




# Knowledge, Attitude and Practice of Physical Exercise Among Elderly People in Enugu Metropolis, Nigerian

IJEOMA ONYINYECHI MADUAKOLAM  
CHIDIEBERE PASCHALINE OSUDE  
STEPHEN SUNDAY EDE   
AGNES CHINYERE ONYEKACHI-CHIGBU  
CHITOO STEPHANIE OSUORAH  
CHISOM FAVOUR OKOH

\*Author affiliations can be found in the back matter of this article

RESEARCH

ubiquity press

## ABSTRACT

**Background:** The older population is often at risk for a sedentary lifestyle, which has been related to an increased risk of all-cause mortality. Unfortunately, information on this concept is limited in sub-Saharan Africa.

**Objectives:** To assess the knowledge, attitude, and practice of physical exercise among older in the Enugu metropolis.

**Methods:** A physical exercise questionnaire was used to collect data from 365 older people conveniently recruited within the Enugu metropolis in this cross-sectional study.

**Results:** Most (72.9%) of the respondent have good knowledge of the benefits of physical exercise, their overall attitude is positive (98.1%), and about the average (53.7%) of them practice regular exercise that mainly involves brisk walking (60.2%) and morning jogging (59.2%) for duration mainly 30 minutes to 1 hour (53.6%). A significant relationship was only found between knowledge of exercise and engagement in regular physical exercise ( $p < .001$ ).

**Conclusions:** There is good knowledge and positive attitudes toward exercise among older people in the Enugu metropolis. More facilities for physical activity are recommended to boost practice.

## CORRESPONDING AUTHOR:

**Stephen Sunday Ede**

School of Sport and Health Sciences, University of Central Lancashire, UK

SSede@uclan.ac.uk

## KEYWORDS:

Knowledge; Attitude; Practice; Physical exercise; Elderly

## TO CITE THIS ARTICLE:

Maduakolam, I. O., Osude, O. C., Ede, S. S., Onyekachi-Chigbu, A. C., Osuorah, O. C., & Okoh, O. C. (2023). Knowledge, Attitude and Practice of Physical Exercise Among Elderly People in Enugu Metropolis, Nigerian. *Physical Activity and Health*, 7(1), pp. 53–63. DOI: <https://doi.org/10.5334/paah.212>

Physical exercise is a health-directed behaviour that is a subset of physical activity that involves engaging in structured and repetitive physical activity to gain health benefits and improve fitness. The World Health Organisation (WHO, 2020) defined physical exercise as bodily movements done using the skeletal muscles that required energy expenditure. Physical exercise is one of the leading desirable health behaviour practised by many people both young and old (Keadle et al., 2016) and it is one of the primary actions to prevent diseases that occur as a result of inactivity (Harvey et al., 2013; de Rezende et al., 2014; Langhammer et al., 2018). Also, exercises help to relieve pain, enhance mobility, prevent cardiovascular diseases, stroke and some cancer types, reduce cognitive decline and reduce the death rate (Tse, et al., 2011; Musich et al., 2017).

On the other hand, physical inactivity according to the WHO (2020) is a major underlying cause of death, non-communicable diseases and disability and they also noted that up to 5 million deaths globally per year can be attributed to physical inactivity. In sub-Saharan African countries non-communicable diseases related to physical inactivity are a cause of about 3 million deaths (Oyeyemi et al., 2018).

Physical exercise practices decline with age and are not common in older adults aged 65 years and above (Milanović et al., 2013). According to the Centers for Disease Control and Prevention (CDC), and the US department of human and health services (2019), about 28% of adults aged 50+ are inactive and this percentage is as high as 30% in older adults with chronic diseases. This prompted the Center for Disease Control and Prevention (CDC) to recommend that older people should engage in physical exercise of moderate to high intensity for 75 to 150 minutes per week with muscle training twice a week to gain the health benefits of physical exercise (Musich et al., 2017). In addition, the WHO reported that around 3.2 million deaths each year are attributable to physical inactivity (WHO, 2013). Thus, it is important that elderly people indulge in physical exercise to promote health and improve and prolong life.

