Acta Scientific NUTRITIONAL HEALTH (ISSN:2582-1423)

Volume 8 Issue 8 August 2024

Research Article

Social Determinant of Healthy Ageing Among the Urban and Rural Aged in Plateau State

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Received: July 08, 2024

Published: July 22, 2024

Abstract

Introduction: The social determinant is the conditions in which people are born, live, work and age; shaped by factors such as social norms, social policies and political systems. The rural areas in developing countries are home to nearly 40% of the world's older population. The number of aged living in urban areas in 2050 will increase to over 900 million. Despite a strong association between social factors and health outcomes, there is little research on how these factors impact on the aged. This study aims at improving the understanding of the social determinants of healthy ageing.

Methodology: A comparative, cross-sectional study was conducted in Jos North LGA, an urban area and Mangu LGA, a rural area. A total of 728 aged persons (≥ 60 years) were selected by multistage sampling technique in both communities. A structured questionnaire was used to collect information from respondents on the social determinants of healthy ageing and SPSS version 20 software was used for data entry and analysis.

Result: In the study, the proportion of healthy ageing aged in rural was 40.1% and 64.0% in urban communities, and 59.6% of the aged live with their spouse in urban, and 56.3% of their rural counterparts reside with their children. Urban pensioners are 20.1%, whereas rural pensioners are 5.6%. The majority (71.7%) of the urban aged are in a social group, compared to the rural aged (29.5%). The elderly who get together and visit friends or relatives often (≥ 4) in a month were higher in the urban areas (76.9% and 75.1%) compared to the rural (52.8% and 48.8%) areas ($p < 0.001$). Moreover, 61.2% of urban respondents telephone a friend or relative (≥ 4) in the past month, and only 43.1% of those in rural reported doing so; the difference was statistically significant ($p < 0.001$).

Conclusion: Frequent social interactions, calls and visits to the aged enhance healthy ageing. Therefore, it should be encouraged and promoted.

Keywords: Social Determinant; Healthy Ageing; Urban; Rural Aged; Plateau State

Introduction

The world is in the midst of a unique and irreversible process of demographic transition in which populations in developed and developing countries will experience unprecedented increases in the aged population [1-3]. Currently, the aged represent about 20% of the total world population and this proportion is predicted to rise to 25% by the year 2020 [4]. In addition, between 2015 and 2030, the number of older persons (aged 60 years or over) in the world is projected to grow by 56 per cent, from 901 million to more than 1.4 billion [2].

WHO projects that the elderly in Africa will grow from an estimated population of 54 million in 2000 to 213 million by 2050 [4]. Nigeria, the most populous nation in Africa and the seventh most populous country in the world, has an estimated population of 210 million people and a life expectancy at birth of 54.3 years [5]. With a population growth rate of 3.2% and having the highest number of the aged in Africa which is about 5% of the population [3,5]. This population is more than 6 million and is projected to reach 16 million by the year 2030 and 47 million by 2060 [5,6].

Since one in twenty Nigerians is an aged person, and more than two-thirds of all the aged reside in rural areas, attention must be given to the aged and ageing process in both the rural and urban settings in Nigeria [7]. The term "the Aged" is synonymous with "the Elderly" and "Older persons". The UN and WHO define the aged as "individuals that are 60 years and above" [1,8]. Whereas, in Nigeria, studies have used both 60 or 65 years and above to refer to the aged [9-19].

A key predictor that may influence health ageing is whether an aged is a rural or urban resident. However, rural areas face a proportionally greater increase in the number of aged than urban areas in developing countries. The rural areas in developing regions are home to nearly 40% of the world's older population.

The social environments are powerful influences on healthy ageing and the relationships with the environments are shaped by determinants such as the sex, family and ethnicity of the individual. Studies have shown some of the major determinants of healthy ageing include; income, work, social protection, education and literacy, social support, potable water and safe foods, safe housing and physical environments, engaging in appropriate physical activity, healthy eating, not smoking and using alcohol, using medication wisely, access to quality primary health care and long-term care [9,20-22].

