

Attitude towards ageing and perceived Health Status of Community-Dwelling Older Persons in a low resource setting: A rural-urban comparison

Eniola Olubukola Cadmus (✉ eniyolacadmus@gmail.com)

University of Ibadan College of Medicine <https://orcid.org/0000-0002-0201-1462>

Lawrence Adekunle Adebuseye

University College Hospital Ibadan

Eme Theodora Owoaje

University of Ibadan College of Medicine

Research article

Keywords: Attitude towards Ageing, Older Persons, Community-Based, Nigeria

Posted Date: July 30th, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-42688/v1>

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Version of Record: A version of this preprint was published at BMC Geriatrics on August 6th, 2021. See the published version at <https://doi.org/10.1186/s12877-021-02394-5>.

Abstract

Background: Ageing is a personal experience peculiar to each individual and is influenced by several demographic and social factors. Individuals, however, have different ways of coping with the challenges experienced during this process which affects their quality of life and health-related outcomes. Despite the increasing number of older persons in sub-Saharan Africa, there is limited information about their experience. This study examines the experience and attitude of older persons in Nigeria regarding the ageing process

Methods: A descriptive cross-sectional study was carried out among older persons aged 60 years and above in a selected rural and an urban community in Oyo State, south-western Nigeria. Using a multistage sampling technique, data were collected with the aid of an interviewer-administered, semi-structured questionnaire. The Attitude to Ageing Questionnaire (AAQ) was used to measure participants' perception of ageing in three domains of psychosocial loss, physical changes and psychological growth. Data were analysed using Stata version 14 at a level of significance $p < 0.05$.

Results: A total of 1,180 participants (588 rural vs 592 urban) were recruited for the study. The mean age was 73.2 ± 9.3 years. The majority (69.7%) were females and still working (50.5%) Overall, urban-dwelling participants had a better attitude to the ageing process in all the domains compared with rural-dwelling participants (psychological growth 32.5 ± 3.4 vs 32.4 ± 3.3 , $p = 0.30$; physical change 27.5 ± 5.1 vs 26.9 ± 5.0 , $p = 0.03$; and psychosocial loss 25.3 ± 5.7 vs 25.0 ± 5.3 , $p = 0.60$). The predictors for having a positive attitude to ageing especially among the urban-dwelling older persons were having a formal education, being employed and good self-rated health. While among the rural-dwelling older participants good self-rated health was the only predictor of having a positive attitude to ageing in the psychosocial loss and physical change domains.

Conclusion: Older persons residing in urban communities had a better attitude to ageing process compared with their rural older counterparts. The common predictor of positive attitude to ageing in both groups was good self-rated health. This information can be used for the planning of targeted interventions and informing policy formation for improved provisions for community-dwelling older persons in Nigeria and other sub-Saharan African countries

Background

Globally, many low and middle-income countries (LMICs) are experiencing an increased growth of the older population alongside increased life expectancy [1]. Nigeria is the most populous country in sub-Saharan Africa and is also witnessing this trend alongside other LMICs [1]. According to the United Nations (UN), an older person is an individual aged 60 years and above. This cut-off has been so determined to enable inclusion because of the lower life expectancy in many LMIC compared to high-income countries (HIC). By recent global estimates in 2015, older persons numbered about 900 million [1–3]. At a growth rate of about 56% between 2015 and 2030, it was estimated that globally, the proportion of older persons will increase to 1.4 billion. By 2050 this number is projected to further increase and double yet again numbering over 2 billion [1, 4].

By 2050, about 80% of older persons in the world will be living in LMIC such as Nigeria [1]. In addition, by this time, the number of older persons in Nigeria is expected to increase to 25.5 million from the current 6.98 million [1]. Ageing is associated with health, social, and economic challenges. Alongside these challenges, are societal changes such as increased female participation in the workforce, rural-urban migration and decreased family size [2]. These changes in demographic patterns and social structures which traditionally ensured care and support for an older person have implications on their well-being. As the number of older persons in Nigeria continues to increase, there will also be an increased need for a relevant evidence base to guide necessary action for providing care for sub-group of the population.

The process of ageing has been documented to be a unique experience for each individual. The associated decline has been reported to not necessarily be associated with low levels of life satisfaction or self-rated health [5]. Available research shows that ageing is associated with health, social and economic difficulties. The available research, however, shows that the experience of ageing is mixed. The perception of ageing ranges across a continuum of positivity and negativity. [6–9]. This includes the perception of ageing as a good period of life or a bad period depending on the individual and prevailing circumstances. For instance, although having a disability or morbidity generally has a negative effect on self-perceived quality of life There is however evidence that for some older persons with a disability their perceived self-rated health and quality of life (QoL) is positive despite the challenges faced [9] reporting on a longitudinal study revealed that older persons experienced a 'paradox of ageing', whereby despite the physical and cognitive decline, many of the respondents still viewed ageing as a good experience with enhanced wellbeing. The authors also asserted that despite associated challenges, ageing is associated with more positive overall emotional wellbeing and greater emotional stability [9].

