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# Cognitive Behaviour of Health Workers on Physical Activity and Sedentary Lifestyle during COVID-19 Pandemic in Abraka Community, Ethiope East Local Government Area, Nigeria

***[1]NWOGUEZE, BC; [2]OFILI, MI**

**[1]Department of Human Physiology, [2]Department of Nursing Science, Faculty of Basic Medical Sciences, Delta State University, Abraka. Delta State, Nigeria*

**Corresponding Author Email: bukasono123@gmail.com*
*Co-Author Email: isiomamary74@gmail.com*

**ABSTRACT:** This research work is based on assessing the cognitive behavior of health workers towards physical activity and sedentary lifestyle during COVID-19 pandemic in Abraka Community. To guide the study, four research questions and hypotheses were generated and tested. Reviews of related literatures were also done. A cross-sectional study was conducted using a descriptive survey method. Data was collected through self-structured questionnaires which consisted of two sections. Section (A) dealt with demographic data of respondents while section (B) dealt with information relating to the research questions and was administered personally to the respondents. The researcher used the proportionate sampling technique to select a sample size of One Hundred and fifty-two (152) respondents out of which One Hundred (100) were retrieved. Collected data was analyzed using frequency distribution tables, percentages, and chi-square statistics at alpha 0.05% level of significance to test the hypotheses. The result obtained show that there was a significant difference between the existence of sedentary life style, the beneficial effect of inadequate exercise, and the health implications of inadequate exercise and sedentary life style among health workers. Similarly, there was a significant difference between the suggested measures to improve exercise among health workers in Abraka community. Cognitive behaviour of health workers with sedentary life style during COVID-19 pandemic in Abraka community was moderately adopted. Findings from the study equally established a moderate level of awareness on adequate physical activity has contributory benefits over a sedentary lifestyle with favourable health outcomes, especially during COVID-19 pandemic outbreak. Hence, the need to create massive awareness on the importance of adopting physical activities for healthy living while discouraging the sedentary lifestyle among health workers in the study area.

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Physical activity is a general term that describes any physical work done with a healthy mind and sound strength. Physical activity is the body's ability to function optimally in an efficient and effective manner in a work situation and leisure activities to meet emergency demands and resist hypokinetic diseases resulting from insufficient motion such as; obesity, coronary heart disease, metabolic syndrome, osteoporosis, high cholesterol, type II diabetes, depression, low back pain among others (Brandon *et al.*, 2002; Heikkila *et al.*, 2019). Fitness programs, involving progressively increasing exercise intensities have been proven to elicit greater cardio protective benefits (Janssen and LeBlanc, 2010; Ogbutor *et al.*, 2022[a]). Engaging in a moderate to high amounts of physical activity reduces the risk of stroke accidents compared with people who accumulate with exercise (Sacco, 2006; Ogbutor *et al.*, 2021). The consequence of lack of physical activity in men includes muscle atrophy, depression, increased visceral fats, etc which is associated with sedentary lifestyle, and physical activity plays an important role in decreasing these

health risks (Chen *et al.,* 2019; Robert, 2007). Physical activity is vital in promoting cognitive behavior, physiological wellbeing, maintaining healthy bone density, muscle strength, and joint mobility of participants, and strengthening the immune system, while reducing surgical risks (Ogbutor *et al.,* 2022[b]). Generally, exercise according to World Health Organization (2002) is any bodily activity that enhances or maintains physical activity and overall health and wellness. Physical exercise is a common phenomenon, but most people find it extremely difficult to engage in it. Balish *et al.,* (2013) maintained that moderate exercise like walking can reduce the risk of diabetes in obesity and sedentary individuals. Sedentary lifestyle, on the other hand, refers to the type of lifestyle associated with inadequate or lack of active participation of an individual in physical activity, either moderate to vigorous (Rosenkranz *et al.,* 2020). Farinola and Bazan (2011) submitted that a sedentary lifestyle involves activities that do not increase energy expenditure levels above the resting level. It is a lifestyle involving no participation in physical activity accompanied by a longer time frame of sitting down. Typical examples of sedentary behavior of public health concern include; watching television, reading, using computer, and sitting for a longer parts of the day with little or no physical activity, in addition to an unhealthy lifestyle like; smoking and eating of junk (Farinola and Bazan, 2011).

