



Functionality of Geriatric Giants among Elderly Patients Presented at the Geriatrics Clinic, University of Calabar Teaching Hospital, Calabar, Nigeria

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ABSTRACT

Background: Ageing is a normal part of life. As people age, they often experience a range of physical, social, and cognitive changes that lead to significant functional decline. This condition is referred to as Geriatric Giants, and they manifest in forms of falls, incontinence, immobility, and cognitive impairment. In Nigeria, the elderly population is growing, and this demographic shift brings unique healthcare challenges that require serious attention. Despite this, there remains a dearth of data on the functionality of these giants among elderly patients in Nigeria, particularly in Calabar.

Objective: This study sought to assess the level of functionality using geriatric giants among the elderly presented at the geriatrics clinic, University of Calabar Teaching Hospital, Calabar, Nigeria.

Methodology: This was a cross-sectional descriptive study involving 242 elderly patients. Data were entered and analysed using SPSS version 20. Logistic regression analysis was used to check for independent predictors of functionality. A p-value of < 0.05 was considered as statistically significant.

Result: The overall mean age of the participants' was 69.20 ± 8.05 years. There were more males (50.4%) compared to females (49.6%). Majority of the respondents (63.6%) were aged 60-69 years. Using logistic regression, only the age group of the participants, and, balance and fall, were independent predictors of functionality among the elderly.

Conclusion: Integration of routine screening of the elderly for hearing impairment, as well as balance and fall risk as part of their holistic care should be advocated in order to address these issues regularly and improve functionality among the elderly.

Unique Contribution: This study provides local data on the functionality of Geriatric Giants among elderly patients in Calabar, Nigeria, filling a knowledge gap and providing insights to inform context-specific healthcare strategies and improve care outcomes for older adults in the country and beyond.

Key Recommendation: One unique contribution is that the routine care of the elderly in our clinic should place more emphasis on their functionality rather than disease conditions.

Key words: Functionality, Geriatric Giants, Elderly Patients, Geriatrics Clinic



INTRODUCTION

The World Health Organisation (WHO), defines the elderly as a person aged 65 years and above, while the United Nations Population Division (UNPD) defines the elderly as persons aged 60 years and older. Suntoo, (2012), Sanderson, (2008). Ageing in humans refers to the accumulation of physiological changes over time and an ultimate decline in physical, social and psychological performance, Akinyemi, Owoaje, Popoola, Ilesanmi. (2012). This can be conceptualized as the product of two interactions and overlapping processes known as primary and secondary ageing. Primary ageing is the progressive deterioration in physical structure and biological function that occurs with advancing age alone, independent of other factors, changes in the body composition (decrease in bone mineral density, decreased muscle mass and abdominal fat) and progressive decline of cardiac, pulmonary, renal and immune function occurring normally with increasing age. Secondary ageing, on the other hand, is the accelerated deterioration in organ structure and function that is mediated by disease conditions such as the common chronic diseases and disabilities seen in the elderly.

OBJECTIVES OF THE STUDY

This study aimed at assessing the level of functionality using geriatric giants in the elderly participants presented at geriatrics clinic UCTH, Calabar. Specifically, the study was meant to determine:

1. socio-demographic characteristics of elderly patients attending the Geriatric clinic, UCTH, Calabar.
2. relationship between socio-demographic characteristics and functionality among study subjects.
3. association between functionality and hearing impairment, balance and fall among elderly subjects

LITERATURE REVIEW

Conceptual Framework

According to the World Health Assembly on ageing and the United Nations, the elderly population is referred as those who are 65 years and 60 years and above respectively, Puteh Bakar, (2015), Okoye .(2012). The difference is because the World Health Organisation is looking at health status and when health challenges are more among the elderly while the United Nations considers the age of retirement from active service.

Ageing is a natural process and a global phenomenon affecting both developed and developing countries. It is a natural course of dynamic physical and biological changes that comes to all in due time following advanced age. However the aging process is associated with diminished organ function due to degenerative processes. This degeneration in organ function could be primary (aging alone) or secondary (aging in the presence of chronic illnesses) if the individual lives long enough, Okoye (2011), Roth, Hanebuth, Probst, (2011) Studies have shown that as populations are becoming progressively older, symptoms of diminished organ function due to degenerative process increase. Flandorfer. (2012).



