Evaluation of Socio-demographic Factors and Morbidity Pattern Among Elderly Patients in a Teaching Hospital in South-South Nigeria

Abstract

Aim: This study was to evaluate the sociodemographic factors and morbidity pattern among elderly patients in order to support the equitable distribution of the few healthcare resources.

Study Design: A hospital-based cross-sectional analytical descriptive study.

Place and duration of study: The study was conducted at the General Out-Patient Clinic of University of Port Harcourt Teaching Hospital, Port Harcourt. The duration of study was three months.

Methodology: Three hundred and eighty-four (384) study participants were recruited by systematic random sampling. The data were collected using structured questionnaire which assessed health problems related to general signs and symptoms and classified patients' problems into reason for encounter, problems/diagnosis managed and interventions. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 16. Chi square (x^2) statistics was used to assess association between categorical variables. The statistical significance was set at $p<0.05$.

Results: A total of 878 health problems were reported based on the ICPC-2. The reasons for encounter were related to musculoskeletal (18.8%), general body symptoms (14.8%), neurological problems (14.7%) and problems related to the ear (0.9%). None of the respondent reported blood related problems. A total of 799 morbidities were diagnosed with an average of 2.1 each (range 1-5), the most prevalent morbidities were related to the cardiovascular system (24.7%), musculoskeletal system (13.8%) and digestive system (13.0%) and the least number of morbidities were found in the female genitalia (0.3%). The relationship between general body

symptoms (GBS), musculoskeletal, mental health and nutritional/endocrine conditions, and gender were statistically significant (GBS p-value = 0.034, musculoskeletal, p=0.000, mental health p=0.001, nutrition p=0.000). Women reported more health problems than men. The majority (70.1%) of the men were still married, while most (88.6%) of the women were widowed. Although the largest proportion (56.0%) of the respondents was from social class V with the female forming the bulk (67.9%), there was no statistically significant association except for blood related morbidity (p-value =0.005). Also, there was statistically significant relationship between morbidity pattern and age groups for blood related diseases (p-value =0.010), digestive system (p-value = 0.003), musculoskeletal system (p-value =0.000), and neurological problems (p-value = 0.001). Statistically significant association was found between marital status and morbidities related to ear (p-value =0.002), musculoskeletal (p-value = 0.000), endocrine/metabolic/nutrition (p-value = 0.023) and male genital (p-value = 0.000).

Conclusion: The most prevalent morbidities of the elderly were chronic medical conditions related to the cardiovascular, musculoskeletal, digestive, endocrine systems as well as nutritional and eye diseases. As the ageing population rises with attendant age – related multi morbidities, there is need to have geriatric care plan in our hospitals for a comprehensive continuing healthcare service.

Keywords: Elderly, signs, symptoms, morbidities, Nigeria.

Introduction

The ageing process is a biologic reality, with its dynamics largely beyond human control.[1] It is a progressive generalized impairment of function resulting in a loss of adaptive response to stress with an increased risk of associated diseases.[2] There is no straightforward definition of old,

elderly, aged and ageing. Old is an individual – culture, country, and gender specific term.[3] It also varies from the stand point of biology, demography, employment, retirement and sociology.[1] A chronological definition of ageing is often used but contested. The United Nation and World Health Organization agreed a cut off 60 and 65 years and above respectively.[3] The older population are further divided into subgroups: the "young old" those between 60 years and 74 years; the "aged" those from 75 years to 80 years, and the "oldest old" are those 80 years and over.[4] While in industrialized countries, 65-74 "young old", 75-84 refers to the "aged" and 85 and over, as the "oldest old".[5]

Worldwide, the population of older persons is fast growing and the pace is by far, faster than in the past.[6,7] Population aging is defined as a process in which older persons become a proportionally larger share of the total population; simply put, the population is "getting older".[5] A society with more than 7%, 14%, 20% of their population 65 years and above is known as an aging, aged and super aging society respectively.[8] It is estimated that between 2015 and 2050, the population of persons over 60 years will nearly double from 12% to 22%, and 80% of them will be living in Low-and-Middle Income Countries.[6] The comparability of elderly population is affected by differences in both within and across countries in the regions and how the geography of rural and urban communities are defined.[7] It is postulated that by 2025, that the population of the elderly in Nigeria will be more than 15 million.[6,7] This on-going demographic transition in Nigeria, may result in public health emphasis shifting in no distant future from maternal and child health to the problems of old people which is mainly chronic, deteriorating health conditions. [4,6]

