

Original Article

DISEASE PROFILE AMONG THE ELDERLY IN A RURAL COMMUNITY IN RIVERS STATE, NIGERIA

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Abstract

Background: Worldwide, the population of the elderly is steadily increasing even in the rural areas. There is paucity of data with regards to the prevalent diseases that affect the elderly in rural communities particularly in Nigeria.

Objective: To determine the disease profile of the elderly in a rural community.

Materials and Methods: This was a cross-sectional descriptive study of the elderly in Wiyaakara, a rural community in Rivers State, Nigeria, who were among the participants in a one-day medical outreach carried out in the community.

Result: The elderly (age ≥ 60 years old) were 12.1% (37) of the participants at the rural medical outreach. There were more males 56.8% (21) than females 43.2% (16) among the elderly. Majority of the elderly were in social class V, mainly consisting of farmers and fishermen. Hypertension (51.3%) was the major chronic disorder seen among them, with males and females almost equally affected. Prehypertension was found in 37.8% of them. Most (n=23) of the elderly had a normal BMI. Other prevalent health conditions seen among them were presbyopia and cataracts. About 13% of the elderly had no acute or chronic medical illness at the time of this survey.

Conclusion: The major cause of ill health among the elderly population surveyed in this rural community was hypertension. A quarter of the elderly population were also in the prehypertension phase. Health care for the elderly in rural areas need to be improved including specialist care.

Keywords: Elderly, Health, Hypertension, Older, Rural.

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INTRODUCTION

The number of persons living in the rural areas has been more than those in the urban areas until the past decade when there has been a steady decline in the population of those living in the rural areas compared to the urban areas.¹ Worldwide, the number of the elderly persons (those aged 60 years and above) is increasing in the rural areas. This can be attributed to more persons going into retirement at this age.² For instance In the United States of America, a 2012- 2016 population statistics showed that 17.5% of those older than 65 years lived in the rural

area as against 13.8% who lived in the urban area, obviously indicating a higher number of older residents in the rural area.³ The preference to reside in the rural area at this age which is associated with reports of better quality of life, is for reasons such as the scenic landscape, feeling of connectedness to the land, as well as the act of sharing and helping common among people in rural areas.⁴

Across the world, access to care for the elderly especially in the rural area is restrictive.⁵ Within the African context, care is usually provided by families,⁶ however, rural brain

drain syndrome has led to migration of young educated persons including health workers to the urban areas. This trend is being seen in different parts of the world including Africa in recent times.^{7,8} The poor attention paid to the care of the elderly and the security challenges in Nigeria, that have led to recurrent kidnapping of health workers residing and working in the rural areas have further compounded the issue,⁹ leading to little information about the disease profile in our rural communities. The evolution of urbanization in many rural communities is causing a shift from the traditional society where the elderly are revered to that of abandonment by younger relatives and decrease in their social influence on families.¹⁰ Few studies as observed on major data bases on the internet have looked at the morbidity pattern of the elderly living in the rural areas of Nigeria and Africa. A knowledge of this will help governments to make health policies, budgets and health care plans that will improve the wellbeing of the elderly living in these areas hence the justification of this study.

This study therefore aims to determine the disease profile of the elderly in a rural community so that health services and educational activities can be planned according to the needs of this population.

MATERIALS AND METHODS

This was a cross-sectional descriptive study of the elderly in Wiyaakara community. Wiyaakara is a village in the district of Ken-Khana in Khana local government area, in Rivers State, Nigeria. The village is close to the major town of Bori. It has its own primary health centre and a community primary school. The major language is Khana. The population is estimated to be about 5,000 persons from the last census in 2006 and those aged 60 years and above are estimated to be about 4% of the total population.¹¹

The study population were elderly residents of the community. All the elderly residents who participated in a one-day rural medical outreach conducted in May, 2017 were included in the study. A predesigned proforma was used to collect the socio-demographic, physical characteristics and medical data of the elderly participants.

A flow chart was used to direct the movement of the participants. The participants were ushered to a rest area and were seated down for five minutes before socio-demographic data were obtained by trained field assistants. The socio-demographic data obtained was used

