

Family functionality among elderly patients with chronic illnesses attending the General Outpatient Clinic of Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria

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ABSTRACT

Background: Chronic illnesses are the leading cause of deaths worldwide. Although, the global epidemics of chronic illnesses have been strongly linked to population ageing, elderly patients with functional families are known to have better chances of survival and better ability to recover from illness. This study was conducted to assess family functionality among elderly patients with chronic illnesses attending the General Outpatient Clinic of Usmanu Danfodiyo University, Sokoto, Nigeria. **Materials and Methods:** This was a cross-sectional study among 372 elderly patients selected by systematic sampling technique. A structured interviewer-administered questionnaire was used to collect data on the research variables. Data were analyzed using IBM SPSS version 20 statistical computer software package. **Results:** The mean age of the respondents was 69.7 ± 8.7 years, majority of them were females (52.4%), had no formal education (60.2%), and close to half of them (47.9%) earn $< \text{₦}235/\text{day}/\text{head}$. Although, most of them lived with other family members (92.5%) in an extended family structure (77.4%), only about half of them (53.2%) had family support, while about two-thirds (59.0%) perceived their respective families to be functional. Perception of having a functional family was significantly associated ($p < 0.05$) with being female, being a Muslim, living in extended family structure, having formal education, being employed, having family support and living with other family members. **Conclusion:** These findings underscore the need for family physicians to involve family members in the care of the elderly to promote family functionality, and make advocacy to government for provision of free health and other welfare services for the elderly.

Keywords: Family functionality, elderly patients, chronic illnesses

INTRODUCTION

Globally, humans now live longer particularly in Asia and Europe where many countries have predominantly ageing demographic profiles (Prince et al., 2015; Rechel et al., 2013). In Beijing, China, the elderly constituted 16.9% of the total population in 2006 and this is expected to reach 30% in 2025 (Cheng et al., 2011). In the UK, over 15 million people were aged ≥ 60 years, with 1.5 million of these being aged ≥ 85 years, and it is expected to surpass 20 million by 2030 (Rachel et al., 2013). This changing demographics has also been reported in the United States, where 35 million (12.4%) of its populace were aged ≥ 65 years, with a projection of reaching 71.5 million by 2030 (Holtzman and Anderson, 2012). Studies in developing countries also

reported a similar rising trend of the elderly population (Prince et al., 2015). An estimated 63.0% of the population aged ≥ 60 years currently live in developing countries and this is expected to increase by 10.0% over the next 25 years (Boerma and Mathers, 2015).

As the most populous country in Africa, Nigeria currently has the highest number of aged or elderly people in Africa (Gesinde et al., 2011). In Nigeria, current estimates indicate that the elderly constitute 6% of the population and the number of individuals aged ≥ 60 years is projected to be 16 million by 2030 and 47 million by the year 2060 (United Nations, 2012). Chronic illnesses (defined as diseases or disabilities that last six

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months or longer, or experience of long-term bodily or health disturbance) are the leading cause of deaths worldwide (Martin, 2007; Strath *et al.*, 2012). Across the globe, epidemics of chronic illnesses are strongly linked to population ageing and 23% of total global burden of disease is attributable to disorders in people aged 60 years and older (Prince *et al.*, 2015). Diagnosis of chronic illness in older age groups is associated with loss of self-esteem from social isolation, and the loss of privacy over personal bodily functions (Thompson, 2009). Furthermore, those suffering from chronic illnesses must adjust to the stress of treatment, symptoms of the disease, financial burden of their illness, changes in family structure, and feelings of vulnerability and loss of control (Thompson, 2009).