The elderly are among the most vulnerable, high risk groups in terms of morbidity with a high prevalence of chronic diseases of insidious onset such as cardiovascular illness, cerebrovascular

diseases, cancers, diabetes, musculoskeletal and mental illness that are under reported.[1,9] They have multiple symptoms which present most often in atypical forms due to decline in the functioning of various body systems[1] Chronic non-communicable diseases become prominent causes of diseases as people grow older.[9] The pattern of morbidity in elderly varies for different age group.[9] Getting old is a normal physiology but it is associated with increased frequency of communicable and non-communicable disease which escalates as one advances in age. Older people, therefore, are relatively frequent users of physician's and health services.[10] The vulnerability of the older populations was observed to be even more in developing countries including Nigeria, where they are susceptible to a lifetime of disease due to poverty and deprivation, a diet that is inadequate in quality and quantity and poor access to effective health care services targeted at them .[11] This can be challenging when we x-ray the problems of health care provision with psycho-social, personal and socioeconomic factors associated with the elderly in the country.[12]

Unfortunately very little information is available about the disease pattern to be expected in the target population in most developing countries, because most of the studies done are from the developed countries.[13,14] Also, the socio-demographic profile of the elderly have been shown to have a profound effect on their health statues and problems.[12] To adequately manage the problems related with the aging population, there should be data on its morbidity pattern and its associated sociodemographic factors. It is therefore, of great interest to know the disease pattern of the elderly patients seen on outpatient basis in our environment. This will broaden our understanding of the health problems of the elderly. Also, data generated from this study will be useful in planning its health care system especially the provision of facilities for medical treatment for this age group and contribute to the development of appropriate intervention

policies. Therefore, this study is aimed at describing the disease pattern and the socio-demographic factors among the elderly patient attending family medicine clinic in order to help in the equitably distribution of the limited health resources.

Methodology

This is a hospital based cross sectional analytical descriptive study which consist of elderly patient that attend General Out- Patient Clinic of Tertiary care Hospital. The duration of study was three months. The sample size of 384 was calculated using Leslie and Kish formula [$n = z^2pq/d^2$

Where:

n = the desired sample size.

z = the standard normal deviate, usually set at 1.96, which corresponds to the 95 percent confidence interval.

p = the proportion in the target population estimated to have a particular characteristic. In this case, the estimated prevalence was taken as 50% (0.50).

q =1.0-p.

d = desired degree of accuracy, set at 0.05.

$n = (1.96)^2(0.50)(0.50)/(0.05)^2$

$= (3.8416)(0.25)/0.0025$

$= 384.16 \sim 384$ (approximately)].

Participants in the study met the following inclusion criteria; age 60 years and above, willingness to participate and give consent, those who understood or spoke English language, pidgin or had interpreter. Exclusion criteria were; severe mental retardation, severely ill patients.

Study participants were selected by systematic random sampling. The sample interval was 4, which was derived by dividing the sample frame of 1500 by the sample size (384). Every 4th elderly patient that presented to clinic was recruited into the study.

The data was collected using a two-part structured questionnaire which was administered by the researchers at the beginning to the closing of each working day. The section A consisted of information regarding the socio-demographic characteristics such as age, sex, marital status, occupation, etc, of the respondents; while section B consisted of a structured questionnaire based on the International Classification of Primary Care-2nd edition (ICPC-2) questionnaire as developed by the World Organization of Family Doctors.[15] The ICPC-2 assesses health problems related to general signs and symptoms and allows classification of the patient's problems into reason for encounter, problems/diagnosis managed, interventions and the ordering of these data in an episode of care structure.[16]

Data was collated using Microsoft Excel Spread Sheet, and analyzed using Statistical Package for Social Sciences (SPSS) version 16. Chi square (x^2) statistics was used to assess association between categorical variables. The statistical significance was set at $p<0.05$.

Results

The majority (180) of the respondents were aged between 60-64years while only 12 of respondents were aged 80-84 years. Majority (70.1%) of the male involved in the study were married, while most of the females (88.6%) were widowed. None of the respondent was single.

Only few of the respondents were divorced and separated. The largest proportion (56.0%) of the respondents was from social class V with the female forming the bulk (67.9%), while social class I had the smallest number of respondents and all were males. Among the respondents only two (both female) had no child, while majority (75.0%) of them have five children and above. Two hundred and two (52.6%) of the respondents lived with their spouse in their own home, 44(11.5%) lived alone and only 10(2.6%) lived with other relatives.

