



OCCURRENCE AND PATTERN OF DISABILITY IN RURAL SETTINGS IN NIGERIA

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Abstract

Background and objectives: Disability is a major public health problem in the developing countries. Yet studies and census reports from developing countries provide insufficient information on disability profiles. Therefore, the aim of this study was to assess occurrence, patterns and socio-demographic correlates of disability in selected rural settings in Nigeria. Materials and methods: This house to house cross-sectional survey was conducted among 200 residents in Moro and Edunabon communities in Ife North Local Government Area, Osun State, Nigeria. Disability was classified according to the World Health Organization International classification with criteria based on functional limitation. Households were considered as the Primary Sampling Unit (PSU) in this study. Descriptive and inferential statistics were used for the analysis of the data obtained. The alpha level was set at $p < 0.05$. Results: The total occurrence of disability was 16%. Visual disability was the most prevalent (6%) and it was significantly associated with age ($\chi^2=11.702$; $p= 0.010$). The recorded locomotor, mental, speech and hearing disabilities constituted 5%, 2%, 1% and 2% respectively of the total population surveyed. The overall occurrence was found to be higher among males and the middle-aged group (31-50) and significantly correlated with low socioeconomic status. There was a significant association between visual impairment and age ($\chi^2=11.702$; $p= 0.010$); hearing disability and marital status ($\chi^2=21.747$; $p= 0.003$); as well as mental disability and marital status ($\chi^2=21.747$; $p= 0.003$). Conclusion: A high occurrence of disability was identified among rural residents in Nigeria, especially among males, those with low socio-economic status, those educated up to secondary school, unemployed and married partners. Visual disability, followed by locomotor disability, is the most common type. It is related to age, while marital status significantly correlates with hearing and mental disability.

Key words: disability, rural settings, Nigeria, occurrence, pattern

Introduction

Disability has been defined as "any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being"[1]. Expanding on the concept, the United Nations Convention on People with disabilities, submits that disability entails physical, intellectual or sensory impairments which may hinder full and effective participation in society [2]. Fifteen percent of the world's population are reported to have some kind of disability, while around

80% of them reside in rural areas [3]. Mac Lachlan and Swartz [4] confirm that a vast majority of the disabled live in low-income countries and most in poverty. As such, disability is a major public health problem in the developing countries [1]. Based on the World Report on Disability [5], about 25 million Nigerians had at least one disability, and 3.6 million of them reported very significant difficulties in functioning. The 2006 Nigerian census, which is the most recent official census,

reported that 2.32% of the total population suffered from some form of disability, comprising predominantly seeing, hearing, speech, mobility and mental impairments. People with disability often live a difficult life, which further reduces their participation in economic and social activities [6-9]. The inability of many people with disability to carry out activities of daily living (ADLs) has resulted in stereotyping, derogatory labeling, and depersonalization [10-12]. Despite the significant health, social and economic challenges faced by the disabled, there is an apparent dearth of studies concerning this issue in sub-Saharan Africa, including Nigeria. The statistics on profiles of disabled citizens in Nigeria are controvertible. For example, the Centre for Citizens with Disabilities claims Nigeria census did not capture the full extent of disability [13]. Also, few studies have sought to fill in the gap observed with the 2006 Nigerian census. The World Health Organization submit that there is significant increase in the number of people with disabilities owing to military conflicts, infectious diseases, malnutrition, chronic diseases, substance abuse, accidents, population growth, and medical advances [14]. The resultant increase in figures seems not to have been captured in many national census and studies. Disability occurrence studies in rural Nigeria are very few despite the usefulness of such data for the sectors of health, education, employment, and social welfare. Therefore, the aim of this study was to assess the occurrence, patterns and socio-demographic correlates of physical disability.

Materials and methods

A house to house cross-sectional survey was carried out among residents in two selected communities (Moro and Edunabon) in Ife North Local Government Area (LGA), Osun State, Nigeria. Ife North LGA is the administrative division that oversees seven rural communities commonly called Origbomeje (Ipetumodu, Eduabon, Moro, Asipa, Yakoyo, Akinlalu and Isope) and has its headquarters in the town of Ipetumodu [15]. Moro and Edunabon communities were purposively chosen for this study based on certain features that are characteristic of rural

settings in the Nigeria's context, such as small population densities and settlement sizes, and lack of infrastructural development and access to health services. Predominantly, the residents of the two communities were Yorubas and mostly farmers, traders and artisans. The population of the LGA, according to the 2006 population census was 153,694.