Chronic illnesses in elderly patients may drastically affect family dynamics because they have significant impact not only on the development of the individual suffering from it, but also on the individual's family members and relationships (Rosland *et al.*, 2012). The family is the most intimate current and past social environment of an individual and has a powerful influence on the health beliefs and behaviors, as well as the overall mental and physical health of the individual (Rosland *et al.*, 2012). The dynamic relationships in families to some extent interfere in the process of health and illness of its members, as well as interpretation of illness experience of each member of the family (Santos *et al.*, 2012). Family-care remains the most widely used survival strategy for the majority of the world's older people, whether in the context of extended families or co-residence of parents with adult children (Botha and Booysen, 2014).

Traditionally, in Nigeria, the extended family system has cared for the Nigerian elderly and it has been shown that the family still accounts for a large proportion of the support they receive (Okumagba, 2011). Thus, most aged persons expect support from their relatives and friends but most especially from their children. As a result of this, the desire for elderly age security from children was one of the motivations for large family sizes in Nigeria (Shofoyeke and Amosun, 2014). However, because of the declining economy, unemployment, underemployment and inflation among others, many children are no longer in a position to provide care and support for their aged parents and relatives while the family support networks are on the decline (Okumagba, 2011). In rural sub-Saharan African countries, urbanization has also broken down the traditional sense of family responsibility as it often leads to young people being separated from their grandparents who had

previously played special roles in their traditional education and socialization (Shofoyeke and Amosun, 2014). In addition, unlike the economically developed countries, lack of social security schemes has worsened the predicaments of the elderly across the continent (Okumagba, 2011).

The functional family system is the group that responds to conflicts and critical situations in order to get emotional stability and seek appropriate solutions through its own resources (Santos *et al.*, 2012). In functional families, members harmonize their own obligations towards others in an integrated, functional and effective form thereby protecting the integrity of the system as a whole (Santos *et al.*, 2012). The social support inherent in a functional family allows for the reduction of vulnerability to stressful events such as chronic illnesses in the elderly population (Wang and Zhao, 2012). In South Africa, Botha and Booysen (2014) studied family functioning and life satisfaction and happiness using data from the 2011 South African Social Attitudes Survey and showed that an improved level of family functioning was positively associated with life satisfaction and happiness.

Dysfunctional family systems on the other hand are those in which there is no commitment to the dynamics and system maintenance by its members (Smith *et al.*, 2012). Dysfunctional families prioritize their private interests at the expense of the group, thus family members fail to assume their roles within the system (Smith *et al.*, 2012). This often results in conflicts, misbehavior, reduced parental monitoring and management of children's behavior, neglect or abuse of vulnerable members of the group; and they occur frequently, thus making other family members to accommodate such actions (Inem, 2016).

Santos *et al.* (2012) observed dysfunctional families to have limited ability in providing adequate care relative to the needs of their elderly members with chronic illnesses, while the elderly with functional families have better chances of survival and better ability to recover from illness. Evidently, the importance of the family and family functionality on physical and psychological health of individuals especially the vulnerable such as the elderly cannot be overemphasized (Inem, 2016). It is therefore essential to study the family functionality of elderly patients with chronic illnesses as the knowledge gained from this study will help provide some insight and guide family physicians in reinforcing and restoring family relationships, and in improving the quality of care provided to chronically ill patients and their families.

This study was conducted to assess family functionality among elderly patients with chronic illnesses attending the General Outpatient Clinic of Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria.

MATERIALS AND METHODS

Study Design, Population and Area, Sample Size Determination and Sampling Technique

A cross-sectional study was conducted among elderly patients with chronic non-communicable diseases attending the General Out-patient Clinic of the Department of Family Medicine, Usmanu Danfodiyo University Teaching Hospital (UDUTH), Sokoto, Nigeria, between July and September 2016. The hospital is a 700-bed tertiary health facility that provides primary, secondary and tertiary care to the inhabitants of Sokoto state, the neighboring states of Kebbi, Zamfara, Katsina, and some parts of neighboring Niger republic.