to group the participants into five social classes based on their occupation using the Registrar General's Scale of social classes.¹² Anthropometric measurements were taken by trained assistants. Blood pressure and random blood glucose were recorded by the nurse before consultation was done by the family physician. The weight was measured using a Hanson weighing scale placed on a flat surface and with the pointer at zero mark. The participants wearing light clothing and without footwear, were asked to step on the scale and stand with their feet firmly on the scale without moving. Their weight was then recorded to the nearest 0.1kg. The scale had earlier been calibrated with a known 20kg equivalent mass. A portable, collapsible stadiometer (Leicester Height Measure-Seca, Ltd Birmingham, UK) placed on a firm level surface was used for height measurement. Participants were asked to take off their foot wear and head gears, to stand on the stadiometer platform with their heels together and touching the back stop to ensure that their spine is at pelvis and shoulder level on an imaginary vertical axis. The back of the head was made to touch the upright rod of the stadiometer. The measuring arm of the stadiometer was lowered onto the participants' head without forcing their head down. They were then asked to move away from the stadiometer and the measurement read by the examiner to the nearest 0.1cm. Body mass index (BMI) was calculated as Weight (Kg)/ Height (M²). The WHO classification was used as follows: underweight- BMI < 18.5kg/m²; normal weight- BMI of 18.5-24.9kg/m²; overweight- BMI of 25-29.9kg/m²; grade 1 obesity- BMI of 30-34.9kg/m²; grade 2 obesity- BMI of 35-39.9kg/m²; grade 3 (morbid obesity)- BMI of 40kg/m² and above. Blood pressure was measured using a mercury sphygmomanometer with appropriately sized cuff and with the participants seated and relaxed. Two readings were measured at 5 minutes intervals and the average recorded. The seventh report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of Hypertension (JNC-7) was used in staging hypertension as follows: Prehypertension- systolic blood pressure of 120-139 and diastolic blood pressure of 80-89; Stage 1 hypertension- systolic blood pressure of 140-159mmHg and diastolic blood pressure of 90-99mmHg; while stage 2 is any systolic blood pressure greater than 160mmHg and diastolic blood pressure greater than 100mmHg. Participants had their thumb pinpricked after proper cleansing and blood sample obtained and analysed with a pre-calibrated ONETOUCH glucometer, manufactured by LIFESCAN (Johnson-Johnson) of

United States of America to assess the Random blood glucose. A Random blood glucose level of 126mg/dL (≥ 10.0 mmol/L) was used to establish a diagnosis of diabetes mellitus according to the guidelines of the Expert Committee on the Diagnosis and Classification of Diabetes Mellitus.

Data Analysis

The data was cleaned, coded and subsequently entered into SPSS Version 22. Results are presented using a pie chart and frequency tables. Inferential statistics using Chi square test was employed to determine the degree of association between socio-demographic parameters and blood pressure, BMI and blood glucose. Statistical significance was set at a p-value < 0.05 .

RESULTS

The number of participants was three hundred and six (306) including children and adults. Thirty-seven of the participants were elderly, constituting 12.1% of the total number of persons who attended the outreach.

There were more males (56.8%, n = 21) than females (43.2%, n = 16) in this study as seen in figure 1.

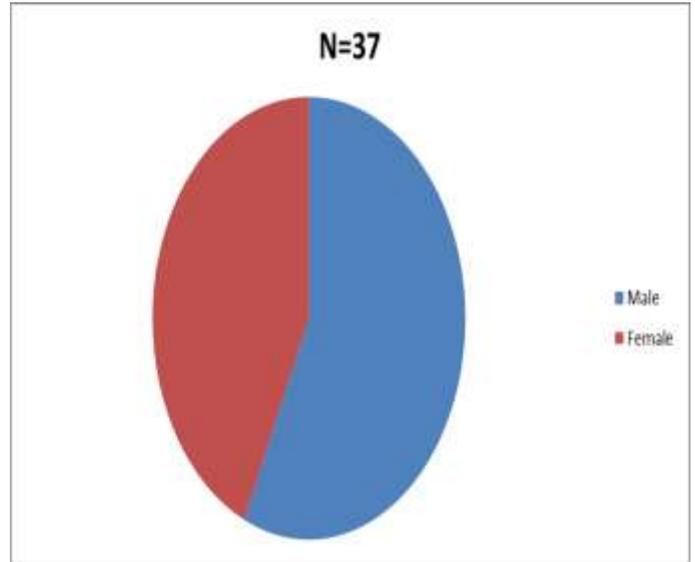


Figure 1: Sex distribution amongst the participants

Majority of the elderly were in social class V mainly consisting of farmers and fishermen. Hypertension (43.2%) was the major chronic disorder seen among the elderly with males and females almost equally affected. About Thirty-eight percent of the elderly fell within the prehypertension category. See Table 1.

Table 1: BP and Socio- demographics

Age	Normal BP	Prehypertension	HTN Stage I	HTN Stage II	X ²	p-value
60-64	2	11	8	2	11.09	0.26
65-69	1	2	1	2		
70-74	3	1	1	1		
>75	1	0	1	0		
Gender					0.78	0.85
Male	4	8	7	2		
Female	3	6	4	3		
Social Class					14.39 (Yates)	0.27 (Yates)
I	0	0	0	0		
II	0	2	0	0		
III	1	1	8	0		
IV	1	1	2	1		
V	5	10	1	4		

Most (62.2%) of the elderly had a normal BMI as seen in Table 2. Most of the participants who were in social class

V had a normal BMI which was statistically significant as seen in Table 2.