Prevalence of Elderly Population

The prevalence of elderly population varies from one country to the other and from one locality to another. However, it is widely believed that the prevalence of the elderly population is increasing worldwide, Rea, Parimon (2014) Studies have shown that in both developed and developing countries of the world, the population of people who are 60 years and above are recently rising remarkably in comparison with the population of persons in other age categories, (Shofoyeke , Amosun 2014), Wandera,, Ntozi, Kwagala, Aboderin .(2014)

The global prevalence of elderly populations aged 60 years and above is a rapidly growing trend estimated at 962 million in the world at a growing rate of above 3 per cent yearly. It is estimated that by 2050, their population is projected to reach 2 billion Akintayo-Usam (2021). Nigeria has the highest number of older people in Africa due to its large overall population, a figure projected to nearly triple from roughly 8.2million in 2019 to around 25 million by 2050. Key challenges include the breakdown of traditional family support, lack of national aging policies and safety nets, increased demands on healthcare services due to chronic diseases and poverty, and potential declines in economic productivity (Diri, 2025)

Association between Socio-Demographics and Functionality of the Elderly

Socio-demographic characteristic has been related strongly to the functionality of the elderly. A study on the assessment of individual activities of daily living(ADL) and its association with self-rated health in elderly people of Taiwan found that the prevalence of functional disability for each ADL item is more with advanced age and the elderly female group had a higher proportion of functional disability in each ADL than the male group, (Hu Y-N, et al (2012) This was corroborated by a study on geriatric giants, contemporary occurrence in 12,210 in-patients which found that the occurrence of geriatric giants increases with increasing age and female gender, (Hu Y-N, et al (2012).The prevalence increased with age, and was more common among persons who were not currently married among others, Gupta, Mani, Rai SK, Nongkynrih, Gupta SK (2014).

Association between Functionality and Balance and Fall

The association between functionality and balance and fall cannot be over-emphasised. This is because falls are the main cause of fractures, hospital admissions for trauma, loss of independence, and injury-related deaths. Smee, Anson,Waddington and Berryin(2012) in their study found that the elderly had significantly greater risk of fall which is associated with lower functional performance, Smee DJ, et al(2012). This corroborated with another study on balance, gait, functionality and strength: comparison between elderly fallers and non-fallers which found that the consequences of falls are functionality reduction, loss of independence and, in some cases, may result in death, Cebolla, , Rodacki, , Bento (2015).

Association between Functionality and Hearing Impairment

Hearing loss is a common problem associated with senescence, and it is likely to become more of an issue with changing population demographics in the developed world. The impact of hearing loss may be profound, with consequences for the social, functional, and psychological well-being of the person.



A study among elderly revealed that hearing loss is the most common sensory deficit in the elderly, and it is becoming a severe social and health problem. This is because hearing loss can impair the exchange of information, thus significantly impacting on everyday life, causing loneliness, isolation, dependence, frustration, as well as functional limitation in the basic activities of daily living, Ciorba, Bianchini, Pelucchi, Pastore, (2012).

EMPIRICAL LITERATURE

In a study carried out in Taiwan on the prevalence of functional disability in each activity of daily living (ADL) item and the association between each ADL item and the self-rated health of the elderly shows that functional disability is more with increasing age, Hu Y-N, et al (2012).

A study in Uganda to estimate the prevalence and investigate the correlates of disability among older people also showed that disability was associated with advancement in age, Uesugui, Fagundes, Pinho, (2011) and a similar study in Nigeria to assess the correlates of functional status in elderly patients presented at the general outpatient clinic found functional disability increase with increasing age, Al-Musafri, Shah, (2026), Ajayi, Adebuseye, Ogunbode, Akinyemi, Adebayo, (2015).

Studies that assessed hearing impairment with respect to age showed that the prevalence of hearing loss increase with increasing age and most times has no cure, Boi, , Racca, Cavallero, (2012), Davis, McMahon, Pichora-Fuller (2016). Studies have also shown that increased fear of falling and the risk of fall itself with associated morbidity and mortality increase with increasing age, Moyer, (2012), Akosile, Anukam, Johnson, Okoye, Iheukwumere, Akinwola (2014) These findings support the fact that the older an elderly is, the more likely the elderly will develop functional disability.

