

The Influence of Socio-demographic Factors on Physical Activity Level of Health Service Providers in Jos University Teaching Hospital

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Abstract

Background: Physical activity and exercise are essential for enhancing the health of healthcare providers and improving their quality of life. Several factors, including socio-demographic characteristics, can influence the physical activity levels of healthcare providers. The aim of this study is to assess the impact of socio-demographic factors on the physical activity levels of healthcare providers at Jos University Teaching Hospital.

Methods: A stratified sampling method was used to select 285 consenting health service providers. Socio-demographic characteristic of participants was documented while physical activity level was assessed with the GPAQ. Data collected was analysed using SPSS version 25. Chi-square statistics was used to explore relationship between socio-demographic factors and physical activity level. A p-value ≤ 0.05 was considered statistically significant. Logistic regression was applied for significant variables from chi-square.

Results: Gender (p value of 0.007) and marital status (p value of 0.004) were statistically significantly associated with the physical activity level of health service providers. Male participants predominantly (41%) had high physical activity levels compared to their female counterparts, who mostly had low physical activity levels (36%). Logistic regression showed that females had about 2 times the odds of being physically inactive compared to their male counterparts (odd ratio of 2.23 at 95% confidence interval). Single participants (50%) had higher physical activity levels compared to married individuals. Age, average monthly salary, and years of practice were not statistically related to physical activity levels.

Conclusion: Marital status and gender was significantly related to physical activity level. Advocacy should be aimed at female and married health service providers who are less likely to be physically active.

Keywords: Influence, Socio-demographic, Physical activity, Health Personnel

Introduction: Physical activity and exercise among health care workers has been shown to be beneficial for stress relief, controlling body weight, improving fitness and managing chronic illnesses like hypertension, diabetes and musculoskeletal disorders.¹ Physical activity also improves the quality of life of health care workers and prevent the occurrence of diseases.¹ A ten minute outdoor physical activity break at work was shown by Francesco et al in 2024 to improve attention span at work and executive functions such as reasoning and planning.²

Several factors including socio-demographic variables influence the physical activity level of health service providers either as barriers or facilitators.^{3,4}

Socio-demographic factors such as age, sex, occupational status, marital status, income level, work experience, type of family has been shown to influence the physical activity level of health service providers.⁵⁻⁷ Advancing age over forty, female gender, black race, been married and increasing number of children and dependent was associated with lower physical activity levels.^{4,6} Physiotherapist and paramedics had been shown to have higher physical activity levels compared to medical doctors, nurses and radiographers.⁴ Male health workers had been shown to have high physical activity levels.⁴ Barriers to physical activity and exercise participation among

health service providers include time constraints, laziness, safety concerns, and prioritizing patient health over their own.⁸ Other barriers include family demands, work inflexibility, lack of social support, lack of appropriate exercise equipment, access to exercise programs and health related comorbidities.⁹⁻¹¹

Goal setting, use of exercise reminders, self-monitoring with the use of electronic and mobile health facilities has been shown to be effective in facilitating physical activity and exercise participation.¹²⁻¹⁵ Facilitators at the work place include pleasant walking routes and access to work place exercise programs.¹⁶

This study was done to determine the influence of socio-demographic factors on the physical activity levels of health service providers in Jos University Teaching Hospital.

METHOD

Study design, population and area: The cross sectional study was carried out among medical Doctors, Nurses, Pharmacist, laboratory Scientist, Physiotherapist, Dental technologist, Radiographers, Dietitians and health record Staff of the JUTH.

Sampling method and sample size: A stratified sampling method was used to recruit 285 health service providers over a

twelve-week period. The first sampling stage included stratification of health service providers by proportionally selecting them from each category by dividing the total number of each category by the total number of health service providers in JUTH and multiplying it by the sample size. The second stage included listing all the departments alphabetically and having a list of all the medical Doctors in the various departments. Proportion to size and a computer generated random numbers was used to determine the number of medical Doctors that were recruited from each department. For recruitment of Nurses, Pharmacist, laboratory Scientist, Radiographers, Dietician, Physiotherapist, health records and dental technologist, a serialised list of all participants in each group was made and the required number from each category were recruited using computer generated simple random method.

