

The cover of the journal features a vibrant green background with a photograph of a cornfield. In the foreground on the right, a large, detailed image of a yellow corn cob is shown, partially shucked to reveal the kernels. The title is printed in large, bold, red letters with a yellow outline, centered on the cover.

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ABSTRACT

This study analysed the nutritional status and health conditions of the older adults making Odoraboyejo Community, Ijebu-Igbo, Nigeria a case study. A sample of seventy-five (75) respondents, at least 60years of age was drawn using the systematic random sampling procedure. Data were collected on demographic and socio-economic characteristics, food and feeding habits, dietary patterns, health conditions and physical defects of the respondents. Empirical results revealed that older adults of the female sex predominate (about 63percent) in the study area. Also, most of the older adults were widowed (49percent), above 70years (37percent), and on self-employment (49percent). Three-quarters of the respondents used pit latrines while 16percent used nearby bush for defeacation. Twenty-four (24) percent had access to well water as the only water source. About 55percent had chewing problems with only 24percent on medication. Also, about 27percent were dependants – on their offspring and close relations with an additional 12percent revealing no source of upkeep. Nonetheless, 36percent of them were into alcohols. Anthropometric indices further confirmed the incidence of a severe under-nutrition among the respondents with eye and conjuctival dysfunction, dental caries and body pains being the most reported ailments within the community. Appropriate programmes should be instituted within the Ijebu North Local Government Area to address the malnutrition and other afore-listed medical problems of the older adults in the study area.

INTRODUCTION

Lately, there is growing interest among researchers worldwide on issues pertaining to the health and nutrition of older people. Chilima (2000) regarded older adults in a population as those of at least 60 years of age. In 1980, statistics indicated that 8.5 percent of the world's population was over 60 years of age. The proportion, however, increased to 9.4 percent in 1990, and to 11 percent in 2000. It is estimated that by 2020, this age group will constitute 13.3 percent of a projected world population of 7.5 billion. More importantly, about three-quarters of the projected one billion elderly will reside in developing countries (Solomon, 2001).

Ageing and senescence are both inescapable outcomes in all living organisms. The ageing process, however, is greatly influenced by what and how one eats. As such, the way people eat, select food rather than the chemicals that pass on the lips may well be better predictors of health (Kouris *et al.*, 1991). Regular, balanced diet add life to the years of the aged, but a majority of them have less income, low security, less social contact, are crippled by diseases of old and are unable to get good food (Hutchinson and Munro, 1991).

The aged form a special vulnerable group in which nutritional disorder, and malnutrition are most likely to occur. The elderly and ageing individuals are thus intrinsically susceptible to under-nutrition and its associated infectious diseases, excessive and imbalanced intakes, and to the concomitant risk of chronic diseases (Solomons, 2001). As such, a need exists for researches that will provide empirical evidence to advocate and/or support policies and programmes to address the health and nutritional needs of the growing elderly population especially in developing countries. This is more so, since there are now implementable guidelines, and simple and easy tools for assessing nutritional status and vulnerability among older people (Ismail, Manandhar and Peachey, 1999; Chilima, 2000).

Presently, several empirical studies have been carried out expressly to guide policy formulation and programmes on older citizens in the developing countries of Asia and Africa (Manandhar, Pervin, Anklesaria and Ismail, 1997; Chilima and Ismail, 1998; Pieterse, Manandhar and Ismail, 1998; Chilima, 2000). These studies have noted the following about older people (Chilima, 2000):

- (i) In developing countries, most old and elderly people do not retire. They continue to contribute to family income by providing essential child-care, helping with household work and in agricultural production.
- (ii) Out-migration in developing countries is changing the common practice whereby older people reside within the extended family structure. Small families resulting from the out-migration are often under severe economic stress. Besides, such families may be coping with the deaths/debilitation of younger adults resulting from HIV/AIDS.
- (iii) Government institutions and NGOs working with households rarely take cognizance of the needs of older members.
- (iv) Government institutions and NGOs involved in emergency and conflict situations mostly do not appreciate the special food needs of older refugees. Poor dentition, make it difficult for the older people to chew. Also, the nutritional content of the general ration is often inappropriate for older people since they require relatively more vitamins and minerals, and less energy than do younger people.
- (v) Due to age-related changes in body composition and structure, standard indicators for assessing nutritional status in younger adults are not necessarily appropriate for older adults.