In addition, the sheer magnitude of people who will age within the next few decades with its effect on the healthcare delivery system and socioeconomic development makes it important to understand and assess the social determinants of healthy ageing in rural and urban settings.

Methodology

Study area and population

Plateau State is located in the North Central Zone of Nigeria. It has 17 Local Governments Areas (LGAs) which are further zoned into North, Central and Southern Senatorial zones [23,24].

The study was conducted in communities in Jos North and Mangu LGAs of Plateau State. Jos North LGA has a population of 429,300 people with an elderly population of 16,923 based on 2006 census and it is a predominantly urban setting with twenty [20] wards [23]. The populace are primarily civil servants and traders. Whereas, Mangu LGA has also twenty (20) wards and a population of 294,931 people [4]. The Elderly population is 17,267 based on the 2006 census and it is a predominantly rural setting [4]. The indigenous tribes are Mwaghavul and Pyem and the major occupation is farming or trade in farm crops [24]. The study population consist of the Aged (≥60 years) residing in the study area. All Elderly people who are 60 years and above and who have lived for ≥ 1 year in the study area were eligible to participate. The participants' age was determined based on at least one of three criteria; (i) knowledge of their date of birth. (ii) Major milestones in the community or area at the time of birth (like when Nigeria became independent in 1960) and (iii) estimation using the age of their first child. But, older persons who are visitors, and migrants were excluded.

Study design and sampling

A comparative, cross-sectional study design was employed with a multistage sampling technique involving the selection of LGAs, wards, households and respondents. Using a simple random sampling technique by balloting, Jos North and Mangu LGAs were selected as the urban and rural LGAs respectively for the study. Four wards per LGA were each used and a systematic sampling technique was used to select households with 1311 houses listed in Jos North and 564 houses in Mangu. From the selected households, an Aged person who meets the inclusion criteria and gave consent was selected. If more than one elderly is present in a household, SRS by balloting is used to select a respondent. If a respondent declined to participate in the study, the respondent from the next household was selected until the required sample size was met, with a total of 728 respondents recruited for the study.

Research instruments

An interviewer-administered questionnaire was used to collect data for the study. It was adapted from the Older American Resources and Services Multidimensional Functional Assessment Questionnaire (OMFAQ) [25]. It is widely used internationally for surveys among the Aged. The adapted questionnaire was pre-tested in communities in Jos East and Jos South LGAs of Plateau State. Other tools that were used in the study include a stadiometer to measure the height of respondent, tape to measure the waist and hip circumference and weighing scale for weight.

Data collection

Advocacy visits to key members of the communities were carried out prior to field implementation. Likewise training of the research team comprised of ward focal persons, Community Health Extension Workers and Resident Doctors of the Department of Community Medicine, Jos University Teaching Hospital (JUTH) were involved in monitoring and supervision. A detailed explanation was given to all eligible respondents and written informed consent sought before the administration of the questionnaire. Data was collected by the team from using questionnaires and blood pressure and anthropometric measurements of eligible respondent in each household were done twice and the average taken to reduce measurement bias.

Scoring of determinant

The interviewer score section II-V on the questionnaire based on the information fill on the determinant of healthy ageing. These sections have an overall rating of the determinant (domains) using

a 6-point scale which is scored. The scale ranges from 1 to 6 and, 6 indicating extremely poor and 1 excellent. The scores are summed up to produce a cumulative score (CS) which gives equal weighting to each section (maximum score of 24 and a minimum score of [4]. Scores below 12 is term "healthy ageing" while; those over or equal to 12 indicate "unhealthy ageing" [25].

Data management

All quantitative data generated was collated and analyzed using SPSS version 20 software. Quantitative data such as age, number of children and number of siblings and qualitative variables such as occupation, highest levels of education and source of income were described using frequencies and percentages in tables and graphs. Chi-square test was used to test association between categorical variable such as healthy ageing or unhealthy ageing. A 95% confidence level was used and p-values less than or equal to 0.05 ($p \leq 0.05$) was considered statistically significant.

