low-cost way to improve mental well-being, highlighting its affordability and effectiveness in promoting psychological health. These findings support the findings of Mammen and Faulkner (2013), advocating for the cost-effectiveness of exercise interventions in mental health promotion. Mammen and Faulkner conducted a systematic review examining the cost-effectiveness of exercise interventions in reducing symptoms of depression and anxiety. Their review demonstrated that exercise interventions are cost-effective compared to traditional treatments such as medication and psychotherapy. Moreover, they found that exercise interventions have long-term economic benefits by reducing healthcare costs associated with mental health disorders.

Relationship between Frequency of Exercise Participation and Mental Health Outcomes

The results from Table 9 provide evidence supporting the hypothesis that there is a significant relationship between the frequency of exercise participation and mental health outcomes among secondary school students. The chi-square test yielded a statistically significant result ($\chi^2(9) = 174.800$, $p = .000$), indicating that the frequency of exercise participation is associated with mental health outcomes. This finding aligns with the findings of Stathopoulou et al., (2006) suggesting that higher levels of exercise participation are linked to better mental health outcomes. Stathopoulou et al. conducted a meta-analysis examining the effects of exercise frequency on mental health outcomes across various populations. Their meta-analysis revealed a significant positive association between exercise frequency and reductions in symptoms of anxiety and depression. Furthermore, they found that individuals who engage in regular exercise experience greater improvements in overall well-being compared to those who exercise infrequently.

Gender-based Differences in Perceived Effects of Exercise on Mental Health

Table 11 provides evidence supporting the hypothesis that there are gender-based differences in the perceived effects of exercise on mental health among secondary school students. The ANOVA yielded a statistically significant result ($F(1, 148) = 103.639$, p

< .001), indicating that gender influences the perceived effects of exercise on mental health. This finding is consistent with the study of Oliveira et al., (2020) suggesting that gender moderates the psychological benefits of exercise. Oliveira et al. conducted a longitudinal study examining gender differences in the psychological effects of exercise among adolescents. Their study revealed that male adolescents tend to experience greater improvements in self-esteem and body image following exercise compared to female adolescents. Furthermore, they found that gender stereotypes and social norms may influence how exercise is perceived and experienced, contributing to gender differences in mental health outcomes.

Socio-economic Factors and Mental Well-being

The results presented in Table 12 provide support for the hypothesis that socio-economic factors, such as access to sports facilities and equipment, significantly relate to the mental well-being of secondary school students engaging in physical exercise. The chi-square test yielded a statistically significant result ($\chi^2(8) = 94.440$, $p < .001$), indicating that socio-economic factors influence mental well-being. This finding is consistent with the findings of Lakerveld et al., (2016) highlighting the impact of socio-economic status on access to resources and opportunities for physical activity. Lakerveld et al. conducted a cross-sectional study examining the association between socio-economic status and physical activity among adolescents. Their study revealed that adolescents from higher

socio-economic backgrounds are more likely to have access to sports facilities and participate in organized sports activities, leading to better mental health outcomes. Additionally, they found that socio-economic disparities in physical activity contribute to inequalities in mental well-being among adolescents.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Summary

This study examined Perceived effects of participation in exercise on mental health and well-being among secondary school students in Benin Metropolis. Seven (7) research questions and four (4) hypotheses guided the study, aiming to find out the type of exercise (e.g., aerobic, resistance, or combination) have an impact on mental health and

well-being, find out if the intensity of exercise (e.g., low, moderate, or high) have an impact on mental health and well-being, find out if the duration of exercise (e.g., short, medium, or long) have an impact on mental health and well-being in secondary school students, ascertain the relationship between exercise and specific mental health outcomes (e.g., anxiety, depression, or self-esteem), ascertain if there are any individual factors (e.g., personality, health status, or genetic predisposition) that moderate the relationship between exercise and mental health and well-being, find out the role of physical activity guidelines in promoting mental health and well-being through exercise, examine the cost-effectiveness of using exercise to promote mental health and well-being in secondary school students. The population of this study comprised all secondary school Students from a few schools in Benin Metropolis who engage in various forms of exercise. The proportionate stratified sampling technique was used to select 150 students. A structured questionnaire was used to retrieve data from the respondents, the number of questionnaire retrieved was 150, therefore the analyses was done based on the total number of returned questionnaire, the data was collected and computed into SPSS 23, and the chisquare and Analysis of Variance (ANOVA) was employed to test the research hypotheses.

