Assessment of Functional and Musculoskeletal Problems, and Barriers to Obtaining Physiotherapy Services Among the Elderly in a Rural Community in Kano State, Nigeria

Okafor, P.I.,[1] Sumaila, F.G.,[1] Mohammed, J.,[1,2] Badaru, U.M.[1]

[1] *Department of Physiotherapy, Bayero University Kano, Nigeria*

[2] *Department of Rehabilitation Sciences and Physiotherapy, Ghent University, Belgium*

Correspondence

Farida Garba Sumaila, Department of Physiotherapy, P.M.B. 3011, Bayero University Kano, Nigeria • E-mail: fareedat2006@gmail.com

SUMMARY

Functional and musculoskeletal problems are a major cause of disability among the elderly in the rural areas. Unfortunately, rehabilitation services are presently inadequate for this population in many parts of the world. This study evaluated the pattern of musculoskeletal disorders, functional status and barriers to obtaining physiotherapy services among the elderly in a rural community in Kano, Nigeria.

This cross sectional survey was carried out using a Hausa translated version of the modified Older American Resource and Services (OARS) multidimensional functional assessment questionnaire and other instruments to assess the pattern of functional and musculoskeletal problems and barriers to obtaining physiotherapy services. The questionnaires were administered to 384 elderly consenting individuals (aged 60 years and above) who were recruited using cluster sampling. The data obtained was analysed using SPSS version 16.0.

The results from this study revealed that the majority of the participants were females (59.9%). The prevalence of musculoskeletal problems was significant (47%), mostly affecting the lower extremity joints and the spine. Generally, the participants were mostly independent in carrying out activities of daily living (ADL), such as feeding (92.5%), grooming (85.7%), money management (84.9%) and management of medication (83.9%). The results also showed that a few of the participants were dependent in bathing (10.2%), walking (9.9%) and dressing (9.9%). Furthermore, the majority (61.9%) of the participants who reported musculoskeletal problems had good ADL performance capacity rating. Almost all the participants (98%) reported that they have never heard of physiotherapy. Lastly, those with musculoskeletal problems reported that they mainly utilized traditional medicine or home remedies and their health-seeking behaviour was mainly determined by affordability (41.8%).

It was concluded that there is a high prevalence of musculoskeletal problems among the participants of this study. Nevertheless, their level of function remained optimal. The study also identified lack of awareness, unavailability, affordability and accessibility as the major barriers to obtaining physiotherapy services among the participants.

KEY WORDS: elderly, musculoskeletal disorders, knowledge, disability, rural community, physiotherapy

INTRODUCTION

According to the World Health Organization (WHO), about 500 million people worldwide live with some form of disability, and 75 per cent of these are in developing countries (Oliver, 2004; Lang and Upah, 2008). In Nigeria, the number of people living with disability is estimated at

around 19 million (Lang and Upah, 2008). These people are mostly elderly, poor and marginalized, and they often present with high levels of musculoskeletal disorders and functional dependence (Solagberu, 2005; Amusat, 2009; Akindele, 2009; Abduraheem et al, 2012; Muirden, 1997). Musculoskeletal health problems in particular are among the leading causes of long-term disability. They are significantly associated with level of function, which has a profound impact on quality of life and use of health resources (Akinpelu et al., 2010).

Majority of the elderly in Nigeria dwell in the rural areas (Okiye 2003). In addition to the poor socioeconomic circumstances of rural dwellers in general, access to rehabilitation services for most elderly people with disability is inadequate (Amusat, 2009; Lecerf et al., 2003). Moreover, physiotherapy is barely practiced at the primary health care (rural) level in Nigeria due to several factors, including scarcity of physiotherapy services and practitioners, and a skewed geographical spread of the available practitioners in favour of urban centres. Other factors include poor physiotherapy referral practices among health professionals, poor health-seeking behaviours, poor perception and inadequate awareness of the role and scope of physiotherapy (Akinpelu et al, 2010; Iezzoni, 2006; Poulis, 2007).