In Nigeria, there seems to be no record of any comprehensive or coordinated, and specially designed health care

policies and programmes to ensure the availability, accessibility and adequacy of provision of appropriate nutrition and health care services for the aged, and in particular for the infirmed older adults in the rural areas (Anyika, 2001). This research, carried out on the older people in the Odoraboyejo community, Ojowo, Ijebu-Igbo, Ogun State, Nigeria, is thus aimed at arousing the consciousness of government and health workers, and policy makers, on the need for appropriate policy and programmes to take care of the nutrition and health conditions of the aged in rural, albeit remotely located, communities and neighbourhoods in Nigeria. Specifically, empirical evidence is provided on: (i) the socio-demographic profile of older adults in Odoraboyejo Community; (ii) their life-style, and feeding and nutritional status; and (iii) the sanitary conditions and environmental / health status of the older adults in the community.

MATERIALS AND METHODS

The Study Area

For the purpose of the study, a survey was carried out in Odoraboyejo Community in Ojowo, Ijebu North Local Government of Ogun State. This community is inhabited mainly by the Ijebu people – a major Yoruba dialectic group in the south-west geo-political zone of Nigeria. The community is predominantly an agrarian setting with farming being the main or sole occupation of the residents.

Sample and Sampling Procedure

A systematic random sampling procedure was used to draw the survey respondents. Specifically, seventy-five (75) respondents who were at least 60years old and who had been living continuously in the community for upwards of five years were interviewed during the survey, which was conducted between November 2002 and June 2003.

Instruments for Data Collection and Analysis

In the study, interviews were conducted with the older people. Structured questionnaires were used to elicit information on demographic and socio-economic characteristics, food and feeding habits, dietary patterns, health conditions and physical defects in the community-dwelling elderly respondents in the study area. In addition, anthropometric indices such as height, weight, arm circumference, skin fold thickness and mid upper arm circumference were taken to assess nutritional (and health) status of older people in the community (see Manandhar, et al., 1997; Chilima and Ismail, 1998; Pieterse, et al., 1998; Chilima, 2000).

Specifically, a calibrated tape – measure, was used to measure the height, arm circumference and mid upper arm circumference (MUAC), while a weighing scale was used to take the weight measures of older adults in the community. A caliper was used to measure the skin fold thickness. The body mass index (BMI) was thereafter estimated as a ratio of the weight (kg) to the square of the height (m^2) of the individual respondents included in the sample. For reference purpose, the following classifications have been suggested by World Health Organisation' (WHO) Expert Committee on Physical Growth (see UN ACC/SCN-IFPRI, 2000):

Mild underweight	(BMI = 17.00 – 18.49kg/m ²)
Moderate underweight	(BMI = 16.00 – 16.99kg/m ²)
Severe underweight	(BMI below 16.00kg/m ²)
Grade 1 overweight	(BMI = 25.00 – 29.99kg/m ²)
Grade 2 overweight	(BMI = 30.00 – 39.99kg/m ²)
Grade 3 overweight	(BMI above 40.00kg/m ²)

Moreover, Chilima (2000) has noted that BMI below 18.50kg/m² indicate the prevalence of under-nutrition while BMI below 16.00kg/m² indicate severe under-nutrition.

Descriptive analytical tools including frequency tabulation and percentages were used to analyse and present the study data.