Knowledge of physical exercise and its benefits is an important factor that lays the foundation for people to practice physical exercise (Fabunmi et al., 2019). A study carried out on Australian adults showed that participants were significantly more active when they identify diseases associated with physical inactivity correctly and when they overestimate the risk associated with inactivity (Fredricksson et al., 2018). However, other studies suggest that people have awareness and good knowledge of physical exercise and its benefits but they do not know the recommended exercise regimen (Vaara et al., 2019), thus affecting their participation in physical exercise. Although people have good knowledge and awareness of physical exercise, elderly people do not meet the frequency, intensity and duration of exercise needed for the maintenance of good health and fitness (Mehra et al., 2016). A study carried out on Romanian adults found that elderly people have a good awareness of the benefits of physical exercise yet they are not involved enough (Elena et al., 2011). Mehra et al (2016) in her study noted that elderly people, who participate in physical exercise get their motivation from keeping in touch with others and maintaining self-reliance. Self-determination is necessary for understanding the initiation and maintenance of physical exercise as a health-seeking behaviour and adherence of the elderly to physical exercise (Silva et al., 2014) but this determination; which may be looked at as their attitude, is not present in elderly people due lack of proper motivation like seeing other elderly people exercising, environmental issues like security, lack of assessing of affordable and near exercise centre, lack of knowledge of recommended regimen and benefits of exercise.

Physical exercise has over time become important health-seeking behaviour across people of all ages, despite the great benefits that are associated with physical exercise studies have found that many older people are still physically inactive while others found otherwise. In a study of Arabian older adults, it was found that they have a satisfactory practice of leisure-time physical exercise like walking (Zainab and Abdulkarim, 2019). Whereas, a study of older adults in Romania found that elderly people are mostly inactive and rarely active (Elena et al., 2011). Also, Adegboyega and Adegboyega (2015) in their study of the senior staff of tertiary institutions in Ondo found that their level of physical activity practices is significantly low. Physical inactivity may be a result of certain factors which may include fear of falls, environmental unsafety and lack of knowledge on what to do and the benefits of doing them. It is noteworthy that some older adults who reside in Enugu, mostly the educated and more informed ones indulge in physical exercise as a health-seeking and maintaining behaviour. In most cases, older adults

who are inactive and who do not indulge in any form of physical exercise are due to their low economic class, lack the information about physical exercise and its benefits, cultural background, marital status, level of educational attainment health status and misconceptions (Abiodun et al., 2018).

In Nigeria, there are no studies that have measured the knowledge and awareness of older people on the issue of physical exercise. There are also no physical activity plans or health promotion initiatives that focus on physical exercise for older people (Oyeyemi et al., 2018). Although the Knowledge of physical exercise may not be sufficient to initiate the practice of it among older people, it will help in developing health promotion initiatives and physical activity interventions (Lusmägi and Aavik, 2021). Health promotion initiatives will increase the knowledge of the types of diseases associated with physical inactivity, the knowledge would in turn provides guidance on the frequency, types and duration of physical activity needed for health maintenance and improvement (Fredricksson et al., 2018), hence improving participation in physical exercise.

However, with the unsatisfactory promotion of physical exercise in Nigeria and the lack of studies to measure older people's knowledge of physical exercise, one may expect that the knowledge of regular physical exercise among older adults will be low and unsatisfactory negatively affecting their participation. Based on the above stimulants, the researcher deemed it necessary to investigate the level of awareness, understanding, attitudes and practice of physical exercise on a regular basis among the older adults in Enugu metropolis.

## **METHODS**

### **STUDY PARTICIPANTS**

This descriptive cross-sectional study conveniently recruited 365 older people participants from the Enugu metropolis between the months of January to July 2021. Power analysis was used to determine a sample size of 365 from the population of 7,326 older people in Enugu metropolis aged 65 years and above as reported by the records of the 2006 population census by the National Population Commission of Nigeria (NPCN). The inclusion criteria for participation in this study were defined based on willingness to participate in the study, availability at the time of the study, and must be older adults aged 65 years and above living within the Enugu metropolis.

Ethical approval for this study was sought and obtained from the Research and Ethics Health Committee of Enugu State Ministry of Health. In addition, all participants gave oral and written consent before the administration of the questionnaire and maximum confidentiality of information received from respondents was maintained.

### **INSTRUMENTS FOR DATA COLLECTION**

The instrument for data collection was a structured questionnaire, which contains 24 items in all. These items are divided into four sections: Section A contains five questions on demographic characteristics, section B contains four questions on knowledge of older people in Enugu metropolis on physical exercise, section C contains 10 questions on the attitude of older people towards physical exercise and section D containing five questions on older people's practice of physical exercise.