Table 1a**:** Socio-Demographic Characteristics Of The Respondents

	Male (%)	**Female (%)**	**Total**
Age Group			
60 - 64	66(36.7)	114(63.3)	180
65 - 69	42(50.0)	42(50.0)	84
70 - 74	40(55.6)	32(44.4)	72
75 - 79	14(63.6)	8(36.4)	22
80 - 84	8(66.7)	4(33.3)	12
=>85	4(28.6)	10(71.4)	14
Marital status			
Married	150(70.1)	64(29.9)	214
Single	0(0)	0(0)	0
Divorced	2(50.0)	2(50.0)	4
Widow	18(11.4)	140(88.6)	158
Separated	4(50.0)	4(50.0)	8
Social class			

Class I	4(100.0)	0(0)	4
Class II	44(81.5)	10(18.5)	54
Class III	15(71.4)	6(28.6)	21
Class IV	42(46.7)	48(53.3)	90
Class V	69(32.1)	146(67.9)	215
Number of children alive			
No Child	0(0)	0(0)	0
1 – 2	10(38.5)	16(61.5)	26
3 – 4	16(23.5)	52(76.5)	68
=> 5	146(50.7)	142(49.3)	288
Living arrangement			
Alone	10(22.7)	34(77.3)	44
With spouse in own home	146(72.3)	56(27.7)	202
With children/grand children in your home	12(12.5)	84(87.5)	96
with children/grand children in their home	6(18.8)	26(81.2)	32
With other relatives	0(0)	10(100.0)	10

Table1b: Socio-Demographic Characteristics Of The Respondents

Occupation	Frequency	Percentage
Civil/Public Servants	14	3.6
Business	87	22.7

Retirees	186	48.4
Farming	75	19.5
Artisan	10	2.6
Others	12	3.1
Ethnic background		
Ikwerre	96	25.0
Ijaws	58	15.1
Ibo	144	37.5
Yoruba	4	1.0
Ogoni	18	4.7
Etche	20	5.2
Annag	14	3.6
Ogba	18	4.7
Others	12	3.1

The Ibo ethnic group formed the largest (37.5%) of the study subjects and the Yorubas constitute only 1%. Whereas majority (48.4%) of them were retiree, a few (3.6%) were still in civil/public service.

Table 2: The Reasons for Encounter of the Respondents based on the ICPC-2 Classification system.

Presenting Complaints	Frequency

	n	%
General Body Symptoms (fever, body pain, malaise, weakness, tiredness, etc)	130	14.8
Blood	0	.0
Digestive	108	12.3
Eye	45	5.1
Ear	8	0.9
Cardiovascular	60	6.8
Musculoskeletal	165	18.8
Neurology	129	14.7
Mental Health	28	3.2
Respiratory	55	6.3
Skin	15	1.7
Endocrine/Nutrition	67	7.6
Urinary	48	5.5
Genitals	20	2.3
Total	878	100

Table 2 above showed self-reported health problems by the respondents based on the ICPC-2. A total of 878 health problems were reported, with an average of 2.3 per respondent (range 1-6). The majority of the reasons for encounter were related to musculoskeletal (18.8%). This was followed by general body symptoms and neurological problems (14.8% and 14.7%) respectively.

Problems related to the ear were the least (0.9%) self-reported by the respondents. None of the respondent reported blood related problems.

Table 3: Morbidity Pattern of the Respondents grouped into 15 categories according to the ICPC-2 Classification system by gender.

	sex		**Total N (%)**	**X^2**	**P-value**
	Male	**Female**			
	n (%)	**n (%)**			
General Body Symptoms	0(0)	6(100)	6(0.8)	5.05	0.034
Blood	26(36.1)	46(63.9)	72(9.0)	3.028	0.089
Digestive	44(42.3)	60(57.7)	104(13.0)	0.52	0.491
Eye	22(45.8)	26(54.2)	48(6.0)	0.006	1
Ear	20(66.7)	10(33.3)	30(3.7)	5.988	0.014
Cardiovascular	84(42.6)	113(57.4)	197(24.7)	1.166	0.306
Musculoskeletal	26(23.6)	84(76.4)	110(13.8)	29.23	0
Neurology	8(50.0)	8(50.0)	16(2.0)	0.148	0.8
Mental Health	4(14.3)	24(85.7)	28(3.5)	11.733	0.001
Respiratory	20(52.6)	18(47.4)	38(4.7)	0.912	0.392
Skin	2(18.2)	9(81.8)	11(1.4)	3.364	0.121
Nutrition	51(64.6)	28(35.4)	79(9.9)	14.865	0
Urinary	12(46.2)	14(53.8)	26(3.2)	0.008	1
Female Genital	0(0)	2(100)	2(0.3)	1.666	0.503
Male Genital	32(100)	0(0)	32(4.0)	42.132	0

