Original Research Article

Assessment of perceived social support and depression in elderly patients with knee osteoarthritis attending state specialist hospital in Nigeria

Adenike Olugbenga-Bello[1], Tolulope J. Adesola[1], Taiwo A. Alatishe[2], Samson A. Ojedokun[3]*

[1]Department of Community Medicine, Lautech University, Ogbomosho, Nigeria
[2]Department of Psychiatry, Lautech University, Ogbomosho, Nigeria
[3]Department of Chemical Pathology, Lautech University, Ogbomosho, Nigeria

*Correspondence:
Dr. Samson A. Ojedokun,
E-mail: Samson.ojedokun@yahoo.com

ABSTRACT

Background: Elderly people are faced with decreasing physical capabilities due to some chronic diseases like osteoarthritis (OA) of the knee, leading to a change in social status which increases the risk for depression. The study aimed to assess the pattern of social support, prevalence, and pattern of depression in the elderly with knee OA.
Methods: The study used a descriptive cross-sectional design, conducted among One hundred and forty-seven elderly patients attending geriatric clinics, using a semi-structured self-administered questionnaire for data collection. Self-reported medical history form was used to capture current and past medical history and the multidimensional scale of perceived social support (MPSS) was used to assess perceived social support. Descriptive statistics was done for all variables with SPSS version 23; association was done by using Chi-square test and logistic regression and level of significance was set at $p<0.05$.
Results: The study revealed a prevalence of 40.8% with a pattern of predominantly mild-moderate depression at 34.7%, while severe depression was 6.1%. The absence of depression was found to be 59.2%. A moderate level of perceived social support was seen in 61.9%. The level of social support was significantly associated with depression in the elderly with knee OA, $p<0.05$.
Conclusions: The prevalence of depression among the elderly studied was good and the perceived social support was good among the studied populations.

Keywords: Social support, Prevalence, Pattern, Depression, Elderly, Knee OA

INTRODUCTION

Patients with knee OA usually experience pain and disability which leads to decreased physical functioning, and greater difficulty performing regular activities and thus, resulting in a decline in health-related quality of life. Physical disability is associated with locomotor function derangement such as walking, ascending or descending stairs, sitting and standing, which are essential for the maintenance of daily activities.[1]

Depression is a mood disorder associated with persistent feelings of sadness, loss of interest and pleasure in daily activities, which may occur independently as a separate health condition, or in reaction to the presence of other chronic illnesses, adverse life events, and losses, as well as mobility losses.[2]

Social support is vital for elderly people because it enhances physical and emotional functioning. The greater the adequacy of social support, the lower the depressive scores. How the elderly perceive and interpret the

incidents around them is important. Perceived negative life events can lead to despair in situations where signs of depression develop. The level of depression may arise when individuals cannot perceive social support.[3]

Elderly people are faced with decreasing physical capabilities, chronic diseases, changing social status and the attendant empty nest syndrome, which all increase the risk for depression. This category of the population falls back on the available social support to reduce and cope with these negative effects.

More prone to depression among the elderly are those with knee OA who experience pain and disability which makes it harder for them to take care of themselves as they carry out activities of daily living.[1] Studies have reported that chronic pain, a common feature of knee OA is associated with depressive symptoms.[4] Twenty-eight percent of patients with knee OA are said to have depressive symptoms.[1] Social support (emotional support, information access, companionship, financial support) gives the individual optimism and leads him or her to cope with stress-filled events more effectively.[3] Social support has been known to offset or moderate the impact of stress caused by illness.[5]

Traditionally, in Nigeria, social support comes from social interactions and networks of individual relationships that strengthen the well-being of their members. The extended family system is the major source of social support, with others being friends, members of one's religious gathering and immediate community. Sadly, these social support systems are gradually declining due to the pressure of urbanization, economic recessions, and neglect of the elderly.[6,7]

Therefore, this study assessed the pattern of social support, prevalence, and pattern of depression in the elderly with knee OA and the relationship between these two factors in this environment.

METHODS

Study design

This study was a cross-sectional descriptive design conducted among elderly with knee osteoarthritis who attended the geriatric and orthopedic clinic at the state specialist hospital, Asubiaro, Osogbo in Osun State.

Sample size

The sample size was calculated by using Leslie Fischer's formulae for a population <10,000. Using the prevalence of depression in the elderly with knee Osteoarthritis as 28.8%. A total of 150 population was sampled with an additional non-response rate of 10% and a systematic random sampling technique was used at both clinics to recruit subjects for this study.

Selection criteria

All consenting elderly aged 60 years and above diagnosed with knee osteoarthritis and on follow-up or newly diagnosed using the American college of rheumatology ACR clinical criteria were recruited for the study. Those less than 60 years old, elderly in bereavement and those that are acutely ill were excluded.

The study was conducted between October 2021-March 2022.

Research instrument

An interviewer-administered semi-structured questionnaire was administered to all the participants to obtain sociodemographic information.

Self-reported medical history form was used to capture current and past medical history and the MPSS was used to assess perceived social support as perceived by the respondents from family, friends and significant others. The MPSS is a subjective assessment of social support adequacy and is a 12-item scale, validated in various groups and countries including Nigeria with good internal consistency.[8] A mean score greater than three for each subscale denotes good perceived social support.[9]

Data analysis

Data was analyzed using a statistical package for social sciences (SPSSvs23). Frequency tables, measures of central tendency (mean) and measures of dispersion (range, standard deviation and confidence intervals of means) were used to summarize the demographic characteristics of respondents. Important variables were tested and the level of significance set at $p<0.05$.

