

PHYSICAL ACTIVITY AND HEALTH-RELATED QUALITY OF LIFE OF HEALTHCARE WORKERS IN CROSS RIVER STATE, NIGERIA

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Abstract

This study described the relationship between physical activity and health-related quality of life (HRQoL) among healthcare workers in Cross River State, using an adapted World Health Organization Quality of Life-Brief Version (WHOQOL-BREF) questionnaire and the International Physical Activity Questionnaire-short form (IPAQ-SF) to assess 330 healthcare workers from ten (10) selected hospitals in Cross River State. A null hypothesis was formulated and tested at a 0.05 level of significance. The study adopted the Ex-post factor design and the sampling technique involved four stages of stratified, simple random and purposive sampling techniques. A simple linear regression statistical tool was used for data analysis. The results revealed that there was a significant influence of physical activity on the health-related quality of life of healthcare workers in Cross River State, with a relative variance of 65.7%. Based on these findings, it was recommended that all public health practitioners should not only redirect education towards preventive/risk reduction practices but also practice these risk reduction practices with good health-seeking behavior for early diagnosis to ensure the maintenance of desirable HRQoL.

Keywords: Physical activity, Health-related quality of life, Health care workers

Introduction

The famous saying that "health is wealth" refers to the importance of excellent health and education delivery for the growth of all nations. It takes determination and excellent educational procedures to keep this state of health. Healthcare workers encourage their patients to engage in regular physical activity in order to improve their health and take action on disease prevention and management. By so doing, health workers are looked at as role models since they play a critical role in encouraging a physically active lifestyle (Costa, Guerra & Santos, 2015).

Physical activity covers daily tasks, including housework, yard work, occupational pursuits, leisure pursuits, and transportation (such as riding a bike or walking to and from work or school). It is any skeletal muscle-driven movement of the body that results in energy expenditure (World Health Organization (WHO), 2015; Fletcher, Landolfo, Niebauer, Ozemek, Arena, & Lavie, 2018). With physical inactivity, the risk of lifestyle-related non-communicable diseases (NCDs), such as obesity and cardiovascular disease (CVD), rises. Thus, the prevention of disease and the promotion of good health for a good quality of life both depend on engaging in the required levels of physical activity (Hallal, Andersen, & Bull, 2012). Physical activity is also linked with lower rates of all-cause mortality and a reduced risk of developing chronic diseases such as hypertension, diabetes, stroke, osteoporosis, cancer, and depression. Even though sedentary behaviour

and physical inactivity have been highlighted as important modifiable risk factors by the American Heart Association (AHA) and the American College of Sports Medicine (ACSM), among other leading organizations, a sizable portion of the world's population engages in little to no physical exercise (Fletcher et al., 2018).

Globally, just one-third of adults and four out of five teenagers meet the public health Physical activity goals and physical inactivity are the fourth most common causes of death worldwide, accounting for 6% of all deaths annually, according to the WHO (2015). Embracing physical activity improves sleep, maintains a healthy weight, manages stress, and improves the quality of life of individuals. The study was conducted to investigate the influence of physical activity on the health-related quality of life of healthcare workers in Cross River State with the specific objectives of determining the level of physical activity among healthcare workers and predicting the influence of physical activity on health-related quality of life of healthcare workers.

In 28 European countries, 28.6% of the population do not engage in any kind of physical exercise, while 71.4% are active enough (Gerovasili, Agaku, Vardavas, & Filippidis, 2015). According to scientific data, those who are physically active, regardless of their age or ethnicity, have higher levels of cardiorespiratory fitness, health, and wellness as well as a better quality of life (Fletcher et al., 2018). In a 22 African country study by WHO, data on physical activity levels showed a wide variation, ranging from 46.8% in Mali, West Africa, to 96.0% in Mozambique, Southeast Africa, but with no clear reasons for the variation (Iwuala, Sekoni, Olamoyegun, Akanbi, Sabir & Ayankogbe, 2015). In 2009, 17% of the world's population was reported to be physically inactive and by 2012, 31% were physically inactive (Iwuala et al., 2015).

There have been few studies on physical activity levels in Nigerian populations; however, a 2008 systematic review found that the prevalence of physical inactivity among Nigerians was 25-57% (Iwuala et al., 2015). A crosssectional study conducted among an urban Northern Nigerian population found that 68.6% were sufficiently active (Michael, Grema, Aliyu, Suleiman & Tanimu, 2020).