Attitudes are individual beliefs about events, issues or experiences. According to Thorpe (2014), the attitude towards ageing may be defined as: 'an individual's meaning regarding the experience of ageing'. This concept reflects both the individual's knowledge as well as their experience and influences their behavioural choices [6, 10, 11]. Researchers suggest that the attitude of older persons to ageing is critical for their survival, adjustment and acceptance of health-related behaviour. As such, the assessment of attitude particularly among older persons has been deemed beneficial [6, 12].

There are several benefits of a positive self-perceived attitude to ageing. These include physical and emotional wellbeing, increased life expectancy as well as improved QoL [7, 8]. Furthermore, positive self-perception has been associated with higher levels of resilience and positivity towards ageing [7, 11, 13]. Similarly, a positive attitude towards ageing has been seen to be associated with personal growth and healthier outcomes [7, 8, 13–15]. As such, positivity towards ageing is associated with increased life expectancy [15–18], increased life satisfaction [7, 9, 10, 13, 19] and increased QoL [20].

On the other hand, a negative attitude to ageing has been associated with health problems and poorer health outcomes. For instance, Quin and colleagues (2009) showed that a negative attitude to ageing was associated with poorer care-seeking behaviour for mental illness. This has been shown to reflect on the failure to seek treatment or poor treatment by health services [11]. Likewise, other research suggests that poor attitude to ageing may be associated with depression [7, 21]. Likewise, ageing self- stereotypes have been shown to contribute to negative expectations and attitude towards ageing as well as impact

behaviour, health and well-being [15]. Levy and colleagues posit that older persons with negative attitudes often view their experience as a time of physical loss and mental decline [15]. The findings of this study are consistent with those of Law, Laidlaw and Peck (2010) which support the finding that older persons with a negative attitude towards ageing were more likely to accept depression as normal and be less willing to seek treatment or adopt necessary lifestyle and behavioural changes [6, 11, 22].

The attitude to ageing has been reported to affect the physical as well as the psychological condition of older persons and is a strong predictor of their QoL [23]. Older persons with better functional status and attitude to life have been shown to have better QoL [24]. Findings from a study among residents of a nursing home in Turkey indicated that a positive attitude towards ageing was associated with better QoL, satisfaction with health, lower incidence of depression and loneliness. [23]. Indeed, the attitude of older persons to ageing has been documented to affect the QoL and life expectancy of older persons [25]. Also, research suggests that positive individuals are usually healthier, have increased life expectancy and better life satisfaction [7, 8, 16].

There is a growing body of evidence about the benefits of assessment of the attitude of older persons towards ageing and the use of such information for targeted action and behavioural change [6, 7]. Attitudes influence behaviour [7] and are good for evaluation as well as the development of health promotional activities. Furthermore, an individual's attitude also may influence future behaviour and health-related outcomes [6].

The promotion of healthy ageing and the ushering in of the 'Decade of Healthy Ageing' is a global priority [26] which stipulates that no older person must be left behind. In order to facilitate initiatives to promote older persons to take greater responsibility for their ageing as well as steer member of the society towards recognition of this task, there is a need to explore the perspective of older persons themselves about the process of ageing. This information will assist in the recognition and targeting of negative attitude to ageing. Also, the planning of appropriate psychological intervention to challenge these negative attitudes may be achieved.

The ability to understand the experiences and attitudes of an older person regarding ageing is very important. However, studies about the attitude of older persons to ageing have to date have been mostly carried out in HIC or facility-based [7, 10–12, 25, 27]. These studies have documented a spectrum of positivity to ageing as well as negativity based on other demographic and social factors. There is however limited research in many low resource settings [6, 18]. Yunus and colleagues in a study conducted in Malaysia reported that reveal that positive attitudes to ageing were associated with health status in older adults [6]. Likewise, Rashid and colleagues in their community-based study among older persons in Malaysia reported that the was a positive attitude to ageing as the total AAQ score and the scores in the individual domains were above average [18]. In addition, social support was associated with increased AAQ score [18].

To our knowledge, this is the first study on the attitude towards ageing among older persons in Nigeria. This study set out to investigate the attitude to ageing among community-dwelling older persons. Information obtained will facilitate the understanding of their adaptation to this phase of their existence as well as assist the planning of appropriate intervention and targeted policies.

Methods

This study is part of a larger community-based, cross-sectional study and sets out to investigate the attitude towards ageing of rural and urban community-dwelling older persons in south-western Nigeria. The study population were older men and women aged 60 years and above at their last birthday in a rural and an urban community in Oyo State, south-western Nigeria. The sample size for the study was determined using the sample size calculator in Stata Version 12 and the formula for comparing two proportions assuming a difference of 10%, power of 90%, and α of 5% [28]. The calculated minimum sample size for the study was 522 to be recruited in each rural and urban area.

