Morbidity Pattern and Illness Variances among the Elderly Seen in General Out-Patient Department of Comprehensive Health Centre, Ukpo, South East Nigeria

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ABSTRACT

Purpose: The elderly comprises the fastest-expanding age group globally. Disease and deteriorating health are implicitly assumed to be associated with aging, as chronic medical illnesses mostly present with increasing age. This study sought to assess the morbidity pattern among elderly patients seen in the General Out-patients Department (GOPD) of the comprehensive health center, Ukpo in South East, Nigeria.

Methodology: This was a retrospective descriptive study of data obtained from health records of 140 patients aged ≥65 years who visited the facility between 1st January 2016 and 31st December 2020. Information obtained included their age, occupational status, place of domicile, educational status, and a diagnosis made at presentation. Data was analysed using the SPSS-26 software package.

Result: Females accounted for 72.90% of respondents while 27.1% were males, with a male to female ratio of 1:2.7. 14.29% of the geriatric morbidity was due to communicable diseases predominantly malaria (7.80%) while diseases of the cardiovascular system (32.62%) and joints (21.28%) were the commonest non-communicable diseases. Chi-square analysis showed a strong correlation between age and the distribution of morbidities among geriatric patients (p < 0.001).

Conclusion: Non-communicable diseases like hypertension, arthritis, and cataract were common in the geriatric population in this study.

Practical implications: It is pertinent that further health training, adequate facilities, and good health coverage needed to cater to the health needs of this unique population group are provided to improve their quality of life.

Keywords: Elderly, Hypertension, Morbidity pattern, Nigeria, Non-communicable diseases, South-east, Ukpo

INTRODUCTION

Aging is a natural process associated with changes resulting in health problems.[1] It leads not only to physical impairment but also to mental and social problems. As the population ages, there is a corresponding

change in life expectancy and disease burden.[1] Although imprecise and controversial, the elderly age group is defined as persons with a chronological age of 65 years and above.[2] There is a higher prevalence of chronic diseases in the geriatric population, leading to frailty and dependence, reduced quality of life, and lower life expectancy in developing countries.[3]

In a study carried out at the General Outpatients Clinic of the University of Uyo Teaching Hospital (UUTH), Uyo, Nigeria, on the Morbidity Pattern of Geriatric Patients Attending A General Out Patient Clinic in a Tertiary Hospital in Nigeria; Bassey *et al*. observed that noncommunicable disease accounts for higher morbidity in the elderly than communicable diseases.[4] Hypertension, Osteoarthritis, Diabetes mellitus, and Cataracts account for the majority of the morbidity in the elderly compared to Malaria (which accounts for the most morbidity from communicable disease) and Typhoid fever which are the most common communicable disease causing morbidity in the elderly. [4] A similar study done at University College Hospital (UCH), Ibadan, Nigeria, by Adebusoye *et al*., observed that Hypertension was the most commonly observed morbidity in the elderly (40%) followed by cataracts (39.4%) and Osteoarthritis (26.8%).[5]

Currently in developing countries, there is a paradigm shift from communicable to non-communicable diseases causing severe morbidity among the elderly population.[6] *D*espite this, the social support system for this increasing population is lacking leaving them with the full burden of providing for their health care needs.[4] A cross-sectional study conducted in a selected Primary Health Care Out-Patient in the South Batinah Governorate of Oman, on the morbidity pattern amongst elders attending general practice observed that change in living standards over the years may be attributed to why there is an increased prevalence of hypertension in the elderly.

