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# Assessing The Factors That Influence Healthy Ageing in Nigeria: An Econometric Approach

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## ABSTRACT

*This study assessed the factors that influence healthy ageing in Nigeria using econometric approach based on a cross-sectional study of 500 consenting older adults (65 years and above) were successfully interviewed using structured and pre-tested questionnaire across 6 communities that made of Auchi in south-south region of Nigeria. The study adopted descriptive statistics and binary logistic regression model to identify socio-economic (education and income), lifestyle behaviour (regular diet and sleep pattern), psycho-social (social participation and social support) and physiological factors (access to healthcare and regular physical activities) and health-related (ability to perform daily activities) as predictor of healthy ageing among ageing population and significant associations were found at p-value less than 0.05. Findings revealed that 65.7% were men participants. Highest participants were the age group 65-69 with 36.5%. 46.3% were still living with their spouses. 63.1% were engaged in one work or the other but 26.9% received forty-one thousand naira and above monthly. 66.3% older adults lived several kilometers away from health facilities and 24.0% reported not being healthy at the time of the survey. Logistic regression model suggest that education, income, regular sleep, regular diet, social participation, social support, access to health care and physical activities significantly increase the likelihood of healthy ageing. The study highlights the need for targeted interventions and policy frameworks to support ageing populations, particularly communities in Nigeria.*

**Keywords:** Socio-economic factors, psychosocial factors, lifestyle behavioural factors, physiological factors, healthy ageing, older adults, econometric approach

## INTRODUCTION

Globally, it is widely acknowledged that the world's ageing population has become a global challenge (WHO, 2019; UNDESA, 2020; Thais et al., 2021). More people above the age of 65

  

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years are increasing than people of any other age (UN, 2019). And over the coming decades, this substantial growth will continue (UNDESA, 2015; WHO, 2019).There is conflicting evidence suggesting that older people today now live in good health better than their parents, so living longer does not guarantee that these extra years will be spent in excellent health (George, 2010; Chatterji et al., 2015;). International interest in how to promote healthier old age has grown as a result of the significant increases in life expectancy over the decades, along with medical and technological advancements, rising health and social care costs, higher expectations for older age, and better social and environmental conditions (WHO, 2015; UNDESA, 2019). Nowadays, living beyond 60 years is becoming more common in the history of man (UNDESA, 2015). The factors or resources that can extend life are very valuable. They offer the chance to re-evaluate not only what old age might be, but also how our entire life might proceed (Beard and Bloom, 2015). For example, there is evidence that many people in developed nations are revisiting fixed ideas of what becoming the aged, they are beginning to think on how to use these extra years in creative ways, such as starting a new career, extending their education, or following a forgotten passion (UNDESA, 2015). Additionally, as young people begin to anticipate longer lives, they may also arrange their lives in a new way.

Despite the fact that population ageing is a global phenomenon, people in different region of the world have been going through various demographic changes. For instance, despite the significant impact of AIDS and COVID-19, the population of ageing in Sub-Saharan Africa will continue to increase (UNDESA, 2020; WHO, 2020; World Bank, 2020). Although only 3 percent of persons in the region were 65 years or older before 2020 (WHO, 2020; WHO, 2022), projections indicate that figure will nearly double itself in less than 30 years (UNDESA, 2019). Nigeria, the most populous black nation in Africa with 206 million people has a very high potential of rapid growth rate of the older population in the years ahead (Araromi, 2015; NPC and ICF, 2019; African Development Bank, 2019; UNDESA, 2019; Akinyemi and Adedini, 2022). Nearly one in every four Nigerians is 65 years old and over and faces the day-to-day challenge of ageing (UNDESA, 2019). According to United Nations predictions, the proportion and number of elderly people in Nigeria are increasing dramatically (WHO, 2015), about 9.4 million individuals in 2020 were 65 years or older by 2050, it is anticipated that this number will reach 25.3 million and ensuring their health and well-being becomes a matter of urgent importance that requires immediate attention (NDHS, 2018; Ministry of Health, 2017; UNDESA, 2019). However, socio-economic disparities pose significant challenges to healthy ageing in Nigeria (Adeyemi, etal 2022; Adeyemi and Adeyemi-Gidado, 2024).

