Health Seeking Behaviour, Food Habit and Nutritional Assessment of an Elderly Group in Ile Ife, Nigeria

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Abstract
Health behaviour is a set of actions taken to protect, promote and maintain the health of an individual. In this study, health behaviour, food habit and nutrition were assessed using various health, socioeconomic and anthropometric indices. For example, a study carried out in the United States showed that elderly to become nutritionally vulnerable due to poor health [5]. There was a validation of the semi-structured questionnaire and a checklist for screening malnutrition. Each item was scored one point where the respondent was vulnerable in regard to that item. The scores thus showed the degree of vulnerability, i.e., the higher the score, the vulnerable the person is likely to be. In interpreting, the score of the respondent, the standard of the nutrition screening initiative was adopted where 10% was regarded as not vulnerable, 10–30% as moderately vulnerable, and greater than 30% as highly vulnerable. There were records of data from the questionnaire using SPSS version 16 (Statistical Package for Social Science data Management Company) software. For data analysis, the SPSS software was used. The results revealed health behaviours included going for medical check-ups (38%) the use of quality drugs (70%) and a preference for traditional medicine (28%). Food habit divulges the fact that 63% eat thrice daily; 50% buy food from vendors and 94% have favourite foods. Factors such as nutrition knowledge and body mass index (BMI) correlated significantly with health behaviour (p<0.05). The mean nutritional vulnerability score was higher for women than men (p<0.05). The most vulnerable elders were those that patronised traditional health facility, fell sick weekly and had inconsistent access to food.

Keywords: Food security; Elderly; Vulnerability; Ile ife; Nigeria

Introduction
Health behaviours are a set of actions that the elderly perform to ensure they eat and keep well, and protect, promote and maintain health [1,2].

Health seeking behaviour is preceded by a decision making process that is further governed by individual and/or household behaviour, community norms and expectations. For this reason, the nature of care seeking is varied depending on cognitive and non-cognitive factors that call for a contextual analysis of care seeking action. This context may include factors such as cognition or awareness, as well as socio-cultural and economic factors [3].

The interplay of these factors is central in the final choice of a care seeking option. This interaction is such that no one option is selected and a series of options may be observed reflecting a pattern of care seeking. Typically, a health care seeking model will involve recognition of symptoms and the perceived nature of illness, followed initially by appropriate home care and monitoring. This may entail seeking care at a health facility, followed by medication and compliance. Treatment failure may require a return to the health facility or an alternative care provider. Thus, client based factors, provider based factors, caretaker perceptions, and social and demographic factors, cost, social networks and biological signs and symptoms work synergistically to produce a pattern of health seeking behaviour [4]. This leads to an observation of a sequential behaviour pattern often drawn from a redefinition of illness and a multiplicity of treatment sources.

Whatever the health seeking behavior is, the resultant goal, is for an elder to be in good health and nutritional status. In Africa, the nutritional status for the majority of elders is affected by poor health [5]. For example, a study carried out in the United States showed that poor nutrition and malnutrition occurred in 15–50% of the elderly population among men of Afro-Caribbean origin [6,7]. Similarly, nutrition researchers observed that elders in Africa were nutritionally vulnerable [8]. In Nigeria, and particularly in the southwest region, access to water and other basic amenities is poor, and more than 40% of households have severe food insecurity [7]. As a result of household insecurity, the elderly often suffer negative health consequences as they typically depend on others for their daily needs [9]. This is a crucial national matter as the elderly in Nigeria is projected to double before 2025. It is thus vital that plans be made for the projected upcoming health and nutrition demand. To quantify future needs, it is necessary to assess the health behaviour and nutritional vulnerability within the community.

Subject and Methods
Area of study
Ife Central Local Government Area of Osun State, Nigeria was purposively selected for the study. The area lies approximately between latitudes 7°28’ and 7°31’ North and longitudes 4°30’ and 4°31’ East of Greenwich Meridian. It is bounded in the north by the Ede South and Ede North Local Government Areas and in the west by Atakumosa Local Government Area. According to the 2006 Population Census (NPC, 2006), the Local Government Area has an estimated population of 167,254, comprising 84,653 males and 82,601 females [10].

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The study area is dominated by the indigenous Yoruba ethnic group, who speak the Yoruba language. Farming of tree crops is a significant activity in the area; however, many people are artisans, traders or perform government work. The predominant religions practiced by inhabitants of Ile Ife are Christianity, Islam and traditional religion, with Christianity and Islam practiced by the majority.

**Sample size and sampling procedure**

**Sample size:** The sample size, n, was determined using Fisher’s formula [11], namely:

\[ n = \frac{Z^2 \cdot PQ}{d^2} \]

Where P is the prevalence of the attribute.

q is 1-P i.e. the proportion of the population that does not have the characteristic.