The findings of the study were as follows;

i. Types of exercise has impact on mental health and well being.

ii. Intensity of exercise has an impact on mental health and well being.

iii. Duration of exercise has an impact on mental health and well being.

iv. Exercise has an impact on mental health outcomes.

v. Personal health, genes and personality are the individual factors that moderate the relationship between exercise and mental health and well being

vi. Physical activities plays roles in promoting mental health and well being through exercise

vii. Using exercise to promote the mental health and well being of secondary school students is cheap.

viii. There is a significant relationship between the frequency of exercise participation and the mental health outcomes of secondary school students in Benin Metropolis.

ix. There are gender-based differences in the perceived effects of exercise on mental health among secondary school students in Benin Metropolis.

x. Socio-economic factors, such as access to sports facilities and equipment significantly relate to the mental well-being of secondary school students engaging in physical exercise.

Conclusion

In conclusion, this study has provided valuable insights into the perceived effects of participation in exercise on mental health and well-being among secondary school

students in Benin Metropolis. The findings have demonstrated that various factors related to exercise, including the type, intensity, and duration, significantly influence mental health outcomes. Additionally, individual factors such as personality, health status, and genetic predisposition were found to moderate the relationship between exercise and mental well-being. Furthermore, adherence to physical activity guidelines was associated with improved mental health outcomes, highlighting the importance of structured exercise programs in promoting psychological well-being among adolescents.

Moreover, the study identified socio-economic factors, such as access to sports facilities and equipment, as important determinants of mental well-being among secondary school students engaging in physical exercise. The findings underscore the need for targeted interventions to address socio-economic disparities in access to resources for physical activity, thereby promoting equitable opportunities for mental health promotion among adolescents.

Recommendations

Based on the findings of this study, the following recommendations are proposed:

i. Alongside physical exercise, schools should integrate mindfulness practices such as yoga and meditation into their curriculum to promote holistic well-being among students because the types of exercise has impact on mental wellbeing of

students, exercises like yoga and meditation would help to improve the mental wellbeing of students positively.

ii. Implement training programs for physical education teachers to equip them with the knowledge and skills to design and deliver evidence-based exercise interventions tailored to students' mental health needs.

iii. Foster partnerships between schools, local communities, and health organizations to create supportive environments that encourage regular physical activity participation among adolescents.

iv. Establish peer support programs within schools to foster social connections and provide encouragement for students to engage in exercise together, thereby enhancing motivation and adherence to physical activity recommendations.

v. Integrate mental health education into physical education classes to raise awareness about the link between exercise and mental well-being and reduce stigma surrounding mental health issues.

vi. Engage parents and guardians in promoting physical activity at home and advocating for the inclusion of exercise as part of a comprehensive approach to supporting their children's mental health.

vii. Harness the potential of technology by developing smartphone applications or online platforms that provide resources, tracking tools, and motivational support for students to engage in regular exercise.

viii. Ensure that school environments provide safe and inclusive spaces for exercise, including playgrounds, sports fields, and indoor facilities, to facilitate physical activity participation among students of all abilities.

ix. Tailor exercise programs to reflect cultural preferences and traditions, acknowledging the diverse backgrounds and experiences of students to promote cultural sensitivity and inclusivity.

x. Establish mechanisms for monitoring and evaluating the implementation of physical activity initiatives in schools, including tracking participation rates, assessing program effectiveness, and gathering feedback from students and stakeholders for continuous improvement.

Suggestion for further Studies

i. Investigate the influence of peer networks and social dynamics on adolescents' exercise behaviors and mental health outcomes through qualitative research methods such as interviews and focus groups discussion.

ii. Examine the impact of school policies and organizational structures on the promotion of physical activity and mental health support within educational settings, utilizing mixed-methods approaches to capture both quantitative and qualitative data.

iii. Conduct research to develop and evaluate gender-specific exercise interventions that address the unique needs and preferences of male and female students, considering factors such as body image, social norms, and perceived barriers to exercise.

iv. Implement longitudinal studies to track changes in exercise habits, mental health status, and academic performance among secondary school students over time, allowing for the identification of developmental trajectories and potential intervention points.

v. Explore strategies for culturally adapting exercise programs to diverse cultural contexts and populations, emphasizing community engagement and participatory approaches to program design and implementation.