Ethical consideration

Written ethical clearance was sought from the JUTH Human and Research Ethics Committee. Request for permission to carry out the study from Mangu and Jos North local government authorities was sought and gotten. Also, permission was sought from the traditional rulers of the LGAs and communities which were given.

Limitations of the study

There could be recall bias from the study participants, as questions concerning their past were asked and also over or under representation of the Aged, because older persons don't know precisely their date of birth.

Result

Variable	Rural (n = 339) Frequency (%)	Urban (n = 389) Frequency (%)	χ^2	p-value
Age group (Years)				
60 - 69	214 (51.3)	254 (65.3)	10.37	0.016
70 - 79	95 (28.0)	93 (23.9)		
80 - 89	45 (13.3)	28 (7.5)		
≥ 90	25 (7.4)	14 (3.6)		
Sex				
Male	148 (43.7)	208 (53.5)	6.980	0.008
Female	191 (56.3)	181 (46.5)		
Marital status				
Single	2 (0.6)	2 (0.5)	-	0.343*
Married	196 (58.2)	239 (61.4)		
Divorced	10 (3.0)	19 (4.9)		
Widower/Widow	129 (38.3)	129 (33.2)		
Living arrangement				
With spouse	122 (36.0)	232 (59.6)	46.358	<0.001
With children	191 (56.3)	138 (35.5)		
Alone	19 (5.6)	7 (1.8)		
Others†	7 (2.1)	12 (3.1)		
Religion				
Islam	222 (65.5)	59 (15.2)	-	<0.001*
Christianity	116 (34.2)	326 (83.8)		
Others**	1 (0.3)	4 (1.0)		
Occupation				
Farming	123 (36.3)	16 (4.1)	1.502	<0.001
Trading	42 (12.4)	100 (25.7)		
Civil Servant	20 (5.9)	23 (5.9)		
Pensioner	19 (5.6)	78 (20.1)		
Not working	83 (24.5)	81 (20.8)		
Artisan	18 (5.3)	34 (8.7)		
Others***	34 (10.0)	57 (14.7)		
Education Level				
None	256 (75.5)	224 (57.6)	32.023	<0.001
Primary	42 (12.4)	111 (28.5)		
Secondary	16 (4.7)	24 (6.2)		
Tertiary	25 (7.4)	30 (7.7)		

Table 1: Demographic characteristics of the aged in rural and urban communities.

In Table 1, the demographic characteristics show that more than half (51.3%, 65.3%) of the population studied in rural and urban communities were between 60 - 69 years. Male to Female ratio was almost equal. Also, 58.2% of the rural communities studied are married and 38.3% are widowed. This was almost similar to the urban communities with 61.4% married and 33.2% widower/widow. In the study, only less than 0.6% are single in both communities.

The majority (92.3%, 95.1%) of the aged are living with either spouse or with their children and only 5.6% live alone in rural communities and 1.8% in urban communities. There was a statistically significant difference between the living arrangement and residential status (χ^2 = 46.36, p < 0.001). Also, 75.5% of the rural aged and 57.6% of the urban had no formal education. However 28.5% had a primary level of education in the urban communities compared to 12.4% in rural communities. In addition, urban pensioners are 20.1%, whereas their rural counterparts are 5.6%. Meanwhile, rural farmers are 36.3% and urban farmers are 4.1% in the study.

Variable	Rural (n = 339)		Urban (n = 389)		χ^2	P-Value
	Freq	%	Freq	%		
Healthy ageing	97	28.6	223	57.3	60.621	<0.001..
Unhealthy ageing	242	71.4	166	42.7		

Table 2: Proportion of healthy Aged in rural and urban settings in the study.

The proportion of respondents classified as ageing healthy in the study is 97 (28.6%) for rural and 223 (57.3%) for urban as shown in table 2. And, it is statistically significant with p =< 0.001.