Based on the ICPC-2, a total of 799 morbidities were diagnosed amongst the respondents, with an average of 2.1 each (range 1-5). The most prevalent morbidities were found in the cardiovascular (24.7%), musculoskeletal (13.8%) and digestive (13.0%) systems as shown in

table 3 above. The least number of morbidities was found in the female genital (0.3%), followed by general body symptoms (0.8%). In this study, the relationship between general body symptoms (GBS), ear conditions, musculoskeletal, mental health and nutrition, and gender were statistically significant. (GBS p-value = 0.034, ear p-value = 0.014, musculoskeletal, p-value = 0.000, mental health, p-value = 0.001, nutrition p-value = 0.000).

Table 4: Association between Morbidity Pattern and Social Class.

	Class I	**Class II**	**Class III**	**Class IV**	**Class V**	**Chi2**	**P-value**
	n (%)	**n (%)**	**n (%)**	**n (%)**	**n (%)**		
General Body Symptoms	0(0)	0(0)	0(0)	1(0.6)	5(1.1)	2.141 [F]	0.738 [F]
Blood	0(0)	4(4.1)	0(0)	18(10)	50(10.5)	13.938 [F]	0.005 [F]
Digestive	2(33.3)	16(16.3)	5(12.8)	20(11.1)	61(12.8)	2.613	0.632
Eye	0(0)	6(6.1)	0(0)	10(5.6)	32(6.7)	4.310 [F]	0.336 [F]
Ear	0(0)	2(2)	0(0)	12(6.7)	16(3.4)	5.836 [F]	0.175 [F]
Cardiovascular	2(33.3)	26(26.5)	16(41)	40(22.2)	113(23.7)	7.254	0.119
Musculoskeletal	0(0)	10(10.2)	6(15.4)	22(12.5)	72(15.1)	7.559	0.104
Neurology	0(0)	2(2)	2(5.1)	2(1.1)	10(2.1)	3.039 [F]	0.491 [F]
Mental Health	0(0)	4(4.1)	0(0)	6(3.3)	18(3.8)	1.608 [F]	0.785 [F]
Respiratory	2(33.3)	2(2)	1(2.6)	10(5.6)	23(4.8)	8.153 [F]	0.066 [F]
Skin	0(0)	0(0)	2(5.1)	3(1.7)	6(1.3)	5.066 [F]	0.244 [F]
Endocrine/Nutrition	0(0)	16(16.3)	4(10.3)	18(10)	41(8.6)	3.428 [F]	0.465 [F]
Urinary	0(0)	2(2)	0(0)	8(4.4)	16(3.4)	2.486 [F]	0.630 [F]
Female Genital	0(0)	0(0)	0(0)	2(1.1)	0(0)	7.180 [F]	0.139 [F]
Male Genital	0(0)	8(8.2)	3(7.7)	8(4.4)	13(2.7)	5.813 [F]	0.180 [F]

Fisher's Exact test

Table 4 above showed the association between the morbidity pattern and social class of the respondents. Though the largest proportion of the respondents were from social class V, there was no statistically significant association except for blood related morbidity (p-value =0.005).

Table 5: Morbidity Pattern by Age Groups.

	60 - 64	**65 - 69**	**70 - 74**	**75 - 79**	**80 - 84**	**≥85**	**Chi2**	**P-value**
	n(%)	**n(%)**	**n(%)**	**n(%)**	**n(%)**	**n(%)**		
General Body Symptoms	3(0.8)	2(1.1)	1(0.7)	0(0)	0(0)	0(0)	1.283 [F]	0.94 [F]
Blood	30(8.4)	12(6.7)	18(11.9)	6(12.5)	6(21.4)	0(0)	14.285 [F]	0.010 [F]
Digestive	48(13.4)	16(8.9)	18(11.9)	8(16.7)	4(14.3)	10(27.8)	18.058	0.003
Eye	16(4.5)	12(6.7)	10(6.6)	2(4.2)	4(14.3)	4(11.1)	10.190 [F]	0.052 [F]
Ear	16(4.5)	2(1.1)	8(5.3)	4(8.3)	0(0)	0(0)	9.219 [F]	0.069 [F]
Cardiovascular	89(24.9)	46(25.7)	38(25.2)	10(20.8)	8(28.6)	6(16.7)	2.549	0.775
Musculoskeletal	52(14.6)	18(10.1)	20(13.2)	6(12.5)	2(7.1)	12(33.3)	25.342	0.000
Neurology	2(0.6)	12(6.7)	2(1.3)	0(0)	0(0)	0(0)	19.409 [F]	0.001 [F]
Mental Health	18(5)	4(2.2)	4(2.6)	0(0)	0(0)	2(5.6)	5.503 [F]	0.286 [F]
Respiratory	14(3.9)	10(5.6)	8(5.3)	2(4.2)	4(14.3)	0(0)	8.276 [F]	0.106 [F]
Skin	9(2.5)	2(1.1)	0(0)	0(0)	0(0)	0(0)	4.399 [F]	0.396 [F]
Endocrine/Nutrition	34(9.5)	23(12.8)	14(9.3)	6(12.5)	0(0)	2(5.6)	6.676 [F]	0.233 [F]
Urinary	10(2.8)	8(4.5)	6(4.0)	2(4.2)	0(0)	0(0)	2.881 [F]	0.675 [F]
Female Genital	2(0.6)	0(0)	0(0)	0(0)	0(0)	0(0)	3.996 [F]	1.000 [F]
Male Genital	14(3.9)	12(6.7)	4(2.6)	2(4.2)	0(0)	0(0)	5.301 [F]	0.317 [F]