The study was carried out in Oyo State, south-western Nigeria. Oyo State has a total of 33 Local Government Areas (LGA) of which 12 each are urban and rural while 9 are peri-urban. The urban study was conducted in Ward 3, selected purposively out of the 12 wards in Ibadan North Local Government Area (LGA) located in Ibadan, the capital city of Oyo State. Ibadan North LGA from recent estimates has about 432,900 people of which about 4% (18,524) are aged 60 years and above. Based on a demographic survey conducted in 2013, Ward 3 has an estimated population of 30,861. The rural community was selected from Ibarapa Central LGA which has its headquarters in the town of Igboora. Recent estimates suggest the LGA has about 140,900 people [29]. Likewise, about 4% (5,479) of the population is aged 60 years and above.

Data were collected over a one-month period in August 2018. The respondents were selected through a multi-stage sampling technique. Initially, the rural LGA (Ibarapa Central LGA) and an urban LGA (Ibadan North LGA) were purposively selected. Next from each of the selected LGA, a ward each was selected. In each of the selected wards, four enumeration areas were selected. The sites had already been mapped and listed by the activities of the Department of Community Medicine, College of Medicine, University of Ibadan. As such households with individuals aged 60 years and above as at their last birthdays were identified. Data were collected by 10 research assistants who were bilingual and had a minimum of National College of Education (tertiary level of education). The research assistants were assisted by field scouts who facilitated community entry and identification of the selected households.

A questionnaire was developed to reflect the study objectives as well as the respondent's sociodemographic characteristics, self-rated health (SRH), self-rated quality of Life (SRQoL) and their attitude to ageing. The participants were requested to respond to the questions related to their demographic backgrounds such as age, sex, educational status, marital status and employment. The survey instrument was standard instruments previously published [13, 30]. The perceived health status and QoL were measured using questions from the short form of the instrument for measuring the QoL developed by the World Health Organization (WHO)[30]. This has been previously validated in Nigeria [31]. Likewise their attitude to ageing was measured using the Attitude to Ageing Questionnaire (AAQ) also developed by the WHO [13]. The responses in both instruments were elicited on a five-point Likert scale ranging from (1 strongly disagree to 5 strongly agree).

The AAQ assesses three domains in the older person's life. These are psychosocial loss, physical change, and psychological growth. The psychosocial loss domain measures the older persons' negative attitude towards ageing. The domain measures both the psychological and social loss experienced by older persons [5, 13, 25]. This domain measures the negativity of older persons towards ageing [5, 13, 25]. Thus, the lower the score the higher the psychological loss to ageing process experienced by the individual [13]. However, similar to a previous study, the psychosocial loss scores were reversed, in that higher scores indicate a more positive attitude [18]. On the other hand, the physical change domain assesses the physical functioning of the older person as it relates to their health and their experience of ageing. The psychological growth domain measures the individual's positivity and perception of the psychological aspects of ageing. Also, higher scores in the physical change and psychological growth domain indicate positivity towards ageing [13]. Previous research has shown that negative scores in the psychosocial loss, and physical change domains, are negatively affected by depression, physically decline and poor self-rated health [6, 7, 11]

Though the AAQ has been validated across different cultures and resource settings [6, 10, 27], the instrument was translated to Yoruba, the local language and back-translated to English by a bilingual expert to ensure the original meanings were maintained. Thereafter, the instrument was reviewed by a panel of experts in the field of ageing. These included two community physicians, a family physician with specialization in geriatric medicine, and a statistician and an older person. The refined instrument was pre-tested among older persons and experts in geriatric care. The instrument was pilot tested among a convenient sample of 40 participants in communities except those chosen for the study and distant enough to prevent contamination of the final study sites. The Cronbach's alpha for the Attitude to ageing indicated that there was good internal consistency among the items (0.76) Although Laidlaw and colleagues recommended a single total score based on a summation of all 24 items of the scale [13] this study reports within the domains of the instrument.

Data were collected over one month in July 2018 using the Research Electronic Data Capturing (REDCap) platform [32] and analysed using the Stata version 14 [28]. Inferential statistics to test for associations between variables were done using the chi-square test. Variables significant at 10% were entered into a logistic regression model.

Data Analysis

Data were analysed using Stata version 14. The categorical variables were summarized using proportions while the continuous variables (including the AAQ domain scores) were summarized using means and standard deviation. Bivariate analysis to measure associations using Pearson's chi-square test or Fisher's exact test. The student's t-test was used for the analysis of the statistical difference between the mean scores and dichotomous variables. Variables significant at a value of $p \leq 0.05$ were entered into the logistic regression model and fitted for the rural and urban location.

Results

A total of 1212 older persons (600 rural versus 600 urban) were approached to participate in the study, 12 (8 urban 4 rural) refused participation giving a total response rate of 99.0%. The response rate in the urban area was 98.6% and in the rural area 99.3%. After uploading and initial data cleaning, 20 records were voided because of the incompleteness of the data collected. Eventually, the data from the 1,180 completed questionnaires were analysed. These consisted of 588 (49.8%) and 592 (50.2%) respondents from the urban and rural respectively.