All patients aged ≥ 60 years presenting with any of the chronic non-communicable diseases, whether single or multiple [of at least six months duration and was within the ICPC-2-PLUS classification (WONCA International Classification Committee, 1998)], or had been on treatment for at least three months were considered eligible for enrollment into the study. Those with disease exacerbation or clinically unstable patients (e.g., flaring osteoarthritis and congestive cardiac failure, as they may require emergency services), those with dementia and other disabling mental illness, and those with hearing impairment or language difficulties without an accompanying person were excluded. The sample size was statistically estimated at 372 and the eligible participants were selected by systematic sampling technique (one of two patients presenting consecutively at the clinic that meets the eligibility criteria and gave informed consent to participate in the study was selected over a period of 2 months until the required sample size was obtained).

Data Collection and Analysis

A structured pretested interviewer-administered questionnaire was used to obtain information on the respondents' socio-demographic characteristics, family characteristics and family APGAR scores. Family APGAR is a scale that was developed by Smilkstein in 1978 (Muyibi *et al.*, 2010), and it consisted of questions that allowed for the quantifying of the perception that the individuals have of their family functionality. These questions allow for the assessment of the individual's satisfaction with their family functioning, based on some elements considered to be essential in the family unit, according to the acronym APGAR. These elements

comprised adaptability (i.e., the sharing of resources, as well as the degree of satisfaction with the attention received), participation (i.e., joint decision-making and family communication when solving problems), growth (i.e., the realization of emotional growth due to freedom within the family to change roles), affection (i.e., the individual's satisfaction regarding intimacy between family members and the family interactions) and resolution (i.e., the sharing of time and satisfaction with the commitments that family members establish).

The APGAR questionnaire consists of five questions regarding the components of family function, with three possible answers presented in a Likert-type scale of three points ("almost always", "sometimes", "almost never") the score varies between zero and two points. The sum can be zero to ten points and families can be characterized as: a functional family (7-10) or moderately dysfunctional family (<6) and severely dysfunctional (≤ 2) (Muyibi *et al.*, 2010). Previous studies have identified the family APGAR scale as the best tool for measuring family functionality in individuals, and analysis of its psychometric properties also found it to be valid and reliable for population screening (Takeneka and Ban, 2016; Da Silva *et al.*, 2014).

Data were analyzed using IBM Statistical Package for the Social Sciences (SPSS) version 20.0 software. Quantitative variables were summarized using mean and standard deviation, while qualitative variables were summarized using frequencies and percentages. Frequency distribution tables were constructed; and cross tabulations were done to examine the relationship between categorical variables. The Pearson's Chi-square test was used to compare differences between proportions. All levels of significance were set at $p < 0.05$.

Ethical Consideration

Institutional ethical clearance was obtained from the Ethical Committee of Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria. Permission to conduct the study was obtained from the Management of the hospital, and informed consent was obtained from the participants before administering the questionnaires.

RESULTS

Socio-demographic characteristics of respondents

All the 372 questionnaires administered were adequately completed and found suitable for analysis, giving a response rate of 100%. The ages of the respondents ranged from 60 to 102 years (mean = 69.7 ± 8.7 years),

with a larger proportion (34.7%) in the 60-64 years age group. Majority of respondents were females (52.4%), practiced Islam as religion (87.1%), and were Hausa by tribe (68.0%). Close to two-thirds of respondents (60.2%) had no formal education, about half (54.8%) were unemployed, and close to half of them (47.9%) earn less than N235/day/head. Majority of respondents were married (71.0%) and were in multiple households (76.6%) and extended family (77.4%) types of relationship (Table 1).

Respondents' family characteristics

Only about half, 198 (53.2%) of the 372 respondents received support from their spouses, children, grandchildren, or other relatives and friends. Most of the respondents (92.5%) lived with other family members, and with majority of them (66.1%) being in a family size of 5 or more (Table 2).