From each of the two communities, three political wards were randomly selected using fishbowl technique. Households were considered as the Primary Sampling Unit (PSU) in this study. In order to survey PSUs within the political wards, houses were randomly selected. Because most of the houses are not numbered, the first house to be surveyed was chosen by ballot; thereafter every other house was consecutively enlisted. Residents under 18 years of age were excluded from this study because of the difficulties in obtaining consent from their Parents/guardians. Also, adults who were 65 years or older were excluded from the study as old age-related disability would increase the occurrence rate. All consenting individuals residing in the selected households were surveyed for any form of physical (locomotor, visual, speech, mental and hearing) disability.

Disability was classified according to the World Health Organization International Classification of Impairments [16]. Disability criteria of the National Sample Survey (NSS) [17] conducted in India were used for data collection, all of them being based on functional limitations. Information regarding hearing, visual, speech and locomotor impairments was obtained. Two hundred respondents volunteered to participate in this study.

The determination of the sample size for this study was based on the formula – $n = Z^2pq/d^2$, 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 occurrence (13.3%) [18]. Thus, Q is $100 - P = 86.7\%$ and D is the error, that is, 5%.

$$(1.962) \times 0.133 \times 0.86.7 = 177 \\ (0.05 \times 0.05)$$

The survey instruments used in this study included:

(a) the National Sample Survey [17], a practical, generic assessment instrument that can measure health and disability at population level or in clinical practice [19]. Developed in India, it is one of the oldest continuing household survey instruments for developing countries. The NSS covered up to fifty different items of the survey, including disability, with necessary modifications since its inception [20]. (a) The WHO Disability Assessment Schedule (WHODAS) 2.0 captures the level of functioning in six domains of life. These include: cognition (i.e. understanding and communicating), mobility (i.e. moving and getting around), self-care (i.e. attending to one's hygiene, dressing, eating and staying alone), getting along with other people, life activities (i.e. domestic responsibilities, leisure, work and school) and participation (i.e. joining in community activities, participating in society) [19]. The WHO Disability Assessment Schedule was used to assess physical disability profile of the PWPDS.

In addition, a structured proforma was used to collect information on socio-demographic characteristics. Ethical approval was obtained from Health Research and Ethics Committee of the institution of public health, Obafemi Awolowo University, Ile-Ife, Nigeria. The purpose of the study was explained to the respondents and their informed consent was obtained. The respondents were assured that their responses and personal details would be kept strictly confidential. The questionnaire was self-administered or conducted in the interview mode owing to the peculiarity of the population.

Statistical analysis

The data was summarized using descriptive statistics of mean and standard deviation and percentages. Inferential statistics of the chi-square test were used to test the association between the level of disability and accessibility to health care. The alpha level was set at $p < 0.05$. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp. IBM

Corp. was used for the analysis. The alpha level was set at $p < 0.05$.

Results

Table 1 shows the socio-demographic information and the distribution of disability among the respondents. The majority (43%) were within the 18-30 age group, males (55.5%) and females (54.5%), married (58.5%), with secondary school education (45.5%) and unemployed (36%).

The occurrence and patterns of disability among the respondents are presented in Table 2. A total of 16% disability occurrence rate was observed in this study, with 6% of the population reporting visual impairment, of which 4% and 2% reported VD1 and VD2 respectively. Also, 5% of the respondents had locomotor disability, 2% had mental disability and hearing disability respectively, while 1% of the population had speech disability. Table 1 shows higher occurrence of disability among the male gender (9.5%), middle aged group (31-50 years) (7%), married and single groups (7%), low class (12%), unemployed group (9%) as well as those at the secondary level of education (9%).

Table 3 shows the association between having visual impairment and socio-demographic variables. As the results show, there was no significant association between having VD1 and each of age, gender, marital status, educational level, employment status and living status ($p > 0.05$). Four percent of the population was VD2 positive, 3% of whom fell between ages 51 and 65. There was 3% occurrence value among the low class. There was a significant association between VD2 and age ($\chi^2=11.702$; $p= 0.010$). The association between hearing disability and socio-demographic variables are presented in table 4. One percent of the respondents were positive for HD1 and HD 2 respectively. There was no significant association between HD1 and factors like age, gender, marital status, educational level, employment status and living status ($p > 0.05$). There was a significant association between HD2 and marital status ($\chi^2=21.747$; $p= 0.003$).