Females constituted more than half of the respondents in both locations accounting for 417 (70%) in the urban and 406 (69.1%) rural areas. The rural respondents were significantly older than urban respondents with mean ages of 74.2 ± 9.5 years compared to 72.3 ± 8.9 years ($p < 0.05$) respectively. The age group 60–69 years had the largest representation in the urban location 248 (41.9%) while those aged 70–79 years had the highest frequency of 221 (52.5%) among the rural dwellers. Virtually all the respondents were of Yoruba ethnicity in both the rural 586 (99.7%) and urban area 592 (97.1%) respectively. See Table 1

A higher proportion of rural respondents were currently married 281 (54.6%) compared to the urban respondents 234 (45.4%). Overall, 410 (34.8%) of the respondents reported they had some formal education. Of these, over half, 236 (57.6%) reported they completed primary school while 88 (21.5%) completed secondary school education. A higher proportion of respondents in the rural areas had no formal education 476 (81.0%) compared to about half 294 (49.7%) of the urban respondents. Also, a higher proportion of rural respondents were still working compared to the urban respondents 259 (43.8%).

Table 1
Socio-demographic characteristic of respondents by location

Variable	Rural N = 588 n (%)	Urban N = 592 n (%)	Total N = 1180 n (%)	χ^2	p-value
Sex					
Male	182 (31.0)	175 (30.0)	357 (30.3)		
Female	406 (69.0)	417 (70.0)	823 (69.7)	0.27	0.60
Age (years)					
60–69	189 (32.1)	248 (41.9)	437 (37.0)		
70–79	221 (37.6)	200 (33.8)	421 (35.7)		
80 and above	178 (30.3)	144 (44.7)	322 (27.3)	12.02	< 0.001*
Mean (SD)	74.2 (± 9.5)	72.3 (± 8.9)	73.2 (± 9.3)		
Religion					
Islam	355 (60.4)	341 (57.6)	696 (59.0)	1.40	0.50
Christianity	225 (38.3)	245 (41.4)	470 (39.8)		
Others	8 (1.4)	6 (1.0)	14 (1.2)		
Marital status					
Currently married	281 (54.6)	234 (45.4)	515 (43.6)		
Not currently married	307 (46.2)	358 (53.8)	665 (56.4)	8.19	< 0.001*
Formal Education					
Yes	122 (19.0)	298 (50.3)	410 (34.7)		
No	476 (81.0)	294 (49.7)	770 (65.3)	127.0	< 0.001*
Employed					
Yes	325 (55.3)	259 (43.8)	584 (49.5)		
No	263 (44.7)	333 (56.2)	596 (50.5)	15.67	< 0.001*
*significant at p < 0.05					

The distribution of means and standard deviations of the AAQ domain scores by location is shown in Table 2. There were similarities in observed mean scores for the rural and urban respondents for both the psychosocial loss and the psychological growth domains. However, there was a statistically significant difference in the domain measuring physical change as urban respondents had higher mean scores 27.5 (± 5.1) compared to their rural counterparts 26.9 (± 5.0) (p = 0.03).

Table 2
Distribution of Means and standard deviations of Attitude to Ageing Questionnaire Domains scores by location

Attitude to Ageing Domains	Location	Mean (\pm SD)	95% CI		t	p-value
			Upper	Lower		
Psychosocial loss						
	Rural	25.0 (\pm 5.3)	24.6	25.4		
	Urban	25.3 (\pm 5.7)	24.9	25.8		
	Total	25.2 (\pm 5.5)	24.9	25.5	-1.03	0.30
Physical Change						
	Rural	26.9 (\pm 5.0)	26.5	27.3		
	Urban	27.5 (\pm 5.1)	27.1	27.9		
	Total	27.2 (\pm 5.1)	26.9	27.5	-2.17	0.03*
Psychological Growth						
	Rural	32.4 (\pm 3.5)	32.1	32.7		
	Urban	32.5 (\pm 3.3)	32.3	32.8		
	Total	32.5 (\pm 3.4)	32.3	32.7	-0.53	0.60
*significant at $p < 0.05$						

The AAQ subscales were analysed by location and sociodemographic characteristics. Results of the factors associated with higher mean scores in the three domains by location are shown in Tables 3 and 4. In the psychosocial loss domain for both the rural and urban population, higher mean scores were observed among older respondents (≥ 70 years), respondents who were married or presently in a relationship and those who had formal education ($p < 0.05$). Also, respondents who were presently working and those with good SRH and SRQoL were shown to have higher mean scores in the domain ($p < 0.05$). There were however differences in associated factors based on respondents' location. Rural respondents who were living with others had higher scores in the psychosocial loss domain compared to those who lived alone ($p < 0.05$). However, among the urban respondents, there were significant differences based on gender as males had higher mean scores in the psychosocial domain 26.2 (\pm 5.6) compared to the females 25.0 (\pm 5.8) ($p < 0.05$).

