www.ajbrui.net

Afr. J. Biomed. Res. Vol.16 (May 2013); 79 - 85

Full Length Research Paper

Coping Strategy for Food Security among the Elderly in Ogun State, Nigeria

[1]Olayiwola I

[1]Department of Nutrition and Dietetics,
University of Agriculture, Abeokuta. Ogun State, Nigeria

ABSTRACT

In this study, the coping strategies for food security among the elderly in Ogun state, Southwestern Nigeria was investigated. There is little available data on the elderly in Nigeria living in poor environmental conditions and without any social security. Thus a sampling of 310 household for a cross sectional descriptive survey to assess coping strategy and food security. Methods of data collection: By means of structured household questionnaire demographic and non-demographic variables such as dietary pattern and food security were assessed. The majority had no formal education, worked in the agricultural sector and was of low socioeconomic status. There were slightly more males than females and 88% were food secured. The coping strategies reported were the use of cooperatives (20.7%), banks (0.3%), and daily money savings (9.2%). The coping strategy was significantly related to socioeconomic status (X^2=40.7), age (X^2=12.9), family structure (X^2=16.5); education (X^2=70.1), occupation (X^2=30.9), caregiver (X^2=79.1) and NGO groups (X^2=23.1; P<0.05). Overall, the elderly coping strategy adopted was influenced by economic status, education, income, occupation, food habits, food avoidance and township status. Food security and health status were significantly related (P<0.05).

Keywords: Coping strategy, Elderly, Food security, Nigeria.

INTRODUCTION

The improvements in nutrition, sanitation, and health care achieved in the 20th century have resulted in more adults surviving into their sixties, seventies, and beyond. Longer life expectancy represents a triumph for developments in science and social policy, but the ageing of the population is generating health, social and economic challenges. With increasing age many elderly people experience personal and social losses. Physical health declines, there is a loss of vigour and an increased susceptibility to disease (Burke and Flaherty 1993).

The emerging socio demographic changes have led to high price of food, a global financial crisis and climate change , all of which highlight the need to better understand the lives and livelihoods of vulnerable populations such as the elderly so that effective policies and actions can be implemented to save lives and address the root causes of food insecurity. Food insecurity occurs whenever people do not have physical or economic access to safe and nutritious foods that meet the dietary

*Address for correspondence:
Email: *ibisumbo@yahoo.com*
Tel:

Date Received: May 2013
Date Accepted: July 2013

Abstracted by:
Bioline International, African Journals online (AJOL), Index Copernicus, African Index Medicus (WHO), Excerpta medica (EMBASE), CAB Abstracts, SCOPUS, Global Health Abstracts, Asian Science Index, Index Veterinarius, , African Journals online

needs and food preferences for an active and healthy lifestyle (World Food Summit, 1996*; World food Programme, 2009). In communities with food insecurity, the elderly are especially vulnerable (ACC/SCN, 1999).

In Nigeria, the elderly population is undergoing a demographic transition that presents serious challenges for policies that aim to increase the well-being of the elderly. These challenges include the provision of accessible and affordable health care, alleviation of poverty, economic and food security, elimination of violence and abuse, strengthening of social and family support systems, (NDHS 2008). In addition to coping elderly adequate living arrangements, inter-generational solidarity and integration into social life must be in place (NPC 2006.).

For the nation to cope, it is necessary that actions are taken to prevent the ageing population from becoming a major economic, social and political problem in the wake of the demographic changes that are occurring in the country. It is critical to have comprehensive and timely data on the elderly population so that informed and evidence-based policies and programs can be developed. Complete, accurate and up to date data are required to monitor the changing needs of the elderly as well as the effects of social policy. There is, therefore, a critical need for detailed and better information on the processes that accompany population ageing and on the coping strategies, food security, health and well-being of older persons. The objective of this study was to obtain information on elderly coping strategies for food security in Ogun state, Nigeria. The data will provide additional, complementary information to better tailor nutrition and health services for an ever-increasing and diverse older population in Nigeria, with a focus on a multidisciplinary approach that includes economics, healthcare, sociology, agriculture and food security.

MATERIALS AND METHODS

Area of study: geographical background of the Yoruba: The Yoruba people reside in southwestern Nigeria. They live in a region approximately 120 miles long on the coast of the Gulf of Guinea, east of the Benin border, and almost 200 miles inland towards the savannah zone of West Africa (Zeitlith and Babatunde, 1995). The elderly Yoruba population surveyed in this study live in the state of Ogun, which is one of the five states in southwestern Nigeria. A multistage sampling method described previously by Olayiwola and Ketiku (2006) was used.