Respondents' perception of family functionality and associated factors

Majority of respondents (59.0%) perceived their respective families as being functional (Figure 1). The proportion of respondents that perceived their respective families to be functional was significantly higher ($p < 0.05$) among males (58.8%) as compared to females (47.5%); among Muslims (62.0%) as compared to Christians (36.4%) and those who practiced traditional religion (25.0%); and among those in extended family settings (60.1%) as compared to those in nuclear family settings (48.8%).

Likewise, the proportion of respondents that perceived their respective families to be functional was significantly higher ($p < 0.05$) among those with formal education (62.2%) as compared to those without (40.2%); among those that were employed (67.9%) as compared to those that were unemployed (13.2%); among those with family support (69.2%) as compared to those without (46.6%); and among those who live with other family members (61.1%) as compared to those who live alone (28.6%). There was no association ($p > 0.05$) between functional family status and type of marriage (i.e., monogamous and polygamous), and family size (Table 3).

Table 1: Socio-demographic characteristics of respondents

Variables	Frequency (%) n = 372
Age group (years)	
60-64	129 (34.7)
65-69	96 (25.8)
70-74	50 (13.4)
75-79	41 (11.0)
80-84	22 (5.9)
>85	34 (9.2)
Sex	
Male	177 (47.6)
Female	195 (52.4)
Religion	
Islam	324 (87.1)
Christianity	44 (11.8)
Traditional	4 (1.1)
Ethnicity	
Hausa	253 (68.0)
Igbo	72 (19.4)
Yoruba	35 (9.4)
Others	12 (3.2)
Marital status	
Not married	108 (29.0)
Married	264 (71.0)
Household type	
Single	87 (23.4)
Multiple	285 (76.6)
Family type	
Nuclear	84 (22.6)
Extended	288 (77.4)
Education	
Non-formal	224 (60.2)
Formal	148 (39.8)
Occupational status	
Employed	168 (45.2)
Unemployed	204 (54.8)
Income (Naira)	
<235/day/head	178 (47.9)
≥235/day/head	194 (52.1)

Table 2: Respondents' family characteristics

Variables	Frequency (%) n = 372
Had family support	
Yes	198 (53.2)
No	174 (46.8)
Living arrangement	
Alone	28 (7.5)
With other family members	344 (92.5)
Family size	
<5	126 (33.9)
≥5	246 (66.1)