These findings corroborated with a study carried out in four urban and rural districts in Selangor Malaysia which found the prevalence of disabilities in ADL to be more in women than men. Puteh, et al (2015).

METHODOLOGY

Study Design

This study was a cross-sectional descriptive study. Because it is used to establish prevalence of characteristics of a population in particular point in time.

Sample Size Determination

This was calculated by using the formula for populations less than 10,000, Araoye(2004)

$$n_f = \frac{n}{1+(n)}$$

Where: n_f = the desired sample size when population is less than 10,000.

n = the desired sample size when the population is more than 10,000.

N = the estimate of the population size.

Desired sample size when population is greater than 10,000 can be calculated using the formula.



$$n = \frac{Z^2 Pq}{d^2}$$

Where: n = the desired sample size when population is greater than 10,000.

Z = the standard normal deviation usually set at 1.96 which corresponds to 95% confidence level.

P = the proportion in the target population estimated to have the desired characteristics.

d = degree of accuracy desired set at 0.05.

A similar study in this environment which assessed the prevalence and correlates of physical disability and functional limitation among elderly rural population in Nigeria, found functional limitation in the elderly to be 22.5%.¹¹⁶ Therefore, P was set at 22.5% (that is 0.225).

Then, $q = 1.0 - p$,

$$q = 1.0 - 0.225 = 0.775$$

Therefore,

$$\begin{aligned} n &= \frac{1.96^2 \times 0.47 \times 0.53}{(0.05)^2} \\ &= \frac{0.6696}{0.0025} \\ &= 267.84 \end{aligned}$$

Calculating for sample size where population is less than 10,000.

$$n_f = \frac{n}{1 + \frac{n}{N}}$$

N = the estimate of the population size during the study = 1200

$$\begin{aligned} \frac{n + 267.84}{1200} &= \frac{267.84}{1 + 0.2232} \\ &= \frac{267.84}{1.2232} \\ &= 219 \end{aligned}$$



Two hundred and nineteen (219) was the minimum sample size required to achieve the minimum sample size required for this study. To make up for attrition, 10% of the estimated sample size that is 22 was added to make it 241 but for easy calculation, 242 was used. Therefore, a total of 242 subjects were recruited for the study.

Sampling Method

The sampling interval for the study was calculated using the following formula

$$\text{Sample interval} = \frac{\text{sample population over duration of study}}{\text{Sample size}}$$

$$\text{Sample interval} = \frac{1200}{242} = \frac{4.96}{1} = 5$$

Therefore, the sample interval was 1 in every 5 patients.

Systematic random sampling technique was used for the study. The selection of the first participant was by simple random sampling (balloting).

Selection Criteria

Inclusion Criteria

1. Patients who are aged 60 years and above.

Exclusion Criteria

1. Elderly patients who are critically ill that need urgent or emergency treatment.
2. Elderly patients with cognitive impairments. This include those who have trouble of remembering, learning new things, carrying out instructions, concentrating or making decisions that affect their everyday life.
3. Respondents used for the pretesting.
4. Non consenting subjects.

Study Protocol

The participants were recruited using systematic random sampling method while waiting in the geriatrics clinic reception. The subjects recruited were thereafter seen by the researcher in the consulting room for detailed explanation of the research work, its benefit in the care of the elderly and participant' responsibility. They were assured of confidentiality and assessed for inclusion into the study.

RESULT

Socio-demographic characteristics of study participants

DATA: Table 1 shows the socio-demographic characteristics of study participants. A total of 242 individuals participated in the study out of which 122(50.4%) were males while 120(49.6%) were females. The male: female ratio was 1.02:1. Majority of the respondents (63.6%) were aged 60-69 years. The overall mean age of study participants was 69.20 ± 8.05 years. A proportion of 46.7% were married. Most participants (78.5%) were Christians. Regarding tribal distribution, the Efik accounted for a proportion of 23.1% while Ibibio accounted for 17.4%. Thirty-one percent had at most primary education. Only 4.5% were civil servants and 2.5% were unemployed.