The widespread of poverty, socio-economic hardship, and changes in the traditional extended family structure are all factors contributing against Nigeria's ageing population (Adebowale et al., 2012; Okoye, 2012 and Abayomi, 2013). In addition, the COVID-19 pandemic has

  

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disproportionately affected older people of 65 years and over, who had previously been in good health (UNDESA, 2019). These provide a compelling reason for an increased focus on ageing population among scholars on how to strategize and optimize the healthy experience of ageing population. Similarly, the rise in older adult in sub-Saharan Africa and Nigeria in particular has stirred the interest of academics, researchers and NGOs in healthy ageing, which was hitherto unrecognized.

Generally, few studies have examined the impact of socio-economic disparities on healthy ageing (Meyer and Sullivan, 2003; Agunbiade and Ogunleye, 2012; Akinyemi and Adedini, 2012; Coleman and Ham ion, 2017; Ajayi and Akpan, 2019). This study aims to fill this gap by investigating this heightened interest in socio-economic disparities and their impact on health outcomes among older adults in Nigeria. Therefore, the study seeks to examine the factors that influence of healthy ageing among older adults in Nigeria. This study, which was part of a larger study, was aimed at investigating the impact of socio-economics, behavioural lifestyle, psychosocial and physiological factors on health outcomes of older adults and identify potential interventions to promote healthy ageing among older adults in Nigeria.

The WHO notes unequivocally in the preface of the first World Report on Ageing and Health that "healthy ageing is more than merely the absence of disease" (WHO, 2015).The first WHO Global Strategy and Action Plan on Ageing and Health which was unanimously endorsed by all WHO Member States during the World Health Assembly in May 2016, proposes a new definition of healthy ageing as "the process of developing and maintaining functional ability that enables well-being in older age" (WHO, 2020; WHO, 2021, WHO, 2022).

## MATERIALS AND METHODS

### Sample Survey Data

The study population comprises of all older adults of 65 years and above in the four Wards of Auchi community. It was a cross-sectional study of 500 consenting older adults who have resided in Auchi community for at least one year prior to study. Auchi is an urban centre and the administrative headquarter of the Etsako-West Local Government Council of Edo state, Nigeria. It is situated approximately on Latitude $7^0$ 4N$^{'}$ and Longitude $6^0$ 4E$^{'}$ of the Equator. The 193,585 people (2012 estimate from 2006 National Census, NPC, 2011) settled in a valley with rich alluvium deposit. The sample size of 500 for the study was determined using Cochran sample size formula (Cochran, 1963).

Sampling was done using a simple random design. Lottery method was used in selecting older adult from 2300 houses picked as the sampling frame. All the houses were listed and numbered. Each individual older adults selected was contacted and information was sort from them. With a

  

