RELATIONSHIP BETWEEN PHYSICAL ACTIVITIES AND THE MENTAL WELL-BEING AMONG HEALTH WORKERS IN WARRI SOUTH LOCAL GOVERNMENT AREA OF DELTA STATE

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Abstract
This study investigated the relationship between physical activities and the mental well-being of healthcare workers in Warri South Local Government Area of Delta State, Nigeria. The research was guided by three objectives and corresponding research questions. A correlational research design was employed, with a population comprising 850 healthcare workers, including doctors, nurses, midwives, administrative staff, laboratory technicians, and pharmacists. The sample size of 265 participants was determined using the Krejcie and Morgan (1970) table. Data were collected using a structured questionnaire titled "Physical Activities on Mental Wellbeing of Health Workers Questionnaire" (PAMWHWQ). The instrument's reliability was confirmed through the Pearson Product Moment Correlation Coefficient (PPMCC), yielding a value of 0.85, indicating high reliability. Data analysis was done with PPMCC. The finding from the study revealed a slight negative, but statistically insignificant relationship between physical activity and mental well-being. The findings suggest that while physical activity is generally beneficial for mental well-being, the level of engagement in different types, frequency, intensity, and duration of the activity play a role in shaping its impact. Recommendations include the implementation of policies by the government to promote regular physical activity within healthcare settings, and the encouragement of healthcare workers to prioritize their physical and mental well-being through consistent engagement in physical activities.

Introduction

Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community. Health workers are workers engaged in work actions whose primary intent is to improve health. They include doctors, nurses, midwives, public health professionals, laboratory technicians, health technicians, medical and non-medical technicians, personal care workers, community health workers, healers and traditional medicine practitioners. The term also includes health management and support workers such as cleaners, drivers, hospital administrators, district health managers and social workers, and other occupational groups in health-related activities as defined by the International Standard Classification of Occupations (ISCO, 2018).Mental well-being is a critical area of concern, particularly given the high-stress nature of their profession. Health workers often experience unique challenges that can significantly impact their mental health, including long hours, high patient loads, emotional strain from patient care, and the pressure to deliver optimal health outcomes under sometimes suboptimal conditions.

Burnout, characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment, is particularly prevalent among health workers. A study by Shanafelt et al. (2019) indicated that burnout not only affects the well-being of health workers but also has significant implications for patient care, leading to reduced quality of care and increased medical errors. Moreover, policies that address systemic issues, such as workload management, fair compensation, and career advancement opportunities, are critical. Implementing comprehensive mental health programs within healthcare institutions that include access to counselling and psychological services can also provide significant benefits.

The mental well-being of health workers is not only a matter of individual health but also a critical component of the overall healthcare system's functionality and effectiveness. Ensuring that health workers are mentally well is paramount for maintaining a resilient and responsive healthcare system, capable of providing high-quality care to patients. The impact of physical activities on the mental well-being of health workers has been a subject of considerable research, particularly in the context of the heightened stresses faced by this group. Historically, physical activities have been shown to provide significant mental health benefits, which are especially relevant for health workers dealing with high levels of stress, burnout, and emotional exhaustion.Regular physical activity has been consistently linked to reduced symptoms of anxiety and depression. Studies have demonstrated that engaging in activities such as aerobic exercises, yoga, and even moderate physical activities can lead to improved mood, reduced stress levels, and enhanced overall mental well-being. For instance, a systematic review by Mammen and Faulkner (2019) highlighted that physical activity is associated with lower rates of depression and anxiety among health workers. The review emphasized that even low-to-moderate levels of exercise can yield significant mental health benefits. Physical activities can foster a sense of community and social support among health workers. Group exercises and team sports not only provide physical benefits but also create opportunities for social interaction, which is essential for mental health. The study by O'Connor et al. (2020) noted that health workers who participated in group physical activities reported higher levels of social support and lower levels of psychological distress. Despite these benefits, there are barriers to regular physical activity among health workers, such as time constraints and demanding work schedules.