Non-communicable diseases are higher in the elderly than Communicable diseases. For instance, there is a high prevalence of Hypertension and Diabetes as a result of being overweight and smoking. Other common morbidities were impaired vision, walking difficulty, and hearing problems.[7]

People aged 65 years or older are the world's fastest-growing group, according to the United Nations report in 2019.[8] By 2025, the global population of this group of individuals will be approximately 1.2 billion and it is also projected that the total number of older persons living in low or middle-income countries (LMIC) will be approximately 850 million by 2025, accounting for 12% of the overall population of these countries.[10] Nigeria ranks 24th globally among countries with the highest number of older persons.[11] The number of elderly people in the country is expected to increase to 25.5 million from the current 6.98 million by 2050.[10]

Rapid population aging is a demographic reality in most countries of the world, including Nigeria. Demographic changes in Nigeria, as well as collapsing family structures and a lack of social security system, pose unique challenges to the elderly. Changes accompanying old age can lead to health problems, necessitating the provision of adequate preventive, curative, and rehabilitative services. However, there is a lack of preparedness by the LMIC, Nigeria inclusive, to meet the healthcare needs of this group.[11] Also, to the author's best knowledge, the country has no applicable national policy on the care and welfare of older persons.[12] Furthermore, to the best of the authors' knowledge, despite several research on the pattern of morbidity study, none has been done in Nnamdi Azikiwe University Teaching Hospital. The aim of the study there was to determine the morbidity pattern and illness variances among the elderly population seen in the General Outpatient Department of a Tertiary Hospital in South-eastern Nigeria.[12]

Aging in Nigeria is occurring against the background of socio-economic hardship,

widespread poverty, the HIV/AIDS epidemic, and the rapid transformation of the traditional extended family structure.[13] Therefore, this research is necessary to help policymakers in the achievement of a decrease in morbidity among the geriatric group in the population.

In anticipation of this increase in the elderly population, employers, health, and social service providers, and the general public will increasingly look to the government for assistance.[13] The government will be expected to initiate policies that will support older people, train and empower health and social service professionals, and supply employers with a trained workforce to take care of the elderly.[13] Thus, authorities at all levels of governance have a direct stake in arguably the most significant demographic shift of the twenty-first century.

In meeting the needs of employers and healthcare providers, as well as the needs of the general public, governments in developing regions will be facing new and old challenges, including educating the general public and recruiting and training skilled health workers to care for the elderly.[13] The Nigerian government must therefore position itself to meet the economic, health, social, and psychological challenges that aging will bring into the 21st century.

The relationship between aging and health-associated problems cannot be overemphasized. Morbidity patterns and illness variances differ among the elderly population and understanding these patterns is the basis for maintaining health in the geriatric group. The study findings will be the basis for future research among the population, especially in Nnamdi Azikiwe University Teaching Hospital, in Southeast Nigeria.

The geriatric group as is known is economically unproductive and there is a high probability that this would result in financial burden and social dependency which could result in ill health among this group of dependants. It is, therefore, justifiable to carry out this study, the outcome of which would provide insight into how to screen and address the issues regarding this population morbidity pattern. Illness variances and their determinants.

This study also explored the morbidity pattern and generated information on what could be the likely underlying risk factors and causes that would result in the paradigm shift of disease patterns and illness variances among the elderly, thereby proffering possible recommendations to mitigate these underlying risk factors.

MATERIALS & METHODS
Study Area
This study was carried out in Comprehensive Health Centre (CHC) Ukpo, in Dunukofia. Dunukofia is a Local Government Area in Anambra State, south-east Nigeria. Towns that make up the local government are Ukpo, the headquarters; Ifitedunu, Dunukofia, Umunnachi, Umudioka, Ukwulu and Nawgu.[18] It shares boundaries with Awka North, Idemili North, Njikoka and Oyi Local Government Areas.[18] The population is predominantly agrarian but major in-roads have been made in commerce and education.[18] The CHC Ukpo was commissioned in 1997 and currently provides 24-hour outpatient and in-patient services to the people of Dunukofia and its environs.[19]

Study Population
The health records/case notes of all persons aged 65 years and above that had assessed care in CHC Ukpo from January 1st, 2016 to December 31st, 2020.

Inclusion Criteria
All health records of all patients aged 65 years and above who had presented at the facility between January 1, 2016, and December 31, 2020.

Exclusion Criteria
Health records of patients with missing, incomplete, or ambiguous information, and case notes without a diagnosis.

Research Design

This was a 5-year retrospective descriptive study to assess disease morbidity patterns and illness variance among the elderly patients of the Community Health Care Centre at Ukpo.