Physical inactivity linked overweight and absent are associations with an increased risk for coronary heart disease, hypotension, outer arithmetic abnormal cholesterol and triglyceride levels, type II diabetes, stroke, gall bladder disease, respiratory problems, sleep apnea, and cancers such as; endometrial breast and colon cancer (Balish *et al.,* 2013; Bakker *et al.,* 2020). The Covid-19 pandemic and technological advancements are making most people adopt sedentary lifestyles. However, such lifestyles are associated with health-related problems (Huang *et al.,* 2021). Many health workers in Abraka community have their means of transportation to and from home ranging from motor vehicles, motorcycles (popularly called Okada), bicycles, and even public transport systems. Such exposure has been reported in previous studies to result in the risk of high rate of obesity, sedentary lifestyle, cases of cardiac arrest, and others health problems associated with sedentary lifestyle (McAlister *et al.,* 2020; Elmberg *et al.,* 2021). Therefore, the purpose of the study was to explore the impact of sedentary lifestyle and physical activity as a vital parameter for determining physiological wellbeing, maintaining healthy bone density, muscle strength and joint mobility, and strengthening of the immune system of health workers in Abraka community. Consequently, this research evaluated the cognitive behaviour of female and male health workers on physical activity and sedentary lifestyle during COVID-19 pandemic in Abraka community, Ethiope East Local Government Area, Nigeria.

## MATERIALS AND METHODS

*Experimental Design:* The descriptive survey research method was used to determine exercise for health walking as the rejected stone by man. This method was considered appropriate because it reveals the characteristics of the population.

*Participants:* The participants for the study consisted of male and female health workers of Abraka community, Ethiope East Local Government Area. The targeted sample size was 152 participants comprising of 72 males and 80 females drawn from the population of health workers in Local council is about 1,502. The researchers utilized the stratified random sampling method to divide the study area into four stratums representing a quarter, while a simple random sampling technique was used to select 152 respondents from different quarters through simple balloting without replacement.

*Instrument for Data Collection:* The instrument used for this research study was a self-structured questionnaire which consists of two sections. Section (A) dealt with demographic data while section (B) dealt with information relating to the research questions which elicited responses from respondents (152 questionnaires). The respondents were expected to tick (√) on the space provided with the option of their choice about the question. The options were in the Likert scale format of agree (5), strongly agree (4), neutral (3), disagree (2), and strongly disagree (1), respectively.

*Data Collection:* A total of 152 copies of the questionnaires was produced and distributed among' the health workers in Abraka Community through the help of two (2) trained research assistants. The questionnaires were administered by the researcher and 100 copies of the questionnaires were successfully retrieved within a week interval and were subjected to statistical analysis.

*Statistical Data Analysis:* Data collected was analyzed using frequency table, percentages, average mean score, and chi-square statistical formula in SPSS version 22. This is represented in the formula below:

Chi-Square, $x^2 = \sum \frac{(O-E)^2}{E}$

Where: $X^2$ = Chi-square; £ = Summation; O = Observation; E = Expected Value; N = Values of Classes; N - 1 = Degree of Freedom

## RESULTS AND DISCUSSION

Table 1 represents the statements on the cognitive behaviour of health workers with sedentary life style during COVID-19 pandemic in Abraka Community. The four items (1, 2, 3, and 4) generated were accepted as they had means above the criterion of 2.50. Hence, it was accepted that health workers prefer consuming junk and fast foods (x=2.95), workers no longer engaged in physical activities (x=2.55), workers are increasingly living a sedentary or inactive life (x=2.90), and workers who used to trek before no longer do so because of the presence of commercial transports (x=2.88). Considering that the aggregate mean of 2.82 was above the bench mark of 2.50, we conclude that the statements on the cognitive behaviour of health workers with sedentary life style during COVID-19 pandemic in Abraka Community were positively adopted. Table 2 represents the statements on the contributory benefits of Physical Activity over sedentary lifestyle among health workers during COVID-19 pandemic in Abraka community. Three out of the four items (5, 6, and 7) generated were accepted as they had means above the criterion of 2.50. Hence, it was accepted that physical activity is very essential for repair of worn out tissues and healthy growth (x=3.00), physical activity makes the workers smarter and lively in workplace (x=3.25), and exercise improves workers cognitive behaviour and mental wellbeing (x=3.32). However, item 8 stated that regular physical activity encourages weight again and obesity (x=1.67) had a mean score below 2.50, and thus was rejected. Considering that the aggregate mean of 2.81 was above the bench mark of 2.50, we conclude that the contributory benefits of physical activity among health workers during COVID-19 pandemic in Abraka community were positively adopted.