Face and content validity was established by two Nursing experts and a physiotherapist who reviewed the questionnaire for adequate coverage of the research objectives. Corrections were effected before the final draft and distribution were made.

A pilot study was further carried out and the instrument of data collection was pretested by administering the questionnaire to 10% of the respondents, who are older people in Enugu metropolis who are not part of the sample but have similar characteristics. Data generated from the pilot study were tested for the reliability of the instrument using Cronbach's alpha (SPSS VERSION 23) and a reliability coefficient range of between 0.815 was obtained, which indicated that the instrument is suitable for the study.

### **STUDY PROCEDURE**

The researchers administered copies of the questionnaires to the respondents through an in-personal survey approach, at their residences, shops, hospital and church, majorly in the Uwani

district, Ogbete market, the University of Nigeria Enugu Campus (UNEC) and surrounding areas. Initially, 400 copies were made and distributed to cover possible missing data. The respondents were allowed to take the questionnaire away and fill in their comfort. Enough time was taken to explain how to tick or indicate their opinion on the items stated on the research questionnaire. In the end, 365 copies of the questionnaire were retrieved giving a response rate of 91.3%.

## DATA ANALYSIS

The collected data were analysed using both descriptive and inferential statistics. The descriptive statistics of frequency and percentage were used to summarise the items of the questionnaire. The overall knowledge of regular physical exercise was obtained by scoring and summing every correct knowledge response to the knowledge questions; the obtained scores were converted to percentages and categorised as good (for scores above 50%) and poor (for scores 50% or below). The inferential statistics of the Chi-Square test of independence were used to test the hypothesis at a 0.05 level of significance. The analyses were done with the aid of the Statistical Package for Social Sciences (SPSS) version 25.

## RESULTS

Table 1 present the demographic characteristics of older people. Their mean and standard deviation age was  $74.67 \pm 6.37$  and the modal age group was 65–75 (60.3%). Males (53.7%) were more than females (45.8%). Very many were married (75.6%); the majority were civil servants (47.9%) and were retired (53.2%).

ITEMS	FREQUENCY	PER CENT
<b>Age</b>		
– 65–75	220	60.3
– 75–85	112	30.7
– 85 +	28	7.7
– No response	5	1.4
<b>Gender</b>		
– Male	196	53.7
– Female	167	45.8
– No response	2	0.5
<b>Marital status</b>		
– Single	9	2.5
– Married	276	75.6
– Divorced	12	3.3
– Widowed	64	17.5
– Separated	1	0.3
– No response	3	0.8
<b>Occupation</b>		
– Civil servant	175	47.9
– Businessman/women	154	42.2
– Others	33	9.0
– No response	3	0.8
<b>Employment status</b>		
– Retired	194	53.2
– Still working	166	45.5
– No response	5	1.4

**Table 1** Demographic Characteristics of older People participants (n = 365).

From Table 2, not many older people knew regular physical exercise to be a planned, structured and repetitive physical activity (44.9%); rather, it is known to involve jogging, brisk walking, swimming and sports (76.2%). Exercise benefits mostly known were weight control (76.2%), sleep improvement (71.2%) and disease prevention (67.7%); 41.1% also knew it promotes total body health while other benefits were hardly known. Very many knew it should be done for 30 minutes per day (75.1%); almost all knew it is for both young and elderly people (95.3%). Generally, the majority had good knowledge of regular physical exercise (72.9%).

ITEMS	FREQUENCY	PER CENT
<b>Your understanding of regular physical exercise</b>		
- Means any physical activity*	63	17.3
- Planned, structured and repetitive physical activity*	164	44.9
- means jogging once in a while	6	1.6
- Means watching games	1	0.3
- Means always sitting down	3	0.8
- Involves jogging, brisk walking, swimming and spots*	278	76.2
<b>Regular physical exercise can help</b>		
- Promote total body health*	150	41.1
- Prevent diseases like diabetes mellitus and obesity*	247	67.7
- Improve mood*	50	13.7
- Weaken bone and joint	8	2.2
- Boost energy	19	5.2
- Cause pain and swelling	17	4.7
- Improve sleep*	260	71.2
- Control weight*	278	76.2
- Promote mental health*	75	20.5
<b>How long should regular physical exercise be done</b>		
- 30 mins a day*	274	75.1
- Once 1 week	71	19.5
- Once in a while	9	2.5
- Only when you add weight	5	1.4
- No response	6	1.6
<b>Physical exercise is for which persons</b>		
- Young individuals only	3	.8
- Elderly people only	6	1.6
- Both young and elderly people*	348	95.3
- No response	8	2.2
<b>Overall knowledge</b>		
- Good (knowledge score > 50%)	266	72.9
- Poor (knowledge score ≤ 50%)	99	27.1

**Table 2** Knowledge of elderly people on physical exercise (n = 365).

\* Indicates the correct response which implies knowledge.