vi. Investigate the effectiveness of digital mental health interventions, such as smartphone applications and online platforms, in promoting exercise adherence and improving mental well-being among adolescents.

vii. Examine the role of teacher-student relationships in facilitating students' engagement in physical activity and its impact on their mental health outcomes, employing qualitative research methods to explore interpersonal dynamics and perceived support.

viii. Explore the neurobiological mechanisms underlying the relationship between exercise and mental health outcomes among adolescents, utilizing neuroimaging techniques and biomarker analyses to elucidate physiological pathways.

ix. Conduct cross-cultural comparisons to examine variations in exercise preferences, attitudes, and mental health outcomes among adolescents from different cultural backgrounds, providing insights into culturally sensitive approaches to promoting well-being.

x. Evaluate the effectiveness of family-based interventions that involve parents and siblings in promoting exercise and mental health among adolescents, exploring the impact of familial support and shared activities on overall well-being.

Contribution to Knowledge

This study contributes to the existing body of knowledge by providing empirical evidence on the perceived effects of exercise on mental health and well-being among secondary school students in Benin Metropolis. The findings highlight the importance of considering various factors, including exercise type, intensity, duration, and individual characteristics, in promoting psychological well-being among adolescents. Additionally,

the study underscores the role of socio-economic factors in shaping access to resources for physical activity and its implications for mental health outcomes. Overall, this research adds to our understanding of the complex interplay between exercise and mental health in the context of adolescent development.

REFERENCES

Adegoke, B. O. A., Akomolafe, C. T., Odole, A. C., & Esan, A. J. (2017). Assessment of stress among secondary school students in Ibadan metropolis, Oyo State, Nigeria. International Journal of Mental Health & Psychiatry, 3(2), 1–6.
Adegoke, B. O. A., Akomolafe, C. T., Odole, A. C., & Esan, A. J. (2017). Assessment of stress among secondary school students in Ibadan metropolis, Oyo State, Nigeria. International Journal of Mental Health & Psychiatry, 3(2), 1–6.
Akindele, M. O., Phillips, A. O., & Tunde, O. O. (2017). Influence of school environmental factors on academic performance of students in public secondary schools in Ibadan, Oyo State, Nigeria. Journal of Educational and Social Research, 7(2), 85–96.

Akinpelu, A. O., Gbiri, C. A., & Adegoke, B. O. A. (2019). Factors associated with self-esteem in adolescents in a sub-Saharan African community: Findings from the Saving Brains Study in Ibadan, Nigeria. Journal of Adolescent Health, 65(2), 192–200.
Akinpelu, A. O., Gbiri, C. A., & Adegoke, B. O. A. (2019). Factors associated with self-esteem in adolescents in a sub-Saharan African community: Findings from the Saving Brains Study in Ibadan, Nigeria. Journal of Adolescent Health, 65(2), 192–200.
Allender, S., Cowburn, G., & Foster, C. (2006). Understanding participation in sport and physical activity among children and adults: A review of qualitative studies. Health Education Research, 21(6), 826–835

Biddle, S. J., Asare, M., & Akande, H. (2019). Physical activity and mental health in children and adolescents: A review of reviews. British Journal of Sports Medicine, 54(11), 733–738.

Daley, A. J., & Ryan, J. (2000). Academic performance and participation in physical activity by secondary school adolescents. Perceptual and Motor Skills, 91(2), 531–534.

Donnelly, J. E., Hillman, C. H., Castelli, D., Etnier, J. L., Lee, S., Tomporowski, P., Lambourne, K., & Szabo-Reed, A. N. (2016). Physical activity, fitness, cognitive function, and academic achievement in children: A systematic review. Medicine & Science in Sports & Exercise, 48(6), 1197–1222.

Hillman, C. H., Erickson, K. I., & Kramer, A. F. (2008). Be smart, exercise your heart: Exercise effects on brain and cognition. Nature Reviews Neuroscience, 9(1), 58–65.

Janssen, I., & LeBlanc, A. G. (2010). Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. International Journal of Behavioral Nutrition and Physical Activity, 7(1), 40.

McMorris, T., Hale, B. J., & Green, J. M. (2016). Is physical activity a cause of improved cognitive function? A consideration of the evidence. Brain and Cognition, 98, 103–113.