**Table 1**: Cognitive Behaviour of Health Workers with Sedentary Life Style during COVID-19 Pandemic in Abraka Community

| S/N | Items | Mean | Std. Deviation | Decision |
|---|---|---|---|---|
| 1. | Workers prefer consuming junk and fast foods | 2.95 | 0.66 | Accepted |
| 2. | Workers no longer engaged in physical activity | 2.55 | 0.34 | Accepted |
| 3. | Workers are increasingly living a sedentary or inactive life | 2.90 | 0.56 | Accepted |
| 4. | Workers who used to trek before no longer do so because of the presence of commercial transports. | 2.88 | 0.80 | Accepted |
| | **Grand Mean** | **2.82** | **0.59** | **Adopted** |

**Table 2**: Contributory Benefits of Physical Activity over a Sedentary Lifestyle among Health Workers during COVID-19 Pandemic in Abraka Community

| S/N | Items | Mean | Std. Deviation | Decision |
|---|---|---|---|---|
| 5. | Physical activity is essential for repair of worn out tissues and healthy growth | 3.00 | 0.66 | Accepted |
| 6. | Physical activity makes workers smarter and lively in workplace | 3.25 | 0.91 | Accepted |
| 7. | Physical activity improves workers cognitive behaviour and mental wellbeing | 3.32 | 0.96 | Accepted |
| 8. | Regular physical activity encourages weight again and obesity | 1.67 | 0.31 | Rejected |
| | **Grand Mean** | **2.81** | **0.71** | **Adopted** |

Table 3 represents the statements on the health implications of physical activity and sedentary life style among health workers during COVID-19 pandemic in Abraka Community. The four items (9, 10, 11, and 12) generated were accepted as they had means above the criterion of 2.50. Hence, it is accepted that workers who live a sedentary life are faced with contacting various non-communicable diseases (x=2.88), there is a high rate of obesity and overweight as a result of poor physical activity (x=3.52), lack of physical activity increases the chances of health related illness among workers (x=3.32), and non-participation in physical activity interferes with optimum body fitness and wellbeing of workers (x=3.25). Considering that the aggregate mean of 3.25 was above the bench mark of 2.50, we conclude that the health implications of sedentary life style among health workers during COVID-19 pandemic in Abraka Community were positively adopted.

**Table 3**: Health Implications of Physical Activity and Sedentary Lifestyle among Health Workers during COVID-19 Pandemic in Abraka Community

| S/N | Items | Mean | Std. Deviation | Decision |
|---|---|---|---|---|
| 9. | Workers who live a sedentary life are faced with contacting various non- communicable diseases | 2.88 | 0.80 | Accepted |
| 10. | There is a high rate of obesity and overweight as a result of poor physical activity | 3.54 | 0.91 | Accepted |
| 11. | Lack of physical activity increases the chances of health-related illness among workers | 3.32 | 0.91 | Accepted |
| 12. | Non-participation in physical activity interferes with optimum body fitness and wellbeing of workers | 3.25 | 1.08 | Accepted |
| | **Grand Mean** | **3.25** | **0.93** | **Adopted** |

**Table 4**: Measures to Improve Cognitive Behaviour of Health Workers towards Sedentary Lifestyle and Physical Activity during COVID-19 Pandemic in Abraka Community

| S/N | Items | Mean | Std. Deviation | Decision |
|---|---|---|---|---|
| 13. | Engaging in sport activities can enhance cognitive and behavioural development | 2.65 | 0.53 | Accepted |
| 14. | Active involvement in walking and cycling decrease incidence of infectious disease | 2.90 | 0.68 | Accepted |
| 15. | Active recreation can be done regularly to improve the immune system of workers | 3.20 | 0.88 | Accepted |
| 16. | Physical activity prevents the risk of excess weight accumulation | 2.98 | 0.81 | Accepted |
| | **Grand Mean** | **2.93** | **0.73** | **Adopted** |

Table 4 represents the statements on the measures to improve cognitive behaviour of health workers towards sedentary lifestyle and physical activity during COVID-19 pandemic in Abraka community. The four items (13, 14, 15, and 16) generated were accepted as they had means above the criterion of 2.50. Hence, it was accepted that engaging in sport activities can enhance the cognitive and behavioural development (x=2.65), the active involvement in walking and cycling decrease incidence of infectious disease (x=2.90), active recreation can be done regularly to improve the immune system of workers (x=3.20), and that physical activity prevents the risk of excess weight accumulation (x=2.98). Considering that the aggregate mean of 2.93 was above the bench mark of 2.50, we conclude that measures to improve the cognitive behaviour towards sedentary lifestyle and physical activity among health workers during COVID-19 pandemic in Abraka Community were positively adopted.