Z is the standard normal deviate for the 95% confidence level (1.96).

d is the precision i.e. the level of accuracy desired or sampling error or one half of the width of the confidence interval (usually set at 0.05).

The Mini Nutritional Assessment [5] review of the literature on the nutritional status of the elderly by the Nestle Nutrition institute found that 9% of the elderly had some form of malnourishment. We adopted this percentage as the proportion of the population having the characteristic being measured (P). A 95% level of confidence was chosen (i.e. \( \alpha = 0.05 \), which is the value for d in the formula).

This gave us a sample size of 139. An error consideration of 20% was allowed for which provided a total sample size of 167. This number was rounded up to the nearest hundred such that the final sample size was 200.

**Sampling procedure:** The target population for the study was male and female elders that lived in the study area that were at least 60 years of age. A multistage sampling procedure was adopted for sampling the respondents. The Ife Central Local Government has 11 wards. Respondents were sampled from two-fifths of the wards following guidelines from the World Health Organization 6 (WHO) sampling manual [11]. Thus, four wards were used to recruit the respondents. The respondents were recruited equally from among the four wards, i.e., 50 respondents were chosen from each ward. Each ward had an average of 24 streets. Two-fifths of the streets were also randomly chosen which gave 10 streets per ward. Thus, five respondents were randomly chosen per street, to make up the total 200 respondents.

**Data collection**

Data collection was done using interviewer administered semi-structured questionnaires. This was carried out in Ile Ife town of Osun state Nigeria during the morning and afternoon hours of the day at the residential places of the respondents. The questionnaires contained both open and closed-ended questions. The duration of the study was three months. The questionnaire captured the demographic and non-demographic characteristics of the respondents such as food security and food habit. The questionnaire also considered the health seeking actions of the elderly.

There was a checklist adopted from the nutritional screening initiative for assessing the vulnerability status of each of the respondents. The checklist was modified to suit the environment in Nigeria [12]. Other items on the checklist included: food intake, economic, health, family life and functional capacity.

Each item scored one point where the respondent was vulnerable in relation to nutrition. In interpreting the score of the respondent, the standard of the nutrition screening initiative was adopted where 10% was regarded as not vulnerable, 10–30% as moderately vulnerable and greater than 30% as highly vulnerable [5].

**Anthropometric measurements**

Anthropometric measurements were obtained using international standards and procedures. Locally constructed stadiometers were used for measuring height. Henderson bathroom scales, which have a high sensitivity, were used to measure weight [13].

**Pre-test:** To standardize the questionnaire and ensure the validity of the actual exercise, a pre-test exercise was carried out in Ipetumodu, Ife North Local Government, which is outside of the study area.

The questionnaires were administered to 40 elderly people. The data were documented and analysed with the SPSS software (Statistical Package). The results were used to revise the questionnaire and plan the definitive fieldwork.

**Results**

**Sociodemography and health seeking behaviour**

Table 1 shows the average age of the 200 respondents was 71 years and all respondents were greater than 60 years of age, meeting the WHO elderly classification [14]. Approximately 45% of respondents were between 60 and 69 years, just about 30% were between 70-79 years and all respondents were greater than 60 years, meeting the

| Variables          | Frequency | Percentage |
|--------------------|-----------|------------|
| Age of respondents |           |            |
| 60-69years         | 91        | 45.5       |
| 70-79years         | 59        | 29.5       |
| 80 years up        | 50        | 25.0       |
| Total              | 200       | 100%       |
| Education          |           |            |
| No formal education| 96        | 48.24      |
| Primary school     | 60        | 30.15      |
| Junior Secondary /college | 27 | 13.57 |
| Tertiary institution| 11       | 5.53       |
| Religious /Quranic | 5         | 2.51       |
| Total              | 200       | 100        |
| Religion           |           |            |
| Christianity       | 147       | 73.5       |
| Islam              | 53        | 26.5       |
| Total              | 200       | 100        |
| Marital status     |           |            |
| Married            | 115       | 57.5       |
| Widowed/widower    | 81        | 40.5       |
| Separated          | 4         | 2.0        |
| Total              | 200       | 100        |
| Occupation         |           |            |
| Petty trader       | 102       | 51.00      |
| Artisan            | 21        | 10.50      |
| Retiree with limited skill | 20 | 10 |
| Farming            | 19        | 9.50       |
| Religious work     | 9         | 4.50       |
| Retiree with skill  | 7         | 3.50       |
| Business men       | 4         | 2.00       |
| Caterer            | 3         | 1.50       |
| Civil servant      | 2         | 1.00       |
| Pensioner          | 4         | 2.00       |
| Others with no specific work | 9 | 4.50 |
| Total              | 200       | 100        |

Table 1: Socio-demographic Characteristics of the Respondents.
70 and 79 years and roughly 25% were between 81 and 100 years. Approximately 61.5% of the respondents were women, possibly due to socio-cultural roles where women tend to stay longer at home than men. Most of the respondents had little or no education, with close to 80% belonging to the low education category i.e. those who had barely primary education. This is likely to have affected and limited their income-generating activities. More than half of the respondents who indicated their occupation (51.0%) were categorized as being engaged in ‘petty trading’. The other two main categories of occupation were artisans (10.5%) and retirees with limited skills (10%) as shown in Table 1.