Table 2: BMI and Socio-demographics

Age	Underweight	Normal	Overweight	Obesity	χ^2	p-value
60-64	0	12	6	3	12.99	0.16
65-69	0	5	3	0		
70-74	1	5	0	0		
>75	0	1	0	1		
Gender					6.38	0.09
Male	1	15	3	1		
Female	0	8	6	3		
Social Class					13.60 (Yates)	0.32 (Yates)
I	0	0	0	0		
II	0	0	0	0		
III	0	0	2	0		
IV	1	3	1	4		
V	0	20	6	0		

Eye disorders were noted in two – fifths of the elderly in this study, and they were presbyopia (24.3%) and cataracts (16.2%). It is remarkable to note that these patients with presbyopia and cataracts were all males. All those with cataracts also suffered from presbyopia. Hypertension was seen only in one of those with cataracts and presbyopia while two had prehypertension. Amongst those with presbyopia

only, there was only one with coexistent hypertension. Those with dental disorders (chronic periodontitis, marginal gingivitis, jaw trauma and retro alveolar abscess) constituted 10.8% of the elderly, with three quarter of these seen in males. Myalgia and dyspepsia were complaints that were exclusively seen in the elderly women as shown in table 3.

Table 3: Disease profile of the Elderly

S/N	Disease	Males (N=21)	% males affected	Females (N=16)	% Females affected	Total (N=37)	% of Total affected
1	Arthritis	2	9.5	1	6.2	3	8.1
2	Cataract	6	28.5	0	0	6	16.2
3	Chronic periodontitis	1	4.7	0	0	1	2.7
4	Dyspepsia	0	0	2	12.5	2	5.4
5	Fungal skin infection	1	4.7	0	0	1	2.7
6	Hypertension	9	42.8	7	43.7	16	43.2
7	Jaw trauma	1	4.7	0	0	1	2.7
8	Malaria	0	0	1	6.2	1	2.7
9	Malnutrition (Under nutrition)	1	4.7	0	0	1	2.7
10	Marginal gingivitis	1	4.7	0	0	1	2.7
11	Myalgia	0	0	3	18.8	3	8.1
12	Obesity	1	4.7	3	18.8	4	10.8
13	Prehypertension	8	38.0	6	37.5	14	37.8
14	Presbyopia	9	42.8	0	0	9	24.3
15	Retro alveolar abscess	0	0	1	6.2	1	2.7
16	Routine Health Check	3	14.2	2	12.5	5	13.5

Other disorders included arthritis, fungal skin infection, malaria, obesity, etc. as also displayed on table 3. Three quarters of those with obesity also had hypertension with the rest at the prehypertension phase. Males had more comorbidities although it was not statistically significant. Majority of those with morbidity had a single chronic pathology as seen in table 4. Diabetes was not recorded in

the elderly in this study and there was only one case recorded among the entire participants at the rural outreach. Some of the elderly (13.5%, n= 5) were not known to be previously diabetic or hypertensive and had no obvious health disorder on screening hence were tagged as those who came for routine health check.

Table 4: Co-morbidity frequency amongst elderly males and females

Morbidity Frequency	Male (N=21)	% of Males	Female (N=16)	% of Females	Total (N=37)	% of Total
5	1	4.8	0	0	1	2.7
4	2	9.5	1	6.3	3	8.1
3	2	9.5	0	0	3	8.1
2	5	23.8	5	31.3	10	27.0
1	8	38.1	8	50.0	16	43.2
0	3	14.2	2	12.5	5	13.5

DISCUSSION

The study shows that the elderly constituted 12.1% of the rural outreach population. Studies that have been done in other rural areas showed varying prevalence which were 7.8%, 23.5%, 30.2% and 40% respectively.¹³⁻¹⁶ Although the percentage of those above 60 years and older in Nigeria is relatively small, the actual number is increasing thus causing an increase in the proportion of the elderly in the rural areas.^{17,18} This increase is likely due to the improved medical advancement in curbing down infectious diseases that often cause mortality in the younger age group and the overall improvement of the quality of life globally. Two classes of the elderly according to Lee et al¹⁹ was found in this study, which are the youngest-old (those aged 60 – 74 years) and the middle-old (those aged 75 – 84 years), reflecting a younger elderly demographic in the population.