From Table 3, the overall attitude of the elderly was positive toward physical exercise ( $3.26 \pm 0.27$ ) with almost all being positive towards it (98.1%). They perceived it to be necessary for elderly people ( $3.74 \pm 0.50$ ) and those who exercised to be healthier and stronger ( $3.55 \pm 0.58$ ). They however also perceived that the exercise schedule was difficult to maintain ( $2.69 \pm 0.74$ ).

ITEMS	SD	D	A	SA	M ± SD
Feel exercise is necessary for elderly people	3	1	85	276	3.74 ± 0.50*
Feel elderly people who exercise are healthier and stronger	3	7	143	212	3.55 ± 0.58*
Feel exercise is for sick people	145	213	6	1	1.62 ± 0.53
Feel regular exercise is for fat people only	195	154	15	1	1.51 ± 0.59
Feel regular exercise is a waste of one's time	205	153	5	2	1.46 ± 0.56
Exercise only when I feel am getting fat	88	246	29	2	1.85 ± 0.57
My regular work is an adequate substitute for regular exercise	50	236	66	13	2.12 ± 0.67
Exercise schedule is difficult for me to maintain	28	89	216	32	2.69 ± 0.74*
Daily exercise takes away my strength and energy	70	256	34	5	1.93 ± 0.58
Feel exercise is not beneficial and important for me	199	158	6	2	1.48 ± 0.56
<b>Overall Attitude</b>					3.26 ± 0.27
<b>Attitude grouped</b>	Frequency		Percent		
<b>1. Positive</b>	358		98.1		
<b>2. Negative</b>	7		1.9		

**Table 3** Attitude of older people towards physical exercise (n = 365).

Item with Mean (M) > 2.5 was judged to be elderly attitude; \* Indicates item with mean (M) > 2.5.

Table 4 presents the practice of physical exercise among the elderly. About average engaged in regular physical exercise (53.7%), majorly brisk walking (60.2%) and morning jogging (59.2%), of which the number of engagement in a week was mainly between once (34.2%) to thrice (38.3%) and the duration mainly 30mins – 1 hour (53.6%) or even less than 30mins (44.4%). Lack of time was a major reason for those that never engaged (63.9%).

Analysis in Table 5 shows that a significant relationship exist between knowledge of exercise and engagement in regular physical exercise (p < .001). Those with good knowledge were associated with regular physical exercise than those with poor knowledge [regular exercise: good knowledge (60.5%), poor knowledge (35.4%)].

## DISCUSSION

This study was carried out to identify the knowledge of older people in the Enugu metropolis on physical exercise, to assess their attitude towards physical exercise and to examine their practice of physical exercise. Findings revealed that the respondents have good knowledge of physical exercise and showed positive attitudes towards physical exercise, and an average number of them practice physical exercise. These findings are critically discussed in the sections that follow.

### KNOWLEDGE OF PHYSICAL EXERCISE AMONG OLDER PEOPLE

The findings of this study revealed that many of the older people in the Enugu metropolis have good knowledge of physical exercise. This finding is in line with that reported by Wong et al. (2017) who showed that the majority of older people in Hong Kong have good knowledge of physical activity and exercise guidelines. The possible explanation for this finding could be attributed to the high level of information dissemination and awareness campaigns on the benefits of physical exercise on televisions, social media and advice given to these older people by their doctors, nurses, colleagues and family members.

However, this result contradicts a study done by Abdeta et al. (2019) who reported that less than one-third of older people respondents in Harar town, eastern Ethiopia have good knowledge of physical activity and exercise regimens. As well, an earlier finding by Pienaar et al, (2004) reported contrarily that older people in Bloemfontein, South Africa lacked sufficient knowledge of the practice of physical fitness to be able to understand adequate physical fitness programmes. They further showed that the South African older people only had a general knowledge of the influence of physical activity on life quality, but had less knowledge of the influence of exercise on cholesterol, diabetes and hypertension.