Physical activities among health workers encompass various variables that significantly impact their mental well-being. These variables include the type, frequency, intensity and duration of physical activities, as well as the social context in which these activities occur. Each of these variables plays a crucial role in determining the overall effect on mental health outcomes. The type of physical activity, whether it is aerobic exercise, strength training, yoga, or recreational sports, can have differing effects on mental well-being. Aerobic exercises such as running, cycling and swimming are particularly effective in reducing symptoms of depression and anxiety. Strength training has also been associated with improvements in mood and reductions in anxiety. Yoga and other mind-body exercises combine physical movement with mental relaxation techniques, which can significantly reduce stress levels and enhance emotional well-being. Rebar et al. (2020) highlights that diverse forms of physical activity, tailored to individual preferences, maximize

adherence and mental health benefits.Frequency and intensity of physical activities are crucial variables. Regular engagement in physical activities, ideally several times a week, is more beneficial than sporadic exercise. Higher intensity workouts have been linked to greater reductions in depressive symptoms and improved mood, although even moderate-intensity activities provide significant mental health benefits. According to a study by Schuch et al. (2019), regular physical activity at moderate to high intensity can lead to sustained improvements in mental health among health workers, reducing symptoms of burnout and emotional exhaustion.

Despite the clear benefits of physical activity for mental well-being, health workers in Warri South Local Government Area of Delta State continue to face significant challenges in maintaining regular exercise routines. Long working hours, high patient loads and inadequate staffing contribute to physical and emotional exhaustion, leaving little time or energy for physical activities.Health workers in Warri South Local Government Area of Delta State face significant mental health challenges due to their demanding work environments. Factors such as long working hours, high patient loads, emotional strain from life-and-death situations, and inadequate staffing contribute to elevated levels of stress, anxiety, depression, and burnout. These issues not only compromise the health workers' personal well-being but also negatively impact patient care, leading to medical errors, reduced quality of service, and increased absenteeism. Previous studies and interventions have focused on addressing these mental health crises through initiatives like mental health awareness, counselling services, and workplace wellness programs, often supported by government and non-governmental organizations.

However, despite these efforts, gaps remain in terms of sustainable, culturally appropriate, and well-funded interventions. Furthermore, little attention has been given to the role of physical activity as a potential preventive and therapeutic measure for mental health issues among health workers.This gap in the research raises important questions about how physical activities may influence mental well-being in this high-stress profession (health care). Are there specific barriers preventing health workers from engaging in regular physical activity? This study aims to fill the gap by specifically examining the relationship between physical activities and mental well-being among health workers in Warri South Local Government Area of Delta State. While existing interventions have primarily focused on psychological support and stress management techniques, there has been limited research on the role of physical activities as a preventive and therapeutic measure for mental health issues in this context. By identifying the specific barriers and facilitators of physical activity among health workers and evaluating the impact of regular exercise on their mental well-being, this study seeks to provide evidence-based recommendations for developing comprehensive wellness programs that incorporate physical activities as a key component.

Methodology

The correlational research design was used for this study. This design was used for this study because it examines the relationship between two or more variables without manipulating them. The population for this study consists of healthcare workers in Warri

South Local Government Area of Delta State, Nigeria. This includes doctors, nurses, midwives, administrative staff, laboratory technicians, pharmacists and other allied health professionals. Based on the data obtained from the Warri South Local Government Health Department and relevant healthcare institutions, the total population size for this study is 850 health workers. This population size is inclusive of individuals working in hospitals, clinics, health centres etc.

Table 1: Accredited healthcare facilities in Warri South L.G.A

S/No	Name of HCF	Ownership	No. of HCW
1	Ajamimogha PHC	Public	21
2	Ogunu PHC	Public	18
3	Igbudu PHC	Public	17
4	Iffie-kporo PHC	Public	13
5	Ugbuwangue PHC	Public	18
6	Ode-Itsekiri PHC	Public	12
7	Omadino PHC	Public	11
8	Eboh PHC	Public	19
9	Urban PHC	Public	16
10	Orugbo PHC	Public	15
11	Edjeba PHC	Public	19
12	Ekurede PHC	Public	18
13	Ubeji PHC	Public	16
14	Ukpokiti PHC	Public	14
15	Central Hospital Warri	Public	567
16	Cottage Hosptial Omadino	Public	56
	TOTAL		**850**

(Statistic Department, Healthcare Workers, Asaba, 2023)

The sample size for the study consisted of 265 respondents randomly selected across the different health centres in Warri South Local Government Area of Delta State. This was determined through the adoption of the Krejcie and Morgan (1970) table for determining sample size. It is a standardized table that contained population and appropriate and accepted sample size for that given population. The table specified that for a given population of 850, a sample size of 265 should be used as it is representative and statistically significant. Thus, for this study the total sample size of 265 healthcare workers was used.