Table 1a: Socio-demographic characteristics of study participants (n=242)

Variable	Frequency	Percentage (%)
Sex		
Male	122	50.4
Female	120	49.6
Age group/years		
60-69	154	63.6
70-79	58	24.0
80-89	22	9.1
90-99	8	3.3
Mean age \pm SD	69.20 \pm 8.05	
Marital status		
Single	11	4.5
Married	113	46.7
Divorced	9	3.7
Separated	8	3.4
Widowed	101	41.7
Religion		
Christianity	190	78.5
Muslem	6	2.5
Traditional	36	14.9
Others:*	10	4.1
Tribe		
Efik	56	23.1
Efut	30	12.4
Quas	31	12.8
Ibibio	42	17.4
Anang	19	7.9
Others:**	64	26.4
Highest level of education		
Nil formal education	63	26.0
Primary	75	31.0
Secondary	56	23.2
Tertiary	48	19.8
Occupation		
Farming	42	17.4
Business	73	30.1
Civil servant	11	4.5
Public servant	13	5.4
Unemployed	5	2.1
Others:***	98	40.5

Others *= Spiritualist
 **= Ejaghams, Oron, Igbo, Hausa and Yoruba
 ***= Retired, pensioners
 SD = Standard Deviation



Table 1b: Socio-demographic characteristics of study participants (N=242)

Variable	Frequency	Percentage (%)
Occupation position		
Manager	14	5.8
Admin officer	25	9.6
Supervisor	23	8.6
Others:**	180	76.0

Others

**= Cadres outside the above like cleaners, attendants

Medical history of study participants

A total of 196(81.0%) had other medical conditions, the most common of which was hypertension (50.4%).

Table 3: Medical history of study participants (N=242)

Medical history	Frequency	Percentage (%)
Any medical condition?		
Yes	196	81.0
No	46	19.0
Types of medical condition		
Diabetes mellitus	46	19.0
Hypertension	122	50.4
Arthritis	13	5.4
Others:*	15	6.2
Nil	46	19.0

Others*Benign prostatic hypertrophy, cancers, and blindness.

Hearing impairment among study participants

Figure 2 is a pie chart showing level of hearing impairment among study participants using Screening Version of the Hearing Handicap Inventory for the elderly. A total of 48.8% study participants had no hearing handicap.

Table 5: Level of balance and fall among study participants (N=242)

Level of balance and fall	Frequency	Percentage (%)
No fall risk	48	19.8
Low fall risk	73	30.2
Some fall risk	45	18.6
High fall risk	42	17.4
Very high fall risk	34	14.0



Relationship between socio-demographic characteristics and functionality among study participants

Tables 6a and 6b show relationship between socio-demographic characteristics and functionality among study participants. The proportion of females who had full function was high compared with that of males, while the proportion of those who had severe functional impairment was higher in males compared with females. The difference was significant ($p=0.009$). The relationship between age group and functionality was statistically significant ($p<0.001$).

Table 6a: Relationship between socio-demographic characteristics and functionality among study participants (N=242)