The result of this study shows a slight male preponderance. Similar studies showed varying results with regards to gender distribution. Studies done in six rural communities in the northern part of Nigeria showed a higher preponderance of males¹⁴ but other studies done within different rural areas in Nigeria showed a higher prevalence of females.^{15-17,20,21} This disparity cannot be fully explained since the estimated male: female ratio in Nigeria shows a slight male preponderance,²² however it may be assumed that the rural areas with higher female numbers may have better environmental or biological factors that favour female survival to an older age.

The socio-economic status of the elderly was similar to those seen in other studies.^{14-21,23} The socioeconomic status is a known factor in seeking health care even in the rural areas.^{14,24-26} The elderly in this study are of the lower socio-economic class and this may also affect their health seeking behavior, thus the rural medical outreach was a plus with regards to detecting morbidity in them. Hypertension and prehypertension were prevalent affecting about four-fifths of the elderly according to JNC 7 classification. This finding is not peculiar to this study

as it is similar to other studies in other rural areas.^{16,17,23} There were studies that recorded lower rates of hypertension.^{14,15} The elderly in this study being mainly farmers and fishermen which involves a lot of job-related physical activity, such as walking down to the farm or fishing port and participating in hoeing or paddling of the canoe. This is likely to be a positive factor for majority of them having a normal BMI and normal glucose levels despite their age. There was no case of diabetes seen among the elderly, although studies done in other rural areas showed prevalence of type 2 Diabetes mellitus among the elderly of 2.5%, 4.0% and 7.5% respectively.^{14,15,27} This job-related physical activity was also observed in a study of rural elders of similar socio-economic status in another country.^{28,29} Obesity occurred in few patients and they were mainly females. This may be related to the female hormonal factors that promote increase weight gain. This finding is similar to other studies done within rural areas in the same region.^{15,30} Obesity has been reported to be seen more in rural dwellers when compared to urban dwellers in developed nations. This may be attributed to the different lifestyle activities that take place within these regions.³¹ Eye disorders such as presbyopia and cataracts as seen in this study was also reported in other studies of rural seniors, however other eye disorders such as glaucoma and age-related macular degeneration which were reported in the other studies was not documented in this study.³²⁻³⁴ Dental disorders were also encountered in this study similar to what has been observed in other studies, however females were more affected comparatively.^{35,36}

Musculoskeletal problems such as arthritis and myalgia have been reported in seniors in rural areas with varying prevalence. Arthritis was found to be 3.3% and 31.5% in two different studies in the northern parts of Nigeria.^{14,37} Myalgia was reported to be slightly higher in another study consisting of almost 10% of the respondents and 33% had low back pain in another study respectively.^{19,38} Physical activities such as farming has been noted to be a

predisposing factor.^{37,38} Dyspepsia has also been reported to be much higher in other studies amongst older aged citizens in Africa. The aetiology might be due to peptic ulcer and non-peptic ulcer causes.^{14,39} Skin disorders particularly fungal skin infections have also been reported in older rural dwellers although it is more prevalent in children in rural communities.^{14,40} Malaria though had a very low prevalence in this study, it is known to be endemic within the country and there is a lot of self-medication across different age groups. This may have accounted for the reduced diagnosis in this study. Higher prevalence has been recorded in other studies as high as 20% and 27.5% respectively.^{20,41} The health seeking behavior with regards visiting a standard health facility to treat malaria amongst rural older adults is lower than that of the urban older adult in Nigeria due to lower socio-economic status.⁴⁰

Malnutrition was found to be much higher in another study done in older persons within the same region. It was more than twice the proportion of those with malnutrition which includes under nutrition and obesity in this study.⁴² The difference may have been in the higher population and the focus on determining nutritional deficiencies in that study. Irrespective of the different diseases seen amongst the elderly in this rural community, a small percentage were noted to have no obvious disease. This has also been seen in other similar studies.^{14-21,23} This may be due to their strong immune system and genetics.

CONCLUSION

The major cause of morbidity in this set of elderly persons was hypertension; with more than a quarter of the elderly population being in the prehypertension phase. The most likely risk factor for the high prevalence of hypertension in this population is advanced age. Health care for the elderly in rural areas need to be improved including specialist care.

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DISCLOSURES

The authors have no conflicts of interests or relevant disclosure.

AUTHOR CONTRIBUTIONS

BEI and ESA both contributed to the conception of this study and they both conducted the data acquisition. BEI

did the data analysis while ESA wrote the manuscript. BEI edited the manuscript.

ETHICAL CONSIDERATIONS

Oral consent was sought and obtained from each participant with ethical principles for the guidance of physicians in medical research applied, which were as follows: confidentiality of data, beneficence of participants, non-maleficence to the participants and right to decline/withdraw from the study without loss of benefits.

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