**Table 4** Practice of physical exercise (n = 365).

ITEMS	FREQUENCY	PER CENT
<b>Engaged in regular physical exercises</b>		
- Yes	196	53.7
- No	169	46.3
<b>What kind of exercise do you do (n = 196)</b>		
- Morning jogging	116	59.2
- Brisk walking	118	60.2
- Running	3	1.5
- Cycling	17	8.7
- Skipping	16	8.2
- Sports	29	14.8
- Swimming	23	11.7
- Stretches	28	14.3
<b>If yes, how often do you exercise in a week (n = 196)</b>		
- Once	67	34.2
- Thrice	75	38.3
- More than thrice	54	27.6
<b>How long do you spend exercising in a week (n = 196)</b>		
- <30mins	87	44.4
- 30mins-1hr	105	53.6
- 1-2hrs	2	1.0
- No response	2	1.0
<b>If not, what prevented you (n = 169)</b>		
- Lack of time	108	63.9
- Lack knowledge of how to exercise	29	17.2
- Exercise is boring	6	3.6
- Tiredness	60	35.5
- Fear of injury	62	36.7
- Lack of group exercise	8	4.7
- Medical conditions	41	24.3
- Work	1	0.6

	ENGAGE IN REGULAR PHYSICAL EXERCISE			CHI-SQUARE	P-VALUE
	YES	NO	TOTAL		
Knowledge of exercise				18.388	.000
<b>3.</b> Good	161(60.5)	105(39.5)	266		
<b>4.</b> Poor	35(35.4)	64(64.6)	99		

**Table 5** Relationship between Knowledge and Engagement in Physical Exercise.

Notwithstanding the variation in findings, this study finding is novel in the western region of Africa and could be a good indication that there is appropriate dissemination of information about the benefits of exercise for older people in society. Thus, further studies are required in other regions of Africa to verify the claims of this study.

Findings of the study further revealed that the majority of older people in Enugu have a positive attitude towards physical exercise. This positive attitude of older people to physical exercise could be influenced by the rising practice of road walking in many corners of the Enugu metropolis and many physical environmental features that are promotive to early morning or evening walkouts. Also, exercise is prescribed by older people's doctors as a means to stay healthy, prolong life and as part of the treatment regimen for some of them that may have some chronic non-communicable conditions like diabetes mellitus, obesity and cardiovascular problems are a possible source of influence for better attitude towards exercising (Durstine et al., 2013).

This finding agrees with the study carried out by Balis et al. (2019), who also reported that older Ghanaian respondents have a positive perception of physical exercise and its promotion. The older people involved in this study agree that physical exercise is necessary for them, which is in line with a study carried out in Japan by Komatsu et al. (2017) that noted that the respondents agree that they were ageing physically and cognitively and regular group exercise helped them improve their health. Such perceived benefit of a public health program is linked to improved outcomes based on the health belief model theory as individuals first assimilate the needs and benefits of health practices before implementing them (McPherson et al., 2014).

However, the findings of this study go contrary to the study done by Elena et al. (2011), who reported that Romania has a negative attitude towards physical exercise. This high level of attitude towards physical exercise by the older people in Enugu implies that they have an understanding of what regular physical exercise is all about, the benefits of physical exercise for them and they have the willingness to practice it.

## **PRACTICE PHYSICAL EXERCISE AMONG OLDER PEOPLE**

Furthermore, the results from inferential statistics only showed a significant relationship between knowledge of exercise and practice of regular physical exercise. Those with good knowledge were associated with regular physical exercise than those with poor. This finding agrees with the results of Fredriksson et al. (2018) among Australian adults where a significant association was found between scores on knowledge of the probabilities of inactivity-related diseases and how active a person was.

However, as revealed in the study found, the practice of physical exercise among older people scored the lowest, indicating a gap between knowledge and actual practice. The number of older adults who practice regular physical exercise is just the average while a good number were still physically inactive due to barriers like feeling too old to exercise, lack of time and motivation to exercise, poor knowledge of their recommended exercise regimen and presence of conditions that scares them from exercising properly. This finding agrees with the study by Balis et al. (2019), who reports that the Ghanaian older participants were unaware of how to maintain a physical exercise regimen, as well as the study by Abdeta et al. (2019) among Ethiopian older people where only an average of the respondent engaged effectively in physical exercise despite having good attitudes towards it.