*Research Hypothesis I: $Ho_1$***:** There is no significant difference between Cognitive Behaviour and sedentary life style of health workers during COVID-19 Pandemic in Abraka Community

**Table 5:** Chi-square Analysis for Hypothesis I

| S/N | A | | SA | | N | | D | | SD | | Cal $X^2$ | Tab $X^2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O | E | O | E | O | E | O | E | O | E | | |
| 1. | 40 | (34.5) | 30 | (28) | 0 | (0.0) | 15 | (25.5) | 15 | (15) | 40.7451 | 16.92 |
| 2. | 20 | (34.5) | 30 | (28) | 0 | (0.0) | 35 | (25.5) | 15 | (15) | | |
| 3. | 30 | (34.5) | 40 | (28) | 0 | (0.0) | 20 | (25.5) | 10 | (15) | | |
| 4. | 48 | (34.5) | 12 | (28) | 0 | (0.0) | 20 | (25.5) | 20 | (15) | | |
| | **138** | | **112** | | **0** | | **90** | | **60** | | | |

*$X^2$ calculated value is 40.7451 ≥ the table value of 0.05 = 16.92*

*Applying Decision Rule to Hypothesis I:* Since the calculated value is greater than ≥ the table value, the null hypothesis is rejected and the alternative hypothesis accepted, hence there is a significant difference between cognitive behaviour and sedentary life style of health workers during COVID-19 pandemic in Abraka Community.

*Research Hypothesis II: $Ho_2$:* There is no significant difference between the contributory benefits of physical activity and sedentary life style among health workers during COVID-19 in Abraka Community

**Table 6:** Chi-square Analysis for Hypothesis II

| S/N | A | | SA | | N | | D | | SD | | Cal $X^2$ | Tab $X^2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O | E | O | E | O | E | O | E | O | E | | |
| 5. | 40 | (45) | 30 | (30) | 0 | (0.0) | 20 | (15) | 10 | (10) | 15.558 | 16.92 |
| 6. | 50 | (45) | 20 | (30) | 0 | (0.0) | 20 | (15) | 10 | (10) | | |
| 7. | 50 | (45) | 30 | (30) | 0 | (0.0) | 10 | (15) | 10 | (10) | | |
| 8. | 40 | (45) | 40 | (30) | 0 | (0.0) | 10 | (15) | 10 | (10) | | |
| | **180** | | **120** | | **0** | | **90** | | **60** | | | |

*$X^2$ calculated value is 15.558 ≥ the table value of 0.05 = 16.92*

*Applying Decision Rule to Hypothesis II:* Since the calculated value is greater than the table value, the null hypothesis is rejected, and the alternative hypothesis accepted, hence there is a significant difference between the contributory benefits of physical Activity over sedentary lifestyle among health workers during COVID-19 pandemic in Abraka Community.

*Research Hypothesis III: $Ho_3$:* There is no significant difference between the health implications of physical activity and sedentary life style of health workers during COVID=19 pandemic in Abraka community.

**Table 7:** Chi-square Analysis for Hypothesis III

| S/N | A | | SA | | N | | D | | SD | | Cal $X^2$ | Tab $X^2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O | E | O | E | O | E | O | E | O | E | | |
| 9. | 48 | (39.5) | 12 | (23.5) | 0 | (0.0) | 20 | (19.5) | 20 | (17.5) | 53.5845 | 16.92 |
| 10. | 50 | (39.5) | 12 | (23.5) | 0 | (0.0) | 18 | (19.5) | 20 | (17.5) | | |
| 11. | 40 | (39.5) | 40 | (23.5) | 0 | (0.0) | 10 | (19.5) | 10 | (17.5) | | |
| 12. | 20 | (39.5) | 30 | (23.5) | 0 | (0.0) | 30 | (19.5) | 20 | (17.5) | | |
| | **158** | | **94** | | **0** | | **78** | | **70** | | | |

*$X^2$ calculated value is 53.5845 ≥ the table value of 0.05 = 16.92*

*Applying Decision Rule to Hypothesis III:* Since the calculated value is greater than ≥ the table value, the null hypothesis is rejected and the alternative hypothesis accepted, hence there is a significant difference between the health implications of physical activity and sedentary life style of health workers during COVID=19 pandemic in Abraka community.

*Research Hypothesis IV: $Ho_4$:* There is no significant measure to improve the cognitive behaviour towards sedentary lifestyle and physical activity among health workers during COVID-19 pandemic in Abraka community.