Food habit and health of the respondents

The food habit of the elderly studied divulged the fact that more than half had food preferences, take fruit daily (61%), eat thrice daily (63) and patronized food vendors (50%), 35% of them have the habit of skipping meals 19% drink alcohol and few were smokers as shown in Table 2.

The habit of alcohol consumption increases digestion problems (r = 0.15 < 0.05). Smoking correlates negatively with regular income (r = -0.18; p<0.05) smilling ability (r = -0.15; p<0.05) and disability (r = -0.23; p<0.05).

The habit of daily fruit intake over years had a negative relationship with frequency of illness/attendance in hospitals. (r = -0.17 p<0.05), constipation (r = -0.15; p<0.05), Digestion (r = -0.20; p<0.05) and fever (r = -0.25; p<0.05). The use of mineral supplement had a negative relationship with swallowing problems (r = -0.23; p<0.05), Poor appetite (r = -0.25; p<0.05). The knowledge of nutrition had a positive relationship with swallowing problems (r = 0.32; p<0.05) and care of diseases (r = 0.32; p<0.05).

Health seeking behaviour of the respondents

The different health seeking behaviours of the respondents were identified. A large proportion (85.2%) of the respondents paid visits to at least one healthcare facility (Table 3). Almost 37% of the respondents were not aware of the presence of any health facility within their vicinity, and 14.8% considered that the healthcare facilities that they visited did not give them an adequate health service. A total of 27.5% of respondents preferred traditional medicine table 2 to orthodox medicine, especially those respondents with no formal education. Many of these respondents listed cost and use of local herbs as the reasons for their preference for traditional medicine. Some respondents believed that orthodox medicine would not work for them. A total of 12.5% of respondents were unable to describe their health challenges to doctors.

Only 38% of the respondents routinely attended medical checkups and approximately 47.5% had visited the hospital in the last month. A total of 11.5% of the respondents did not follow doctors’ prescriptions. 30.5% were not concerned about buying fake drugs, 32% would buy cheaper drugs and 23.7% did not check the expiry dates of drugs purchased. A total of 30.5% of the respondents were not anxious when they noted symptoms suggesting ill health such as pain, swelling or sores and wounds. In fact, 43.4% of the respondents did not visit the hospital when they had these symptoms. Only 7% of the respondents suggested that their culture or religion prevented them from visiting an orthodox hospital, which implies that there is no significant effect of religion on health behaviour. The knowledge of nutrition had a significant association with attendance at routine medical checkups (r = 0.28; p<0.05), following a doctor’s prescription (r = 0.31; p<0.05) and careful use of drugs (r = 0.32; p<0.05).

Nutritional status vulnerability, food security and health behaviour

Nutritional vulnerability is the presence of risk factors for malnutrition. In terms of differences between the sexes, the male nutritional vulnerability score was higher than the female score (15 compared to 13; p<0.05). Most of the elderly (75%) were in the category of food insecurity with more women than men. Male respondents are more secured (37.7%) than their female counterparts (17.9%). A greater proportion of women found in the lower grades of insecurity

| Variable **| Frequency | Percentage | |
|------------|-----------|------------|---|
| 1 Routine Medical Checkups | | | |
| Yes | 76 | 38 |
| No | 124 | 62 |
| Total | 200 | 100 |
| 2 Follow Doctor’s Prescription | | | |
| Yes | 177 | 89 |
| No | 23 | 11 |
| Total | 200 | 100 |
| 3 Check for Fake drugs | | | |
| Yes | 139 | 69 |
| No | 61 | 31 |
| Total | 200 | 100 |
| 4 Awareness of Orthodox Health Facility | | | |
| Yes | 127 | 64 |
| No | 73 | 36 |
| Total | 200 | 100 |
| 5 Preference for Traditional Health Facility | | | |
| Yes | 55 | 27.5 |
| No | 145 | 72.5 |
| Total | 200 | 100 |
| 6 Check for Expiry Date on Drugs | | | |
| Yes | 152 | 76 |
| No | 48 | 24 |
| Total | 200 | 100 |

Table 3: Health Behaviour of the Respondents.

** No Total in view of multiple Responses

Table 2: Percentage Distribution of food habit and health condition of respondent.
and, more women (11.4%) suffer ‘Severe Insecurity’ than men (2.6%) (Table 4).