Although, an average number of the respondents is practising physical exercise in this study and most of the respondents who have good knowledge of physical exercise do not practice it as the findings revealed that the majority noted lack of time as the reason for not participating, there stands to be a gap between knowledge and practice due to existing barriers and unmet needs towards the actual practice of Physical exercise in later life. This agrees with the study by Justine et al. (2013), which reported that the most common barrier to physical exercise as identified by their respondents is not having enough time.

However, the findings of this study are opposed to the study by Adegboyega and Adegboyega (2015), who reported a lower level of participation in physical exercise among older people in Ondo State, the western part of Nigeria. In addition, the work of Elena et al. (2011) reported that older people in Romania are mostly inactive and rarely active. Therefore, older people in the Enugu metropolis may not be meeting the recommended exercise regimen but are exposed to information, social and environmental settings that encourage them to exercise relatively to some regions in Africa. These findings might not apply to older people in rural areas in Enugu given the difference in environmental settings and facilities, as such indicate areas for future research.



## STRENGTH AND LIMITATIONS

Some limitations to the generalizability of the study findings include difficulty in administering the questionnaire to the older population due to the reluctance of some to filling the questionnaire, difficulty to follow on with the questions, which might have affected the quality of data elicited and the even distribution of the participants among those with low education and old-old categories. Second, this was a cross-sectional study and not able to establish causal relationships. More so, the study participants were all drawn from the city, which leaves a huge gap for the rural population given their peculiar settings and lower environmental features and facilities that encourages physical exercises. Thus, future research is warranted to provide updates to these findings.

Notwithstanding, the study findings studies adds to literature for evidence on older people's knowledge, attitudes, and practice of physical exercise, which is scarcely reported among in western Africa. The result reveals the need for health professionals to continuously advocate for regular physical exercise through an educational campaign on the benefits of exercise on the health of older adults. The older population should be sensitized that lack of regular physical exercise poses a great challenge to their health, social and psychological well-being. Part of the advocacy could include influencing government health agencies to institute recreational and exercise centres such as gyms, and table tennis courts to encourage older adults to engage in physical exercise. The result of the study also offers awareness and as a reference to motivate, the government and community heads to make policies that will encourage the practice of physical exercise in older adults like encouraging early morning and group sports.

## CONCLUSION

The present findings concluded that older people in Enugu metropolis have good knowledge of physical exercise, their attitude towards physical exercise is positive and their practice of physical exercise is on average. Therefore, there is a need to intensify and consolidate educative efforts, especially in the area of negative effects of physical inactivity on older people and make provisions for places where these older people can go for exercise training based on their approved regimen. Following further from the findings of the study, it is suggested that studies be conducted to verify the health implications of regular exercise among older and outline barriers to the practice of physical exercise among older people.

## COMPETING INTERESTS

The authors have no competing interests to declare.

## AUTHOR AFFILIATIONS

### **Ijeoma Onyinyechi Maduakolam**

Department of Nursing Sciences, Faculty of Health Sciences and Technologies, University of Nigeria, Enugu Campus, NG

### **Chidiebere Paschaline Osude**

Department of Nursing Sciences, Faculty of Health Sciences and Technologies, University of Nigeria, Enugu Campus, NG

### **Stephen Sunday Ede** [orcid.org/0000-0002-4340-4297](https://orcid.org/0000-0002-4340-4297)

School of Sport and Health Sciences, University Of Central Lancashire, UK; Department of Physiotherapy, Faculty of Allied Medical Sciences, Gregory University, Uturu, Abia state Nigeria, NG

### **Agnes Chinyere Onyekachi-Chigbu**

Department of Nursing Sciences, Abia State University, Uturu, Nigeria

### **Chitoo Stephanie Osuorah**

School of Nursing, University of Nigeria Teaching Hospital, Enugu

### **Chisom Favour Okoh**

Department of Medical Rehabilitation, Faculty of Health Sciences and Technologies, University of Nigeria, Enugu Campus, NG