The instrument for data collection was a structured questionnaire titled: Physical Activities and Mental Wellbeing of Health Workers Questionnaire (PAMWHWQ), divided into three sections: demographic information, physical activities and Mental wellbeing. The research instrument was validated by the research supervisor and two experts in Measurement and Evaluation in College of Education, Warri. Items that do not harmonize with the research objectives or ambiguous terms were dropped.

To test for the reliability of the instrument, test-retest method was adopted and this was done by carrying out a pre-test that is twenty (20) copies of the instrument was administered to 20 respondents, after an interval of two weeks another twenty (20) copies of the questionnaire were administered to the same respondents outside the area of study. Therefore, the first and second administered questionnaire were collected and used to establish the reliability coefficient at 0.05 level of significant. The Pearson Product Moment Correlation Coefficient was used to establish the reliability. The value of 0.85 obtained after the analysis was high enough and also indicates a substantial agreement between the two tests. Thus, confirming the reliability of the questionnaire/instrument.

Data collection involved administering the questionnaire to the selected sample of health workers during working hours, with the assistance of two trained research assistants. Ethical considerations were included, obtaining informed consent from the health workers, ensuring confidentiality and minimizing any potential risks to the participants. The data for the study were analysed using Pearson Product Moment Correlation Coefficient (PPMCC) to answer the research questions.

Results

Research question one: What is the **relationship between the level of engagement in different types of physical activities and the mental wellbeing scores of health workers in Warri South Local Government Area of Delta State?**

Table 1: Level of engagement in different types of physical activities and the mental well-being scores of health workers

Variable	N	$\bar{X}$	S.D	Level of engagement in diff types of physical activities	Mental well-being
Level of engagement in diff types of physical activities		16.0604	1.69339	1	
Mental well-being	265	18.6679	1.75678	-.109**	1

The table shows the correlation coefficient of the level of engagement in different types of physical activities and the mental wellbeing scores of health workers. The data analysis show that the r value is -0.109. The correlation coefficient indicates that there is low and negative correlation between the level of engagement in different types of physical activities and mental wellbeing scores of health workers. There was a weak negative correlation between level of engagement in different types of physical activities and the mental wellbeing scores of health workers, but the relationship was not statistically significant, $r(265) = -0.109$, $p>0.05$.

Research question two: What is the relationship between the frequency of physical activity and the mental wellbeing scores of health workers in Warri South Local Government Areaof Delta State?

Table 2: Frequency of physical activities and the mental well-being scores of health workers

Variable	n	$\bar{X}$	S.D	Frequency of physical activities	Mental well-being scores
Frequency of physical activities	265	18.0528	1.14359	1	
Mental well-being scores		18.6679	1.75678	- 131**	1

From the table above, the correlation coefficient of the frequency of physical activities and mental well-being of health workers is -0.131. The correlation coefficient indicates that there is low and negative correlation between the frequency of physical activities and the mental well-being scores of health workers. The relationship was not statistically significant, r(265) = -0.131, p > 0.05. it indicate that that the frequency of engagement in physical activities does not significantly enhance the mental health or the health workers.

Research question three: What is the relationship between the perceived intensity of physical activity and the mental wellbeing scores of health workers in Warri South Local Government Area of Delta State?

Table 3: Perceived intensity of physical activities and mental well-being scores among health workers

Variable	N	$\bar{X}$	S.D	Perceived Intensity of physical activities	Mental well-being scores
Perceived Intensity of physical activities	265	17.3962	1.95343	1	
Mental well-being score		18.6679	1.75678	-.574**	1

From the table above, the correlation coefficient of the perceived intensity of physical activities and mental well-being of health workers is -0.574. This indicates that there is moderate and negative correlation between the intensity of physical activities and the mental well-being scores of health workers in Warri South Local Government Area. The result showed that there was a moderate to strong negative correlation between the intensity of physical activities and the mental well-being of healthcare workers, and this relationship

was statistically significant, r(265) = -0.574, p< 0.05. the above means that the low intensity of physical activities of the health care workers significantly affects their mental well-being scores of healthcare workers in a negative way.