Table 3 shows 56.1% of rural aged are classified as having poor social determinants compared to 43.9% of their urban counterparts. Whereas 62.8% of urban aged are considered to have good social determinants, unlike 37.2% of the rural aged. There was a statistically significant difference between social (χ^2 = 26.18, p < 0.001) determinants of healthy ageing with rural-urban status in this study.

Domain		Rural Frequency (%)	Urban Frequency (%)	Total	χ^2-test	p-value
Social determinants	Good	136 (37.2)	230 (62.8)	366(100.0)	26.180	<0.001
	Poor	203 (56.1)	159 (43.9)	362(100.0)		
		339 (46.6)	389 (53.4)	728(100.0)		

Table 3: Comparing Social determinants of aged in rural and urban communities.

Table 4 shows, more than half of the aged in rural and urban communities have many (≥ 6) family acquaintances and they visit each other. Furthermore, getting together and visiting friends or

Variable		Rural (n = 339) Frequency (%)	Urban (n = 389) Frequency (%)	χ^2	p-value
Number of families acquainted with	≥ 6	201 (59.3)	254 (65.3)	2.786	0.095
	< 6	138 (40.7)	135 (34.7)		
Number of close friends	≥ 6	65 (19.2)	138 (35.5)	23.938	<0.001
	< 6	274 (80.6)	251 (64.5)		
Number of people at ease with	≥ 6	70 (20.6)	88 (22.6)	0.415	0.519
	< 6	269 (79.4)	301 (77.4)		
Getting together with friends or relatives in a month	≥ 4	179 (52.8)	299 (76.9)	46.511	<0.001
	< 4	160 (47.2)	274 (23.1)		
Visiting friends at their homes during the past month	≥ 4	159 (46.9)	292 (75.1)	60.945	<0.001
	< 4	180 (53.1)	97 (24.9)		
Telephoning a friends or relatives in the past month	≥ 4	146 (43.1)	238 (61.2)	23.848	<0.001
	< 4	193 (56.9)	151 (38.8)		
Attended a religious service during the past month	≥ 4	327 (96.5)	326 (83.8)	31.396	<0.001
	< 4	12 (3.5)	63 (16.2)		

Table 4: Indicators for social determinants of healthy ageing amongst the aged in rural and urban communities.

relatives often (≥ 4) in a month is slightly greater in urban community (76.9% and 75.1%) than rural (52.8% and 46.8%). Whereas 61.2% of the urban aged telephone a friend or relative more than 4 times a month while only 43.1% of the rural aged did so. There was a statistically significant difference in the number of close friends the aged have ($\chi^2 = 23.94$, $P < 0.001$), getting together ($\chi^2 = 46.51$, $P < 0.001$), visiting ($\chi^2 = 60.95$, $P < 0.001$) and telephoning ($\chi^2 = 23.85$, $P < 0.001$) with friends and relatives in a month with rural-urban status. In addition, more than 80% of the aged attended a religious service during the past month.

Variable		Rural Frequency (%)	Urban Frequency (%)	χ^2	p-value
Belonging to a group	Yes	100 (29.5)	279 (71.7)	127.231	<0.001
	No	239 (70.5)	110 (28.3)		
	Total	339 (100.0)	389 (100.0)		
Type of group*	Religious	49 (49.0)	230(82.4)		<0.001**
	Parents	6 (6.0)	16 (5.8)	-	
	Clubs	4 (4.0)	3 (1.1)		
	Tribal Union	20 (20.0)	11(3.9)		
	Political Party	16 (16.0)	6 (2.1)		
	Alumni group	3 (3.0)	8 (2.9)		
	Others***	2 (2.0)	5 (1.8)		
	Total	100 (100.0)	279 (100.0)		
Level of activity					
	Very Active	76(76.0)	230(82.2)	-	0.403**
	Fairly Active	22(22.0)	45 (16.4)		
	Not Active	2(2.0)	4(1.4)		
	Total	100 (100.0)	279 (100.0)		

Table 5: The social participation by the aged in rural and urban communities.