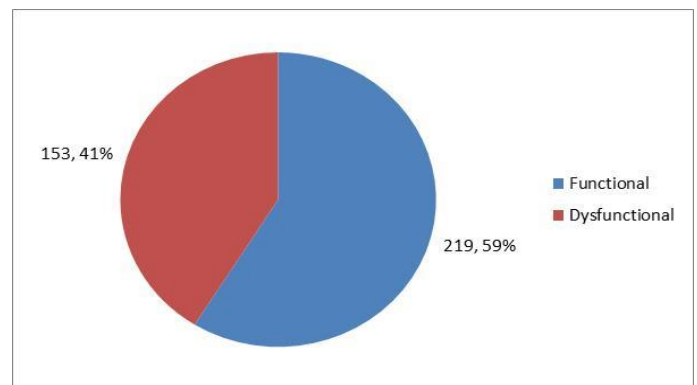


Figure 1: Respondents' perception of family functionality

Table 3: Factors associated with family functionality among respondents

Variables	Family functionality status		Test of significance
	Functional Frequency (%)	Dysfunctional Frequency (%)	
Sex			
Male	90 (58.8)*	63 (41.2)	$\chi^2 = 35.152,$ $p < 0.001$
Female	104 (47.5)	115 (52.5)	
Religion			
Islam	201 (62.0)*	123 (38.0)	$\chi^2 = 50.214,$ $p < 0.001$
Christianity	16 (36.4)	28 (63.6)	
Traditional	1 (25.0)	3 (75.0)	
Type of marriage			
Monogamous	91 (54.5)	76 (45.5)	$\chi^2 = 3.302,$ $p = 0.497$
Polygamous	123 (62.0)	77 (38.0)	
Household type			
Nuclear	41 (48.8)	43 (51.2)	$\chi^2 = 30.322,$ $p < 0.001$
Extended	173 (60.1)*	112 (38.9)	
Education			
Non-formal	90 (40.2)	134 (59.8)	$\chi^2 = 26.482,$ $p < 0.001$
Formal	92 (62.2)*	56 (37.8)	
Occupation			
Employed	114 (67.9)*	54 (32.1)	$\chi^2 = 26.015,$ $p < 0.001$
Unemployed	27 (13.2)	177 (86.8)	
Had family support			
Yes	137 (69.2)*	61 (30.8)	$\chi^2 = 64.189,$ $p < 0.001$
No	81 (46.6)	93 (53.4)	
Living arrangement			
Alone	8 (28.6)	20 (70.1)	$\chi^2 = 47.967,$ $p < 0.001$
With other family members	210 (61.1)*	134 (38.9)	
Family size			
<5	66 (52.4)	60 (47.6)	$\chi^2 = 6.582,$ $p = 0.189$
≥5	153 (62.2)	93 (37.8)	

*Statistically significant ($p < 0.05$)

DISCUSSION

This study assessed family functionality among elderly patients with chronic illnesses attending the General Outpatient Clinic of Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria. The findings from this study indicate that a larger proportion of respondents were in the age bracket 60-64 years, an observation that is in consonance with the Nigerian National Demographic Health Survey 2013 wherein two-thirds of the elderly belong to the same age bracket (NPC and ICF Int., 2014). The importance of this, is that this cohort of “active elderly” individuals (i.e. 60-64 years) can be targeted for early preventive interventions, which if instituted early may lead to successful ageing (characterized by an improvement in the quality of life and reduction in illness and death in the elderly) (Omotara et al., 2015).

There was a predominance of females among the elderly interviewed in this study. Females constituted more than half (52.4%) of the respondents. This is similar to the findings of Adebuseye et al. (2011) in a cross-sectional study conducted to determine the morbidity patterns

among elderly patients in the general outpatient clinic of a tertiary hospital in south-western Nigeria in which 62.2% of the respondents were females. These findings may be attributed to the current global phenomenon described as “feminization of old age” (Vera et al., 2015) whereby there is predominance of women in the elderly population probably as a result of their longer life expectancy. This phenomenon is a two-edged sword; on the one hand it implies a reduction of deaths in women, yet on the other hand, as a result of the longevity, it signals a period of social isolation and frequently, economic adversity in them (Vega et al., 2015).

Regarding the educational level of the respondents in this study, about two-thirds (60.2%) received no formal education. A study on assessment of determinants of healthy ageing among the rural elderly in Maiduguri, north-eastern Nigeria by Omotara et al (2015) reported that 73.6% of the study participants had no formal education. Consistent with the aforementioned studies is the finding in a study to determine the morbidity patterns among community dwelling elderly in Zaria,

north-western Nigeria, by Yusuf *et al.* (2011) which found that most (91.0%) of the elderly respondents had no formal education. Given that evidence exists on the positive effects of formal education on improving health related knowledge, problem solving abilities, accessibility to preventive health services and self-management of chronic illnesses, the poor uptake of formal education among the respondents in the other studies and the current study may translate to poor health indices in these areas (NPC and ICF Int. 2014). In contrast, a study conducted in Ghana by Ayernor *et al.* (2012) reported that only 35.8% of respondents had no formal education. The difference between this study and the latter study may be due to the age range of 50-59 years included by Ayernor and colleagues, whereas in this study and the others studies included respondents that were aged ≥ 60 years.

The employment status of elderly respondents in this study showed that more than half of them (54.8%) were unemployed. In contrast, a survey by Shofoyoke and Amosun (2014) on care and support for the elderly carried out in four geopolitical zones of Nigeria (south-south, south-east, south-west and north-central) found that over half (51.7%) of the elderly respondents were employed. In our study setting located in north-western Nigeria, there exists a socio-culturally assigned gender role in which males serve as the main income earners (NPC and ICF Int., 2014).