Variable	Functionality				Total N=242	p-value
	Full function n=111 (%)	Mild impairment n=18 (%)	Moderate impairment n=59 (%)	Severe impairment n=53 (%)		
Sex						
Male	52(42.1)	10(8.3)	26(21.5)	34(28.1)	122(100)	0.009 ^{b*}
Female	60(50)	8(6.7)	33(27.5)	19(15.5)	120(100)	
Age group/years						
60-69	102(66.2)	13(8.4)	30(19.5)	9(5.8)	154(100)	0.001 ^{a*}
70-79	8(13.8)	3(5.2)	24(41.4)	23(39.7)	58(100)	
80-89	1(4.5)	2(9.1)	4(18.2)	15(68.2)	22(100)	
>90	0(0)	0(0)	1(12.5)	7(87.5)	8(100)	
Marital status						
Single	5(45.5)	1(9.1)	2(18.2)	3(27.3)	11(100)	<0.001 ^{a*}
Married	78(69)	8(7.1)	19(16.8)	8(71)	113(100)	
Divorced	3(33.3)	1(11.1)	3(33.3)	2(22.2)	9(100)	
Separated	20(19.8)	7(6.9)	34(33.7)	40(39.6)	101(100)	
Widowed	5(62.5)	1(12.5)	1(12.5)	1(12.5)	8(100)	
Religion						
Christianity	100(52.6)	17(8.9)	45(23.7)	28(14.7)	190(100)	<0.001 ^{a*}
Islam	2(33.3)	1(16.7)	1(16.7)	2(33.3)	6(100)	
Traditional	5(13.9)	0(0)	10(0)	21(58.3)	36(100)	
Others	4(40)	0(0)	3(30)	3(30)	10(100)	
Tribe						
Efik	26(46.4)	5(8.9)	13(23.2)	12(21.4)	56(100)	0.901 ^a
Efut	14(46.7)	1(3.3)	5(16.1)	10(33.3)	30(100)	
Quas	15(48.4)	4(12.9)	5(16.1)	7(22.6)	31(100)	
Ibibio	21(50)	2(4.8)	11(26.2)	8(19)	42(100)	
Annang	7(36.8)	1(5.3)	8(42.1)	3(15.8)	19(100)	
Others	28(43.8)	5(7.8)	17(26.6)	14(21.9)	64(100)	
Education						
None	20(15.9)	2(3.2)	24(38.1)	27(42.9)	63(100)	<0.001 ^{a*}
Primary	36(48)	7(9.3)	21(28)	11(14.7)	75(100)	
Secondary	34(60.7)	4(7.1)	8(14.3)	10(17.9)	56(100)	
Tertiary	31(64.6)	5(10.4)	6(12.5)	6(12.5)	48(100)	

^a =Fisher's Exact Test

^b = Chi Square test

*= statistically significant



Table 6b: Relationship between socio-demographic characteristics and functionality among study participants (N=242)

Variable	Functionality				Total N=242	p-value
	Full function n=111 (%)	Mild impairment n=18 (%)	Moderate impairment n=59 (%)	Severe impairment n=54 (%)		
Occupation						
Farming	11(26.2)	2(4.8)	11(26.2)	18(42.9)	42(100)	<0.001 ^{a*}
Business	19(26)	5(6.8)	29(39.7)	20(27.4)	73(100)	
Civil servant	10(90.9)	1(9.1)	0(0)	0(0)	11(100)	
Public servant	11(64.6)	0(0)	2(15.4)	0(0)	13(100)	
Unemployed	2(40)	0(0)	2(40)	1(20)	5(100)	
Others	58(59.2)	10(10.2)	15(15.3)	15(64.6)	98(100)	
Occupation position						
Manager	7(50)	2(14.3)	3(21.4)	2(14.3)	14(100)	0.492 ^a
Admin officer	14(63.6)	2(9.1)	4(18.2)	2(9.1)	22(100)	
Supervisor	11(55)	2(10)	4(20)	3(15)	20(100)	
Others	79(42.5)	12(6.5)	48(25.8)	47(25.3)	186(100)	
Personal income/month						
<18000	54(38.8)	6(4.3)	39(28.1)	40(28.8)	139(100)	0.004 ^{a*}
18000-50000	47(58.8)	10(12.5)	15(18.8)	8(10)	80(100)	
>50000	10(8.7)	2(8.7)	5(21.7)	6(26.1)	23(100)	
Household income/month						
<18000	28(49.1)	2(3.5)	11(19.3)	23(18.9)	57(100)	0.541 ^a
18000-50000	54(44.3)	10(8.2)	35(28.7)	8(10)	122(100)	
>50000	29(46)	6(9.5)	13(20.6)	15(23.8)	63(100)	

^a =Fisher's Exact Test

^b = Chi Square test

*= statistically significant



Relationship between functionality and hearing impairment among study participants

Table 7 shows relationship between functionality and hearing impairment among study participants. Participants with no hearing handicap had the highest full function and had the lowest risk of developing severe impairment.