Table 3
Factors associated with the subscale of the Attitude to Ageing Questionnaire (AAQ) for the Rural Population

AAQ Subscale	Psychosocial loss				Physical Change			Psychological Growth			
	Variables	N	Mean (SD)	t-test	p value	Mean (SD)	t-test	p value	Mean (SD)	t-test	p value
Age Category (in years)											
≥ 70	399	24.6 (5.5)			26.2 (5.1)			32.3 (3.6)			
≤ 70	189	22.0 (4.7)	3.07	< 0.001*	28.2 (4.7)	4.66	< 0.001*	32.8 (3.3)	1.60	0.11	
Sex											
Male	182	25.3 (5.3)			27.1 (5.3)			32.5 (3.7)			
Female	406	24.9 (5.2)	-0.90	0.37	26.8 (4.9)	-0.69	0.49	32.4 (3.5)	-0.27	0.79	
Marital Status											
Currently Married	281	25.9 (4.8)			27.4 (5.0)			32.7 (3.4)			
Currently unmarried	307	24.2 (5.6)	-4.00	< 0.001*	26.3 (5.0)	-2.70	0.01*	32.1 (3.6)	-2.15	0.03*	
Formal Education											
Yes	112	26.5 (5.0)			28.8 (4.7)			33.2 (3.6)			
No	476	24.7 (5.3)	-3.38	< 0.001*	26.4 (5.0)	-4.50	< 0.001*	32.2 (3.5)	-2.62	0.01*	
Employed											
Yes	325	26.2 (4.9)			28.6 (4.3)			32.8 (3.2)			
No	263	23.6 (5.4)	-6.08	< 0.001*	24.7 (5.1)	-10.07	< 0.001*	31.8 (3.8)	-3.52	< 0.001*	
Living arrangement											
Living with others	472	25.3 (5.0)			27.2 (5.0)			32.5 (3.4)			
Living alone	116	24.0 (6.0)	-2.30	0.02 *	25.7 (5.1)	2.86	0.01*	32.0 (4.0)	0.14	0.93	
Home Assistance											
Yes	469	25.0 (5.2)			26.8 (5.1)			32.5 (3.5)			
No	119	25.2 (5.5)	0.34	0.73	27.3 (4.6)	-5.90	< 0.001*	32.0 (3.7)	-1.54	0.12	
Self –rated QoL (SRQoL)											
Poor SRQoL	82	22.0 (5.5)			27.3 (4.8)			30.5 (4.0)			
Good SRQoL	506	25.5 (5.1)	-5.74	< 0.001*	23.9 (5.2)	-5.90	< 0.001*	32.7 (3.3)	-5.48	< 0.001*	
Self- rated health (SRH)											
Poor SRH	163	22.9 (5.1)			23.8 (5.2)			31.1 (3.7)			
Good SRH	425	25.8 (5.1)	-6.29	< 0.001*	28.0 (4.4)	-9.85	< 0.001*	32.9 (3.3)	-5.93	< 0.001*	
significant at p < 0.05											

Table 4
Factors associated with the subscale of the Attitude to Ageing Questionnaire (AAQ) for the Urban Population

AAQ Subscale	Psychosocial loss				Physical Change			Psychological Growth		
	N	Mean (SD)	t-test	p value	Mean (SD)	t-test	p value	Mean (SD)	t-test	p value
Age Category										
≥ 70	344	24.5 (5.7)			26.0 (5.3)			32.3 (3.3)		
≤ 70	248	26.6 (5.6)	4.43	< 0.001*	28.2 (4.7)	2.91	< 0.001*	32.8 (3.3)	1.89	0.06
Sex										
Male	175	26.2 (5.6)			28.4 (5.3)			33.3 (3.4)		
Female	417	25.0 (5.8)	-2.45	0.01*	27.1 (5.0)	-2.70	1.00	32.2 (3.2)	-3.65	< 0.001*
Marital Status										
Currently Married	234	27.0 (5.5)			28.7 (4.8)			33.2 (3.2)		
Currently unmarried	358	24.3 (5.7)	-5.65	< 0.001*	26.7 (5.2)	-4.54	< 0.001*	32.1 (3.3)	-3.92	< 0.001*
Formal Education										
Yes	298	26.6 (5.6)			28.4 (5.0)			33.1 (3.2)		
No	294	24.1 (5.6)	-5.38	< 0.001*	26.6 (5.0)	-4.24	< 0.001*	31.9 (3.2)	-4.29	< 0.001*
Employed										
Yes	259	26.5 (5.8)			28.7 (4.7)			32.8 (3.1)		
No	333	24.4 (5.5)	-4.40	< 0.001*	26.6 (5.2)	-4.90	< 0.001*	32.3(3.4)	-1.88	0.06
Living arrangement										
Living with others	431	25.6 (5.7)			27.3 (5.2)			32.6 (3.3)		
Living alone	161	24.7 (5.8)	-1.61	0.10	28.1 (4.9)	1.66	0.10	32.3 (3.3)	-1.11	0.27
Home Assistance										
Yes	442	25.5 (5.7)			27.1 (5.2)			32.5 (3.3)		
No	150	24.8 (6.0)	-1.40	0.16	28.7 (4.8)	3.47	< 0.001*	32.5 (3.3)	-0.19	0.85
Self –rated QoL (SRQoL)										
Poor SRQoL	101	23.5 (5.6)			24.7 (5.6)			31.4 (3.5)		
Good SRQoL	491	25.7 (5.7)	-3.48	< 0.001*	28.1 (4.8)	-6.18	< 0.001*	32.7 (3.2)	-3.81	< 0.001*
Self- rated health (SRH)										
Poor SRH	175	23.7 (5.3)			24.6 (5.4)			31.7 (3.4)		
Good SRH	417	26.0 (5.8)	-4.46	< 0.001*	28.7 (4.4)	-9.74	< 0.001*	32.9 (3.2)	-4.13	< 0.001*
*significant at p < 0.05										