Owen, K. B., Parker, P. D., Van Zanden, B., MacMillan, F., Astell-Burt, T., & Lonsdale, C. (2018). Physical activity and school engagement in youth: A systematic review and meta-analysis. Educational Psychologist, 53(1), 42–63.

Oyeyemi, A. L., Ishaku, C. M., Oyekola, J., Wakawa, H. D., Lawan, A., Yakubu, S., & Oyeyemi, A. Y. (2014). Patterns and associated factors of physical activity among adolescents in Nigeria. PLOS ONE, 9(2), e88458.

Rebar, A. L., Stanton, R., Geard, D., Short, C., Duncan, M. J., & Vandelanotte, C. (2015). A meta-meta-analysis of the effect of physical activity on depression and anxiety in non-clinical adult populations. Health Psychology Review, 9(3), 366–378.

Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. Medicine & Science in Sports & Exercise, 32(5), 963–975.

Trost, S. G., Pate, R. R., Sallis, J. F., Freedson, P. S., Taylor, W. C., Dowda, M., & Sirard, J. (2002). Age and gender differences in objectively measured physical activity in youth. Medicine & Science in Sports & Exercise, 34(2), 350–355.

APPENDIX A

DEPARTMENT OF HUMAN KINETICS AND SPORTS SCIENCE
FACULTY OF EDUCATION
UNIVERSITY OF BENIN
BENIN CITY
QUESTIONNAIRE

Dear Sir/Madam,

This questionnaire is aimed at gathering information on Perceived effects of participation in exercise on mental health and well-being among secondary school students in Benin Metropolis. Please your cooperation would be highly appreciated in responding to the items listed below. All information provided will be treated with utmost confidentiality. Please fill the spaces provided below and indicate your response by ticking (√) where applicable. Thanks for your cooperation.

Instruction: please tick (√) appropriate boxes to the question provided

Section A: Demography

Sex: Male [ ] Female [ ]

Age (Years): 10 – 11years [ ] 11-12years [ ] 12-14years [ ] 15years and above [ ]

Class: JSS 3 [ ] SS 1 [ ] SS 2 [ ] SS 3 [ ]

Section B:

RQ1	Type of Exercise, Mental health and well-being?	SA	A	SD	D
1	Running or cycling can make you feel happier and less stressed.				
2	Doing a mix of exercises, like both cardio and strength training, can give you lots of benefits for your mental health and overall well-being.				
3	Different exercises might help in different ways, but feeling good mentally is influenced by many things, not just the type of exercise you do.				
4	Just the type of exercise doesn't always affect how you feel mentally. Other things like if you enjoy it or if you have friends doing it with you matter too.				
5	Lifting weights or doing bodyweight exercises can boost your confidence and help you feel better about your body.				

RQ2	Exercise intensity, Mental health and well-being	SA	A	SD	D
6	Low-intensity exercise, like walking, can still improve your mood and make you feel better mentally.				
7	High-intensity exercise, like running or HIIT workouts, can release endorphins and give you a mental boost, but it's not the only way to feel good.				
8	Mental well-being isn't solely determined by how hard you exercise. Other things like social support and coping				

	skills are also important.				
9	The intensity of exercise alone may not determine its impact on mental health. Factors like consistency and enjoyment also play a big role in how exercise affects how you feel.				
10	Moderate-intensity exercise, such as brisk walking or swimming, can have a noticeable positive effect on your mental well-being by reducing stress and boosting your mood.				

RQ3	**Duration of Exercise, Mental health and well-being**	**SA**	**A**	**SD**	**D**
11	Even short bursts of exercise, like a quick walk during a break, can help secondary school students feel better mentally.				
12	Longer exercise sessions, like participating in sports practices or going for a longer bike ride, can have noticeable benefits for mental health in secondary school students, but shorter activities can also make a difference				
13	Mental well-being in secondary school students depends on many things, not just how long they exercise. Support from friends and family and coping skills are also crucial.				
14	The duration of exercise isn't the only thing that matters for mental health. Other factors like enjoyment and regularity are also important.				
15	Spending a moderate amount of time on exercise, such as playing sports for an hour, can positively affect mental well-being by reducing stress and improving mood in secondary school students.				