Table 7: Relationship between functionality and hearing impairment among study participants

Variable	Functionality				Total N=242	p-value
	Full function n=111 (%)	Mild impairment n=18 (%)	Moderate impairment n=59 (%)	Severe impairment n=54 (%)		
No handicap/no referral	78(66.7)	6(5.1)	15(12.8)	18(15.4)	117(100)	<0.001 ^{a*}
Mild to moderate handicap/referral	23(29.9)	11(14.3)	26(33.8)	17(22.1)	77(100)	
Severe handicap/referral	10(20.8)	1(2.1)	18(37.5)	19(39.6)	48(100)	

^a=Fisher's Exact Test; *=statistically significant

Relationship between functionality and balance and fall among study participants

Table 8 shows the relationship between functionality and balance & fall among study participants. Almost all those who had no fall risk had full function (97.9%).

Table 8: Relationship between functionality and balance and fall among study participants

Variable	Functionality				Total N=242	p-value
	Full function n=111(%)	Mild impairment n=18(%)	Moderate impairment n=59(%)	Severe impairment n=54(%)		
No fall risk	47(97.9)	0(0)	1(2.1)	0(0)	48(100)	<0.001 ^{a*}
Low fall risk	56(76.7)	12(16.4)	5(6.8)	0(0)	73(100)	
Some fall risk	8(17.8)	5(11.1)	31(68.9)	1(1.1)	45(100)	
High fall risk	0(0)	1(2.4)	21(50)	20(47.6)	42(100)	
Very high fall risk	0(0)	0(0)	1(2.9)	33(97.1)	34(100)	

^a=Fisher's Exact Test; *=statistically significant



Multivariate logistic regression of independent determinants of functionality among study participants

Table 9 shows multivariate logistic regression of independent determinants of functionality among study participants. Age group of participants as well as balance and fall category of participants were independent predictors of functionality of study participants.

Table 9: Multivariate logistic regression of independent determinants of functionality among study participants

Variable	Odds Ratio	95% Confidence Interval	p-value
Age group/years			
≤69	0.16	0.057-0.507	0.002*
>69	1.0		
Presently married?			
Yes	0.46	0.147-1.429	0.179
No	1.0		
Religion			
Christianity	1.87	0.396-8.798	0.430
Others*	1.0		
Educational level			
Nil/Primary	0.66	0.160-2.700	0.560
Secondary/Tertiary	1.0		
Present occupation			
Working	4.93	0.069-1.338	0.115
Not working	1.0		
Monthly income/Naira			
≤18,000	3.09	0.876-10.871	0.079
>18,000	1.0		
Level of hearing impairment			
No handicap/mild to moderate handicap	0.30	0.069-1.338	0.115
Severe handicap	1.0		
Balance and fall			
No fall risk/low fall risk	0.01	0.002-0.025	<0.001**
High fall risk/very high fall risk	1.0		

*=Statistically significant

** = Remarkably statistically significant

Hearing impairment, loss of balance and fall in the elderly appear to be the harbinger of the frustrations and increasing loss of independence in the elderly. However, early detection of those at risk of balance and fall and those at risk of hearing impairments and offering advice on how to



avert fall have been shown to improve the frustrations by increasing their levels of functional independence.

Socio-demographic characteristics

All the respondents in this study were elderly aged 60 years and above, with overall mean age of 69.20 ± 8.05 years; therefore, their freely expressed opinion on the study was most likely to be reliable. In terms of clinic attendance, the analysis showed that male respondents constituted 122(50.4%) which was slightly higher than the female respondents which were 120(49.6%) with male to female preponderance ratio of 1.02:1. This is in keeping with a study which reported attendance to the clinic in elderly to be more in males than females. Hu Y-N, Hu et al (2012). The findings were also corroborated by El-Rahman and Hassan who reported the male attendance to be more than females. El-Rahman, Hassan. (2013). However, other studies assessed were not in support of the finding of the index study. Wu, Chie, and Yang in Taiwan reported 52.1% in favour of females, Wu TY, Chie WC, Yang RS, et al.(2013). Gomes GAO(2013) while Gomes, et al (2013) in Brazil reported 65% of females compared to males.

Hearing impairment among study participants.