[F] Fisher's Exact test.

In table 5 above, the relationship between morbidity pattern and age groups was statistically significant for blood related diseases (p-value =0.010), digestive system (p-value = 0.003), musculoskeletal system (p-value =0.000), and neurological problems (p-value = 0.001).

Table 6: Morbidity Pattern by Marital Status

	Married	Single	Divorced	Widow	Separated		
	n(%)	n(%)	n(%)	n(%)	n(%)	Chi2	P-value
General Body Symptoms	3(0.7)	0(0)	0(0)	3(0.9)	0(0)	1.899 [F]	0.754 [F]
Blood	36(8.1)	0(0)	0(0)	36(10.8)	0(0)	3.813 [F]	0.230 [F]
Digestive	56(12.6)	0(0)	2(33.3)	44(13.3)	2(11.1)	1.497 [F]	0.718 [F]
Eye	26(5.9)	0(0)	0(0)	22(6.6)	0(0)	0.875 [F]	0.797 [F]
Ear	24(5.4)	0(0)	0(0)	4(1.2)	2(11.1)	13.781 [F]	0.002 [F]
Cardiovascular	106(23.9)	0(0)	2(33.3)	83(25)	6(33.3)	2.186 [F]	0.533 [F]
Musculoskeletal	36(8.1)	0(0)	0(0)	72(21.7)	2(11.1)	37.482 [F]	0.000 [F]
Neurology	10(2.3)	0(0)	0(0)	6(1.8)	0(0)	0.564 [F]	0.880 [F]
Mental Health	12(2.7)	0(0)	0(0)	14(4.2)	2(11.1)	5.035 [F]	0.132 [F]
Respiratory	28(6.3)	0(0)	0(0)	10(3)	0(0)	4.838 [F]	0.153 [F]
Skin	9(2)	0(0)	0(0)	2(0.6)	0(0)	3.414 [F]	0.387 [F]
Endocrine/Nutrition	55(12.4)	0(0)	0(0)	22(6.6)	2(11.1)	8.551 [F]	0.023 [F]
Urinary	14(3.2)	0(0)	0(0)	12(3.6)	0(0)	0.342 [F]	0.867 [F]
Female Genital	0(0)	0(0)	0(0)	2(0.6	0(0)	5.891 [F]	0.230 [F]
Male Genital	28(6.3)	0(0)	2(33.3)	0(0)	2(11.1)	38.058 [F]	0.000 [F]

[F]Fisher's Exact test.

In table 6 above, the association between morbidity pattern and marital status was illustrated. This was statistically significant for morbidities related to ear (p-value =0.002), musculoskeletal (p-value = 0.000), endocrine/metabolic/nutrition (p-value = 0.023) and male genital (p-value = 0.000).