Results and Discussion

Socio-demographic Profile

Tables 1 and 2 present the demographic and socio-economic characteristics of the older adults included in the study sample. As shown in Table 1, majority (62.67percent) of the respondents were of the female gender. Thus, older adults of the female sex predominate in the Odoraboyejo Community. Fairly equal proportions of the respondents were married (48percent) or widowed (49.33percent). Also, 37.33percent of the respondents were above 70years old. Consequently, married or widowed members of the community who mostly, were older than 70years of age appeared to form the more vulnerable segment of the respondents drawn from the Odoraboyejo Community. By implication, intervention efforts should be focused particularly on this vulnerable group within the community.

In Table 2, the socio-economic status of the respondents was analysed. Although, 49.33percent of the older adults were on self-employment and could be considered as self-supporting and financially independent, 26.67percent were dependants - on their children and other close relations. An additional 12percent of the respondents indicated no source of upkeep. Further, only 12percent of the older adults in the sample considered their incomes quite adequate while a sizeable majority (61percent) regarded their upkeep incomes as inadequate. The bulk (about 83percent) of the respondents were however either farmers (46.67percent) or self-employed in business or petty trade (36percent).

The finding that 38.67percent of the respondents were either dependants on their children/relations or indicated no source of upkeep suggests the existence and operation of a household-and/or community-level, social networks directed at sustaining the

aged and the infirmed within the community. This finding further suggests a scope for government intervention within the community especially in terms of the provision of social security (or income support) for the aged. In Odoraboyejo Community, like in most rural communities in Nigeria, agricultural work and labour intensive occupations are the predominant engagement of the people (Omotola et al., 2001). As such, physical (or functional) ability at old age is a critical factor that can determine the ability of older adults to sustain their livelihoods or overall socio-economic well – being.

Life-style, Feeding Habits and Nutritional Status

The life-style, feeding habits and nutritional situation of older people in the study area are analysed in Tables 3 to 5. Majority (73percent) of older adults in Odoraboyejo Community took residence with relations within the community; thus confirming the existence of a social or extended families network among the residents (Table 3). Moreover, 57.33percent of the respondents were assisted by relations in doing market shopping and in the preparation of meals. Consequently, older adults living in solitude, and without any relations to assist or take proper care of them, are at a particularly high risk of malnutrition (Anyika, 2001).

Majority (61.33percent) of the respondents ate twice a day while 29.33percent ate at least thrice per day (Table 4). This finding tends to suggest a moderate to adequate meal intake (i.e. in terms of frequency) among the respondents. However, 36percent of the respondents were into alcohols while only 12percent of them consumed chocolate beverages (Table 4). Following from Echendu (2001), it is obvious that old age alcoholics are at high nutritional risk. This is more so, with the several nutrition-related effects of alcohol consumption including caloric excess and development of obesity, hypertension, hypervitaminosis, mineral overload, protein-energy malnutrition, vitamin depletion and underweight. Moreover, habitual and excess intake of alcohol can lead to emotional stress,

illness, disability and ultimately death. Alcoholism is also frequently characterized by irregular eating habits and negligible food intake especially during heavy consumption (Echendu, 2001).

Several anthropometric measurements were also taken during the survey so as to assess the nutritional status of older adults in the study area (Table 5). On the average, the Body Mass Index (BMI) for older adults in the community is 22.74kg/m^2 . This result compares with the estimate (i.e. 22kg/m^2) obtained for older adults (at least 60years old) in Abeokuta, Ogun State (Aboaba and Olusanya, 2001).

Following from UN ACC/SCN-IFPRI (2000), the normal weight range for adults (i.e. younger and older) in developing countries is $\text{BMI} = 18.50 - 24.99\text{kg/m}^2$. As such, older adults in the Odoraboyejo Community could be considered as enjoying favourable nutritional status. However, the BMI, as an indicator of nutritional status, has limited relevance especially in assessing the nutritional status of older adults. This is more so, when 37percent of the study respondents were above 70years old. Although, national cut-offs are not available for reference purpose, WHO, has noted that conventional BMI cut-offs for defining malnutrition may not be appropriate for older people above 70years. This is because of age-related changes in body composition. Moreover, there are practical problems in obtaining accurate BMI measurements in this group because of curvature of the spine