Discussion of findings

There was no relationship between the levels of engagement in different types of physical activities and the mental well-being of health workers in Warri South Local Government Area of Delta State. The literature on this subject presents a mix of supportive and contrasting views. For instance, studies by Aylward et al. (2021) and Van der Feltz-Cornelis et al. (2020) align with the findings, indicating that while physical activities generally benefit mental health, the specific type of activity may not significantly influence mental well-being. These studies argue that factors such as intensity and duration are more crucial determinants of mental well-being than the type of physical activity itself. Conversely, other research contradicts these findings. For example, Smith et al. (2019) and Lindwall et al. (2020) suggest that certain types of physical activities, such as aerobic exercises or team sports, have a more pronounced positive impact on mental well-being than others, such as strength training or solitary activities. They argue that the social interaction and cardiovascular benefits associated with some types of physical activities can enhance mental well-being more effectively.

There was a moderate but significantly weak negative relationship between the frequency of physical activities and the mental well-being of health workers in Warri South Local Government Area of Delta State. These findings are supported by recent literature that questions the simplistic view of "more is better" when it comes to physical activity and mental health. For example, the study by Mandolesi et al. (2020) highlights that while physical activity generally benefits mental health, there can be diminishing returns when the frequency becomes excessive, potentially leading to burnout or fatigue.

Similarly, research by Kim et al. (2021) discusses how excessive physical activity, particularly when not well-balanced with rest and recovery, can lead to adverse mental health outcomes, including increased stress and anxiety. On the other hand, other scholars emphasize the positive impact of regular physical activity on mental well-being, with a focus on its mood-enhancing and stress-reducing effects. For instance, Biddle et al. (2019) argue that regular physical activity is consistently linked to improved mental health, and that higher frequencies of moderate exercise are generally associated with better mental well-being. They suggest that the social and psychological benefits derived from regular physical activity, such as enhanced self-esteem and reduced anxiety, are significant.

There was a strong negative relationship between the intensity of physical activities and the mental well-being of health workers in Warri South Local Government Area of Delta State. The findings are supported by a body of literature that highlights the potential risks associated with high-intensity physical activities, especially in populations that may already be under significant stress, such as healthcare workers. For instance, a study by Füzéki et al. (2020) discusses how high-intensity physical activities can sometimes lead to increased physical and psychological stress, particularly if the activities are not well-balanced with adequate rest and recovery. The study suggests that in high-stress environments, such as

those experienced by health workers, intense physical activities may exacerbate feelings of fatigue, burnout, and psychological strain, ultimately leading to a decrease in mental well-being. Conversely, some literature emphasizes the benefits of high-intensity activities, particularly in terms of their efficiency in improving physical health and potentially contributing to mental well-being when appropriately managed. For example, Heisz et al. (2019) argue that high-intensity interval training (HIIT) and other forms of intense exercise can lead to significant mental health benefits, including improved mood and cognitive function. However, they also caution that these benefits are most pronounced when the activities are balanced with adequate recovery and tailored to the individual's capacity and stress levels.

Conclusion

The study on the relationship between physical activities and mental well-being of health workers in Warri South Local Government Area of Delta State underscores the complex and multifaceted relationship between exercise and mental health within this specific population. The findings reveal that while physical activity is widely recognized for its positive impact on mental well-being, the nature of this impact is influenced by the level of engagement in different type, frequency, intensity, and duration of the activities. This complexity highlights the need for better understanding of how health workers, who operate in high-stress environments, can best utilize physical activity to enhance their mental health.Based on the findings that examine the relationship between physical activities and the mental well-being of health workers, three key recommendations can be proposed for the government, health workers, and medical practitioners:

1. The government should implement policies that promote regular physical activity in healthcare settings. This can be achieved by allocating funding to build fitness centers in hospitals and clinics, or by providing incentives for health institutions that integrate physical activity programs into their daily operations. Additionally, health campaigns that raise awareness about the importance of physical activity for mental well-being should be established, focusing on improving working conditions to reduce stress and encourage a balanced lifestyle for health workers.
2. Health workers should be encouraged to prioritize their own physical and mental well-being through regular engagement in physical activities. Institutions can offer flexible work schedules that allow time for physical exercise, along with workplace wellness programs that provide access to fitness equipment, group exercises, and personal training. Health workers should be educated on the benefits of physical activity in managing stress, preventing burnout, and improving their mental health, encouraging them to make it part of their daily routines.
3. Medical practitioners should take an active role in promoting physical activity as part of the holistic care of their patients and colleagues. In addition to treating mental health conditions, practitioners can emphasize preventive measures, including recommending suitable physical activities based on individual health profiles. Collaboration between medical professionals and fitness experts can

ensure that health workers engage in safe and effective exercise routines tailored to their specific needs, thereby improving their overall mental well-being.

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