In virtually all studies carried out on musculoskeletal problems and disability in Nigeria, none seems to have reported on the elderly in any rural community in northern Nigeria. This was also the case in two earlier studies that investigated the prevalence of musculoskeletal problems, functional problems, barriers to physiotherapy as well as health-seeking behaviour of rural dwellers in southern Nigeria communities (Akinpelu et al, 2010; Igwesi-Chidobe et al, 2005). The present authors predicted that the significant variation in geography, educational, occupational, traditional and cultural make-up of the rural northern and southern communities may provide interesting results (Davis and Kalu-Nwiwu, 2001; Mustapha, 1986). Therefore, this study was carried out to evaluate the pattern of musculoskeletal disorders, functional status and barriers to obtaining physiotherapy services among the elderly, in a rural community in Kano, Nigeria.

METHODOLOGY

Research Design and Participants

The population of this cross-sectional survey research comprised elderly males and females, aged 60 years and above, from Sumaila local government area (LGA) in Kano State, using a multistage sample technique. However, the proportion of the elderly dwelling in the rural communities of the LGA could not be estimated, hence 50% was used (0.50). The LGA is estimated to have a finite population of about 253,661 people in an area of 1,250 km² according to the National Population Commission (2006). Therefore, the sample size formula for populations greater than 10,000 used by Igwesi-Chidobe et al. (2005) was adopted:

$$\frac{z^2pq}{d^2}$$

where:

- n = the desired sample size (when population is greater than 10,000)
- z = the standard normal deviate, set at 1.96 corresponding to 95% confidence level
- p = the proportion of persons requiring physiotherapy services (because it is not available from the literature, 50% will be used (0.50))
- q = 1.0-p
- d = error tolerated, set at 0.05 (Araoye, 2004).
- n = $(1.962 \times 0.5 \times 0.5)/(0.05)^2 = 384$ participants.

Consequently, a total of 390 participants were initially recruited from 3 wards (out of 11), which served as primary clusters. The participants were then drawn from six villages (2 from each of the 3 wards initially selected) which served as secondary clusters. In each village, 65 participants were interviewed in their households. In the end, the data for 384 participants was finally analysed for the report.

Procedure

Ethical approval for this study was obtained from the Research Ethics Committee of Aminu Kano Teaching Hospital, Kano. The consent of the community heads (*Mai-Ungwa's*) in the study areas was also obtained in order to enhance participation. All participants gave a written consent (signature or thumb print) after they had fully understood the study objectives prior to the interview.

Questionnaires Description

A modified Older American Resource and Services (OARS) multidimensional functional assessment questionnaire was used to assess the activities of daily living (ADL) of the participants. This instrument has earlier been described to be highly valid (with a 74% agreement) and satisfactorily reliable (Fillenbaum and Smyer, 1981; Fillenbaum, 2013).

Information on pattern of musculoskeletal problems (presence, region and frequency), bio data (age, sex, occupation, marital status, religion and educational level), healthcare-seeking behaviours and knowledge of physiotherapy of participants were also collected using a validated self-developed questionnaire. All instruments were translated into Hausa language by language experts from the Department of Nigerian languages in Bayero University Kano. The translations went through back translation and were pretested prior to data collection.

Scoring of the Questionnaire

The functional assessment in form of activities of daily living (ADL) from the modified OARS questionnaire was rated as good, moderate or low performance capacity. The scores also differed depending on the gender of the participant. For males, a score of 0-9 points indicated good performance capacity, 10-18 points indicated moderately impaired performance capacity while a score of 19-27 points indicated severely impaired performance capacity. For females, a score of between 0-11 points indicated a good performance capacity, 12-21 points indicated moderately impaired performance capacity and 22-31 points indicated severely impaired performance capacity.

The data obtained from all the questionnaires were analysed using descriptive statistics comprising frequencies, percentages, means and standard deviation. All statistical analyses were performed using the Statistical Package for Social Sciences (SPSS) Version 16.0.

RESULTS

The results of the study showed that the majority (56%) of the participants were between the ages of 60-70 years. The majority (90.4%) of the participants had no formal education, and there was a preponderance of females (59.9%). The males were mostly farmers (90%), while most of the females were full-time housewives (79%) as shown in table 1.