Table 7: Morbidity pattern by Tribe

Tribe	Ikwerre	Ijaw	Ibo	Yoruba	Ogoni	Etche	Annang	Ogba	Others
General Body Symptom	2 (0.9)	1 (0.7)	3 (0.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Blood	22 (10.1)	8 (5.5)	18 (5.5)	0 (0.0)	6 (13.8)	10 (18.3)	2 (5.0)	0 (0.0)	6 (17.1)
Digestive	23 (10.6)	23 (15.8)	43 (13.1)	2 (25.0)	6 (13.8)	4 (7.4)	6 (15.0)	0 (0.0)	3 (8.6)
Eye	10 (4.6)	10 (6.8)	20 (6.0)	0 (0.0)	2 (4.3)	6 (11.1)	4 (10.0)	2 (12.5)	2 (5.8)
Ear	14 (6.4)	8 (5.5)	4 (1.2)	2 (25.0)	2 (4.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Cardiovascular	59 (27.0)	32 (21.9)	92 (28.0)	0 (0.0)	10 (21.3)	9 (4.1)	6 (15.0)	3 (18.7)	6 (17.1)
Musculoskeletal	22 (10.1)	14 (9.5)	61 (18.5)	0 (0.0)	5 (10.6)	10 (18.3)	12 (30.0)	2 (12.5)	0 (0.0)
Neurology	8 (3.7)	2 (1.4)	8 (2.4)	0 (0.0)	2 (4.3)	0 (0.0)	2 (5.0)	0 (0.0)	4 (11.4)
Mental Health	10 (4.6)	7 (4.8)	13 (4.0)	0 (0.0)	4 (9.5)	0 (0.0)	2 (5.0)	0 (0.0)	4 (11.4)
Respiratory	8 (3.7)	6 (4.1)	12 (3.6)	2 (25.0)	2 (4.3)	5 (12.5)	0 (0.0)	2 (12.5)	3 (8.6)
Skin	4 (1.8)	2 (1.4)	2 (0.6)	2 (25.0)	0 (0.0)	1 (9.1)	0 (0.0)	0 (0.0)	0 (0.0)
Nutrition	22 (10.1)	17 (11.6)	25 (7.6)	0 (0.0)	2 (5.3)	3 (3.8)	6 (15.0)	2 (12.5)	3 (8.6)
Urinary	10 (4.6)	6 (4.1)	14 (4.3)	0 (0.0)	2 (4.3)	2 (5.6)	0 (0.0)	2 (12.5)	0 (0.0)

Female Genital	0 (0.0)	2 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Male Genital	4 (1.8)	8 (5.5)	14 (4.3)	0 (0.0)	4 (9.5)	4 (9.8)	0 (0.0)	3 (18.7)	4 (11.4)
Chi Sq	23.929	21.965	27.929	30.37	8.928	26.975	26.222	19.473	32.933
Pvalue	0.047	0.079	0.015	0.007	0.836	0.019	0.024	0.148	0.003

Table 7 above, cardiovascular symptoms was the most common morbidity among the Ikwerre, and Ibo tribes 59(27),92(28) which were statistically significant (P-value 0.047, 0.015). Digestive, ear, respiratory and skin morbidities were equally common among the Yoruba tribe, which was statistically significant (P-value 0.007). Cardiovascular morbidities were more common among the Ogoni tribe 10(21.3) which was statistically not significant (P-value0.836). Blood and musculoskeletal morbidity were the most common in Etche tribe 10(18.3) each, was statistically significant. Annag tribe have the highest morbidity in the musculoskeletal system 12(9.5), (p-value=0.024) statistically significant. Male genitalia and musculoskeletal morbidities were commoner among the Ogba tribe which was not statically significant.

Table 8: Diagnosis by occupation

	Civil/Public servant		Business		Retirees		Farming		Artisans		Others		Chi^2	P-value
	n	%	n	%	n	%	n	%	n	%	n	%		
General body symptoms	0	.0	1	.6	5	1.2	0	.0	0	.0	0	.0	2.864^{*}	0.714^{F}
Blood	2	7.7	8	4.4	44	10.8	18	12.9	0	.0	0	.0	$14.484^{F}*$	$0.009^{F}*$
Digestive	4	15.4	20	11.1	50	12.3	24	17.1	2	8.3	4	18.2	2.168	0.833
Eye	0	.0	10	5.6	30	7.4	6	4.3	2	8.3	0	.0	6.999^{F}	0.176^{F}
Ear	2	7.7	10	5.6	14	3.4	2	1.4	2	8.3	0	.0	8.310	0.134
Cardiovascular	10	38.5	43	23.9	91	22.4	43	30.7	6	25.0	4	18.2	5.759	0.335