Sampling Technique

Total population sampling was employed. Data was collected using a structured checklist designed to record the patients' profile which will include age, gender, place of domicile, marital status, level of education, occupation, religion, and diagnosis.

With permission from the records department, records of morbidities among the elderly group were collected. Diagnosed diseases were classified into two broad groups, namely Communicable and Non-communicable diseases. Non-communicable diseases were further categorized on the basis of physiological systems such as cardiovascular system (CVS); Eye; Endocrine/Nutrition; gastrointestinal system (GIS) etc.

Data Analysis

Data gotten from the study were analysed using Statistical Package for the Social Sciences (SPSS) version 26 and results were presented in the form of frequency tables. The test of significance was calculated with Chi-square analysis was used to assess the relationship between morbidity pattern and age and given morbidities and respondents' occupations. The level of significance was set at 0.05.

RESULT

Table 1 above shows the socio-demographic parameters of the elderly sampled within the 5 years retrospective study. The result showed a higher number of elderly female 102(72.90%) than male 38 (27.10%) visiting the General outpatient department of CHC within the period of study. Majority of the elderly fall within the age range 77-82years 49(35.00%) followed by those

within the age of 71-76years 44(31.40%) and then 65-70years 35(25.00%). With respect to occupation, most of the elderly are aged/dependent 69(54.30%) followed by those engaged in farming 29(20.70%) and then traders 12(8.60%).

Table 1: Shows Socio Demographic Variables

Variable	Frequency N = 140	Percentage (%)
AGE		
65-70	35	25.00
71-76	44	31.43
77-82	49	35.00
83-88	9	6.43
89-94	2	1.43
>95	1	0.71
OCCUPATION		
Aged	74	58.27
Carpentry	1	0.79
Driver	1	0.79
Farmer	29	22.83
House wife	3	2.36
Secretary	1	0.79
Trading	12	9.44
Welder	1	0.79
Woodwork	1	0.79
Rtd civil servant	3	2.36
Rtd teacher	1	0.79
SEX		
Female	102	72.9
Male	38	27.1
EDUCATION > SSCE		
Yes	40	28.57
No	100	71.43

Mean age of respondents = 75.6 years

Table 2: Shows Prevalance of the Different Morbidities Among Geriatric Patients.

variable	frequency	percentage
DIAGNOSIS		
Arthritis	30	21.28
Ulcer	1	0.71
Hypertension	46	32.62
Malaria	11	7.80
Diabetes	9	6.38
Gastro enteritis	4	2.84
Pneumonia	5	3.55
Urinary tract infection	3	2.12
Eye diseases/Cataract	26	18.44
Dementia	1	0.71
Peptic ulcer disease	5	3.55

Table 2 result shows that Hypertension is the most common cause of morbidity among geriatric patient visiting GOPD of CHC within the year of study 32.62% followed by arthritis 21.28% with dementia and leg ulcer been the least cause of morbidity among geriatric patients who visited GOPD of CHC within the period of study 0.71% respectively.

Table 3: Shows Distribution Of Morbidities Among The Geriatric Patients Attending GOPD.

VARIABLE	AGE						
DIAGNOSIS	65-70 (N=35)	71-76 (N=44)	77-82 (N=49)	83-88 (N=9)	89-94 (N=2)	>94(N=1)	P value
Arthritis	8(22.86%)	9(20.45%)	10(20.41%)	3(33.33%)	0(0.00%)	0(0.00%)	<0.001
Ulcer	0(0.00%)	0(0.00%)	0(0.00%)	1(11.11%)	0(0.00%)	0(0.00%)	
Hypertension	14(40.00%)	17(38.64%)	14(28.57%)	1(11.11%)	0(0.00%)	0(0.00%)	
Malaria	3(8.57%)	2(4.55%)	5(10.21%)	1(11.11%)	0(0.00%)	0(0.00%)	
Diabetes	2(5.71%)	4(9.09%)	3(6.13%)	0(0.00%)	0(0.00%)	0(0.00%)	
Gastro enteritis	1(2.86%)	1(2.27%)	2(4.09%)	0(0.00%)	0(0.00%)	0(0.00%)	
Pneumonia	0(0.00%)	1(2.27%)	4(8.16%)	0(0.00%)	0(0.00%)	0(0.00%)	
Urinary tract infection	0(0.00%)	2(4.55%)	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)	
Eye diseases	6(17.14%)	7(15.91%)	8(16.33%)	3(33.33%)	2(100.00%)	0(0.00%)	
Dementia	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)	1(100.00%)	
Peptic Ulcer disease	1(2.86%)	1(2.27%)	3(6.13%)	0(0.00%)	0(0.00%)	0(0.00%)	