Likewise, those who were younger (≤ 70 years), married or in a relationship, had a formal education and employed had a more positive perception of physical changes measured by the AAQ in both rural and urban study populations. These findings were statistically significant ($p < 0.05$). Also, good SRH, good SRQoL as well as having assistance at home were associated with a positive perception of physical changes in both the rural and urban population. These findings were statistically significant ($p < 0.05$). However, in particular, among the rural respondents, those who were not living alone had higher mean scores compared to those who were. This finding was statistically significant ($p < 0.05$).

The regression analysis of the factors associated with the respondent's attitudes towards ageing in the study revealed differences based on location. This is shown in Tables 5 and 6. Among the rural respondents, a statistically significant correlation was observed for the psychosocial loss subscale of the AAQ. The mean attitudinal score in this domain increased among respondents who had a good SRH [β : 2.49 (95% CI: 1.56–3.41)].

Table 5
Linear Regression analysis of factors associated with higher means Scores for the rural location

Domain	Psychosocial loss			Physical change			Psychological growth		
	β Coefficient	t	95% CI	β Coefficient	t	95% CI	β Coefficient	t	95% CI
Age Category									
≥ 70	-0.20	-0.41	-1.16-0.76	0.45	-1.06	-1.29-0.39	0.12	0.35	-0.54-0.77
< 70	1 (ref)			1 (ref)			1 (ref)		
Sex									
Male	0.59	-1.19	-1.57-0.39	-0.45	-1.04	-1.31-0.40	-0.34	-1.00	-1.02-0.33
Female	1 (ref)			1 (ref)			1 (ref)		
Marital Status									
Currently Married	1.08	2.24	0.14–2.03	-0.06	-0.15	-0.89-0.76	0.42	1.28	-0.29-1.08
Currently unmarried	1 (ref)			1 (ref)			1 (ref)		
Living arrangement									
Living with others	0.47	0.90	-0.57-1.53	0.85	1.83	-0.06-1.77	0.28	0.77	-0.44-1.00
Living alone	1 (ref)			1 (ref)			1 (ref)		
Formal Education									
Yes	1.40	2.44	0.27–2.52	2.03	4.05	1.04–3.01*	0.91	2.31	0.14–1.68
No	1 (ref)			1 (ref)			1 (ref)		
Employed									
Yes	1.74	3.89	0.86–2.61	3.00	7.58	2.19–3.72*	0.58	1.89	-0.02-1.19
No	1 (ref)			1 (ref)			1 (ref)		
Homeownership									
Owner occupied	0.45	1.04	-0.40-1.31	-0.21	-0.57	-1.0-0.53	0.50	-1.65	-0.02-1.12
Rented	1 (ref)			1 (ref)			1 (ref)		
Self-Rated Health									
Good SRH	2.49	5.31	1.56–3.41*	3.50	8.56	2.70–4.30*	1.76	5.46	1.13–2.39*
Poor SRH	1 (ref)			1 (ref)			1 (ref)		
* significant at $p < 0.05$									

Table 6
Linear Regression analysis of factors associated with higher means Scores for the urban location

Domain	Psychosocial loss			Physical change			Psychological growth		
	β Coefficient	t	95% CI	β Coefficient	t	95% CI	β Coefficient	t	95% CI
Age Category									
≥ 70	-0.81	-1.63	-1.80-0.17	-0.56	-1.33	-1.40-0.27	-0.12	-0.40	-0.70-0.46
< 70	1 (ref)			1 (ref)			1 (ref)		
Sex									
Male	-0.38	-0.63	-1.57-0.81	0.15	0.76	-0.85-1.16	0.48	1.35	-0.22-1.16
Female	1 (ref)			1 (ref)			1 (ref)		
Marital Status									
Currently Married	1.56	2.70	0.42–2.69	1.33	2.73	0.37–2.28	0.45	1.32	-0.22-1.11
Currently unmarried	1 (ref)			1 (ref)			1 (ref)		
Living arrangement									
Living with others	0.36	0.70	-0.66-1.39	-1.15	-2.62	-2.02–0.29	0.17	0.55	-0.43-0.77
Living alone	1 (ref)			1 (ref)			1 (ref)		
Formal Education									
Yes	1.72	3.35	0.71–2.72	0.90	2.08	0.49–1.75	0.70	2.31	0.10–1.29
No	1 (ref)			1 (ref)			1 (ref)		
Employed									
Yes	1.20	2.52	0.26–2.13	1.24	3.09	0.45–2.03	0.24	0.85	-0.31-0.79
No	1 (ref)			1 (ref)			1 (ref)		
Homeownership									
Owner occupied	-0.43	-0.91	-1.36-0.49	0.81	2.03	0.02–1.60	0.02	0.06	-0.53-0.57
Rented	1 (ref)			1 (ref)			1 (ref)		
Self-Rated Health									
Good SRH	1.93	3.90	0.96–2.90	3.77	9.01	2.94–4.59*	1.10	3.77	0.53–1.67
Poor SRH	1 (ref)			1 (ref)			1 (ref)		
* p < 0.05									