**Table 8:** Chi-square Analysis for Hypothesis IV

| S/N | A | | SA | | N | | D | | SD | | Cal $X^2$ | Tab $X^2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O | E | O | E | O | E | O | E | O | E | | |
| 13. | 20 | (39.5) | 35 | (26.75) | 0 | (0.0) | 15 | (15) | 30 | (18.75) | 40.7194 | 16.92 |
| 14. | 40 | (39.5) | 30 | (26.75) | 0 | (0.0) | 15 | (15) | 15 | (18.75) | | |
| 15. | 50 | (39.5) | 30 | (26.75) | 0 | (0.0) | 10 | (15) | 10 | (18.75) | | |
| 16. | 48 | (39.5) | 12 | (26.75) | 0 | (0.0) | 20 | (15) | 20 | (18.75) | | |
| | **158** | | **107** | | **0** | | **60** | | **75** | | | |

*$X^2$ calculated value is 40.7l94 ≥ the table value of 0.05 = 16.92*

*Applying Decision Rule to Hypothesis IV:* Since the calculated value is greater than ≥ the table value, the null hypothesis is rejected and the alternative hypothesis accepted, hence there is a significant difference between measure to improve the cognitive behaviour towards sedentary lifestyle and physical activity among health workers during COVID-19 pandemic in Abraka community.

In this study, four research questions were raised and answered. Findings from research question one on the cognitive behaviour of health workers with sedentary life style during COVID-19 pandemic in Abraka community indicated that most workers prefer consuming junk and fast foods, no longer engaged in physical activities, workers are increasingly living a sedentary or inactive life, while workers who used to trek before no longer do so because of the presence of commercial transports. The outcome of research question one points to the direction that the absence of physical activity contributes significantly to the progression of heart disease, elevated blood fats, and cholesterol levels. This collaborates with the opinion of previous studies that opined that physical activity has an ability to enable individuals perform in a mental, emotional, and stable manner during normal daily tasks without undue fatigue, as such physical

activities delivered as exercises have the value of producing high levels of physical activity and wellness (Igbanugo, 2006; Centre for Disease Control and Prevention, 2007). Data obtained from research question two show that the contributory benefits of physical activity among health workers during COVID-19 pandemic in Abraka community; repair of worn out tissues and healthy growth makes workers smarter and lively in the workplace, improves workers cognitive behaviour and mental wellbeing and encourages weight again and obesity. This finding from the research question two is in agreement with the reports of previous research who opined that a well-balanced exercise program can improve the general health of the people (Callaghan, 2004).

The results from research question three revealed that the health implications of sedentary life style among health workers during COVID-19 pandemic in Abraka Community have been linked to problems such as; contacting of various non- communicable diseases, high rate of obesity and overweight, increases the chances of health related illness and interferes with optimum body fitness and wellbeing of workers. This finding collaborates with previous studies who argued that high a sedentary lifestyle portends grave danger in many diseases and may adversely affect health status in long-term (deRezende *et al.*, 2014; Bird *et al.*, 2015). It has been well established that sedentary lifestyle is a critical factor contributing to coronary heart disease development and incidence of increased blood fat and cholesterol. Physical activities play an important role in decreasing these health risks (Jogunola and Awoyemi, 2012). The outcome from research question four on measures to improve cognitive behaviour towards a sedentary lifestyle and physical activity among health workers during the COVID-19 pandemic in Abraka Community points out that engagement in sport activities enhances cognitive and behavioural development, active involvement in walking and cycling decrease incidence of infectious disease, active recreation can be done regularly to improve the immune system of workers and that physical activity prevents the risk of excess weight accumulation. This agrees with the assertion of David (2002) who recommended that an adequate amount of physical activity is required to maintain and promote good health. Similarly, Nabofa, (2012) advocacies for physical activity are capable of stimulating staff and students' interest to ensure that physical activity and wellness benefits are realised.

*Conclusion:* Physical inactivity and sedentary lifestyle behaviour appear to be on the increase globally despite its prevalence and having an association with arrays of health-related problems. Findings from our study revealed a moderate awareness among health workers of the contributory benefits of physical activity over a sedentary lifestyle with favourable health outcomes especially during COVID-19 pandemic outbreak. Lack of physical activity was accepted to contribute to coronary heart disease development and incidence of increased blood fat, cholesterol, diabetes, and high blood pressure. Hence, the need for health workers to improve their cognitive behaviour towards physical activity against a sedentary lifestyle.

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