This study found that 48.8% of the participants had no hearing handicap, thus, there are not handicapped yet and they don't need referral, 31.8% had mild to moderate hearing handicap while 19.4% had severe handicap and needed referral. This shows that hearing impairment is actually an issue in the elderly. The finding of a large number of elderly people with hearing impairment is expected since it is well known that there is a degeneration of the inner hair cells of the cochlea in the inner ear as people age. This degeneration is gradual and leads to a progressively worsening loss of hearing acuity. The finding of the current researchers is in line with a study by Sogebi. (2013) in Ogun state, Nigeria who reported 52.6 %.. However, higher prevalence was reported by Olaosun, et al (2013) in Osogbo, Osun state who found 82%. The finding was supported by Lin (2012) who in his study found 63.1 %.

Level of balance and fall among the study participants

The current study found the level of balance and fall among the respondents to be 19.8% had no risk of fall, 30.2% had low fall risk, 18.6% has some fall risk while high risk of fall and very high risk of fall risk were 17.4% and 14.0% respectively. The greatest challenges are seen in those that had high and very high risk respectively where supervision and physical support are necessary. The finding of the researcher is not in line with other studies that reported higher values of high risk of fall in their study population as seen with previous reports by Wu, et al (2013) who reported 63.8%. Hignett, et al (2013) in their study reported 78%, and Gomes, et al (2013) reported 54% . Their findings of higher number of the elderly at risk may be explained by their sample size and the area where the study was carried out. . The finding is in line with a study by Akosile, et al (2014) in Nnewi, Nigeria who reported that 27.8% of their respondents had very high risk of fall.

CONCLUSION

The current work validates the fact that hearing impairment, balance and fall among the elderly are major contributors to their functionality. Respondents' factors such as their ages, sex, marital status, level of education, occupation, hearing impairment as well as balance and fall were found



to have strong association with functionality among the elderly. However, following multivariate logistic regression, only the age group of the participants and their balance and fall category were independent predictors of functionality of the study participants.

RECOMMENDATIONS

In this current study, the effect of hearing impairment as well as balance and fall on the functionality have been noted, but there were other factors such as cognitive impairment, blindness, impotence and urinary incontinence that could also affect functionality. To address these, the following recommendations were made:

1. The routine care of the elderly in our clinic should place more emphasis on their functionality rather than disease conditions.
2. Hearing status of the elderly as well as balance and fall risk should be routinely assessed in all the elderly patients as part of their holistic care in the General Outpatient Clinic for early detection of those at risk as a measure to reduced functionality dependence among the elderly.
3. There should be incorporation of all the elderly into the National Health Insurance Scheme (NHIS) to limit out of pocket expenses and encourage elderly to present to the hospital for early assessment of their functionality.

Ethical clearance

Ethical consent was sought and obtained from the participants used in this study. They were made to understand that the exercise was purely for academic purposes, and their participation was voluntary.

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Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Authors' Contributions

So and so conceived the study, including the design, so and so collated the data, and so and so handled the analysis and interpretation, while so and so the initial manuscript. The authors have critically reviewed and approved the final draft, and are responsible for the content and similarity index of the manuscript.

Availability of data and materials

The datasets on which conclusions were made for this study are available on reasonable request.