The regression analysis of factors associated with the respondent's attitudes towards aspects of physical change as a result of ageing revealed that in the rural area, a significant correlation was seen among the educated [β : 2.03 (95% CI: 1.04–3.01)], employed [β : 3.00 (95% CI: 2.19–3.72)] and those with perceived good self-rated health, [β : 3.50 (95% CI: 2.70–4.30)]. Likewise, in the urban area, factors associated with higher increase in attitudes regarding physical changes due to ageing are good SRH [β : 3.70 (95% CI: 3.11–4.27)], being educated [β : 1.63 (95% CI: 1.03–2.23)] and those who were presently employed [OR: 2.02 (95% CI: 1.47–2.57)].

However, in the rural community, perceived good self-rated health correlated with positive attitudes in the psychological growth domain of the AAQ, [β : 1.76 (95% CI: 1.13–2.39)] was positively correlated with higher scores in the domain but not among the urban dwellers [β : 1.10 (95% CI: 0.53–1.67)].

Discussion

This study was conducted among a sample of community-dwelling older persons in rural and urban communities in Oyo State, south-western Nigeria. There were no significant differences among the rural and urban participants in the domains except the domain which measures physical changes. This may be because older persons face the same challenges irrespective of their setting. Oftentimes, these challenges are as a result of health issues and poor support structures and targeted services to cater to their needs. Research shows that older persons who require more medical attention have to contend with a higher level of loss in physical functioning [6, 7, 11]. This may account for the lower mean scores in the physical changes domain in the study. The mean scores were highest in the psychological growth domain. Since this domain measures the older persons perceived growth in wisdom and knowledge due to ageing this finding is not surprising. Traditionally, in the African setting, older persons are often viewed as a repository of knowledge and wisdom and they are often asked for advice on how to resolve family and community problems [33–35].

Increasing age was found to be associated with the psychosocial loss AAQ domains among the rural and urban respondents. This is similar to documented findings by Yunus and colleagues in Malaysia where older age was found to be significantly correlated with more negative scores on psychosocial loss [6]. Also, studies in Australia [7] and Edinburg [19] had similar findings.

Likewise, increasing age was associated with higher mean scores in the physical changes domain for both the rural and urban respondents which is consistent with the observations of other studies [7, 36] which reported mean scores of younger respondents were higher than those where older respondents. This finding is expected as the functional decline with age and increased care needs may be a cause.

Gender difference in attitude to ageing has been documented in previous similar studies but this study revealed differences based on study setting. There were no gender differences concerning the AAQ domains in the rural location. This is similar to findings from other studies where both genders had similar measures of their positivity to ageing [6, 7, 10, 18]. Also, males were reported to have higher mean scores in the domain compared to the females. This may be because of the inherent vulnerability of older females in terms of worse morbidities, and disability compared to males. In addition, research shows that females are more likely to perceive themselves less attractive with age compared to their male counterparts [37, 38]. However, for the urban location, there was a significant association in gender in psychosocial loss and psychological growth as males had higher scores in the domains. This may be because males have been shown to gain more status with age and be regarded in a more dignified light compared to females [6]. Other research shows likewise, a larger proportion of respondents in both settings are women. Older women are already socially vulnerable in many settings, being less educated and less likely to have economic resources than their male counterparts [39]. Older persons in the urban location have been reported to have a more positive outlook to ageing [17]. This may be because of the differences in health and economic status among the study population. Urban respondents are usually wealthier and as such are expected to have access to facilities and resources to better take care of their health and other needs. Also, in the study, a higher proportion of urban dwellers had formal education which implies they most likely would have better financial status.

Similar to previous findings, in this study, education was found to be associated with positivity towards ageing among both the rural and urban groups [6, 17, 18, 40, 41]. Although the findings were similar in both settings, education and urban setting have been shown to be indicative of higher social status [17]. Likewise, participants who were employed had more positivity in the psychosocial domain compared to those who were not employed [7]. Also a possible reason for this finding may be because older individuals with higher educational attainment have been reported to have a more positive attitude towards ageing [6, 17, 42]. As documented by Zhang and colleagues (2007), educated persons are less lonely and have a higher level of psychological well-being compared to those who have lower education [42]. Also, as reported in a study among older Malaysians, education offers better occupational opportunities for financial and social status [6]. In addition, educated individuals have better resources and occupational opportunity, social and financial status [6]. Although Luo and colleagues did not use the AAQ to measure the attitude of community based older persons towards ageing among, the study documented similar trends. Ageing according to the authors is not a uniform experience and some people seem to fare better than others. In Taiwan, education and urban-dwelling were found to be associated with increased positivity and better adjustment. Also, respondents who were urban-dwelling and had better self-rated health. [17]