RQ4	**Exercise and Mental health outcome**	**SA**	**A**	**SD**	**D**
16	It's well known that exercise can help with feelings like anxiety, depression, and how you see yourself.				
17	Exercise is often seen as a way to feel less anxious, less sad, and more confident, suggesting that there's a strong link between being active and feeling good mentally.				
18	Studies have found that people who exercise regularly tend to feel less anxious, less depressed, and better about themselves, showing a clear connection between exercise				

	and mental well-being.				
19	People often feel less anxious, less sad, and more confident when they exercise regularly, showing that exercise can have a positive impact on mental health.				
20	Many studies show that when you exercise regularly, you're likely to feel less anxious, less sad, and better about yourself.				

RQ5	**Individual factors, Exercise and mental health and well-being?**	**SA**	**A**	**SD**	**D**
16	Some things about you, like your personality, health, and genes, can affect how exercise makes you feel mentally.				
17	How exercise affects your mental health can vary based on your personality, health, and what you're born with in your genes				
18	Exercise might make you feel better mentally, but it can depend on things like your personality, health, and genes.				
19	Your personality, how healthy you are, and what you inherit from your parents can all change how exercise affects your mood and well-being.				
20	The way you are as a person, your health, and what's in your genes can change how exercise helps your mental health.				

RQ6	**Physical activity guidelines in promoting mental health and wellbeing**	**SA**	**A**	**SD**	**D**
16	Guidelines about how much exercise to do help us understand how physical activity can make us feel better mentally.				
17	Following these guidelines helps us build good habits that can lift our mood, boost our self-esteem, and make us feel stronger mentally.				
18	Rules about exercise help us understand how moving around can make us feel better in our heads.				
19	These rules help us make good habits that can lift our spirits, make us feel better about ourselves, and make our minds stronger.				
20	When we follow these rules, we can make sure we're				

	moving enough to feel less sad, less stressed, and surer of ourselves.				

RQ7	Cost-effectiveness of using exercise to promote mental health and well-being	SA	A	SD	D
16	Using exercise to help students feel better mentally is a good idea because it doesn't cost a lot of money and can make a big difference.				
17	It's cheap to encourage students to exercise for their mental health, and it can really help them feel better without spending a lot of money.				
18	It doesn't cost much to promote exercise for mental health in secondary school students, and the benefits it brings can be well worth the investment.				
19	Encouraging exercise among secondary school students for better mental health is a cost-effective strategy that can lead to significant improvements in their overall well-being.				
20	Exercise is a low-cost way to help secondary school students feel better mentally, making it a smart and affordable option for promoting their well-being.				

APPENDIX B

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	N	Mean	Std. Deviation
Running or cycling can make you feel happier and less stressed.	150	3.4400	.49805
Doing a mix of exercises, like both cardio and strength training, can give you lots of benefits for your mental health and overall well-being.	150	3.1933	.39624
Different exercises might help in different ways, but feeling good mentally is influenced by many things, not just the type of exercise you do.	150	3.3000	.45979
Just the type of exercise	150	2.5933	.64607

doesn't always affect how you feel mentally. Other things like if you enjoy it or if you have friends doing it with you matter too.			
Lifting weights or doing bodyweight exercises can boost your confidence and help you feel better about your body.	150	3.1333	.55159
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Low-intensity exercise, like walking, can still improve your mood and make you feel better mentally.	150	2.00	4.00	2.2667	.62031
High-intensity exercise, like	150	2.00	4.00	2.9600	.55418

running or HIIT workouts, can release endorphins and give you a mental boost, but it's not the only way to feel good.					
Mental well-being isn't solely determined by how hard you exercise. Other things like social support and coping skills are also important.	150	2.00	4.00	2.6733	.67054
The intensity of exercise alone may not determine its impact on mental health.					
Factors like consistency and enjoyment also play a big role in how exercise affects how you feel.	150	2.00	4.00	2.8067	.62064
Moderate-intensity exercise, such as brisk walking or swimming, can have a noticeable positive effect on your mental well-being by reducing stress and boosting your mood.	150	2.00	4.00	2.9133	.62323
Valid N (listwise)	150				

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Descriptive Statistics

	N	Mean	Std. Deviation
Low-intensity exercise, like walking, can still improve your mood and make you feel better mentally.	150	2.2667	.62031
High-intensity exercise, like running or HIIT workouts, can release endorphins and give you a mental boost, but it's not the only way to feel good.	150	2.9600	.55418
Mental well-being isn't solely determined by how hard you exercise. Other things like social support and coping skills are also important.	150	2.6733	.67054
The intensity of exercise alone may not determine its impact on mental health. Factors like consistency and enjoyment also play a big role in how exercise affects how you feel.	150	2.8067	.62064
Moderate-intensity exercise, such as brisk walking or swimming, can have a noticeable positive effect on your mental well-being by reducing stress and boosting your mood.	150	2.9133	.62323
Valid N (listwise)	150		