Table 1. Socio-demographic characteristics and percentage distribution of disability (N=200)

Variable	Frequency <i>n</i> (%)	Positive <i>n</i> (%)	Negative <i>n</i> (%)
Age			
• 18-30	86 (43)	10 (5)	76 (38)
• 31-50	63 (31.5)	14 (7)	49 (24.5)
• 51-65	51 (25.5)	8 (4)	43 (21.5)
Gender			
• Male	111 (55.5)	19 (9.5)	92 (46)
• Female	89 (44.5)	13 (6.5)	76 (38)
Marital status			
• Single	66 (33.0)	14 (7)	52 (26)
• Married	117 (58.5)	14 (7)	103 (51.8)
• Divorced	17 (8.5)	4 (2)	13 (6.5)
Education			
• Less than primary	6 (3.0)	2 (1)	4 (2)
• Primary	42 (21.0)	4 (2)	38 (19)
• Secondary	91 (45.5)	18 (9)	73 (36.5)
• Tertiary	61 (30.5)	8 (4)	53 (26.5)
Employment status			
• Employed	58 (29.0)	2 (1)	56 (28)
• Unemployed	72 (36.0)	18 (9)	54 (30)
• Retired	4 (2.0)	4 (2)	0 (0)
• Other	66 (33.0)	8 (4)	58 (29)
Social status			
• Low class	113 (56.5)	24 (12)	89 (44.5)
• Middle class	87 (43.5)	8 (4)	79 (39.5)

Table 2. Occurrence and pattern of disability

Type of disability	Positive <i>n</i> (%)	Negative <i>n</i> (%)
Visual		
• complete blindness (VD1)	4 (2.0)	196 (98.0)
• seriously impaired vision (the respondent is unable to see the fingers of a hand (with spectacles/contact lenses if he/she uses ones) from a distance of 3 m (or 10 feet) in good day light with both eyes open. (VD2)	8 (4.0)	192 (96.0)
Hearing		
• complete or partial loss of hearing (only loud sounds such as thunder are heard; communication with gestures only (HD1).	2 (1.0)	198 (99.0)
• impaired hearing (communication with words shouted or lip-reading (HD2)	2 (1.0)	198 (99.0)
• hard of hearing (repeatedly asking for repetition of the words spoken or insisting to see the face of the interlocutor; reporting difficulty in conducting conversations (HD3)	0 (0.0)	200 (100.0)
Speech		
• unable to speak (SD1)	2 (1.0)	198 (99.0)
• communication with limited vocabulary (SD2)	0 (0.0)	200 (100.0)
• loss of voice (SD3)	0 (0.0)	200 (100.0)
• incomprehensible speech (SD4)	0 (0.0)	200 (100.0)
Locomotor		
• loss or absence or inactivity of whole or part of hand or leg or both (LD1)	8 (4.0)	192 (96.0)
• physical deformities in the body (other than limbs), such as, hunch back, deformed spine etc. (LD2)	2 (1.0)	198 (99.0)
Mental		
• difficulty in understanding routine instructions (MD1)	2 (1.0)	198 (99.0)
• unable to function like their peers (MD2)	2 (1.0)	198 (99.0)

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Table 3. Association between visual disability and socio-demographic variables (N=200)