Similar to previous research, this study revealed that respondents in both locations who were presently married or in a relationship had higher mean scores reflecting higher positivity in the psychosocial loss and psychological growth domains [7]. A possible explanation for this finding may be the fact that the partners provide support, positive emotion and contribute to each other's emotional well-being [43]. Likewise, spouses may be a source of motivation as they encourage their partners to carry out the prescribed health behaviour leading to better health outcomes. Furthermore, the emotional and instrumental support provided by the partner may act both as a buffer for stress and a direct source of positive emotion [7]

The research findings show an association between the three attitudinal domains and good self-rated health. This is similar to findings by Yunus et al (2015) in Malaysia and consistent with findings from other studies as well. [6, 10, 17, 19]. These results corroborate the notion that ageing is not a uniform experience [17] and some people fare better. Bryant and colleagues in their study revealed that increased scores in the psychological growth domain were associated with poorer health. The authors hypothesized that this may be because individuals with poor health are more likely to generate more coping responses to their condition [7]. Also, such these individuals develop more resilience [7]. The most common predictive factor across the domains of the AAQ was good self-rated health and QoL. Similar research documented positivity in the psychosocial loss and psychological growth domain associated with increased self-rated satisfaction with health [7].

Limitations

This study has some limitations worth mentioning. The cross-sectional nature prevents inference about the causal relationship among the factors. Because the study was conducted in the south-western part of the country generalisability of the results is limited and future research needs to be conducted in other geopolitical zones of the country. Also, the study utilized quantitative measures. Further enquiries using qualitative methods to explore the older people's attitudes will be of immense benefit. Despite these limitations, the findings from this study add to the growing body of evidence on attitude to ageing in a low resource setting in SSA study was conducted among community-dwelling older persons in rural and urban settings with a wide range of disability.

Conclusions

This study is unique as it provides the views of older persons themselves regarding their attitude towards ageing. To our knowledge, the first from a low and middle-income country in SSA, use the AAQ and participants are community-based which enhances generalizability as well as applicability.

The added value of this study is that to our knowledge, this is the first study which explores the attitude of older persons to ageing. The identification of associated factors and predictors provide the much-needed evidence base to plan targeted intervention and policy formation. However, more research needs to be conducted to gain more understanding about the role played by the attitudes of older persons towards ageing in Nigeria in ensuring their health and well-being. As shown in this study, older people who are at risk of a negative outlook for ageing such as those with minimal education and those living in rural

areas must be targeted for necessary intervention. Furthermore, the factors which will improve the lived experience of older persons thereby improving their overall QoL must be looked into especially as good SRH were predictive of better scores across all the domains. Other predictors such as employment emphasise the need to provide opportunities for older persons to be given opportunities to work or proxies such as volunteering may be beneficial. Considering the effect of education on the attitude towards ageing, opportunities to foster learning across the life span must also be explored. In terms of strengthening the physical functioning of older persons, appropriate strategies such as enabling the environment must be looked into. Regarding the psychosocial loss, social policies to promote social inclusion other enablers of healthy ageing such as social participation may be beneficial.

List Of Abbreviations

AAQ Attitude to Ageing Questionnaire

HIC High Income Countries

LGA Local Government Area

LMIC Low and Middle-Income Countries

QoL Quality of life

REDCap Research Electronic Data Capturing

SAGE Study of Global Ageing and Adult Health

UN United Nations

WHO World Health Organization

Declarations

Ethics approval and consent to participate

The study protocol was reviewed and approved by the University of Ibadan/University College Hospital Ethics Review Committee (UI/UCH Ethical review committee) number UI/EC/18/02/04

Verbal informed consent were obtained from study participants who were able to write. However for those who were unable to write, written consent was obtained and this procedure had been approved by the ethics committee approved this procedure.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests for the study

Funding

This research was supported by the Consortium for Advanced Research Training in Africa (CARTA). CARTA is jointly led by the African Population and Health Research Center and the University of the Witwatersrand and funded by the Carnegie Corporation of New York (Grant No–B 8606.R02), Sida (Grant No:54100113), the DELTAS Africa Initiative (Grant No: 107768/Z/15/Z) and Deutscher Akademischer Austauschdienst (DAAD). The DELTAS Africa Initiative is an independent funding scheme of the African Academy of Sciences (AAS)'s Alliance for Accelerating Excellence in Science in Africa (AESA) and supported by the New Partnership for Africa's Development Planning and Coordinating Agency (NEPAD Agency) with funding from the Wellcome Trust (UK) and the UK government. The statements made and views expressed are solely the responsibility of the Fellow.

Authors' contributions

All authors (EC, EO, LA) contributed to the study conception and design. Material preparation, data collection and analysis were performed by EC. The first draft of the manuscript was written by EC and all authors contributed to the previous versions of the manuscript. All authors read and approved the final manuscript

Acknowledgements

The authors would like to acknowledge the hard work by the field assistants and appreciate the participants for their time and contribution to the study. We also appreciate Mr Kunle Afolayan for his assistance with the statistical analysis.

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