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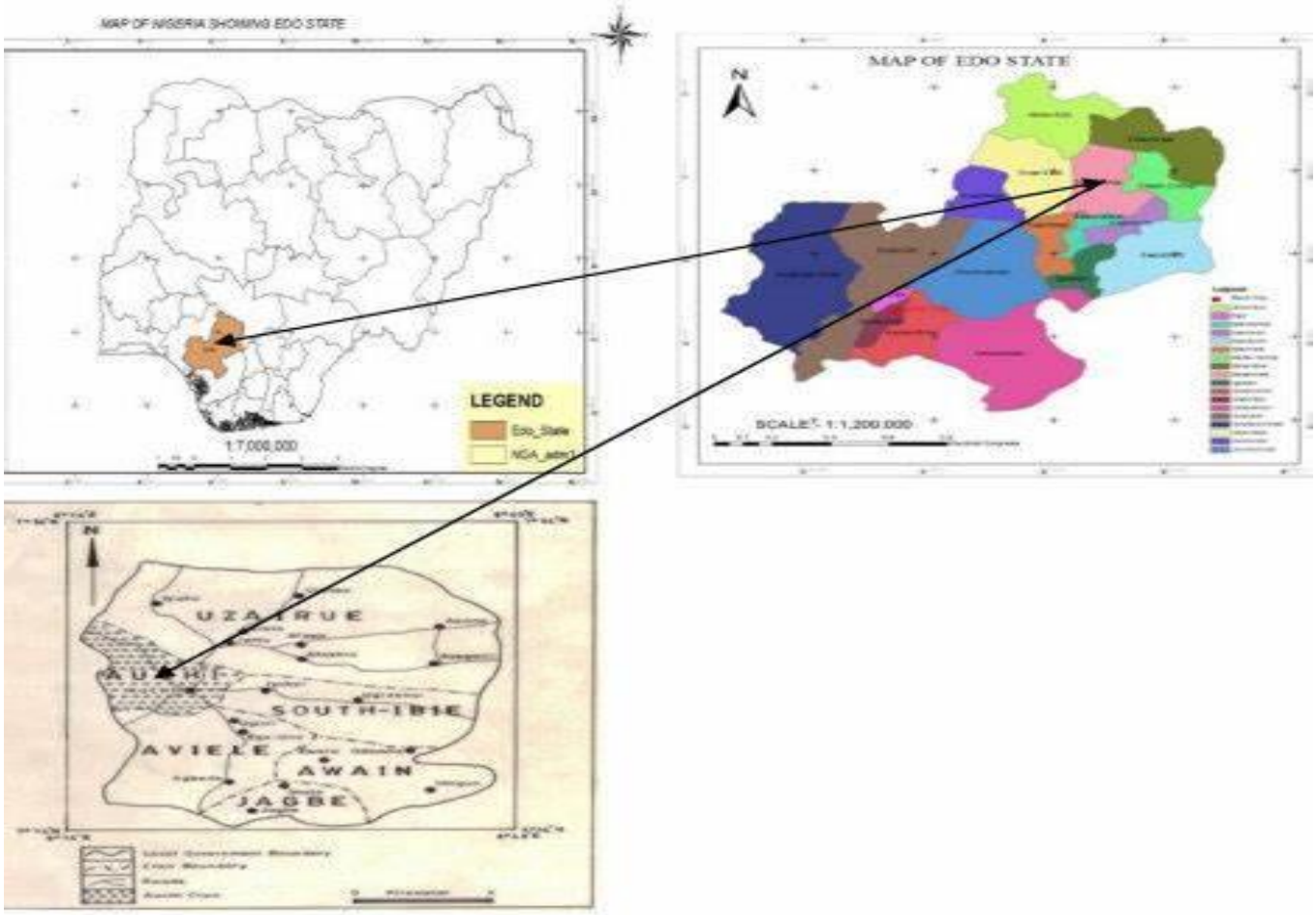
larger sample of 500 sizes, the simple random sampling design ensured high external validity that represents the characteristics of the larger older adult population.

**Map of Auchi Community in Edo State, Nigeria**




**Source:** State's Land and Surveys Ministry, Benin- City, Nigeria (2021).

The instrument for the study was a survey questionnaire developed on a nominal scale with a specific focus on indices of healthy ageing in Nigeria and socio-economic characteristics of the older adults under study. The research instrument was translated to Etsako Language, the predominant local dialect (in the community) for ease of communication. It was re-translated to English Language to ensure the original meaning was retained. The research instrument was pre-tested in Afuze (a semi-urban community in Owan-West Local Government Council) which is similar to the study location in terms of geographical location, culture, beliefs and lifestyle of the

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people. Twenty-five questionnaires were pretested and appropriate amendments were then made after the pre-test (Adeyemi, etal 2022; Adeyemi and Adeyemi-Gidado, 2024).