Table 1. Socio-demographic information of the participants

Variable	Total = 384 n(%)	Male = 154 n(%)	Female = 230 n(%)
Age			
60-70	215 (56)	110 (71.4)	105 (45.7)
71-80	101 (26.3)	23 (14.9)	78 (33.9)
81-90	68 (17.7)	21 (13.7)	47 (20.4)
Educational Attainment			
No formal	347 (90.4)	125 (81.2)	222 (96.5)
Primary	31 (8)	23 (14.9)	8 (3.5)
Secondary	5 (1.3)	5 (3.2)	0 (0)
Tertiary	1 (0.3)	1 (0.7)	0 (0)
Occupation			
Unemployed	29 (7.6)	1 (0.7)	28 (12.2)
Farmer	139 (36.2)	138 (89.6)	1 (0.4)
Trader	34 (8.8)	15 (9.7)	19 (8.3)
Housewife	182 (47.4)	N/A	182 (79.1)

% = percentage, n=frequency

Table 2 shows the breakdown of the results of the functional status (OARS) of the participants. The major areas of independence were feeding (92.5%), grooming (85.7%), money management (84.9%) and medication management (83.9%), while the major areas of total dependence were bathing (10.9%), walking (9.9%) and dressing (9.9%). The summary of the ADL performance capacity rating (OARS) for the participants that reported musculoskeletal problems showed that the majority (61.9%) of them had good performance rating as illustrated in figure 1.

The results also revealed that the majority (98.4%) of the participants had never heard of physiotherapy and 184 (47.9%) of them reported having musculoskeletal problems at the time of the interview (table 3). The pattern of the problems showed that multiple joint pain was the commonest (31.5%). Spinal problem/back pain was experienced by 48 (26.3%) participants, while 25 (13.5%) participants reported weakness in their limbs. Lower and upper limb joints pain was experienced by 36 (19.5%) and 17 (9.2%) participants respectively. In terms of frequency of musculoskeletal problems in the past 12 months, 58.6% experienced it occasionally (at least once a month), 26% experienced it most of the time (at least once a week), while 15.2% experienced it all the time (most days of the week).

Table 3 shows the health-seeking behaviour of the participants who reported musculoskeletal problems during the interview. The majority of the participants used traditional medicine and home remedies. Only a few (17.4%) patronized health facilities for treatment. The table also shows the variables that influenced the pattern of seeking treatment.

Table 2. Activity of Daily Living (ADL) among participants

Questions	Independent	Need some help	Fully dependent
	n (%)	n (%)	n (%)
Getting to far places	200 (52.1)	180(46.9)	4 (1.0)
Shopping in the market	200 (52.1)	180(46.9)	4 (1.0)
Preparing meals	316 (82.3)	66(17.2)	2 (0.5)
Doing house chores	316 (82.3)	66(17.2)	2 (0.5)
Medication management	322 (83.9)	60 (15.6)	2 (0.5)
Money management	326 (84.9)	54 (14.1)	4 (1.0)
Feeding	355 (92.5)	24 (6.2)	5 (1.3)
Dressing	307 (79.9)	39 (10.2)	38 (9.9)
Grooming	329 (85.7)	42 (10.9)	13 (3.4)
Walking	310 (80.7)	36 (9.4)	38 (9.9)
Getting in and out of bed	307 (79.9)	68 (17.7)	9 (2.3)
Bathing oneself	305 (79.4)	37 (9.6)	42 (10.9)
Get to toilet on time*	318 (82.8)	66 (17.2)	0 (0.0)
Incontinence*	319 (83.1)	56 (14.6)	9 (2.3)

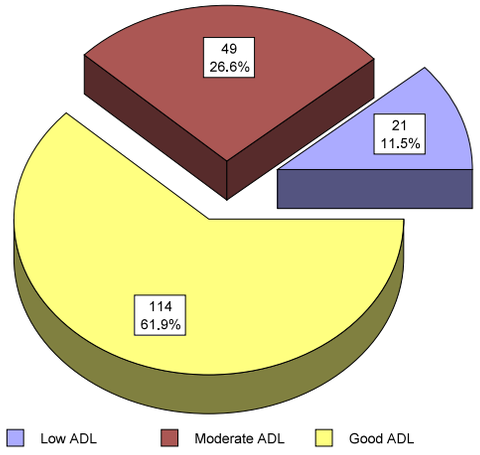

Figure 1. ADL performance capacity rating of participants with musculoskeletal problems