Nonetheless, the London School of Hygiene and Tropical Medicine (LSHTM) group has found that MUAC cut-off of 21.7cm had sensitivity of nearly 86percent in relation to the BMI cut-off of 16kg/m^2 (i.e. the cut-off point for severe underweight or under-nutrition). As such, the group has proposed MUAC cut-off as an alternative to BMI cut-off as part of a screening tool in the acute phase of an emergency (UN ACC/SCN-IFPRI, 2000). Comparison of the MUAC estimate for the study sample (i.e. 13.04cm) with the available benchmark (i.e. 21.7cm) tends to confirm incidence of

severe under-nutrition among older adults in the study area. The nutritional situation of older adults in the community thus merits appropriate medical assistance.

Sanitary Conditions and Environmental/Health Status

The environmental/health status and sanitary conditions of older adults in the Odoraboyejo Community is presented in Tables 6 to 8. The distributions revealed that three-quarters of older people in the study area had access to pit latrines, while 16percent used nearby bush to defecate. Sixty-five (65) percent of the respondents had access to tap water. Twenty-four (24) percent, however, had access to well as the only source of water. The bulk (i.e. about 87percent), however, had access to medical facilities (Table 6). These findings have serious, albeit unsavoury, implications for the social (and human) capital, and to the economic well – being of the community – in terms of incidence and susceptibility to likely future outbreaks of epidemics including typhoid, cholera and dysentery among the residents.

Table 7 further provides the health conditions of the study respondents. About 54.67percent of them had chewing problems. Nonetheless, only 24percent of the sample were on medication at the time of the survey. This obviously, is because of the high cost of medical facility within and in the immediate vicinity of the community. Unsurprisingly thus, 26.67percent of the survey respondents were on local herbs as a form of medication.

The analysis of the incidence and types of body ailments/impairments experienced by older adults in the community is provided in Table 8. The ranking of the reported ailments revealed eye and conjunctival dysfunction, dental caries, and body pains as the three most common ailments among the older people in the community. Other oft-reported ailments in the area were skin problem and rheumatism. Although, these are common ailments at

old age, their onset could be substantially delayed, and even, better tackled if adequate awareness and orientation are provided at the community level, and if such intervention is focused especially on the aged who formed part of the more vulnerable groups in rural Nigeria.

SUMMARY AND RECOMMENDATIONS

Summary of Major Findings

This study had assessed the nutrition and health situations of older adults in Odoraboyejo Community, Ijebu-Igbo, Ogun State, Nigeria. The following are the salient findings from the study:

- Older people of the female gender resided mainly in the Odoraboyejo Community. The bulk of the respondents were widowed and above 70 years of age, and on self-employment as farmers or in business/petty trade.
- 75 percent of the respondents used pit latrines while 16 percent used nearby bush to defecate. Twenty-four percent had access to well as the sole source of water. About 27 percent of them were dependent on their offspring and close relations while an additional 12 percent had no source of upkeep. Nonetheless, 36 percent of the older adults in the study sample were on alcohols.
- Anthropometric measures on the respondents confirmed the incidence of severe under-nutrition among older adults of Odoraboyejo Community. Eye and conjunctival dysfunction, dental caries, and body pains were the most reported ailments among the sample. About 55 percent had chewing problems with only 24 percent on medication (i.e. herbal therapy) at the time of the survey.

RECOMMENDATIONS

In line with the basic principles of the International Plan of Action on Ageing, people-focused programmes including the recently inaugurated National Health Insurance Scheme (NHIS), and other pro-poor and aged schemes (or programmes) such as the income support or social security scheme and public infirmary (or old people's homes) scheme, should be implemented at the local government level to address adequately the needs and peculiar problems of older adults in the Odoraboyejo Community, Ijebu-Igbo, Ogun State, and by extension, in other rural neighbourhoods in Nigeria. Such programmes should, inter alia:

- Orientate the elderly and the aged on the merits and demerits of consumption of alcohols and beverages as well as on affordable means/avenues for the attainment and maintenance of sound health and nutrition at old age.
- Provide income support or social security for the aged who are predominantly women and dependants in the study area.