Subjects: All participants were at least 60 years of age, and had resided in the study area for at least five consecutive years and given oral informed consent to participate in the study. The study sample size was determined using the formula (Gibson, 2004):

$N = Z^2 (pq) / d^2$,

where N is the sample size;

Z is the standard normal variable for a 95% confidence level (CI);

p is the prevalence of the attribute (The National Population Council (NPC, 2009) of Nigeria estimates that 20% of the elderly in Nigeria reside in the southwest[10]), q is 1-p, and d is precision = (0.05). The sample size for the present study was calculated to be $N = (1.96^2 \times 0.20 \times 0.80)/0.05^2 = 246$. Thus, to estimate the proportion of the old people in Ogun state with 95% confidence and a precision of 5%, a total of 246 elderly people were required. An additional 25% was added to account for non-responses, (Askia, 2001) yielding a sample size of 307 participants, which was rounded up to 310.

Selection of families: Within each of the selected communities, 100 families were randomly chosen to represent each zone (senatorial districts), which was subdivided in to 50 families in urban and 50 in rural setting. Thus, a total of 300 households were selected from the three zones (CIOMS, 1991).

Data collection and ethical procedures: Demographic information was collected using a structured household questionnaire, and non-demographic information, such as health and the socioeconomic environment, was collected during an interview. All questionnaires were validated in the population with appropriate methods. A validated food frequency questionnaire was also used (Macintyre and Anderson, 1997). This study was performed according to the guidelines of the Declaration of Helsinki, with all procedure involving human subjects (Macintyre and Anderson, 1997). The study conforms to international guidelines of the ethical review of epidemiological studies and was approved by the Ethical Review Committee of the Federal University of Abeokuta Nigeria Department of Nutrition and Dietetics. Informed verbal consent was obtained from all subjects with witnesses present and was formally recorded.

RESULTS

Demographic characteristics of the elderly : The mean age of the participants was 71±9 years, and there were slightly more males (53%) than females (47%). The family structure information revealed 118

monogamous and 187 polygamous households. The household size was larger in polygamous (6 ± 2 individuals) than in monogamous (4 ± 2 individuals) families. This is not surprising, because polygamy usually leads to increased household size and thereby becomes a major factor in population increase. Regardless of the family structure, the mean number of children was 6 ± 3, the number of caregivers ranged from 1 to 6, and the number of dependents ranged from 1 to 6. Sixty one percent of the respondents were married and 31% were widowed. A relatively small percentage of the subjects were single, either because of divorce (3%) or separation (5%). In this study majority of the widowed were women (56%). Information on the educational attainment of the elderly revealed that the majority (58%) had no formal education.

The variables of income, property ownership, control of household income, employment status, and level of education that were used to classify the socioeconomic statuses of the elderly indicated that 61% had low, 24% had moderate and 15% had high socioeconomic status.

The occupations of most of the elderly were livestock farming (27.9%), followed by farming and trading (24.3%), civil service (7.9%), trading and casual work (6.9%) and crop farming (6%). All of these activities provided income for the elderly, but there was a strong correlation between various occupation and education ($P<0.05$).

Table 1
Coping strategy and socioeconomic status of the elderly

	Coping strategy (%)				
Socioeconomic status	No specific	Cooperative society	Daily contribution	Banking	Total
Low	131	16	18	0	165
Moderate	69	34	9	0	112
High	13	13	1	1	28
Total	213	63	28	1	305

Chi-square test ($X^2 = 40.7$; $P<0.05$) likelihood ratio ($X^2 = 35.4$; $P<0.05$)

Table 2
Percentage distributions of the immediate needs of the elderly

Type of need	Frequency	Percent	Valid Percent
Food	43	14.1	14.1
Shelter	55	18.0	18.0
Medical care	123	40.3	40.3
Combination of others	84	27.5	27.5
Total	305	100.0	100.0

Chi-square tests $X^2 = 1.2$; $P<0.05$

Coping strategy and sociodemographic variables: The coping strategies reported by the elderly in this study were the use of cooperatives (20.7%), banks (0.3%), and daily contribution for savings (9.2%) but many participants failed to report a specific approach to food security but combination of various plans (69.8%).

The individual coping strategy was significantly related to socioeconomic status ($X^2 = 40.7$;$P<0.05$), age ($X^2 = 12.9$; $P<0.05$), family structure ($X^2 = 16.5$; $P<0.05$), education ($X^2 = 70.1$; $P<0.05$), occupation ($X^2 = 30.9$; $P<0.05$), caregiver status ($X^2 = 79.1$; $P<0.05$) and NGO group ($X^2 = 23.1$; $P<0.05$).