Based on how hard the body has to work, several levels or intensities of physical activity exist. It includes activities that are mild, energetic, strong, and balance-related. The WHO guidelines and recommendations include information on the recommended levels of physical activity for various age groups and specific population groups in order to promote optimal health. Healthcare workers are adults between the ages of 18 and 64, and the suggested activities include at least 150–300 minutes of moderate-intensity aerobic physical activity; or at least 75–150 minutes of vigorous-intensity aerobic physical activity; or an equivalent combination of moderate- and vigorous-intensity activity throughout the week, muscle-strengthening activities at a moderate or greater intensity that involve all major muscle groups on 2 or more days a week, as these provide additional health benefits, increase moderate-intensity aerobic physical activity to more than 300 minutes, or do more than 150 minutes of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity activity throughout the week for additional health benefits, limit the amount of time spent being sedentary. Replacing sedentary time with physical activity of any intensity (including light

intensity) provides health benefits, and reduce the detrimental effects of high levels of sedentary behaviour on health, all adults and older adults should aim to do more than the recommended levels of moderate- to vigorous-intensity physical activity. (WHO, 2005)

To encourage people to exercise more throughout their lives, regardless of their gender, age, income, nationality, etc., a new Physical Activity Strategy for the WHO European Region (2016-2025) was designed, which aims to implement policies at every administrative level (World Health Organization, 2015). A multidisciplinary team strategy that encourages behavior change through regular encounters and individualization of preventive measures can help to facilitate the adoption of a physically active lifestyle. The benefits of physical activity have been proven at both biological and disease-specific levels (Adams, Reich, Uhlemann & Niebauer, 2017). Physical activity also enables all community stakeholders to test and validate plans and capabilities and uncover both capability gaps and areas for improvement, which is crucial for community healthy living. A well-planned activity offers a low-risk setting for testing abilities, educating staff members about their roles and duties, and promoting fruitful collaboration and communication between organisations.

Health-related quality of life (HRQoL) is the perceived physical and mental health of an individual or a group over time. It encompasses perceptions of one's health correlates, such as socioeconomic status, functional status, social support, and perceptions of one's energy level and mood (Centre for Disease Control and Prevention, 2018). The goal of health-related quality of life (HRQoL) is to measure how well people feel about their present health state and capacity to carry out everyday tasks in many spheres of their lives (Zubritsky, Abbott, Hirschman, Bowles, Foust, & Naylor, 2013). HRQOL assists in estimating the prevalence of diseases, accidents, and disabilities that are preventable and can offer important new insights into the connections between risk variables and HRQoL. Physical activity is associated with improved mental health and well-being. Both factors are closely linked to HRQoL (Battaglia, Bellafore, Alesi, Paoli, Bianco & Palma, 2016). Studies that analyse the effect of aerobic physical activity on HRQoL have shown inconsistent results (Villalobos, Vinuesa, Pedret, Basora, Basora, Arija, 2019). But, total physical activity significantly improved the HRQOL measures of physical functioning (+10.19 points), bodily pain (+7.32 points), general health (+2.53 points), and mental health (+5.65 points). Battaglia et al. (2016) showed that supervised physical activity results in positive health status. Other results also support the hypothesis that higher levels of PA are associated with better health-related quality of life (Anokye, Trueman, Green, Pavey, & Taylor, 2012), but and high-intensity, unsupervised activity did not improve HRQOL as documented by Conradsson, Littbrand, Lindelöf, Gustafson and Rosendahl, (2010).

Healthcare workers are a group seen as an example for the general population with whom people interact. Globally, they are the most physically and mentally taxing group. Physical activity for this group is challenging to plan for and carry out due to varying work shifts, demanding jobs, and family-related concerns. Several studies have shown that not only do healthcare workers not carry out enough physical activity (Biernat,

Poznanska& Gajewski, 2012), but they also consume unhealthy foods, abuse alcohol, and are very susceptible to burnout (Moustou, 2010).