	Visual Disability		χ^2	<i>p</i> -value
	Positive	Negative		
VD1				
Age			1.531	0.418
• 18-30	2 (1.0)	84 (42.0)		
• 31-50	2 (1.0)	61 (30.5)		
• 51-65	0 (0.0)	51 (25.5)		
Gender			0.050	0.824
• male	2 (1.0)	109 (54.5)		
• female	2 (1.0)	109 (54.5)		
Marital status				
• single	2 (1.0)	64 (32.0)		
• married	2 (1.0)	115 (57.5)		
• divorced	0 (0.0)	17 (8.5)		
Educational level			4.889	0.929
• < primary	0 (0.0)	6 (3.0)		
• primary	0 (0.0)	42 (21.0)		
• secondary	4 (2.0)	87 (43.5)		
• tertiary	0 (0.0)	61 (30.5)		
Employment status			1.845	0.250
• employed	0 (0.0)	58 (29)		
• unemployed	2 (1.0)	70 (35)		
• retired	0 (0.0)	4 (2.0)		
• other	2 (1.0)	64 (32.0)		
Social status			0.070	0.792
• low class	2 (1)	111 (55.5)		
• middle class	2 (1)	85 (42.5)		
VD-2				
Age (years)			11.702	0.010 *
• 18-30	0 (0.0)	86 (43.0)		
• 31-50	2 (1.0)	61 (30.5)		
• 51-65	6 (3.0)	45 (22.5)		
Gender			1.093	0.297
• Male	3 (1.5)	108 (54.0)		
• Female	5 (2.5)	84 (42.0)		
Marital status			5.912	0.236
• Single	0 (0.0)	66 (33.0)		
• Married	8 (4.0)	109 (54.5)		
• Divorced	0 (0.0)	17 (8.5)		
Educational level			3.076	0.093
• <primary	0 (0.0)	6 (3.0)		
• Primary	0 (0.0)	42 (21.0)		
• Secondary	4 (2.0)	87 (43.5)		
• Tertiary	4 (2.0)	57 (28.5)		
Employment status			25.817	0.236
• Employed	2 (1.0)	56 (28)		
• Unemployed	0 (0.0)	72 (36)		
• Retired	2 (1.0)	2 (1.0)		
• Others	4 (2.0)	62 (31.0)		
Social status			1.160	0.283
• Low class	6 (3.0)	107 (53.5)		
• Middle class	2 (1.0)	85 (42.5)		

VD1- No light perception in both eyes

VD2- Unable to determine the number of fingers shown from a distance of 3 metres (or 10 feet) in good day light with both eyes open (with spectacles/contact lenses if used by the respondent).

Table 4. Association between hearing disability and socio-demographic variables (N=200)

	Hearing Disability		χ^2	<i>p</i> -value
	Positive	Negative		
HD1				
Age			2.678	0.148
• 18-30	2 (1.0)	84 (42.0)		
• 31-50	0 (0.0)	63 (31.5)		
• 51-65	0 (0.0)	51 (25.5)		
Gender			1.620	0.124
• male	2 (1.0)	109 (54.5)		
• female	0 (0.0)	89 (45.5)		
Marital status			4.102	0.072
• single	2 (1.0)	64 (32.0)		
• married	0 (0.0)	117 (58.5)		
• divorced	0 (0.0)	17 (8.5)		
Educational level			2.420	0.950
• < primary	0 (0.0)	6 (3.0)		
• primary	0 (0.0)	42 (21.0)		
• secondary	2 (1.0)	89 (45.5)		
• tertiary	0 (0.0)	61 (30.5)		
Employment status			3.591	0.928
• employed	0 (0.0)	58 (29.0)		
• unemployed	2 (1.0)	70 (35.0)		
• retired	0 (0.0)	4 (2.0)		
• other	0 (0.0)	66 (33.0)		
Social status			1.555	0.213
• low class	2 (1.0)	111 (53.5)		
• middle class	0 (0.0)	87 (42.5)		
HD2				
Age (years)			4.393	0.759
• 18-30	0 (0.0)	86 (43.0)		
• 31-50	2 (1.0)	61 (30.5)		
• 51-65	0 (0.0)	51 (25.5)		
Gender			2.520	0.113
• Male	0 (0.0)	111 (54.5)		
• Female	2 (1.0)	87 (45.5)		
Marital status			21.747	0.003*
• Single	0 (1.0)	66 (33.0)		
• Married	0 (0.0)	117 (58.5)		
• Divorced	2 (1.0)	15 (7.5)		
Educational level			4.603	0.086
• <primary	0 (0.0)	6 (3.0)		
• Primary	0 (0.0)	42 (21.0)		
• Secondary	0 (0.0)	91 (45.5)		
• Tertiary	2 (1.0)	59 (29.5)		
Employment status			3.591	0.928
• Employed	0 (0.0)	58 (29.0)		
• Unemployed	2 (1.0)	70 (35.0)		
• Retired	0 (0.0)	4 (2.0)		
• Others	0 (0.0)	66 (33.0)		
Social status			2.624	0.106
• Low class	0 (1.0)	113 (56.5)		
• Middle class	2 (1.0)	85 (42.5)		

HD1- Profound- Total or near-total inability to hear (the respondent can only hear loud sounds such as thunder).