- Abdeta, C., Seyoum, B., & Teklemariam, Z.** (2019). Knowledge of the physical activity guidelines and factors associated with physical activity participation among adults in Harar town, eastern Ethiopia. *BMJ Open Sport and Exercise Medicine*, 5(1), e000463. DOI: <https://doi.org/10.1136/bmjsem-2018-000463>
- Abiodun, A. A., Sam, A., & Olufemi, B. O.** (2018). Factors influencing regular physical exercise among elderly in residential care facilities in South African health district. *African Journal of Primary Health Care and Family Medicine*, 10(1), 1493. DOI: <https://doi.org/10.4102/phcfm.v10i1.1493>
- Adegboyega, J. A., & Adegboyega, J. A.** (2015). Physical activity and exercise behaviour of senior academic and administrative staff of tertiary institutions in Ondo State, Nigeria. *International Journal of Education Research*, 3(2), 189–201.
- Balis, L. E., Sowatey, G., Ansong-Gyimah, K., Ofori, E., & Harden, S. M.** (2019). Older Ghanaian adults' perceptions of physical activity: An exploratory, mixed methods study. *BMC Geriatrics*, 19(1), 85. DOI: <https://doi.org/10.1186/s12877-019-1095-1>
- de Rezende, L. F., Rey-López, J. P., Matsudo, V. K., & do Carmo Luiz, O.** (2014, April 9). Sedentary behavior and health outcomes among older adults: A systematic review. *BMC Public Health*, 14, 333. DOI: <https://doi.org/10.1186/1471-2458-14-333>
- Durstine, J. L., Gordon, B., Wang, Z., & Luo, X.** (2013). Chronic disease and the link to physical activity. *Journal of Sport and Health Science*, 2(1), 3–11. DOI: <https://doi.org/10.1016/j.jshs.2012.07.009>
- Elena, S., Georgeta, N., Cecilia, G., & Elena, L.** (2011). The attitude of the elderly persons towards health-related physical activities. *Procedia – Social and Behavioral Sciences*, 30, 1913–1919. DOI: <https://doi.org/10.1016/j.sbspro.2011.10.372>
- Fabunmi, A. A., Jumbo, I. S., & Oloyede, M. J.** (2019). Physical exercise: Knowledge, attitude and participation of senior secondary school students of selected private schools in Ibadan North Local Government Area, Oyo state (Nigeria); 2. *Health Promotion and Physical Activity*, 7(2), 9–14. DOI: <https://doi.org/10.5604/01.3001.0013.2660>
- Fredriksson, S. V., Alley, S. J., Rebar, A. L., Hayman, M., Vandelanotte, C., & Schoeppe, S.** (2018). How are different levels of knowledge about physical activity associated with physical activity behaviour in Australian adults? *PLOS ONE*, 13(11), e0207003. DOI: <https://doi.org/10.1371/journal.pone.0207003>
- Harvey, J. A., Chastin, S. F., & Skelton, D. A.** (2013). Prevalence of sedentary behavior in older adults: A systematic review. *International Journal of Environmental Research and Public Health*, 10(12), 6645–6661. DOI: <https://doi.org/10.3390/ijerph10126645>
- Justine, M., Azizan, A., Hassan, V., Salleh, Z., & Manaf, H.** (2013). Barriers to participation in physical activity and exercise among middle-aged and elderly individuals. *Singapore Medical Journal*, 54(10), 581–586. DOI: <https://doi.org/10.11622/smedj.2013203>
- Keadle, S. K., McKinnon, R., Graubard, B. I., & Troiano, R. P.** (2016). Prevalence and trends in physical activity among older adults in the United States: A comparison across three national surveys. *Preventive Medicine*, 89, 37–43. DOI: <https://doi.org/10.1016/j.ypmed.2016.05.009>
- Komatsu, H., Yagasaki, K., Saito, Y., & Oguma, Y.** (2017). Regular group exercise contributes to balanced health in older adults in Japan: A qualitative study. *BMC Geriatrics*, 17(1), 190. DOI: <https://doi.org/10.1186/s12877-017-0584-3>
- Langhammer, B., Bergland, A., & Rydwick, E.** (2018, December 5). The importance of physical activity exercise among older people. *BioMed Research International*, 2018, 7856823. DOI: <https://doi.org/10.1155/2018/7856823>
- Lusmägi, P., & Aavik, K.** (2021). Developing a social-ecological model for promoting physical activity among older adults based on the experiences of 50+ adults. *SAGE Open*, 11(3). DOI: <https://doi.org/10.1177/21582440211032943>
- McPherson, A. C., Gofine, M. L., & Stinson, J.** (2014). Seeing is Believing? A mixed-methods study exploring the quality and perceived trustworthiness of online information about chronic conditions aimed at children and young people. *Health Communication*, 29(5), 473–482. DOI: <https://doi.org/10.1080/10410236.2013.768325>
- Mehra, S., Dadema, T., Kröse, B. J., Visser, B., Engelbert, R. H., Van Den Helder, J., & Weijs, P. J.** (2016). Attitude of older adults in group based exercise program towards a blended intervention; A focus group study. *Frontiers in Psychology*, 7, 1827. DOI: <https://doi.org/10.3389/fpsyg.2016.01827>
- Milanović, Z., Pantelić, S., Trajković, N., Sporiš, G., Kostić, R., & James, N.** (2013). Age-related decrease in physical activity and functional fitness among elderly men and women. *Clinical Interventions in Aging*, 8, 549–556. DOI: <https://doi.org/10.2147/CIA.S44112>
- Musich, S., Wang, S. S., Hawkins, K., & Greame, C.** (2017). The frequency and health benefits of physical activity for older adults. *Population Health Management*, 20(3), 199–207. DOI: <https://doi.org/10.1089/pop.2016.0071>
- National Population Commission of Nigeria.** (2006). <http://nationalpopulation.gov.ng/>. Retrieved September 10, 2022.