According to the Randstad Work monitor poll of 2014, employees who regularly exercised were more productive and in better physical shape, but only a small percentage of the employees (18%) stated that their place of employment had a gym or other appropriate area for physical activity (Ranstad, 2014). Most healthcare workers from many studies had low levels of physical activity, corresponding to those of the general Greek population (Gerovasili et al., 2015). A low level of physical activity was reported by 26.5% of those taking part, which correlated with various health-related quality of life indicators, including pain, physical and mental health, vitality, and mental and emotional well-being. As compared to the general population, many authors have documented that healthcare workers engage in more physical activity (Chevan &Haskvitz, 2010; Suija, Pechter, Maaroos, Kalda, Rätsep& Oona, 2010; Stanford, Durkin, Stallworth & Blair, 2013). Other reports showed that healthcare workers were less active than the general population, despite the relevance of physical activity on health (Howe, Leidel, Krishnan, Weber, Ruben, & Jackson, 2010; Ambakederemo, & Chikezie, 2018). Various literature has also documented that higher levels of physical activity are associated with better health-related quality of life (Anokye, Trueman, Green, Pavey & Taylor, 2012; Wu, Han, Zhang, Luo, Hu & Sun, 2017).

The reviewed literature on physical activity and health-related quality of life in Cross River State, Nigeria is scanty, especially local literature. No empirical work has studied the physical activity and health-related quality of life among healthcare workers in Cross River State. Most of the available studies are foreign-based research, and only a very few were solely on the general health of healthcare workers. In the Cross River State, Nigerian setting, there is also the need to provide empirical data. The present study, therefore, fills the gaps between the foreign and the local. Also, the appraisal of the literature reviewed revealed a gap in behaviour change and health promotion services for healthcare workers that this study will help fill with its findings. The purpose of the study was therefore to extend the knowledge through empirical evidence that the study may provide in revealing the influence of physical activity on health-related quality of life of health care workers in Cross River State, Nigeria. Specifically, the study sought to determine the level of physical activity among healthcare workers and also predict the influence of physical activity on health-related quality of life. An hypothesis postulated to guide the study as expressed in the null was that there is no significant influence of physical activity on health-related quality of life of healthcare workers in Cross River State.

Methodology

The research design that was adopted for this study is an ex-post facto design. The area of this study is the Cross River State of Nigeria. Cross River State is one of the thirty-six (36) states of the Federal Republic of Nigeria. Cross River State has 573 public primary health care facilities, 18 private primary health care facilities, 22 public secondary care facilities, 117 private secondary care facilities, and two (2) public tertiary health care facilities. The tertiary facilities are the University of Calabar Teaching Hospital and the Federal

Neuropsychiatric Hospital, Calabarare owned by the federal government, while the primary health care facilities and secondary facilities are owned by the Cross River State government and private firms (Eriki et al., 2015).

The population of the study was health care workers in the tertiary and secondary government hospitals in Cross River State. The population covered only medical doctors and nurses, working in selected tertiary and secondary healthcare facilities in Cross River State between January 2021 and December 2021. There are 36 doctors and 938 nurses from the secondary facilities and 356 doctors and 1,230 nurses in the tertiary healthcare facilities (World Bank, 2014; Hospital Statistics, 2021). Making a total population of 2,560

A multi-stage sampling procedure was adopted for the study. First, a stratified sampling method was used to place the hospitals according to their level of care (tertiary and secondary). One tertiary institution was selected was then selected through the random sampling method. Stratified sampling was then used again, placing the secondary hospitals according to their senatorial districts (southern, central, and northern). In the fourth stage, a simple random sampling method was used to select three hospitals from each senatorial district. The researcher achieved this by writing the names of all the public secondary hospitals on pieces of paper, folding the papers into small ball-like shapes, turning the papers into a cup, the papers were mixed, and the researcher asked another person to pick off the paper balls from the cup with replacement. Nine (9) secondary care hospitals were selected. At the hospital level, a purposive sampling method was adopted to select the sample for the study from the total population of medical doctors and nurses irrespective of their ranks.

Inclusion criteria: all health care workers in the facility without any neuromuscular impairment or physical disabilities that would prevent them from participating in the study.

Using Krejcie and Morgan's (1970) table of sample size determination, to obtain a representative statistical sample for the empirical research, the sample comprised three hundred and thirty (330) healthcare workers.

The instruments that were used for this study were an adapted World Health Organization Quality of Life-Brief Version (WHOQOL-BREF) questionnaire and the International Physical Activity Questionnaire-short form (IPAQSF) to collect information from respondents (healthcare workers) while at their places of work (clinics, wards, offices). The seven items that make up the IPAQ-SF assess the amount of time spent being physically active over the previous seven days and track walking, sitting time, and moderate-intensity activities (other than strenuous activity).