*The variable options are mutually exclusive **fishers exact test ***

Table 5 shows that majority (71.7%) of the urban aged belong to social groups, in comparison to the rural aged with 29.5%. Amongst those in the groups, religious groups predominate in urban 230 (82.1%) and the rural 49 (49.0%). But, in terms of levels of activity in these voluntary groups, majority (76.0%, 82.2%) are said to be very active in both rural and urban communities. There was a statistically significant difference in whether the aged belong to a social group in rural and urban communities ($\chi^2 = 127.23$, $P < 0.001$).

Discussion

This study shows the majority of the respondents were aged between 60-69 years in both the rural and urban communities studied. This finding is in keeping with the recent census in the country where two-thirds of the aged population are within the same age group [5,7]. In addition, it buttresses the fact that population ageing is occurring in developing countries and persons are living longer even above the age of 60 years. The sex composition in the study showed that there were slightly more males in the urban community than the females while reverse is the case in rural communities. This finding does not correspond to the previous census in which there are more males in rural communities than females [7]. While, in the urban, there is more females than males [7]. Even though, studies have shown that there are more females than males at old age which is more pronounced as the years increase [9,27].

In addition, most of the aged in rural and urban communities are married or were once married with almost one-third widowed, this might be because of the socio-cultural setting in the sub-Saharan countries and it was consistent with the report of the recent census of the elderly in Nigeria [9]. Also, the study shows that the aged in rural communities mostly (56.6%) live with their children whereas those (59.6%) in the urban communities live with their spouse. This perhaps is because those in rural communities still maintain the extended family system and their children stay close to the aged; unlike the urban aged whose children often leave home to start a new life separately, and most residential accommodations are not even conducive for an extended family system unlike that of the rural communities.

Most rural aged in the study are farmers, unemployed or traders with very few pensioners. This implies that most of them are likely to have spent their years, living and working outside the formal sector of the economy. Their counterparts in the urban communities are mostly traders, not working or pensioners which

shows that quite a number have worked in the formal sector of the country. This finding is typical of most developing countries in Africa. Also, the literacy and educational attainment of the rural aged studied showed that 75% of them had no formal education. This is in consonance with other reports and studies in developing countries which show about two-third of the aged had no formal education [7,29]. The higher rural illiteracy add to the challenge of geriatric health issues, as literacy has an impact on overall health. Also, the aged in rural communities have an average of 7 children while that of urban communities have 5 children. This finding is similar to that of national demographic and health survey which shows fertility rate is higher in rural than urban communities [30].

The proportion of the healthy aged from this study was 40.1% and 64.0% for rural and urban communities respectively. Although in Nigeria, there are fewer studies on healthy ageing a longitudinal community study was conducted in Yoruba-speaking south-west and north-central parts of Nigeria which showed, the proportion of successful aged are between 16% and 75% [10]. Also, a study in which 28 articles were reviewed on healthy ageing showed different definitions for it, with a wide range of healthy ageing proportion depending on the definition, with the proportion of healthy ageing ranging from 0.4% to 95% [31]. This variability depends on the criteria that was used in studies. But, it did not precludes the importance of the concept to ageing and health. Even though, researchers have not reached a consensus about its definition.

In Africa, informal support network provides social protection for most aged and resources in cash and in kind from children to ageing parent are the main stay of social protection systems. Though, there is an observable progressive decreased in the traditional family function of care and social support to older family members due to migration and economic reasons. Findings, from this study shows, the mean numbers of families in the neighbourhood in whom the aged are well acquainted with are slightly lower in rural than in urban. These differences could be explained by the level of population between rural and urban settlements which in turn determines the number of people one interacts with in the course of a life time. This shows a slight difference between the rural and urban. The people the aged are at ease with are similar for both rural and urban that is why there was no statistically significant difference in the study.