Table 3 above shows that Arthritis and Eye diseases were more common morbidity in geriatric patients aged 77-82years {10(20.41%), 8(16.33%)} respectively. Hypertension and Diabetes were most prevalent {17(38.64%), 4(9.09%)} respectively among geriatric patients aged 71-76years, while Dementia was a cause of morbidity only in elders aged above 94years 1(100.00%). Pneumonia and Malaria where more among elderly within the age of 77-82years {4(8.16%) and 5(10.21%)} respectively. Chi square analysis show a strong correlation between age and distribution of morbidities among geriatric patients attending GOPC of CHC within the period of study (P < 0.001).

Table 4: Shows Distribution of Morbidities Among Geriatric Patients Attending GOPD In CHC UKPO Between 2016-2020 With Respect To Occupation

VARIABLES	DIAGNOSIS										
	ATR	ULC	HTN	MAL	DM	GE	RTI	UTI	ED	DEM	PUD
Aged (n=74)	20.7%	1.4%	30.8%	11.5%	5.7%	2.4%	2.7%	1.4%	17.6%	0	5.8%
Rtd. civil servant (n=5)	40.0%)	0	20.0%	0	20.0%	0	0	20.0%	0	0	0
Rtd teacher(n=1)	0	0	100.0%)	0	0	0	0	0	0	0	0
Carpentry (n=3)	0	0	0	0	0	0	0	0	66.8%	33.2%	0
Driver (n=1)	0	0	0	0	100.0%	0	0	0	0	0	0
Farmer (n=38)	21.3%	0	21.1%	15.8%	10.5%	2.3%	0	8.0%	18.4%	0	2.6%
House wife (n=5)	40.0%	0	60.0%	0	0	0	0	0	0	0	0
Secretary (n=1)	0	0	0	0	0	0	0	0	100%	0	0
Trading (n=16)	31.2%	0	37.5%	0	12.5%	0	6.3%	0	12.5%	0	0
Welder (n=1)	0	0	0	100.0%		0	0	0	0	0	0

ATR = Arthritis   MAL = Malaria   RTI = Respiratory tract Infection
ULC = Leg Ulcer   DM = Diabetes   UTI = Urinary tract Infection
HTN = Hypertension   GE = Gastroenteritis   ED = Eye diseases
DEM = Dementia   PUD = Peptic ulcer disease

Table 4 shows that Malaria and Arthritis were more common among farmers (15.8%) and (21.3%) respectively while Gastroenteritis and PUD was more common among the aged (2.4%) and (5.8%) respectively. Hypertension was the most common across all occupation while leg ulcer found only among the aged (1.4%). Pneumonia was more common in the Aged (2.7%) and Traders (6.3%).

Table 5: Shows Chi Square Test of Association Between Occupation and Arthritis

VARIABLES	Value	Df	P –value
OCCUPATION* ARTHRITIS Pearson Chi-Square	8.970	12	0.705
Likelihood Ratio	9.117	12	
N of Valid Cases	140		

Table 5 above shows there was no association between occupation and arthritis in the sample.

Table 6: Association Between Occupation and Hypertension

OCCUPATION* HYPERTENSION			
VARIABLES	Value	Df	P –value
Pearson Chi-Square	20.304	12	0.062
Likelihood Ratio	22.974	12	
N of Valid Cases	140		

Table 6 above, shows no association between occupation and hypertension.