Musculoskeletal	0	.0	24	13.3	62	15.2	12	8.6	10	41.7	2	9.1	39287	0.000*
Neurology	0	.0	2	1.1	10	2.5	2	1.4	2	8.3	0	.0	6.134[F]	0.214[F]
Mental Health	2	7.7	4	2.2	16	3.9	4	2.9	0	.0	2	9.1	5.197	0.368
Respiratory	0	.0	4	2.2	22	5.4	10	7.1	0	.0	2	9.1	7.035[F]	0.164[F]
Skin	0	.0	9	5.0	2	.5	0	.0	0	.0	0	.0	15.422[*]	0.004[F]*
Nutrition	2	7.7	25	13.9	37	9.1	13	9.3	0	.0	2	9.1	7.123	0.207
Urinary	2	7.7	8	4.4	12	2.9	2	1.4	0	.0	2	9.1	6.682	0.223
Female Genital	0	.0	0	.0	0	.0	2	1.4	0	.0	0	.0	8.192[F]	0.217[F]
Male Genital	2	7.7	12	6.7	12	2.9	2	1.4	0	.0	4	18.2	18.787	0.006[*]

[F]Fisher's Exact, *significant

Table 8: The retirees have the highest number of morbidities across most of the systems with significant findings in blood [44(10.8%), p-value 0.009], musculoskeletal [62(15.2%), p-value 0.000] and male genital [12(2.9%), p-value 0.006]. The commonest morbidities among civil/public servants were in the cardiovascular system 10(38.5%). Though the business class has more cardiovascular morbidities 43(23.9%), followed by nutritional 25(13.9%) and musculoskeletal 24(13.3%), but skin 9(5%) and male genitalia 12(6.7%) morbidities were significant; p-values 0.004 and 0.006 respectively. The cardiovascular 43(30.7%) and digestive 24(17.1%) morbidities were common among Farmers. In the Artisan class, the cardiovascular 10(41.7%) morbidities were the commonest.

Discussion

This study evaluated the connotation of socio-demographic with the morbidity pattern among the elderly patients attending the general out-patient clinic of a teaching hospital in the South-South Nigeria. The majority of the respondents that participated in the study were aged between 60-64years with 54.7% of them females, which is similar to other related studies.[12,14,17,18,19] There was slight variation with the study done in India where the most of the elderly was between 65-69 and have increased number of females just as our study.[21] The increase in number of females in this study maybe because women have better health seeking behavior than their male counterpart and also, have a higher life expectancy in Nigeria. [17]

The majority of the men were still married (70.I %) while the majority of the women were widowed (86.6%). This may be attributed to the fact that in Nigeria, due to cultural practice, it is easier for a widower to re-marry than a widow. There were few divorcees (only 1% of the study population) and no single person among them. This could be explained by the strong value placed on marital relationships in the environment of this study. The above finding is similar to the findings done in the South-South, Nigeria[6]

The majority of the patients in this study belonging to social classes IV and V is similar to findings by Adebusoye et al in the University College Hospital, Ibadan.[6] This may mean that more of the lower social classes patronize government health facilities as most of those in the higher social classes [I-III] are likely to patronize private medical facilities because of the long waiting time and workers attitude to service in public hospitals. These factors were noted by Agbogidi and coworkers as a hindrance to health care utilization and the low attendance by those in higher social classes.[20]

In this study, a total of 878 health problems were self-reported (reason for encounter), with an average of 2.3 per respondent (range 1-6), and this is similar to findings from the study done at UCH Ibadan which reported a total of 871 problems with an average of 1.7 (range 1-6).[6] George and coworkers[21] reported an average of 3 per respondent in their study a total of 662 problems. The majority of the reasons for encounter in this study were related to musculoskeletal (19.0%), followed by general body symptoms (14.8%) and neurological problems (14.7%) in contrast to the Ibadan study which reported high prevalence of complaints related to general body symptoms (41.2%), neurology (26.4%), musculoskeletal (26%) and eye (19.8%).[6] The average number of self-reported health conditions (reasons for encounter) was more than the average number of morbidities (diagnoses) found amongst the respondents. This was in contrast to the findings from Ibadan.[6] The reasons may be attributed to over exaggeration of health conditions by the elderly, and individual and cultural differences in the study population. Also, perception of the elderly regarding their own health status varies even within people of the same culture.

The average number of morbidities was 2.1 per elderly. This is similar to report of 2.7 morbidities per elderly from studies conducted in Ibadan [6] and other parts of Asia.[22] However, a morbidity of 1.81 per elderly was reported in a South-Western Nigeria study.[17] Many other

studies have reported a high prevalence of multi-morbidity pattern among elderly, especially with increasing age.[21,22]

The proportion of some morbidities such as cardiovascular, musculoskeletal, digestive, neurological conditions reported in this study are in keeping with findings from other related studies conducted in Nigeria and other developing countries, even though there are slight variations. [17,18,21]

The most frequently diagnosed morbidity was cardiovascular diseases, making 24.7% of all morbidities. This finding is in tandem with reports from similar studies done in Nigeria. [12,17] Conversely, Adebusoye et al and George et al, reported eye conditions as the commonest disease. This may be due to the fact that most patients with obvious eye morbidities by-pass the General Outpatient Clinic to Ophthalmology Clinic in University of Port Harcourt Teaching Hospital.