The researcher visited the hospitals in the states. Permission was obtained from the ethical committees of the Ministry of Health, Cross River State, and the heads of each hospital. Six (6) research assistants were trained on how to administer and retrieve the questionnaire from respondents. A total of three hundred and thirty copies of instruments were distributed to the medical doctors and nurses in the 10 selected hospitals for study over three weeks.

Each copy of the duly retrieved instrument was assigned a numerical value. A key was developed for each of the constructs of the instruments in a tabular form after data collection. The items were coded and scores were assigned to each of them according to

the weight of the questions. Physical activity levels were classified as low (no activity reported or activity that was reported but was insufficient to meet the criteria-less than 3 days of activity lasting less than 20 minutes each day within the week), moderate (any of the following three criteria: (a) 3 or more days of vigorous activity lasting at least 20 minutes each day; (b) 5 or more days of moderate activity lasting at least 30 minutes each day; (c) 150–300 minutes of moderate-intensity aerobic within the week or high intensity-either of the following two criteria: (a) three or more days of vigorous-intensity activity per week; or (b) seven days of any combination of walking or moderate or vigorous-intensity activities per week; or (c) at least 75-150 minutes of vigorous-intensity aerobic physical activity; or an equivalent combination of moderate- and vigorous-intensity activity throughout the week. Following that, these three groups were divided into two categories: adequate physical activity (moderate or high-intensity categories), and inadequate physical activity (low intensity).

They were summarized using frequency tables and percentages. Simple regression analysis was used to determine the influence of physical activity on health-related quality of life.

All the distributed questionnaires were returned (representing a 100% response rate) and were analysed. Most respondents (34%) were in the 45–51-year age group. They were predominantly female (84%). Most respondents (83.9%) were nurses, with only 16.1 % being medical doctors. 49% were married, and 32% of all respondents had 6-10 years of working experience.

Table 1: Distribution of demographic variables

S/N	Variables	N	%
1.	Age		
	20-26years	14	4.2
	27-32 years	19	5.8
	33-38 years	56	17
	39-44 years	97	29.3
	45-51 years	112	34
	52- 59years	32	9.7
	Total	330	100
2.	Gender		
	Female	278	84.2
	Male	52	15.8
	Total	330	100
3.	HealthCare Worker		
	Medical doctor	53	16.1
	Nurse	277	83.9
	Total	330	100
4.	Marital Status		

	Single	124	37.6
	Married	162	49
	Separated/ Divorced	31	9.4
	Widowed	13	4
	Total	330	100
5.	Years of experience		
	Less than 5years	55	16.7
	6-10years	106	32.1
	11-15years	98	29.7
	More than 15years	71	21.5
	Total	330	100

Table 2: Showing the type of physical activity by respondent

S/N	Variables	Frequency	%
1.	Type of Activity		
	Brisk walk	225	68.1
	Housework	303	91.8
	Carrying weight	201	60.9
	Standing	130	39.3
	Dancing	294	89
	Car washing	156	47.3
	Aerobic exercise	198	60
	Jogging	108	32.7
	Rope skipping	111	33.6

Most respondents (91.8%) carry out household chores as a form of physical activity, 68.1% engage in brisk walking while only 32.7% carry out jogging.

Table 3: Showing the level and adequacy of physical activity

S/N	Variables	Medical doctor	Nurse	Frequency	%
1.	Physical activity				
	Low	32(60.4)	169(61.0)	201	60.9
	Moderate	14(26.4)	78(28.2)	92	27.9
	High	7(13.2)	30(10.8)	37	11.2
	Total	53	277	330	100
2.	Adequacy of physical exercise				
	Adequate	21(39.6)	108(39)	129	39.1
	Inadequate	32 (60.4)	169(61)	201	60.9

Total	53	277	330	100
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The majority of respondents (60.9%) had a low level of physical activity, both doctors (60.4%) and nurses (61.%) had the highest respondent having a low level of physical activity, while 11.2% had high-level physical activity. In the activities performed, the majority (60.9%) of the respondent had inadequate physical activity as recommended by WHO.