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REFERENCES

- Ajayi SA, Adebusoye LA, Ogunbode AM, Akinyemi JO, Adebayo AM.(2015) Profile and Correlates of functional status in elderly patients presenting at a primary care clinic in Nigeria. *Afr J Prm Health Care Fam Med.* 7(1):1-7.
- Akintayo-Usman NO,Usmans O(2021) Comparative analysis of ageing in Nigeria and United Kingdom, using life course approach. The implications for the Nursing profession in Nigeria. *Pan Afri Med.J,* 38:411
- Akinyemi OO, Owoaje ET, Popoola OA, Ilesanmi. OS(2012). Quality of life and associated factors among adults in a community in South West Nigeria. *Annals of Ibadan Postgraduate Medicine Journal.* 10(2):34-39.
- Akosile CO, Anukam GO, Johnson OE, Okoye AAFEC, Iheukwumere N, Akinwola MO(2014). Fear of falling and quality of life of apparently- healthy elderly individuals from a Nigerian population. *Journal of Cross-Cultural Gerontology.*;29 (2):201-209.
- Araoye M(2004). *Research Methodology with Statistics for Health ans Social Sciences.* . Ilorin, Nigeria:: Nathadex publishers.
- Boi R, Racca L, Cavallero A, et al.(2012) Hearing loss and depressive symptoms in elderly patients. *Geriatrics & Gerontology International,*12(3):440-445.
- Cebolla EC, Rodacki ALF, Bento PCB.(2015) Balance, gait, functionality and strength: comparison between elderly fallers and non-fallers. *Braz J Phys Ther.*19(2):146-151.
- Ciorba A, Bianchini C, Pelucchi S, Pastore A.(2012). The impact of hearing loss on the quality of life of elderly adults. *Clinical Interventions in Aging,*7:159-163.
- Davis A, McMahon CM, Pichora-Fuller KM, et al(2016). Aging and hearing health: The life-course approach. *The Gerontologist.*56(2):256-264.
- Diri G.E (2025) Application of pre-and Post-Geriatrics responsibilities in curbing challenges facing the aged and aging process. *Trends Med. Res.,* 20 (1):01-07.
- El-Rahman SKA, Hassan NI.(2013) The effect of self-esteem images on the well-being of the elderly people in geriatric homes and a community living elderly. *J Am Sci.*;9(3):339-354.
- Flandorfer P(2012). Population ageing and socially assistive robots for elderly Persons: The importance of sociodemographic factors for user acceptance. *International Journal of Population Research.*1-13.
- Gomes GAO, Cintra FA, Guariento E, Sousa MLR, Batista FS, D'Elboux MJ(2013). Elderly outpatient profile and predictors of falls. *Sao Paulo Med J,*131(1):13-18.



- Gupta P, Mani K, Rai SK, Nongkynrih B, Gupta SK (2014). Functional disability among elderly persons in a rural area of Haryana. *Indian Journal of Public Health*,58(1):12-16.
- Hignett S, Sands G, Griffiths P(2013). In-patient falls: what can we learn from incident reports? *Age and Ageing*. 42:527-531.
- Hu Y-N, Hu G-C, Hsu C-Y, Hsieh S-F, Li C-C(2012). Assessment of individual activities of daily living and its association with self-rated health in elderly people of Taiwan. *International Journal of Gerontology*,6:117-121.
- Lin FR.(2012) Hearing loss in older adults Who's listening? *JAMA*,307(11):1147-1148.
- Moyer VA(2012). Prevention of falls in community-dwelling older adults: U.S. preventive services task force recommendation statement. *Ann Intern Med*. 157:197-204.
- Okoye UO.(2012) Family care-giving for ageing parents in Nigeria: gender differences, cultural imperatives and the role of education. *International Journal of Education and Ageing*,2(2):139-154.
- Olaosun AO, Ogundiran O, Tobih JE.(2013) Hearing loss among elderly patients in an ear clinic in Nigeria. *Advances in Life Science and Technology*,14:81
- Puteh SE, Bakar IM, Borhanuddin B, Latiff K, Amin RM, Sutan R. A(2015). Prevalence study of the activities of daily living (ADL) dependency among the elderly in four districts in Selangor, Malaysia. *J Epid Prev Med*,1(2):110.
- Roth TN, Hanebuth D, Probst R.(2011) Prevalence of age-related hearing loss in Europe: a review. *Eur Arch Otorhinolaryngol*, 268:1101-1107.
- Sanderson W, Scherbov S.(2008) Rethinking age and aging.Population reference bureau *Population reference bureau*,64(4):1-4
- Shofoyeke AD, Amosun PA(2014). A survey of care and support for the elderly people in Nigeria. *Mediterranean Journal of Social Sciences*. 5(23):2553-2562.
- Smee DJ, Anson JM, S.Waddington G, Berry HL.(2012) Association between physical functionality and falls risk in community-living older adults. *Current gerontology and geriatrics research*:1-6.
- Sogebi OA.(2013) Assessment of the risk factors for hearing loss in adult Nigerian population. *Niger Med J*, 54(4):244-249.
- Suntoo R. Suntoo R.(2012) Population ageing and the theory of demographic Transition. The case of Mauritius. *University of mauritius research journal*; 18:1-6.
- Wandera SO, Ntozi J, Kwagala B, Aboderin I.(2014) Prevalence and correlates of disability among older Ugandans: Evidence from a national household survey. *Journal Global Health Action*.7(1):1-14.