HD2- Severe- Impaired ability (The respondent can only hear words shouted)

Table 5 shows the result of the association between speech disability and socio-demographic variables. One percent of the respondents were SD1 positive and fell between ages 18 and 30. There was no significant association between SD1 and factors such as age, gender, marital status, educational level, employment status and living status ($p > 0.05$). However, none of the respondents were positive for SD2, SD3 and SD4. The results of the association between locomotor disability and socio-demographic variables are presented

in table 6. 4% of the population were LD1 positive (3% males and 1% females). There was no significant association between either LD1 or LD 2 and the factors of age, gender, marital status, educational level, employment status and living status ($p > 0.05$). Table 7 shows that 1% of the observed population was positive for MD1, with a significant association between MD1 and marital status ($\chi^2=21.747$; $p= 0.003$). However, none of the respondents were positive for MD2.

Table 5. Association between speech disability and socio-demographic variables (N=200)

	Speech Disability		χ^2	p-value
	Positive	Negative		
SD1				
Age			2.678	0.148
18-30	2 (1.0)	84 (42.0)		
31-50	0 (0.0)	63 (31.5)		
51-65	0 (0.0)	51 (25.5)		
Gender			1.620	0.204
male	2 (1.0)	109 (54.5)		
female	0 (0.0)	89 (44.5)		
Marital status			4.102	0.072
single	2 (1.0)	63 (31.5)		
married	0 (0.0)	117 (58.5)		
divorced	0 (0.0)	17 (8.5)		
Educational level			2.420	0.950
< primary	0 (0.0)	6 (3.0)		
primary	0 (0.0)	42 (21.0)		
secondary	2 (1.0)	89 (44.5)		
tertiary	0 (0.0)	61 (30.5)		
Employment status			3.591	0.928
employed	0 (0.0)	58 (29.0)		
unemployed	2 (1.0)	70 (35.0)		
retired	0 (0.0)	4 (2.0)		
other	0 (0.0)	66 (33.0)		
Social status			1.555	0.213
low class	2 (0.0)	111 (55.5)		
middle class	0 (0.0)	87 (43.5)		

SD1- Unable to speak

Table 6. Association between locomotor disability and socio-demographic variables (N=200)

	Locomotor Disability		χ^2	<i>p</i> -value
	Positive	Negative		
LD1				
Age			1.534	0.464
• 18-30	2 (1.0)	84 (42.0)		
• 31-50	4 (2.0)	59 (29.5)		
• 51-65	2 (1.0)	49 (24.5)		
Gender			1.283	0.259
• male	6 (3.0)	105 (52.5)		
• female	2 (1.0)	87 (43.5)		
Marital status			2.934	0.236
• single	2 (1.0)	64 (32.0)		
• married	4 (2.0)	113 (56.5)		
• divorced	2 (1.0)	15 (7.5)		
Educational level			14.360	0.053
• < primary	2 (1.0)	4 (2.0)		
• primary	2 (1.0)	40 (20.0)		
• secondary	2 (1.0)	89 (44.5)		
• tertiary	2 (1.0)	59 (29.5)		
Employment status			30.729	0.784
• employed	0 (0.0)	58 (29.0)		
• unemployed	6 (3.0)	66 (33.0)		
• retired	2 (1.0)	2 (1.0)		
• other	0 (0.0)	66 (33.0)		
Social status			1.160	0.283
• low class	6 (3.0)	107 (53.5)		
• middle class	2 (1.0)	85 (42.5)		
LD-2				
Age (years)			2.678	0.148
• 18-30	2 (1.0)	84 (42.0)		
• 31-50	0 (0.0)	63 (31.5)		
• 51-65	0 (0.0)	51 (25.5)		
Gender			1.620	0.204
• Male	2 (0.0)	109 (54.5)		
• Female	0 (0.0)	89 (44.5)		
Marital status			4.102	0.072
• Single	2 (1.0)	64 (32.0)		
• Married	0 (0.0)	117 (58.5)		
• Divorced	0 (0.0)	17 (8.5)		
Educational level			7.600	0.065
• <primary	0 (0.0)	6 (3.0)		
• Primary	2 (1.0)	40 (20.0)		
• Secondary	0 (0.0)	91 (45.5)		
• Tertiary	0 (0.0)	61 (30.5)		
Employment status			3.591	0.928
• Employed	0 (0.0)	58 (29.0)		
• Unemployed	2 (1.0)	70 (35.0)		
• Retired	0 (0.0)	4 (2.0)		
• Others	0 (0.0)	66 (33.0)		
Social status			1.555	0.213
• Low class	2 (1.0)	111 (55.5)		
• Middle class	0 (0.0)	87 (43.5)		