Additional sources of income included children (26.6%), property (15.7%), charity (8.9%), pensions (7.9%) and combinations of pension, property and children. The sources of income were significantly related to coping strategy such as savings and use of cooperatives ($X^2 = 93.8$; $P<0.05$).

The elderly that ensure food security all the year round were 88%. The food habits were such that some people patronized food vendors (56%); had scheduled meal times (27%) and had favorite food (69%).

Some elderly skip meal (40%) and avoid some foods (43%). Among food avoided were drawing soups (8.2%), cassava and cassava products and yams and yam products (3.2%). Animal proteins including meat, fish, milk and eggs were avoided by 7.6%; and 3% avoided pepper, salt and spices. Some of the reasons given for food avoidance were taboos (10%), health (9%), economic reasons (4%), allergy (14%), religion (10%) and parent instructions (46%). The approaches to food security include scheduling of meal times ($X^2 = 29.7$; $P<0.05$); use of favorite foods ($X^2=9.1$; $P<0.05$) and number of times a day a person ate ($X^2 = 20.7$; $P<0.05$) significantly relates with bank savings.

Food security and health of the elderly: The reported ailments included body pains (31.5%); non communicable disease such as hypertension (5%), diabetes (10%) and rheumatism (11.1%); malaria (12%) and other type of fevers and infections (15%); 16 % of the elderly were disease-free.

Food security coping strategy also interacted with health status. A significant relationship was observed between use of cooperative and overall health status (X^2 = 16.5) water supply (X^2 = 8.1; P<0.05); type of drugs (X^2 = 13.4; P< 0.05) and body ailments (X^2 = 33.2; P<0.05).

Table 3.
Present occupation and level of education of the elderly study participants

	Level of education (%)				
Occupation	No Formal	Primary	Secondary	Grade 2 or Technical	Tertiary Education
Civil servant	10	5	12	6	25
Farming	20	35	34	41	24
Trading	14	1	14	6	22
Farming/Trading	50	32	31	–	24
Casual/Technical	6	7	35	–	–
No specific job.	10	5	3	12	5

Significant relationship Chi-square: X^2 = 104.1: P < 0.05.

Table 4.
Distribution of sources of income in the elderly

	Coping strategy (%)				
Sources of income	No specific	Cooperative society	Daily contribution	Banking	Total
Salary	4	7	1	0	12
Charity	25	2	0	0	27
Children	70	5	6	0	81
Pension	16	8	0	0	24
Property	31	8	9	0	48
Charity and children	13	10	1	0	24
Children and property	29	10	9	0	48
Children and salary	15	6	0	0	21
Salary/pension and Property	2	5	1	1	9
Others	6	2	1	0	9
Total	211	63	28	1	303

Chi-square X^2 = 93.8; P<0.05

Table 5.
Percentage distribution of food habits of the elderly

	Respondents**			
	Yes		No	
Variables*	n	%	n	%
Food preferences	109	36	192	64
Meal skipping	123	40	182	60
Food avoidance	131	43	168	55
Eating between meals	122	40	181	59
Scheduled meal times	83	27	222	73
Food vendor patronage	175	57	130	43

**No sum total due to multiple responses.*
*** Coping strategy was related significantly (P<0.05).*

Table 6.
Reasons for food avoidance given by elderly participants

*Reason given	n	%
Religious	14	10
Allergy	18	14
Taboo	14	10
Dislike	5	4
Dental problem	3	2
Economy	5	4
Parents instruction	60	46
Other health related problem	12	9
TOTAL	131	100

*A significant relation to coping strategies (P <0.05, Chi-squared test)

Table 7a.
Relationships of coping strategy, food security and health variables.

Variable	X2	P-value*
Food security / body ailment	33.4	P<0.05
Food security/rate of sickness	12.8	P<0.05
Food security/shelter	13.5	P<0.05
Food Security/drug consumption	13.4	P<0.05
Food security/income	7.6	P<0.05
Coping/family structure	16.5	P<0.05
Coping/income	86.8	P<0.05
Coping/gender	9.3	P<0.05
Coping/education	70.1	P<0.05
Coping/occupation	30.9	P<0.05
Coping /township status	8.0	P<0.05
Coping/no. Of children	50.1	P>0.05**
Coping/nutrition knowledge	41.8	P<0.05
Coping/care givers	79.1	P<0.05
Coping/no of times of eating	20.7	P<0.05
Coping/reasons for skipping meals	42.2	P<0.05
Coping/scheduled meal times	29.7	P<0.05
Coping/favorite food	9.1	P<0.05
Coping/type of foods avoided	83.1	P<0.05
Coping/health	16.5	P<0.05
Coping strategy/water supply	8.1	P<0.05
Coping/memory loss	3.1	P<0.05