The data collected were coded and analyzed using statistical package for social science (SPSS version 23) while the research questions guiding the study were answered and tested with descriptive statistics to examine the proportion of socio-economic characteristics of the respondents, using percentage distribution and multivariate binary logistic regression model was used to identify socio-economic (education and income), lifestyle behaviour (regular diet and sleep pattern), psycho-social (social participation and social support) and physiological factors (access to healthcare and regular physical activities) and health-related (ability to perform daily activities) as predictor of healthy ageing among ageing population. In the end, the results were presented in texts and tables with adjusted odd ratio and the corresponding 95% confidence interval.

Informed oral consents were obtained from the participants before their participation in the study while written permission was sort and approved by the chairman Etsako-West Local Government Council. The permission was given before the commencement of the field survey.

**Variables**

- Dependent variable: Healthy ageing status (binary)
  i.e (1= healthy, 0= not healthy), defined based on self-rated health, ability to perform daily living activities.
- Independent Variables:
  - **Socio-economic factors**
    - Education (categorical)
    - Income (categorical)
  - **Lifestyle behavioural factors**
    - Regular diet (categorical)
    - Sleep pattern (categorical)
  - **Psycho-social factors**
    - Social participation (binary)
    - Social support (binary)
  - **Physiological factors**
    - Physical access to healthcare (binary)
    - Regular physical activities (binary)
  - **Demographic factors**
    - Age and gender (control)

  

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**Model Specification**

A logistic regression model was used;

Logistic regression is a statistical technique used to determine the relationship between predictors (independent variables) and a predicted variable (the dependent variable) where the dependent variable is binary in nature. Binary regression analysis uses a linear predictor function f(k,i) to predict the probability that observation (i) has outcome (k), of the following form:

$$f(_{k,i}) = \beta_{0,k} + \beta_{1,k}X_{1,i} + \beta_{2,k}X_{2,i} + \beta_{3,k}X_{3,i} + \beta_{4,k}X_{4,i} + \ldots\ldots + \beta_{m,k}X_{m,I} \quad \text{(i)}$$

Invariably, it is of the form;

$$\gamma_{k,i} = \beta_{0,k} + \beta_{1,k}X_{1,i} + \beta_{2,k}X_{2,i} + \beta_{3,k}X_{3,i} + \beta_{4,k}X_{4,i} + \varepsilon_{k,i} \quad \text{(ii)}$$

In this study, the model took the form;

$$(HA) = \beta_0 + \beta_1(SDE) + \beta_2(LBF) + \beta_3(PSF) + \beta_4(PHF) + \varepsilon_I \quad \text{(iii)}$$

where;

$HA$ - healthy ageing

$(SDE)$- socio-demographic/economic characteristics,

$(LBF)$ - lifestyles behavioural factors,

$(PSF)$ - psycho-social factors,

$(PHF)$ – physiological factors

$\beta_0$ – healthy ageing intercept (constant),

$\beta_1$–regression coefficient i.e standardized regression weight that quantifies the direct effect of socio-demographic/economic factors on healthy ageing within the model.

$\beta_2$-regression coefficient i.e standardized regression weight that quantifies the direct effect of lifestyle behavioural factors on healthy ageing within the model.

$\beta_3$-regression coefficient i.e standardized regression weight that quantifies the direct effect of psycho-social factors on healthy ageing within the model.

  

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$\beta_4$-regression coefficient i.e standardized regression weight that quantifies the direct effect of physiological factors on healthy ageing within the model.

$\varepsilon_i$ – the error term.

## ANALYSIS AND FINDINGS

**Table 1: Summary of the Descriptive Analysis on Socio-Demographic/Economic, Lifestyle behaviour, Psycho-social and Physiological factors of Older Adults**