- Oyeyemi, A. L., Oyeyemi, A. Y., Omotara, B. A., Lawan, A., Akinroye, K. K., Adedoyin, R. A., & Ramírez, A. (2018). Physical activity profile of Nigeria: Implications for research, surveillance and policy. *Pan African Medical Journal*, 30, 175. DOI: <https://doi.org/10.11604/pamj.2018.30.175.12679>
- Pienaar, P. E., De Swardt, M., De Vries, M., Roos, H., & Joubert, G. (2004). Physical activity knowledge, attitudes and practices of the elderly in Bloemfontein old age homes. *South African Family Practice*, 46(8), 17–19. DOI: <https://doi.org/10.1080/20786204.2004.10873121>
- Silva, M. N., Marques, M. N., & Teixeira, P. J. (2014). Testing theory in practice: The example of self-determination theory-based interventions. *European Health Psychologist*, 16, 171–180.
- Tse, M. M., Wan, V. T., & Ho, S. S. (2011). Physical exercise, does it help in relieving pain among older adults with chronic pain? *Journal of Clinical Nursing*, 20(5–6), 635–644. DOI: <https://doi.org/10.1111/j.1365-2702.2010.03548.x>
- Vaara, J. P., Vasankari, T., Koski, H. J., & Kyröläinen, H. (2019). Awareness and knowledge of physical activity recommendation in young adult men. *Frontiers in Public Health*, 7, 310. DOI: <https://doi.org/10.3389/fpubh.2019.00310>
- Wong, M. K., Cheng, S. Y. R., Chu, T. K., Lee, C. N., & Liang, J. (2017). Hong Kong Chinese adults' knowledge of exercise recommendations and attitudes towards exercise. *BJGP Open*, 1(2), bjgpopen17X100929. DOI: <https://doi.org/10.3399/bjgpopen17X100929>
- World Health Organization. (2013–20). *Global action plan for preventing and controlling noncommunicable disease, 2013* (pp. 21–27). WHO.
- World Health Organization. (2020). Physical activity. <https://www.who.int/news-room/fact-sheets/detail/physical-activity>. Retrieved September 10, 2022.
- Zainab, R. M., & Abdulkarim, D. (2019). *Physical activity and exercise among elderly population: Knowledge, attitude and practice in eastern province of Saudi Arabia*, 6(10).

#### TO CITE THIS ARTICLE:

Maduakolam, I. O., Osude, O. C., Ede, S. S., Onyekachi-Chigbu, A. C., Osuorah, O. C., & Okoh, O. C. (2023). Knowledge, Attitude and Practice of Physical Exercise Among Elderly People in Enugu Metropolis, Nigerian. *Physical Activity and Health*, 7(1), pp. 53–63. DOI: <https://doi.org/10.5334/paah.212>

**Submitted:** 19 September 2022

**Accepted:** 04 January 2023

**Published:** 10 February 2023

#### COPYRIGHT:

© 2023 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.

*Physical Activity and Health* is a peer-reviewed open access journal published by Ubiquity Press.