Potential participants identified from the different departments and health service provider categories were contacted and informed about the study and consent documented for all consenting participants. A self-administered questionnaire was used to collect Socio-demographic characteristics of participants while the global physical activity questionnaire was used to assess physical activity levels of study participants. Data entering and analysis was done using SPSS version 25. Chi-square statistics was used to test for relationship between socio-demographic variables and physical activity levels. Logistic regression applied for variables that were significant from chi-square.

Ethical consideration: Ethical clearance was obtained from the ethical committee of Jos University Teaching Hospital (JUTH/DCS/IREC/127/XXXI/2664). Written Permission from various departments was obtained from the heads of departments. Participation in the study was voluntary with written, signed consent obtained from participants.

Results

Results in table I show that majority of participants were females(53.3%), less than 40 years of age(73.7%), medical doctors(48.8%), Single(30.2%) with 5-10 years of practice(50.5%).

Table I: Socio-demographic characteristics of Study participants

Sociodemographic characteristics	Variables	Frequency(n)	Percentage (%)
Sex	Male	133	46.7
	Female	152	53.3
Age(years)	≤40	210	73.7
	>40	75	26.3
Health professional Cadre	Medical doctors	139	48.8
	Nurses	93	32.6
	Pharmacist	20	7.0
	Health records	15	5.3
	Laboratory scientist	9	3.0
	Radiographers	5	1.8
	Dieticians	2	0.7
	Dental technician	1	0.4
Physiotherapist	1	0.4	

Marital status	Divorced	2	0.7
	Separated	1	0.35
	Single	86	30.2
	Widowed	5	1.75
Years of practice	≤5	76	26.7
	5-10	144	50.5
	>10	65	22.8
Average monthly Salary (Naira)	<200,000	134	47.0
	201,000-400,000	96	33.7
	>400, 000	55	19.3

Socio-demographic variables and relationship with Physical activity level of study participants

Majority of male participants (41%) were involved in high physical activity level while females were predominantly involved in low (36%) to moderate (36%) physical activity levels. Single participants engage more in high physical activities (50%) unlike their married counterparts with low (33%) to moderate (41%) physical activity levels.

Table II: Socio-demographic variables and relationship with Physical activity level of study participants

Variables	Frequency (n)	Level of physical activity			P value
		High (%)	Moderate (%)	Low (%)	
Sex					
Male	133	54(41)	52 (39)	27 (20)	0.007
Female	152	42(28)	55 (36)	55(36)	
Age(years)					
≤40	210	75(36)	77 (37)	58(28)	0.470
>40	75	21 (28)	30(40)	24 (32)	
Marital status					
Married	191	51(26)	78 (41)	62(33)	0.004
Divorced	2	-	2 (100)	-	
Separated	1	-	-	1 (100)	
Single	86	43(50)	24 (28)	19(22)	
Widowed	5	2 (40)	3 (60)	-	
Years of practice					
≤5	76	34(45)	22 (29)	20 (26)	0.120
5-10	144	45(31)	57 (40)	42(29)	
>10	65	17 (26)	28 (43)	20 (31)	
Average monthly Salary (Naira)					
<200,000	134	49(37)	46(34)	39(29)	0.413
201,000-400,000	96	31(32)	35(37)	30(31)	
>400, 000	55	16(29)	26(47)	13(24)	

Result is significant where p<0.05 at 95% CI.

Logistic Regression of Gender of participants

Below shows a logistic regression of the gender of participants with female participants having a 2.23 odds of being physically inactive compared to their male counterparts.

Table III: Logistic Regression of Gender of participants

Variables	B (beta)	Std error	Significance Level (p)	Exp B (Odds ratio)	95% CI	
					Lower limit	Upper limit
Sex (1)	0.800	0.274	0.003	2.226	1.302	3.807

I= Females as the reference group CI= confidence interval B= Coefficient of the variable

Discussion

From the results of the study, most participants were female (53.3%), married (67%), low income earners (47%), with tertiary level of education (100%) and less than 40 years (73.7%) of age with a mean age of 37.49±8.45 years.