Table 1: Demographic characteristics of the respondents (n = 75)

Demographic features	Frequency	Percentage (%)
Sex:		
Male	28	37.33
Female	47	62.67
Marital Status:		
Married	36	48.00
Widow(er)	37	49.33
Single (Divorced)	2	2.67
Age (years):		
60-65	26	34.67
66-70	21	28.00
Above 70	28	37.33

Source: Field Survey 2002/2003.

Table 2: Socio-economic status of the respondents (n = 75)

Socio-economic status	Frequency	Percentage (%)
Source of upkeep:		
Children/relations	20	26.67
Government pension	9	12.00
Self-employment	37	49.33
None	9	12.00
Adequacy of income:		
Adequate	9	12.00
Inadequate	46	61.33
Manageable	10	13.33
No response	10	13.33
Work status/record:		
Civil servant (retired)	10	13.33
Self-employed (business)	27	36.00
Farmer	35	46.67
No response	3	4.00

Source: Field Survey 2002/2003.

Table 3: Life-style of the respondents (n = 75)

Life-style indicators	Frequency	Percentage (%)
Living arrangement:		
Live alone	20	26.67
Reside with relations	55	73.33
Shopping, cooking eating arrangement:		
Arranged by self	32	42.67
Assisted by relations	43	57.33

Source: Field Survey 2002/2003.

Table 4: Food and feeding habits of respondents (n = 75)

Food/Feeding Habits	Frequency	Percentage (%)
Number of meals per day:		
Once	6	8.00
Two times	46	61.33
Three times	22	29.33
Four times	1	1.33
Beverage Intake:		
Alcohol	27	36.00
Coffee	15	20.00
Cocoa	9	12.00
Tea	14	18.67
None	10	13.33

Source: Field Survey 2002/2003.

Table 5: Mean anthropometric status of the respondents (n = 75)

Anthropometric indices	Index
Weight \pm s.d (kg)	52.63 \pm 9.31
Height \pm s.d (cm)	152.13 \pm 7.00
Arm circumference \pm s.d (cm)	25.95 \pm 2.55
Skinfold thickness \pm s.d (mm)	20.01 \pm 1.64
Mid upper arm circumference \pm s.d (cm)	13.04 \pm 1.35
Body Mass Index (kg/m ²)	22.74

Source: Computations based on study data.

Table 6: Sanitary/environmental health conditions in the study area (n =75)

Access to	Frequency	Percentage (%)
Toilet facilities:		
Water closet	7	9.33
Pit latrine	56	74.67
Nearby bush	12	16.00
Water source:		
Spring	0	0.00
Tap	49	65.33
Borehole	8	10.67
Well	18	24.00
Hospital/clinic/health centre:		
Yes	65	86.67
No	9	12.00
No response	1	1.33

Source: Field Survey 2002/2003.

Table 7: Health status of the respondents (n = 75)

Health status/Drug supplementation	Frequency	Percentage (%)
Chewing problem:		
Yes	41	54.67
No	34	45.33
Presently on medication:		
Yes	24	32.00
No	51	68.00
Type of drug supplements:		
Vitamins & minerals	55	73.33
Local herbs	20	26.67

Source: Field Survey 2002/2003.

Table 8: Incidence and nature of body ailments (n = 75)

Nature of ailment	Frequency	Percentage (%)	Ranks (based on level of reporting*
Skin problem	34	45.33	4
Eyes & conjunctival dysfunction	49	65.33	1
Dental caries & gingivitis	41	54.67	2
Thyroid gland (goitre)	1	1.33	10
Bone deformity	5	6.67	8
Rheumatism	25	33.33	5
Body pain	38	50.67	3
Malaria	20	26.67	6
Osteoporosis	6	8.00	7
Deafness (partially or totally)	3	4.00	9

Note: *Ranks = 1 (most reported), 10 (least reported).

Source: Field Survey 2002/2003.

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