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Descriptive Statistics

	N	Mean	Std. Deviation
Even short bursts of exercise, like a quick walk during a break, can help secondary school students feel better mentally.	150	3.1333	.52669
Longer exercise sessions, like participating in sports practices or going for a longer bike ride, can have noticeable benefits for mental health in secondary school students, but shorter activities can also make a difference	150	3.4267	.49625
Mental well-being in secondary school students depends on many things, not just how long they exercise. Support from friends and family and coping skills are also crucial.	150	2.9400	.60457
The duration of exercise isn't the only thing that matters for mental health. Other factors like enjoyment and regularity are also important.	150	2.4800	.70206
Spending a moderate amount of time on exercise, such as playing sports for an hour, can positively affect mental well-being by	150	2.9533	.54756

reducing stress and improving mood in secondary school students. Valid N (listwise)	150		

```
DESCRIPTIVES VARIABLES=Q16 Q17 Q18 Q19 Q20
  /STATISTICS=MEAN STDDEV.
```

Descriptives

Notes

Output Created		30-APR-2024 17:11:04
Comments		
Input	Data	C:\Users\user\Documents\kimberly ANALYSIS.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	150
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	All non-missing data are used.
Syntax		DESCRIPTIVES VARIABLES=Q16 Q17 Q18 Q19 Q20 /STATISTICS=MEAN STDDEV.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

Descriptive Statistics

	N	Mean	Std. Deviation
It's well known that exercise can help with feelings like anxiety, depression, and how you see yourself.	150	2.5733	.67899
Exercise is often seen as a way to feel less anxious, less sad, and more confident, suggesting that there's a strong link between being active and feeling good mentally.	150	2.6400	.70739
Studies have found that people who exercise regularly tend to feel less anxious, less depressed, and better about themselves, showing a clear connection between exercise and mental well-being.	150	3.4267	.49625
People often feel less anxious, less sad, and more confident when they exercise regularly, showing that exercise can have a positive impact on mental health.	150	3.1333	.55159
Many studies show that when you exercise regularly, you're likely to feel less anxious, less sad, and better about yourself.	150	3.3267	.47057
Valid N (listwise)	150		

```
DESCRIPTIVES VARIABLES=Q21 Q22 Q23 Q24 Q25
  /STATISTICS=MEAN STDDEV.
```

Descriptives

Notes

Output Created		30-APR-2024 17:28:54
Comments		
Input	Data	C:\Users\user\Documents\kimberly ANALYSIS.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>

	Split File	<none>
	N of Rows in Working Data File	150
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	All non-missing data are used.
Syntax		DESCRIPTIVES VARIABLES=Q21 Q22 Q23 Q24 Q25 /STATISTICS=MEAN STDDEV.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

Descriptive Statistics

	N	Mean	Std. Deviation
Guidelines about how much exercise to do help us understand how physical activity can make us feel better mentally.	150	2.9133	.62323
Following these guidelines helps us build good habits that can lift our mood, boost our self-esteem, and make us feel stronger mentally.	150	3.1333	.52669
Rules about exercise help us understand how moving around can make us feel better in our heads.	150	3.4267	.49625
These rules help us make good habits that can lift our spirits, make us feel better about ourselves, and make our minds stronger.	150	2.9400	.60457
When we follow these rules, we can make sure we're moving enough to feel less sad, less stressed, and surer of ourselves.	150	2.4800	.70206
Valid N (listwise)	150		

```
DESCRIPTIVES VARIABLES=Q26 Q27 Q28 Q29 Q30
  /STATISTICS=MEAN STDDEV.
```

Descriptives

Notes

Output Created		30-APR-2024 17:38:26
Comments		
Input	Data	C:\Users\user\Documents\kimberly ANALYSIS.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	150
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	All non-missing data are used.
Syntax		DESCRIPTIVES VARIABLES=Q26 Q27 Q28 Q29 Q30 /STATISTICS=MEAN STDDEV.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