Table 7b.
Pearson product-moment-correlation of food security and health variables

Variables	Male	Female	Total
Food security vs. Appetite	0.11	0.12	0.12
Food security vs. House hold control	0.12	0.11	0.11
Food security vs. Nutrition knowledge	0.29	0.28	0.29
Food security vs. Socioeconomic status	0.42	0.40	0.41
Food vendor vs. income	-0.24	0.23	−0.24
Food security vs. health	0.10	0.11	0.11
Health vs. coping strategy	0.18	0.19	0.19

DISCUSSION

This study breaks new ground in understanding the coping strategies used by the elderly to deal with various challenges in the food security, heath, and the socioeconomic environment. The significant interaction between health and food insecurity cannot be ignored. Food insecurity can affect health and quality of life, either directly or indirectly through nutritional status (Lee and Frongillo 2001; Adebusoye et al 2011). For elderly persons, food insecurity can bring additional physical and economic burdens to the elderly persons themselves, their formal or informal caregivers, and the health care system.

Previous work on the consequences of food insecurity includes decreased dietary intake (Cristofar and Basiotis 1992; Kendall et al. 1996; Rose and Oliveira 1997, Tarasuk and Beaton 1999), decreased household food supply (American Dietetic Association ,1998; Kendall et al. 1996), psychosocial dysfunction (Shariff and Khor, 2008; Kleinman et al. 1998, Louise Demers *et al*., 2009), increased body weight (Kendall et al. 1995), health problems (Nelson et al. 1998, Roe 1990, Wehler et al 1998), decreased quality of life and socio-familial disturbances (Shariff and Khor, 2008).

Some of the factors affecting food security are avoidance of certain foods, the number of times a day that someone eats, income and use of favorite foods, which the elderly use as coping strategy.

Other coping strategies identified were the use of cooperatives, daily contributions of money to savings and use of commercial banks. Generally economic status and food intake are directly related (Olayiwola and Ketiku 2006; Patterson and. Pietinen 2004). Income is significantly related to coping strategy and the income level determines the consumption of goods and services by the elderly.

Income also relates directly to the type of occupation. In this study, agriculture was the predominant occupation of the elderly, similar to most regions of Nigeria, where about 44% of elderly persons work in agriculture. However, of the total agricultural population, three-quarters are men and one-quarter women. In general, the elderly participate more in the labor force than the total population; therefore, most elderly men and a significant percentage of elderly women continue work almost until the end of their lives (NPC , 2006). This observation is in contrast to developed countries where pension systems and many other social institutions are available to the elderly.

The coping strategy used to ensure food security and health generally depends on the socioeconomic environment, which is determined by education, occupation, income and township status (Wolfe, 1996). The low socioeconomic status observed in this study is typical of the situation in Nigeria, where a low level of educational attainment is the norm. In Nigeria, the literacy rate decreases with age. In 1991, three-quarters of the elderly were illiterate; thus, the highest illiteracy rates are associated with the oldest people in the population (NPC, 2009). Township status further contributes to low education; more elderly people are literate in urban than in rural areas in Nigeria, and in both urban and rural areas, elderly males have higher literacy rates than elderly females (NPC 2006). In this study, educational levels were similar to those in the whole nation. Gender differences in literacy at older ages in developing countries are sometimes as striking as the sharp differences between nations. Older women often have lower rates of literacy than older men. In 1990 in China, for example, 11% of women aged 60 and above could read and write compared with half of all men in the same age group (UN, 1999). Among young adults in many developing countries today, literacy rates are higher for women than for men (UN,1999). This implies that gender disparity at older ages eventually will diminish, and will allow women to cope more effectively with food insecurity in the near future.

Conclusion and recommendation

The coping strategies of the elderly in Ogun state are daily contribution (locally named *Ajo*) as savings cooperatives to improve economy. Education, income, type of occupation, food habits food avoidances, township status, food security and health were related significantly to coping strategy. Food security correlated positively with household resource control.

For the elderly to cope well with the society they live in, three priorities must be addressed. First, there is a need to continue implementing policies that increase the integration and empowerment of older persons, thereby enabling them to participate actively in society, and receive higher financial remuneration if they are in the labor force. The second priority is increasing the health and well-being of people into their old age and provides access to food and adequate nutrition. Thus, needs and opinions of older persons should be taken into consideration when reviewing health policy.