Furthermore, the frequency of getting together with friends or relatives was assessed over a month time and it showed that within a month 52.8% of the rural aged said they get together at least 4 times, while 76.9% of the urban aged said they get together with friends at home at least 4 times a month. Also, the study showed that when asked how often the rural aged visits friends at their homes during the past months, 46.9% said they did more than 4 times and in urban aged 75.1% did more than 4 times. This difference might be because most of the rural aged are still involved in active farming, while those in the urban might have retired and have more time for interaction and visitations. But, a similar urban study in Delta, Nigeria among aged 60 years and above showed, 24.6% of the aged received supports from family members which included nephews, nieces and other family relations. In addition, those that received support from friends were 23.1% [34]. While, the frequency of telephone conversations with close friends or relatives was asked in the past month among the rural aged which was 43.1% that of urban aged was 61.2%. This is partly because more telecommunication facilities are found in the urban communities than the rural communities and the socio economic level are also differ, which favours the urban aged.

In addition, the urban aged are average more enlightened and educated. Therefore, government should provide the enabling environment, favourable policies and programs for the private sectors to facilitate provision of this facilities in rural communities at affordable rates. These will help to relief boredom, discourage loneliness and improve the overall quality of life of the aged there by ensuring a healthy ageing population.

In terms of attending religious services during the past month, most aged are involved. But, those belonging to voluntary groups showed a difference between the rural and urban communities, with more involvement of urban than rural which corroborate the findings on social participation of the aged, although it is skewed towards religious groups which is common in Nigeria and most of them are very active in such groups. This finding is similar with SAGE study in Ghana were aged 60 years and over, had 95% of the females and 91% of males were affiliated to a religion. Churches, mosques and other religious institutions and organizations offer social protection to the aged and sometimes even to their families. It also serves as a medium for sensitization and enlightenment of the aged on healthy ageing. They also provide the platform for the aged to improve their social lives through social networks and interactions with others who share similar faith [35] Meanwhile, this aspect of social determinants had been part of human existence, yet often neglected in research literature. It is part of the societal activities in this part of the world which are reflected in both rural and urban communities with great impact.

Conclusion

The proportion of healthy ageing elderly differs in rural and urban communities in the study with the more in urban Aged. The reasons are not far-fetched because basic amenities of life are more in the urban communities than the rural ones. The exploration of determinants of healthy ageing provides insight into the role of cer-

tain modifiable risk factors in the maintenance of function in later years of life. Therefore, frequent social interactions, calls and visits to the aged enhance healthy ageing. Therefore, it should be encouraged and promoted.

Bibliography

1. United nation. Global issues: "Ageing" (2015).

2. World Population Ageing (2013).

3. Togonu-Bickersteth F and Akinyemi AI. "Ageing and national development in Nigeria: Costly assumptions and challenges for the future". *African Population Studies* 27.2 (2014). 361-371.

4. World Health Organization.10 facts on ageing and the life course (2015).

5. National Bureau of Statistics of Nigeria. 2006 Population Census. [Internet]. Official gazette FGP 71/52007/2,500 (OL24): legal notice on publication of the details of the breakdown of the national and state provisional totals 2006 census (2014).

6. Ajomale O. Country report: ageing in Nigeria-current state, social and economic implications. "ISA RC11, Sociology of Aging" (2007).

7. National Population Commission. National population census 1991 analysis". *The Elderly* 3 (2013): 1-60.

8. World Health Organization. Definition of an Older or Elderly person (2002).

9. Gureje O., *et al.* "Determinants of quality of life of Elderly Nigerians: results from the Ibadan study of ageing". *African Journal of Medicine and Medical Sciences* 37.3 (2008). 239-247.

10. Gureje O., *et al.* "Profile and determinants of successful ageing in the Ibadan study of ageing". *Journal of the American Geriatrics Society* 62.5 (2014). 836-842.

11. Adebowale SA., *et al.* "Elderly well-being in a rural community in north central Nigeria, sub-Saharan Africa". *Public Health Research* 2.4 (2012). 92-101.

12. Olayiwola IO and Ketiku AO. "Socio-demographic and nutritional assessment of the Elderly yorubas in Nigeria". *Asia Pacific Journal of Clinical Nutrition* 15.1 (2006). 95-101.