A total of 77.4% of respondents in the current study were in an extended family structure. This is in consonance with the findings by Okumagba (2011) in Delta state, south-south Nigeria, and it supports the submission that the family unit in these areas most likely provide a large proportion of the support most aged persons receive. In the present study, majority of the elderly were found to reside with their families. Similarly, Omotara *et al.* (2015), reported multi-generational households as being more common in Maiduguri, north-eastern Nigeria.

On the contrary, in a survey to assess the care and support given to the elderly in Nigeria, Shofoyoke *et al.* (2014), observed a predominance of elderly persons living alone in Lagos city, located in the south-western part of Nigeria. Thus, there is a varied dynamics of living arrangement as observed in the studies above, and this may be explained by the polygamous types of marriage and the existing extended family structure in most parts of northern Nigeria (Omotara *et al.*, 2015). Such type of marriage leads to high fecundity and hence more

likelihood of the elderly living with their children in later life in such areas. The environment in which we live is one of the most influential factors on our lives. For older people, this may be particularly so since they spend more time at home than many other groups in the society. Living alone without help leads to a poor self-rated health and high levels of disability and depression in the elderly (who are also more vulnerable to chronic illnesses) (Okumagba, 2011; Bolina and Tavares, 2016).

Almost half (46.8%) of the respondents in this study supported themselves. In contrast, other studies (Okumagba, 2011; Omotara *et al.*, 2015) have found that family support for the elderly is mainly provided by others. To explain this, it must be considered that in this study, a larger proportion of respondents were found to be of the age bracket 60-64 years. This cohort of elderly are termed “active elderly” given that they still retain most of their physical and mental capabilities, and as such, can support themselves (Omotara *et al.*, 2015).

In the present study, close to two-thirds of the respondents (59.0%) perceived their families to be functional. In consonance, Da Silva *et al.* (2014) in Brazil studied a cohort of elderly patients in order to determine their family functionality, and reported that majority of respondents (81.6%) perceived their families to be functional. In contrast, however, Chaves *et al.* (2013) assessed the family function of the elderly with chronic illness in Viseu, Portugal, and found that most (81.3%) of the respondents perceived their families to be dysfunctional. The observed difference in family functionality may be due to racial dissimilarities, and differences in culture, sample sizes, and the methodology used. The current study and the Brazilian study by Da Silva *et al.* (2014) had sample sizes of 372 and 400 respondents respectively and both studies used probability sampling methods to select respondents, whereas the study in Portugal by Chaves *et al.* (2013) had a sample size of 294 respondents selected by non-probability (convenience) sampling method which is known to be hampered by selection bias.

About two-thirds (60.1%) of the elderly respondents who were living in an extended family setting in this study regarded their families as being functional, as compared to less than half (48.8%) of those from nuclear family settings. This finding highlights the importance of accommodating the elderly in the extended family structure as it enables the family members to become aware of their needs and render the necessary assistance to them promptly. Family support is

a major concern in the elderly as they are more prone to developing medical problems such as chronic illnesses which require constant care and supervision. Elderly people mostly rely on their family members for assistance on social problems like limited economic resources and depleted social networks (Okumagba, 2011). Such a support was observed among 69.2% of the elderly who perceived their family as being functional in this study. The findings of this study therefore underscore the need for family physicians to sensitize the public on the benefits of retaining the traditional extended family structure, involve family members in the care of the elderly to promote family functionality, and make advocacy to government for provision of free health and other welfare services for the elderly.

CONCLUSION

The poor educational attainments, low income and sub-optimal levels of family support and perception of family functionality among the respondents in this study despite the fact that most of them live with their family members underscore the need for family physicians to involve family members in the care of the elderly to promote family functionality, and make advocacy to government for provision of free health and other welfare services for the elderly.

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Nil.

Conflict of interest

None declared.

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