Hypothesis One

There is no statistically significant influence of physical activity on health-related quality of life of Healthcare workers in Cross River State

Table 4: A simple regression of physical activity on health-related quality of life of Health care workers in Cross River State

Variables			Sum of Squares	df	Mean Square	F-ratio	p-value	B	R ²
Physical Activity	Health-related quality of life	Regression	14011.682	1	13112.81	209.736	.000 ^b	.656 ^a	.371
		Residual	17318.149	328	56.011				
		Total	31329.731	329					

Table 4 showed the result of the simple regression analysis of the influence of physical activity on the health-related quality of healthcare workers in selected hospitals in Cross River State. The results from the Analysis of Variance (ANOVA) obtained from the regression was F-ratio = 209.736 for the influence of physical activity on health-related quality of life of health care workers in Cross River State with p-values = .000 (or $p > .05$) at the degree of freedom (df) 1 and 328. This result implies that the null hypothesis was rejected and the finding drawn from the result was that there is a significant influence of physical activity on health-related quality of life among healthcare workers in Cross River State.

Discussion of Findings

Physical activity reduces the risk of developing chronic diseases among other benefits thus promoting health-related quality of Life. Findings from the study however revealed that the majority of respondents (60.9%) were inactive, likewise, in the studies of Iwuala et al (2015) and Michael, et al., (2020) where only 20.8% were active, 40.4% of respondents met the WHO recommendation for sufficient physical activity and respectively. Gerovasili, et al., (2015) also documented a higher number of physically inactive health workers. On the contrary, studies from other parts of the world suggest that HealthCare workers have higher physical activity levels (Suija et al., 2010). This could be a result of the developmental status of some countries that have adequate facilities and provisions within health establishments for physical activities. The study showed nurses (61%) and physicians (60.1%) were equally physically inactive. Also supporting this are findings that reported among Polish medical personnel, doctors were more likely to be physically inactive compared to other healthcare workers (Iwuala, et al., 2015).

The study revealed that physical activity significantly influences the health-related quality of life of personnel. This is confirmed by the study of Anokye et al., (2012), which results support the hypothesis that higher levels of PA are associated with better health-related quality of Life and the study of Wu et al, (2015), which showed greater HRQoL is achieved when levels of physical activity get higher. Also study by Villalobos et al.(2019) documented that total physical activity had a positive effect significantly on the following HRQOL items: Physical Functioning (+10.19 points), Bodily Pain (+7.32 points), General Health (+2.53 points) and Mental Health (+5.65 points) and the study by Battaglia et al. (2016), revealed that supervised physical activity advice reported a positive relationship, However, contrary to this is the study by Conradsson et al. (2010) that revealed that unsupervised activity with high intensity did not report any benefit on HRQOL. This disparity might be due to the different instruments used for the studies and could also be because some people tend to over-report their participation levels in physical activity.

Despite global reports that suggest that physical activity improves health-related quality of life, this study presents a high proportion of healthcare workers having a low to moderate level of physical activity. This can mislead their clients and the public who look unto them as models into reluctantly waiting at home or deciding to follow their advice rather than the health care worker and educators. Abiding by advice and instruction regarding health may be ignored thus resulting in poor health-related quality of life. Healthcare workers should also follow instructions given by them to also improve their health.

Conclusion

Physical activity has several benefits for man, including the reduction of the risk of the development of noncommunicable diseases. Despite these known benefits, healthcare workers in selected hospitals in Cross River State, Nigeria are majorly inactive physically. This affects their health-related quality of life, as shown in the findings of this study that there is a significant positive influence of physical activity on the health-related quality of life of healthcare workers in Cross River State, Nigeria. The high rate of physical inactivity amongst this group of healthcare workers in Nigeria positions them at risk of a low health-related quality of life. This has public health consequences. If the health personnel in Nigeria, which are still insufficient in numbers, become unhealthy, this will limit their capacity to provide health-related services to the people. The effectiveness of Nigerian healthcare workers as good role models, health promoters, and health educators of physical activity is also in question. Therefore, there is a need for an urgent provision of facilities in establishments and health promotion programs that will increase physical activity. The following recommendations are made from the results of the study:

- i. government authority should ensure that public hospitals are adequately equipped with physical activity programmes to encourage healthcare workers to partake in physical activities.
- ii. public health practitioners should not only redirect education towards preventive/risk reduction practices but also have a behaviour change and practice these risk reduction practices with good health-seeking behaviour for

early diagnosis to ensure the maintenance of a desirable health-related quality of Life.

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