LD1- Loss or absence or inactivity of whole or part of hand or leg or both due to amputation, paralysis, deformity or dysfunction of joints which affects his/her "normal ability to move self or objects".

LD2- Physical deformities in the body (other than limbs), such as, hunch back, deformed spine etc.

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Table 7. Association between mental disability and socio-demographic variables (N=200)

	Mental Disability		χ^2	p-value
	Positive	Negative		
MD-1				
Age			4.393	0.759
• 18-30	0 (0.0)	86 (43.0)		
• 31-50	2 (0.0)	61 (30.5)		
• 51-65	0 (0.0)	51 (25.5)		
Gender			2.520	0.113
• male	0 (0.0)	111 (55.5)		
• female	2 (0.0)	87 (43.5)		
Marital status			21.747	0.003*
• single	2 (1.0)	68 (34.0)		
• married	0 (0.0)	117 (58.5)		
• divorced	0 (0.0)	13 (6.5)		
Educational level			2.420	0.950
• < primary	0 (0.0)	6 (3.0)		
• primary	0 (0.0)	42 (2.0)		
• secondary	2 (1.0)	91 (40.5)		
• tertiary	0 (0.0)	61 (30.5)		
Employment status			3.591	0.928
• employed	0 (0.0)	58 (29.0)		
• unemployed	2 (1.0)	70 (35.0)		
• retired	0 (0.0)	4 (2.0)		
• other	0 (0.0)	66 (33.0)		
Social status			1.555	0.213
• low class	2 (1.0)	111 (55.5)		
• middle class	0 (0.0)	87 (43.5)		
MD-2				
Age (years)			4.393	0.759
• 18-30	0 (0.0)	86 (43.0)		
• 31-50	2 (0.0)	61 (30.5)		
• 51-65	0 (0.0)	51 (25.5)		
Gender			1.620	0.204
• Male	2 (1.0)	109 (54.5)		
• Female	0 (0.0)	89 (44.5)		
Marital status			21.747	0.003*
• Single	0 (0.0)	66 (33.0)		
• Married	0 (0.0)	117 (58.5)		
• Divorced	2 (0.0)	15 (7.5)		
Educational level			7.600	0.065
• <primary	0 (0.0)	6 (3.0)		
• Primary	2 (0.0)	40 (20.0)		
• Secondary	0 (1.0)	91 (40.5)		
• Tertiary	0 (0.0)	61 (30.5)		
Employment status			3.591	0.928
• Employed	0 (0.0)	58 (29.0)		
• Unemployed	2 (1.0)	70 (35.0)		
• Retired	0 (0.0)	4 (2.0)		
• Others	0 (0.0)	66 (33.0)		
Social status			1.555	0.213
• Low class	2 (1.0)	111 (55.5)		
• Middle class	0 (0.0)	87 (43.5)		

MD1- Difficulty in understanding routine instructions

MD2- Inability to function in a way typical of one's peers in terms of communication (speech), self-care (cleaning teeth, getting dressed, preparing meals, personal hygiene etc.), housekeeping and expected social skills.

Discussion

This study investigated the occurrence, patterns and socio-demographic correlates of disability among residents in two selected rural communities in Nigeria. As the results indicate, the overall occurrence of disability was 16%. This result is close to the global data for disability, estimated at 15% [1]. Disability occurrence is reported to be higher in developing than in developed countries [21], and it has been reported that about 80% of those affected by disability reside in rural areas [1].

The data on the occurrence of disability obtained in this study differ from those obtained in a community-based study conducted in rural Karnataka, India (6.3%) [22] and, more recently, in Bareilly, also in India (37%) [23]. The differences in disability occurrence rates found in these studies may be accounted for by inherent differences in the sample population and the variations in operational definitions for disability used in the various studies, as well as differences in methods used for data collection.