This is likely because training opportunities and professional advancement opportunities exist more in tertiary hospitals. Hence majority of health service providers in tertiary hospitals are usually relatively young people in search of professional development. This finding is similar to that of another tertiary hospital-based study in Southeast Nigeria by Nnadozie et al which assessed the physical activity of health care workers.⁶ The study reported a mean age of participants at 34.32±9.88.⁶ However, Kunene et al in their study to ascertain the level of physical activity of health professionals in a district hospital in KwaZulu-Natal, South Africa showed that majority of participants were older than 40 years of age.⁴ The difference may likely be as a result of the small sample size (109) and the convenience sampling method used by Kunene et al in their study as opposed to the sample size of 285 and the stratified sampling technique used in this study.⁴ From the results of this study, majority (67%) of participants were married which is similar to findings by Saad et al in Perak, Malaysia as well as by Kunene et al and Nnadozie in South Africa and Nigeria respectively.^{4,6} This could be as a result of similarity of age group (24-46) of participants across the regions studied with most individuals in Africa and especially in Nigeria likely to be married within the 21-27 age group.¹⁷

From the results of this study, majority (50.5%) of the participants had been in earned employment of between five to ten years unlike reports by Kunene in South Africa that most participants were in earned employment for less than or equal to five years.⁴ The difference may be due to the early age (22-23) of entry into employment of South Africans compared to Nigerians who have a highest employment rate among age group 25 to 44 years.^{18,19} Most (47%) participants in this study were low-income earners with a salary of less than 200,000 naira a month (249 USD) unlike reports by Saad in Perak, Malaysia where most participants were middle income earners (640-1281USD).⁵ The difference may be due to regional and geographical variations in staff remuneration. Siyabonga et al's study also showed that majority of health professionals in earned employment for more than five years had lower physical activity levels compared to those in earned employment for less than five years.⁴ Cross sectional study by Saad et al among primary care workers in Malaysia showed that participants with average monthly income of 3001-6000 RM (640-1281USD) had higher physical activity level compared to those with more than 6000 RM (greater than 1281 USD).⁵

All Participants from this study had tertiary level of education similar to findings reported from studies in Southeast Nigeria and Perak Malaysia by Nnadozie et al and Saad et al.^{5,6} This may be as a result of compulsory recruitment requirements of tertiary level of education into health care service delivery.

The findings of this study showed that majority of male participants and individuals who were single had high to moderate physical activity levels while their married and female counterparts had low to moderate physical activity levels. This relationship was statistically significant for gender ($p=0.007$) and marital status ($p=0.004$). However, study participants age, average monthly salary and years of earned employment was not statically significant. The findings of this study showed female participants to have a 2.23 odds ratio of being physically inactive compared to their male counterparts. The odds was statistically significant ($p=0.003$) with a confidence interval of 1.301-3.807. These findings are likely because males and singles have more time to engage in energy expending physical activities compared to their female and married counterparts. Participants that were married or with advancing age had low physical activity levels.⁶ Nnadozie et al's study in Southeast Nigeria and Ayodele et al study in Ibadan, Southwest in Nigeria showed that male health workers had a higher physical activity level compared to their female colleagues.^{6,7} Hebat et al's study in Egypt, Skaal et al in South Africa and Hazizu et al in Malaysia all showed males to have higher physical activity levels unlike their female counterparts.^{5,20-21} The findings may be due to extra time constraints encountered by married and female participants in caring for their family needs in addition to work demands. However, Siyabonga et al study in KwaZulu, South Africa showed no relationship between gender, work experience with physical activity levels although advancing age of more than 40 years correlated with low physical activity levels.⁴ The difference in results from that of Siyabonga et al may be because majority of the participants from his study were female (83%) and mostly Nurses (57%).⁴

Conclusion: Marital status (p value of 0.004) and gender (p value of 0.007) was significantly related with physical activity level of health service providers. Age, average monthly salary and the years of practice were not related to physical activity level. Advocacy should be aimed at female and married health service providers who are less likely to be physically active.

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Recommendations

Exercise promotion should be aimed especially at female and married health care professionals. Health personnel should be encouraged to use physical activity monitoring devices especially among female and married health staff. Health education and training on exercise participation should be

provided for female and married health personnel. A work place physical activity and exercise guideline should be established while providing exercise facility at the work place. There should be adequate management of working hours for health staff to promote participation in exercise.

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