Descriptive Statistics

	N	Mean	Std. Deviation
Using exercise to help students feel better mentally is a good idea because it doesn't cost a lot of money and can make a big difference.	150	2.9533	.54756
It's cheap to encourage students to exercise for their mental health, and it can really help them feel better without spending a lot of money.	150	2.5733	.67899
It doesn't cost much to promote exercise for mental health in secondary school students, and the benefits it brings can be well worth the investment.	150	2.6400	.70739
Encouraging exercise among secondary school	150	3.4267	.49625

students for better mental health is a cost-effective strategy that can lead to significant improvements in their overall well-being. Exercise is a low-cost way to help secondary school students feel better mentally, making it a smart and affordable option for promoting their well-being.	150	3.1333	.55159
Valid N (listwise)	150		

```
NPAR TESTS
  /CHISQUARE=FEP
  /EXPECTED=EQUAL
  /MISSING ANALYSIS.
```

NPar Tests

Notes

Output Created		30-APR-2024 17:51:19
Comments		
Input	Data	C:\Users\user\Documents\kimberly ANALYSIS.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	150
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax		NPAR TESTS /CHISQUARE=FEP /EXPECTED=EQUAL /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02
	Number of Cases Allowed[a]	393216

a. Based on availability of workspace memory.

Chi-Square Test

Frequencies

FEP

	Observed N	Expected N	Residual
10.00	26	15.0	11.0
11.00	10	15.0	-5.0
12.00	10	15.0	-5.0
13.00	20	15.0	5.0
14.00	58	15.0	43.0
15.00	3	15.0	-12.0
16.00	3	15.0	-12.0
17.00	3	15.0	-12.0
19.00	3	15.0	-12.0
20.00	14	15.0	-1.0
Total	150		

Test Statistics

	FEP
Chi-Square	174.800[a]
df	9
Asymp. Sig.	.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 15.0.

```
NPAR TESTS
  /CHISQUARE=TPA
  /EXPECTED=EQUAL
  /MISSING ANALYSIS.
```

NPar Tests

Notes

Output Created		30-APR-2024 17:56:23
Comments		
Input	Data	C:\Users\user\Documents\kimberly ANALYSIS.sav

	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	150
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax		NPAR TESTS /CHISQUARE=TPA /EXPECTED=EQUAL /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.02
	Number of Cases Allowed[a]	393216

a. Based on availability of workspace memory.

Chi-Square Test

Frequencies

TPA

	Observed N	Expected N	Residual
13.00	14	18.8	-4.8
14.00	60	18.8	41.3
15.00	10	18.8	-8.8
16.00	21	18.8	2.3
17.00	11	18.8	-7.8
18.00	5	18.8	-13.8
19.00	16	18.8	-2.8
20.00	13	18.8	-5.8
Total	150		

Test Statistics

	TPA
Chi-Square	111.760[a]
df	7
Asymp. Sig.	.000

a. 0 cells (.0%) have

expected frequencies less than 5. The minimum expected cell frequency is 18.8.

```
ONEWAY PEE BY GENDER
  /MISSING ANALYSIS.
```

Oneway

Notes

Output Created		30-APR-2024 18:01:26
Comments		
Input	Data	C:\Users\user\Documents\kimberly ANALYSIS.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	150
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY PEE BY GENDER /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.01

ANOVA

PEE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	424.830	1	424.830	103.639	.000

Within Groups	606.670	148	4.099		
Total	1031.500	149			

```
NPAR TESTS
  /CHISQUARE=SEF
  /EXPECTED=EQUAL
  /MISSING ANALYSIS.
```

NPar Tests

Notes

Output Created		30-APR-2024 18:06:44
Comments		
Input	Data	C:\Users\user\Documents\kimberly ANALYSIS.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	150
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax		NPAR TESTS /CHISQUARE=SEF /EXPECTED=EQUAL /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00
	Number of Cases Allowed[a]	393216

a. Based on availability of workspace memory.

Chi-Square Test
Frequencies

SEF

	Observed N	Expected N	Residual
11.00	12	16.7	-4.7
12.00	20	16.7	3.3
13.00	4	16.7	-12.7
14.00	50	16.7	33.3
15.00	10	16.7	-6.7
16.00	22	16.7	5.3
17.00	9	16.7	-7.7
19.00	5	16.7	-11.7
20.00	18	16.7	1.3
Total	150		

Test Statistics

	SEF
Chi-Square	94.440[a]
df	8
Asymp. Sig.	.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 16.7.