With reference to the context of this study, it might be assumed that the occurrence rate for disability has been underestimated, as some of those affected may have been absent or may no longer have resided in the households visited. Anecdotally, the severely disabled - in the study setting - often engage in street begging due to economic deprivation and the lack of, or limited, welfare benefits. Furthermore, it could also be assumed that some of the respondents in this door-to-door survey, whose disabilities were not apparent, chose not to reveal them. With strong negative societal perception of disability in the study setting, people may feel stigmatized or ashamed identifying themselves as ones with a disability. In some cultures, disability is seen as a punishment for transgressions committed in previous lives [24], as such, it is rarely disclosed [25].

Visual disability with the occurrence of 6% was the most common type of disability in this study, followed by locomotor disability (5%). This finding aligns with the results reported by Mahmood et al. [23], who found visual disability to be the most prevalent, followed by locomotor disability, in India.

However, Kumar et al. [26] found that locomotor disability was the commonest disability in their study in a rural India. The outcome of the former study is at variance with the overall global pattern that indicates locomotor disability as the most common type of disability. As noted above, locomotor disability in economically deprived settings such as the one in this study, drives those affected to beg in the streets, which has an impact on the results in house to house surveys.

In the current study, the occurrence of visual disability increased significantly with old age, being highest in 51-65-year-olds and older ones. Also, higher occurrence of visual disability was found among females than males. This finding is consistent with reports that visual acuity declines steadily in those between 55 and 80 [27]. Furthermore, there was a higher rate of locomotor disability, especially among males. Generally, the higher rate of physical disability among males than females as observed in this study contrasts with most reports [5, 28, 29]. However, variations in gender-related patterns of disability have been observed in literature [30, 31].

This study has also found that the occurrence of disability was higher among those in the lower class (12%), which is consistent with earlier studies [32-34]. Limited resources and low income mean lesser affordability of health care and restricted access to facilities and rehabilitation, which leads to further deterioration in the condition of the disabled and a sense of confinement. Moreover, all these may further lower their standard of living and socioeconomic status leading to a vicious cycle [34].

In this study, hearing disability was found to have an occurrence of 1%, which corresponds with other studies [35, 36]. For example, in China, the occurrence of hearing disability was 3.28% [37]. This study also shows a significant association between hearing disability and marital status with the highest rate among the divorced and none in the married couples. It has been reported that marriage rates are lower among people with hearing disability when compared to normally hearing individuals [38]. Hearing loss may be a major obstacle in maintaining relationships,

whether it is marriage or cohabitation [38]. Apart from difficulty in effective communication, which may impair forming or maintaining a romantic relationship, a couple may face societal pressure, prejudice and social stigmatization if either or both of them are hard of hearing or deaf.

A 2% occurrence of mental disability was found in this study. Although, there seems a significant variation in the occurrence of mental disability among populations and geographical areas [39], the occurrence rate of mental disability obtained in this study is comparable to the global variance of the occurrence of mental retardation (1-3%) [40] and the occurrence of mental disability in rural India (1.71%) [39]. Also, there was a significant association between mental disability and marital status in this study. Several studies have shown that marital stress is associated with a range of psychiatric diagnoses [41-43]. Certain personality traits and disorders like dependency, passiveness, aggression, histrionic personality disorder, paranoia and obsession, especially when aggression is a marked feature, have a high incidence of severe marital discord [44]. When compared to well-adjusted couples, divorce-seeking couples have a high psychiatric morbidity, with more neurotic traits [45]. Studies in male neurotics showed that a wife's

inability to escape from her husband's neurotic behavior may affect her mental health. This might explain the association between mental disability and marital status as observed in this study.

A potential limitation of this study is that disability was assessed subjectively. The respondents' claims were not verified, which leaves room for improvement and studies with revised methodology and more objective measures of disability. However, the current study used a valid subjective tool that has been implemented in other studies, which enables comparison with data obtained elsewhere. Also, the validity of this research lies in following the protocol for community survey on disability [17] as an established procedure.

Conclusion

This study has identified a high occurrence of disability among the rural population in selected regions of Nigeria, especially among males, those with low socio-economic status and married partners. Visual disability, followed by locomotor disability is the most common type of disability. Visual disability is related to age, while marital status significantly correlates with hearing and mental disabilities.

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