Elderly males were less exposed to associated factors of nutritional vulnerability than elderly females (r = 0.44; p<0.05). The difference was most pronounced in the ‘highly vulnerable’ group where 20.3% of women were classified as highly vulnerable versus 18.2% of men (p<0.05). The respondents that were classified as nutritionally vulnerable tended to patronise traditional medicine facilities (r = 0.54; p<0.05). There was also a significant relationship between distance to a health facility and nutritional vulnerability (r = 0.43; p<0.05), and also attendance at routine checkups at the hospital and nutritional vulnerability (r = 0.34; p<0.05). Food security relates significantly with nutritional vulnerability (X2 = 41: p<0.05).

Body mass index (BMI) and health challenge

The relationship between sex and BMI is presented in table 5. Less than half of the population studied was within the normal nutritional status range (19.5% of males; 25.5% of females). The prevalence of being ‘underweight’ was 13% for men and 8% for women; the prevalence of being ‘overweight’ was 29%. A total of 16% of respondents were classified as obese (11.5% with mild obesity, 3% with moderate obesity and 1.5% with morbid obesity. Of these, the male respondents that were mildly obese made up 0.5% of the sampled population, while the female respondents that were mildly obese made up 11%. The male respondents that were moderately obese made up 1% of the sampled population, while the female respondents made up 2%. Interestingly, none of the male respondents were morbidly obese, with all 1.5% of respondents being female.

There were strong gender differences related to weight. More women than men were underweight, and a greater proportion of men (51%) than women (45%) were in a healthy weight range. Notably, a significantly higher proportion of women (16%) than men (4%) (p<0.05) were obese. The BMI relates significantly with routine checkup; food security and nutrition knowledge (p<0.05).

Discussion

In this study the demographic characteristics were observed to relate significantly with health actions. There were strong gender differences in relation to health behaviour. This study show that men demonstrate better health seeking behaviours in regard to diet and perhaps more empowered to bear the cost of health care. A significant relationship was observed in routine medical check up and gender (X2 = 4.39; p<0.05). There are also gendered issues in food security among the elderly. This is related to the fact that women suffer deprivation of various sorts including access to food and when to eat especially if the husband has not had his own share [15,16].

This observation is similar with other studies where demographic characteristics are determinant models of health seeking behaviour in developing countries [17] reported that educated women influence choice of health facility among Nigerians and that they may be able to negotiate with health provider, better health treatment conditions for themselves and their children than non-educated women [18].

On literature, the decision to engage with particular medical channels is influenced by a variety of socio-demographic variables: sex; age, the social status of women, the type of illness, access to services and perceived quality of service [19,20].

The current study identified the knowledge of nutrition had a significant association with attendance at routine medical checkups (r = 0.28; p<0.05), following a doctor’s prescription (r = 0.31; p<0.05) and careful use of drugs (r = 0.32; p<0.05).

It was noted that those respondents with poor nutrition knowledge also had a preference for non-orthodox health facilities; however, those with good health education and that followed doctors’ prescriptions tended to be in the healthy BMI range. The BMI also correlated significantly with regular attendance at routine checkups (r = 0.32; p<0.05) and food security.

It was observed that food security and nutritional vulnerability were significantly related (r = 0.41; p<0.05). Food security is a critical element in the discussion of multi factorial system of health and well being of any population including the elderly.

The study showed that a quarter of the elderly were food secured, i.e., had access to the required level of nutrition for healthy living. By contrast, 75% of respondents were not food secured. This is of serious concern for health care services in the study area. It implies that the medical care that many people require could be avoided if the elderly are food secured. A significant relationship occurred between those on a low budget for food and those that attended routine checkups (r = -0.21; p<0.05). Food security also correlates significantly with obeying doctors order (r = 0.23 p<0.05) medical routine checkups (0.13) and regular income (r = 0.66; p<0.05) these further confirms the seriousness and importance of food security to health of the elderly.

Table 5: Indices of Nutritional Status by Sex.

| Table 5: Indices of Nutritional Status by Sex. |
|-------------------|-------------------|-------------------|-------------------|-------------------|
|                  | Male              | Female            | Total             |
| %                | %                 | %                 | %                 |
| Underweight      | 12.98             | 10.12             | 11.02             |
| Overweight       | 50.65             | 51.29             | 50.94             |
| Obese            | 32.47             | 38.59             | 35.28             |
|                  | 10.90             | 10.24             | 10.57             |
| %                | 72.65             | 70.18             | 71.42             |
| %                | 19.41             | 27.20             | 23.31             |
| %                | 72.65             | 70.18             | 71.42             |
| %                | 19.41             | 27.20             | 23.31             |
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| %                | 19.41             | 27.20             | 23.31             |
| %                | 72.65             | 70.18             | 71.42             |
| %                | 19.41             | 27.20             | 23.31             |
rapidly, the government should put in place programmes that would ensure good health behaviour, access to food and health care.

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