13. Owoaje E. "Lectures on the Elderly. National Postgraduate Medical College of Nigeria. Faculty of Public Health". *Revision Course* (2012).

14. Adebusoye LA., *et al.* "Morbidity pattern amongst Elderly patients presenting at a primary care clinic in Nigeria". *African Journal of Primary Health Care and Family Medicine* 3.1 (2011): 211-217.

15. Fajemilehin BR and Odebiyi AI. "Predictors of Elderly persons' quality of life and health practices in Nigeria". *International Journal of Sociology and Anthropology* 3.7 (2011): 245-252.

16. Babafemi AA., *et al.* "Health and social problems of Elderly people in selected areas of Ondo state, Nigeria". *Research Journal of Medical Sciences Introduction* 8.2 (2014): 45-49.

17. Shofoyeke AD. "A Survey of Care and Support for the Elderly People in Nigeria". *Mediterranean Journal of Social Sciences* (2014).

18. Anakwe AI. "Understanding the Ageing Process, Problems Associated with it and how to age gracefully in the Nigerian Society". *Annals of Humanities and Development Studies* 1.2 (2010): 313-322.

19. Asagba A. "Research and the Formulation and Implementation of Ageing Policy in Africa: The Case of Nigeria". *British Society of Gerontology* 15.2 (2015): 3.

20. Rowe JW and Kahn RL. "Successful aging". *Gerontologist* 37 (1997): 433-440.

21. Bowling A and Dieppe P. "What is successful ageing and who should define it?" *British Medical Journal* 33.1 (2005): 1548-1551.

22. Bowling A and Iliffe S. "Which model of successful ageing should be used? Baseline findings from a British longitudinal survey of ageing". *Age and Ageing* 35 (2006). 607-614.

23. Steel N., *et al.* "Physical and cognitive function". *Institute for Fiscal Studies* (2004): 7.

24. Fadupin GT. "Social Support, Environmental Condition and Nutritional Status of the Elderly in Ibadan". *Nigerian Journal of Nutritional Sciences* 33.1 (2013): 1-6.

25. Afolabi WAO., *et al.* "Nutrient intake and nutritional status of the Aged in low-income areas of southwest, Nigeria". *The Journal of Aging Research and Clinical Practice.*

26. Holmen K and Furukawa H. "Loneliness, health and social network among Elderly people: a follow-up study". *Achives of Gerontology and Geriatricis* 35.3 (2002). 261-274.

27. Kinsella K. "Urban and Rural Dimensions of Global Population Aging: An Overview". *The Journal of Rural Health* 17.4 (2015): 314-322.

28. United Nations Human Settlements Programme, Living Conditions of Low-income Older People in Human Settlements: A global survey in connection with the International Year of Older People 1999 (2006).

29. World Health Organization. "Ageing": Exploding the myths (1999).

30. Nigerian Demographic and Health Survey (NDHS). "Work plan for community outreach for elder care by tertiary health institutions in Nigeria. A five day workshop for community physicians organized by Federal Ministry of Health between 5th and 9th (2008).

31. Depp CA and Jeste DV. "Definitions and predictors of successful ageing: A comprehensive review of larger quantitative studies". *Journal of the American Geriatrics Society* 14 (2006): 6-20.

32. McLaughlin SJ., *et al.* "An examination of healthy ageing across a conceptual continuum: prevalence estimates, demographic patterns and validity". *The Journals of Gerontology. Series A, Biological Sciences* 67.7 (2012): 783-789.

33. Ayernor PK. "Diseases of ageing in Ghana". *Ghana Medical Journal* 46.2 (2013): 18-22.

34. Okumagba PO. "Family Support for the Elderly in Delta State of Nigeria". *Studies on Home and Community Science* 5.1 (2011): 21-27.

35. Park K. "Concept of health and disease. Park's textbook of preventive and social medicine. 21st edition. Jabalpur, India: M/S Banarsidas Bhanot (2011): 10-46.