The third priority, is provide supportive environments through improved housing and living environments for older persons, promote overall socioeconomic status

REFERENCES

ACC/SCN (1999): Administrative committee on coordination/ Subcommittee on nutrition. Nutrition and Healthy Agents. Number 19:45. Geneva. Switzerland. WHO.

Adebusoye LA, Ajayi IO, Dairo MD, and Ogunniyi AO (2011): Factors associated with under nutrition and overweight in Elderly patients presenting at a primary health care Clinics in Nigeria. S.Afr Fam Pract 53(4) 355-360.

American Dietetic Association. Position of The American Dietetic Association (1998): Domestic food and nutrition security. *J Am Dietetic Assoc, , 98,* 337-342.

Burke M, Flaherty MJ. (1993): Coping strategies and health status of elderly arthritic women. J Adv Nurs. Jan;18(1):7-13.

Council for International Organizations of Medical Science (CIOMS). (1991): International Guidelines for Ethical Review of Epidemiological Studies. Geneva, CIOMS,

Cristofar SP, Basiotis PP (1992): Dietary intakes and selected characteristics of women ages 19-50 years and their children ages 1-5 years by reported perception of food sufficiency. J Nutr Educ.;24:53–58.

Kleinman, R. E., Murphy, J. M., Little, M., Pagano, M., Wehler, C. A., Regal, K. & Jellinek, M. S. (1998): Hunger in children in the United States: potential behavioral and emotional correlates. Pediatrics. 101:1-6.

Kendall A, Olson CM, Frongillo EA. (1996): Relationship of hunger and food insecurity to food availability and consumption. J Am Diet Assoc.; 96:1019–1024.

Louise Demers, Line Robichaud, Isabelle Gélinas, Luc Noreau, Johanne Desrosiers Coping strategies and social participation in older adults. Gerontologia (Basel) (2009): Volume: 55, Issue: 2, Publisher: KARGER, Pages: 233-239 Available from www.ncbi.nlm.nih.gov

Lee JS, Frongillo EA (2001): Nutritional and health consequences are associated with food insecurity among U.S. elderly persons. J Nutr.; 131:1503–1509.

Macintyre S, Anderson A (1997): Sociodemographic and psychosocial variables. In Margetts B, Nelson M, editors *Design concepts in nutritional epidemiology*. Oxford: Oxford University Press,: 273-288.

Nigeria Demographic and Health Survey NDHS (2008): National Population Commission, Federal Republic of Nigeria., pg 156 . Abuja. ICF Macro. Calverton, Maryland, USA.

National Population Commission/Macro (2006): Nigeria Population. The Elderly. Abuja, Nigeria. Chapters 5 and 7.

National Population Commission (2009): 2006 Population and Housing Census of the Federal Republic of Nigeria National and State population and Housing Tables: Priority Tables Volume 1 August 2009.

Olayiwola I.O and A.O Ketiku.(2006): Sociodemographic and Nutritional Assessment of the elderly Yoruba in Nigeria. Asia Pacific Journal of Clinical Nutrition. 2006: 15: 1: 95–101.

Patterson and P. Pietinen (2004): Public Health Nutrition. (1st edition) Nutrition Society. Book series. Publ. Blackwell UK. .

Rose D, Oliveira V (1997). Nutrient intakes of individuals from food-insufficient households in the United States. Am J Public Health. 87:1956–1961,

Shariff ZM and GL Khor (2008): Household food insecurity and coping strategies in a poor rural community in Malaysia. Nutr Res Pract. Spring; 2(1): 26–34.

Tarasuk VS, Beaton GH (1999): Women's dietary intakes in the context of household food insecurity. J Nutr.; 129:672–679.

United Nations (UN, 1999): Review and Appraisal of the Progress Made in Achieving the Goals and Programme of Action of the International Conference on Population and Development, Report. Sales No. E.99.XIII.16.

World food Programme (WFP, 2009): Comprehensive Food Security & Vulnerability Analysis Guidelines © January 2009, World Food Programme (WFP), Food Security Analysis Service

Wolfe, W. S., Olson, C. M., Kendall, A. & Frongillo, E. A., Jr. Understanding food insecurity in the elderly: a conceptual framework. *J. Nutr. Educ*. 1996; 28:92-100.

Welch KJ, Mock N, Netrebenko O (1998): Measuring hunger in the RussianFederation using the Radimer/Cornell hunger scale. Bull World Health Organ.;76:143–148.

Zeitlith. MF and E.D. Babatunde (1995): The Yoruba Family: Kinship and Socialisation and child development. UNU. 1995, strengthening the family, implication for International development.

.