DISCUSSION

The mean age of the respondents was 75.6 years, which is higher than the age at presentation in an outpatient clinic in the same environment.[11]

There was a higher number of elderly females (72.90%) than males (27.10%) visiting the General outpatient department within the period of study. The predominance of female respondents with a ratio of female: male =2.7:1 which results to increase morbidity among female respondents is a result of regular use of health services than males which corresponds to similar findings from studies carried out in Oman, South West Nigeria, Federal Capital Territory (FCT) and Calabar, Nigeria among geriatrics.[7,11,14,16] Better health-seeking behaviour will no doubt result in reduced morbidities and complications and in the long run mortality.

Hypertension was identified in this study as the most common cause of morbidity among geriatric patients (32.62%) followed by arthritis at 30 (21.28%), eye disease with cataracts as the most common at 18.44%, diabetes at 6.38%, and pneumonia at 3.55% Dementia and leg ulcer been the least cause of morbidity among geriatric patients (0.71%) respectively. The most common cause of morbidity from communicable disease identified in this study was malaria with a percentage of 7.80%, which is similar to the study done in calabar[16], although non-communicable diseases especially hypertension, arthritis, diabetes, and eye problem constitute the greater burden of geriatric health problems.

Arthritis and Eye diseases were more common morbidity in geriatric patients aged 77-82 years {10(20.41%), 8(16.33%)} respectively. Hypertension and Diabetes were most prevalent {17(38.64%), 4(9.09%)} respectively among geriatric patients aged 71-76years, while Dementia was a cause of morbidity only in elders aged above 94years 1(100.00%). Pneumonia and Malaria were more among the elderly within the age of 77-82 years {4(8.16%) and 5(10.21%)} respectively.

Arthritis was more common among farmers 21.3% due to the fact that osteoarthritis has also been found to be associated with a higher frequency of falls, disability, and psychological distress among the elderly which is in line with the Calabar study[15] while leg ulcer was found only among the aged (1.4%) and respiratory tract infection common among traders (6.3%).

Chi-square analysis showed a strong correlation between age and distribution of morbidities among geriatric patients attending GOPD within the period of study (P < 0.001) as seen in Table 3.

Chi-square analysis revealed no association between occupation and arthritis in the sample under review (p = 0.705) as seen in Table 5. This finding of a correlation between age and morbidities among the respondents is in tandem with many other findings as this could possibly be due to the aging process, diminishing functionality of the organs, and poor health-seeking behaviour in this clime. Chi-square analysis showed no association between occupation and hypertension (p = 0.062) as seen in Table 6.

Limitations and Strengths

There were some missing and incomplete records due to manual imputation and storage of patients' data.

Being a hospital-based study, the study may not represent the general population.

The sampling of the total eligible patient pool within the study period minimised the possibility of selection bias. The use of data obtained from patient records reduced the reduced the risk of information bias by respondents.

CONCLUSION

In conclusion, non-communicable diseases are common in the geriatric population, in which the most prevalent health problems of the elderly are chronic medical illnesses like hypertension, cataracts, osteoarthritis, and diabetes. It is pertinent that further health training and facilities needed to cater to the health needs of this unique population group

be provided to improve their quality of life. Further research is needed to explore the effect of various socio-demographic, behavioural, nutritional, and environmental modifiable risk factors on morbidity patterns in elderly persons.

Recommendation

We recommend that an organized geriatric healthcare program is needed to easily identify and treat most of these morbidities at primary and secondary healthcare facilities. Education of patients and the community at large is needed to ensure regular periodic medical examinations at the primary and secondary care facilities, which will help detect the diseases at their early stages and also, prevent complications and further deterioration of their health status.

Declaration by Authors
Ethical Approval:

Ethical approval for this study was obtained from the Nnamdi Azikiwe University Teaching Hospital Ethical Committee (NAUTHEC) through the head of the department of community medicine, at Nnamdi Azikiwe University. Permission and approval were also obtained from the Head of the Department of Medical Records CHC, Ukpo before the patient case files were retrieved for the collection of data. Information obtained from case notes was only to be used for the purpose of this project and patient identities were kept confidential.

Conflict of Interest: The authors declare no conflict of interest.

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