Musculoskeletal conditions were the second most common morbidities diagnosed in the study population, with a prevalence of 13.8%. Musculoskeletal conditions were reported in previous studies as one of the most common morbidities in the aged. [6,17,18,21] This may be related to increased degenerative changes with age, reduced morbidity and activities in the elderly and reduced sex hormones in this population.

Problems related to digestive system was 13% of total morbidities in elderly. This is comparatively higher than reports of study in Ibadan.[6] but lower than 26.5% reported in India[21] The differences might be due to the differences in the total number of morbidities and the sample size.

There is high prevalence of female (85.7%) with mental conditions compared to 14.3% of males with similar condition. It was found to be statistically significant (p=0.001). The high prevalence of mental illnesses in females in this study is in tandem with other study.[6,21]

Overall, there was statistically significant association with increasing age and blood related problems (p=0.010), digestive system conditions (p=0.003) and musculoskeletal conditions (p=0.000). The increase in blood related problems with age may be due to multiple chronic

conditions associated with ageing. This is in line with other studies that showed that increasing age is associated with increased number of morbidity. [6,21]

On association between socio-demographic characteristics and morbidity pattern, shows that blood diseases were more common in the respondent from social class V (50(10.5%) and this was statistically significant. This observed difference may be due to habits and lifestyle. Other study has also shown that lower socio-economic class is associated with a lot of morbidity[21]

This study shows a general lower prevalence of morbidity among the married elderly patients across the systems compared to those in other groups. This is in line with previous study which showed that married adults may have lower morbidity and better physical health than their unmarried counterparts.[23] The reason may not be far from the fact that married adults tend to avoid some risky lifestyle that might predispose them to ill-health. There is significant statistical association between marital status and disease related to the ear (p-value = 0.002), musculoskeletal (p-value = 0.000), endocrine/nutrition/ metabolic (p-value = 0.023) and male genitalia (p-value = 0.000).

This study showed that cardiovascular symptoms were the most common morbidity among the Ikwerre, Ijaw, and Ibo tribes 59(27),32(21.9),92(28) which were statistically significant (P-value 0.047, 0.079,0.015) while digestive, ear, respiratory and skin morbidities were equally common among the Yoruba tribe, which was statistically significant (P-value 0.007). Blood and musculoskeletal morbidity were the most common in Etche tribe 10(18.3) they were statistically significant. Annag tribe have the highest morbidity in the musculoskeletal system 12(9.5), (p-value=0.024) statistically significant. The difference in the morbidity pattern by ethnicity may be due to the difference in diet, cultural practices and occupation.

The retirees have the highest number of morbidities across most of the systems with significant findings in blood [44(10.8%), p-value 0.009], musculoskeletal [62(15.2%), p-value 0.000] and male genital [12(2.9%), p-value 0.006]. The commonest morbidities among civil/public servants were in the cardiovascular system 10(38.5%). Though the business class has more cardiovascular morbidities 43(23.9%), followed by nutritional 25(13.9%) and musculoskeletal 24(13.3%), but skin 9(5%) and male genitalia 12(6.7%) morbidities were significant; p-values 0.004 and 0.006 respectively. The cardiovascular 43(30.7%) and digestive 24(17.1%) morbidities were common among Farmers. In the Artisan class, the cardiovascular 10(41.7%) morbidities were the

commonest. A study in Indian did not show any association between occupation and morbidity pattern.

Conclusion

In conclusion, the most prevalent morbidities of the elderly were chronic medical conditions related to the cardiovascular, musculoskeletal, digestive, endocrine systems as well as nutritional and eye diseases. As the ageing population rises with attendant age – related multi morbidities, there is need to have geriatric care plan in our hospitals for a comprehensive continuing healthcare service.

Ethical Approval and Consent

Ethical permission was granted by ethical committee of University of Port Harcourt Teaching Hospital. A written informed consent duly signed was obtained from each respondent before data collection. Each respondent was assured that the information given will be solely used for scientific purposes and would be kept confidential in files with the collected data properly encrypted.

Limitation of Study

In the course of this research, the following were encountered as limitations;

i) Respondents had to wait for longer periods due to the volume of instrument for data collection
ii) This is a hospital-based study of which the result may not be acceptable to the general population
iii) The limited time of the study may not allow for the true and widespread representation of patients.

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