| Univariate Variable Category | Frequency (%) |
|---|---|
| **Age Group** | |
| 65 – 69 years | 183 (36.2) |
| 70 – 74 years | 100 (20.2) |
| 75 – 79 years | 97 (19.4) |
| $80^+$ years | 119 (24.0) |
| Mean $\pm$ SD | 2.31 $\pm$ 1.20 |
| **Educational Level** | |
| No formal education | 56 (11.2) |
| Quranic education | 26 (5.2) |
| Primary education | 132 (26.2) |
| Secondary education | 217 (43.4) |
| Tertiary education | 69 (13.8) |
| **Monthly Income** | |
| Less than ₦20,000 | 197 (39.3) |
| ₦20,000 – ₦30,000 | 104 (20.8) |
| ₦31,000 - ₦40,000 | 65 (13.0) |
| ₦41,000 and above | 134 (26.9) |
| **Regular Sleep Pattern** | |
| Less than 8 hours per day | 166 (33.2) |
| 8 hours per day | 114 (22.8) |
| More than 8 hours per day | 220 (44.0) |
| **Regular Diet** | |
| Carbohydrate | 78 (15.6) |
| Protein | 18 (3.6) |
| Carbohydrate/Protein | 329 (65.8) |
| Vegetarian | 75 (15.0) |
| **Social Participation** | |
| High | 284 (56.8) |
| Low | 216 (43.2) |
| **Social Support Status** | |

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| | |
|---|---|
| High<br>Low | 260 (52.7)<br>240 (47.3) |
| **Basic Physical Activity**<br>Yes<br>No | <br>380 (76.0)<br>120 (24.0) |
| **Access to Health Care**<br>Within walking distance<br>Several kilometers | <br>169 (33.8)<br>331 (66.2 |

The table 2 presents logistic regression on socio-economic, lifestyle behaviour, psycho-social and physiological factors predicting healthy ageing among older adults in Nigeria. The analysis shows that education (OR = 2.655, P = 0.013) and monthly income of older adults (OR = 2.750, P = 0.001) were significant predictors of healthy ageing outcomes. Likewise, regular sleep pattern (OR =1. 486, P =0.000) and regular diet (OR =0.352, P =0.030) were also significant predictors.

In the same vein, social participation (OR = 1.447, P = 0.000) and social support (OR = 2.621, P = 0.000) were significant predictors of healthy ageing outcomes. Regular physical activity (OR = 2.897, P = 0.036) and access to healthcare (OR = 0.647, P = 0.026) were also significant predictors of healthy ageing outcomes.

**Table 2: Logistic Regression on Socio-Demographic/Economic, Lifestyle behaviour, Psycho-social and Physiological factors Predicting Healthy Ageing among Older Adults**

| Multivariate Variable | Odd Ratio [β] | P-Value Sign | 95% CI for Exp [β] | |
|---|---|---|---|---|
| | | | Lower | Upper |
| Education | 2.655 | 0.013 | 0.948 | 7.436 |
| Income | 2.750 | 0.001 | 1.965 | 16.822 |
| Regular Sleep Pattern | 1.486 | 0.000 | 0.356 | 0.663 |
| Regular Diet | 1.533 | 0.030 | 0.998 | 1.833 |
| Social Participation | 1.477 | 0.000 | 0,263 | 1.514 |
| Social Support | 2.621 | 0.000 | 0.705 | 2.864 |
| Regular Physical Activity | 2.897 | 0.036 | 0.184 | 0.539 |
| Access to Health Care | 0.647 | 0.026 | 0.311 | 1.130 |

**Statistically Significant at P= 0.05 level; β – odd ratio, P-Value– Sign**

Age and gender were not statistically significant in the model, suggesting that functional healthy is more influenced by socio-economic, lifestyle behaviour, psycho-social and physiological factors.

  

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## CONCLUSION

This study identifies critical of healthy ageing in Nigeria and confirm the importance of socio-economic, lifestyle behaviour, psycho-social and physiological factors. Policy makers should prioritize income security, access to education for all ages, make more affordable healthcare for low income ageing populations through Micro Health Insurance (MHS) programs and introduce mobile Health Clinics and Telemedicine services in other to improve healthcare access. There should be a policy reform to increase funding to public health initiatives and support community-based programs that encourage regular sleep, regular diet, social support and social activity for older adults. Future research should explore longitudinal study.

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**Note:** The spelling and definition of 'ageing' in this study is according to the style of the World Health Organization (WHO).

  