Table 3. Musculoskeletal problems and barriers to obtaining physiotherapy

Variable		
Prevalence of musculoskeletal disorder		
	Yes	184 (47.9)
	No	200 (52.1)
Heard of physiotherapy		
	Yes	6 (1.6)
	No	378 (98.4)
Source of treatment for musculoskeletal and functional problems		
	Traditional/herbal treatment	61 (33.2)
	Health facilities	32 (17.4)
	Self-medication at home	47 (25.5)
	No treatment of any sort	29 (15.7)
	Chemist	15 (8.2)
Reason for seeking treatment		
	Affordability	77 (41.8)
	Accessibility	69 (37.6)
	Satisfaction	9 (4.9)
	Traditional/religious influence	29 (15.7)

DISCUSSION

This study was aimed at investigating the prevalence of musculoskeletal problems, level of function and barriers to obtaining physiotherapy services among the elderly in a rural community. The results from the study revealed that the prevalence of musculoskeletal problems was very high. About half of the participants were experiencing one form of musculoskeletal problem or another. This outcome is supported by the findings from a study by Okiye (2003), in which a similar prevalence rate was reported amongst rural dwellers. However, in this study, it is likely that this high prevalence rate may be due to physical strain from the predominant occupation of farming among the males and the largely sedentary lifestyle of the females. The results also indicated that the multiple joint problem was more common, especially those involving the spine/back and lower limbs. This can be attributed to the mode of farming (using simple tools) or poor ergonomics/posture when carrying out basic tasks (Akinola, 2007).

Interestingly, despite the high prevalence rate of musculoskeletal problems, the ADL performance capacity among the participants who reported having musculoskeletal problems was largely good. The possible reason for this may be that many of them scored high on tasks that required little physical effort such as taking medications, handling of money, maintaining self-appearance and feeding. The large number of female participants may have influenced these findings since the majority of them were housewives, thus sedentary. It is also possible that the musculoskeletal problems reported were overestimated since the assessment was subjective and could be exaggerated.

The participants in this study reported that they mainly used traditional medicine and home remedies when they experienced musculoskeletal problems. They also reported that the main reasons influencing choice of treatment were mainly affordability and accessibility. Even though it is a common feature to care for the elderly within the confines of the family in developing nations like Nigeria (Okoye, 2003), it is very likely that the participants did not consider musculoskeletal problems as serious medical conditions that require medical intervention. Moreover, the health seeking behaviour of rural dwellers is known to be influenced by traditional and cultural beliefs as well as poor perception (Poulis, 2008). It is also likely that the trend reported in this study could be improved upon if rehabilitation services and medical treatments are made more affordable and accessible. This is very important in view of the negative effects of these beliefs (Snow et al., 2001; Akinpelu et al., 2010).

In one of the findings of the present study, almost all the participants reported that they had never heard or had any knowledge of physiotherapy. This finding is similar to that of some past studies carried out in rural communities (Akpala et al, 1998; Akinbo et al, 2009; Miller Mifflin, Bzdell and Mifflin, 2010). Therefore, it is not surprising that physiotherapy was not a choice among those who experienced musculoskeletal problems. Another reason for this may be the concentration of most physiotherapy services in urban areas. Efforts were also made to ascertain whether physiotherapy services were available in the 12 health facilities in the study area. Predictably, none of the centres provided any form of physiotherapy services.

There were few limitations in the study. Notable among them is that musculoskeletal problems could not be clinically differentiated since the results of the study were based on subjective reports. Secondly, the health-seeking behaviour in those who did not have any musculoskeletal problem at the time of the interview was not assessed. This is because their responses were more likely to be hampered by forgetting, consequently, only the pattern of musculoskeletal problems and health-seeking behaviour of those who currently had the problem were assessed.

CONCLUSION

It was concluded that there was a high prevalence of musculoskeletal problems among the elderly in the rural areas. However, these problems did not significantly affect the level of function in the majority of them. It was also concluded that there was a general lack of awareness of physiotherapy, and the major barriers to obtaining physiotherapy services were unavailability, affordability and accessibility.

Based on these findings, it is recommended that adequate community health education (ergonomics) and intervention services be provided and made affordable and accessible to the elderly in rural communities. Also, physiotherapy practitioners should be encouraged to extend their services to the rural areas.

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