Ethical approval

Ethical clearance was obtained from the ethical review committee of Osun state ministry of health, Osogbo, Osun State.

RESULTS

From Table 1 the age range of 70 to 74 accounted for 36.7% of the studied population, followed by 65 to 69 years (34%) while above 75 years was 10.9%. The majority of the respondents were married. Only 9% of the respondents were divorced while 12.9% were separated. Few 8.8% had between 1-2 children while those that had between 3-5 children constituted the highest proportion (59.2%) followed by those with more than 5 children (32%). Most of the respondents (41.5%) were living with significant other people aside from their spouses while only 5.4% were living alone. The majority of the respondents (52.4%) were Muslim and Christians accounted for 42.2% while 5.4% were of the traditional religion. The 17.7% of the respondents had tertiary

education while 20.4% had no formal education. The respondents were mostly of the Yoruba tribe (89.1%) while the Igbo's accounted for 10.2%.

Table 1: Socio-demographic characteristics of respondents, (n=147).

Variables	N	Percentage (%)
Age (in years)		
60-64	27	18.4
65-69	50	34.0
70-74	54	36.7
75-79	16	10.9
Sex		
Male	59	40.1
Female	88	59.9
Marital status		
Married	82	55.8
Widowed	37	25.2
Divorced	9	6.1
Separated	19	12.9
Marriage type		
Monogamy	91	61.9
Polygamy	57	38.1
Family type		
Nuclear	97	66.0
Extended	50	34.0
Number of children		
1-2	13	8.8
3-5	87	59.2
6-Above	47	32.0
Living arrangement		
Living alone	8	5.4
Living with a spouse	24	16.3
Living with spouse and children	54	36.7
Living with sig. others	61	41.5
Education		
No education	30	20.4
Primary level	39	26.5
Secondary level	52	35.4
Tertiary level	26	17.7
Tribe		
Yoruba	131	89.1
Igbo	15	10.2
Hausa	1	0.7
Religion		
Christianity	62	42.2
Islam	77	52.4
Traditional	8	5.4

The majority (53.7%) of respondents had been diagnosed with knee OA for more than 52 months while only 4.8% were newly diagnosed. Only 31.6% of respondents had diabetes as a comorbid illness while 22.8% (8.8% of total respondents) of these have been diagnosed diabetic for over 52 months. Ninety-nine (67.3%) of respondents are known hypertensive patients with 30.3% (20.4% of total

respondents) of them knowing for over fifty-two months. The majority of respondents are obese (48.9%) while none is underweighted (Table 2).

Table 2: Medical history index of respondents, (n=147).

Variables		N	Percentage (%)
Duration of knee OA (in months)	<6	7	4.8
	6-12	19	12.9
	12-24	14	9.5
	25-52	28	19.0
	>52	79	53.7
	No	90	61.2
Duration of diabetes (in months)	<6	18	31.6
	6-12	9	15.8
	12-24	3	5.2
	25-52	14	24.6
	>52	13	22.8
Hypertension, (n=147)	Yes	99	67.3
	No	48	32.7
Duration of hypertension, (in months) (n=99)	<6	13	13.1
	6-12	19	19.2
	12-24	16	16.2
	25-52	21	21.2
	>52	30	30.3
Actual BMI	Normal	22	15.0
	Overweight	53	36.1
	Obese	72	48.9

The perceived social support was good among 120 (81.6%) respondents and poor among 27 (18.4%) respondents. 145 (98.6%) respondents indicated good perceived social support from their family members. The 73 (49.6%) reported good perceived social support from their friends and 68 (46.2%) of respondents reported good perceived social support from significant others (Figure 1).
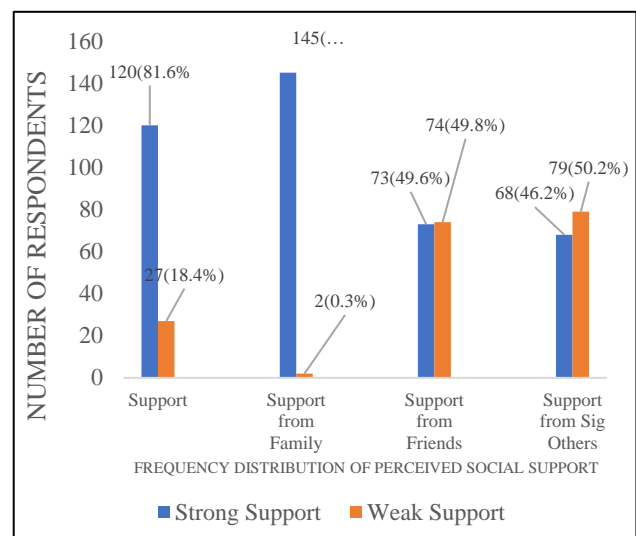

Figure 1: Sources of support among respondents.

The majority of respondents, eighty-seven (59.2%) do not report depression while a total of sixty (40.8%) respondents reported depression. Of the sixty who reported depression, nine (6.1% of total respondents) reported severe depression while fifty-one (34.7% of total respondents) reported moderate depression (Figure 2).
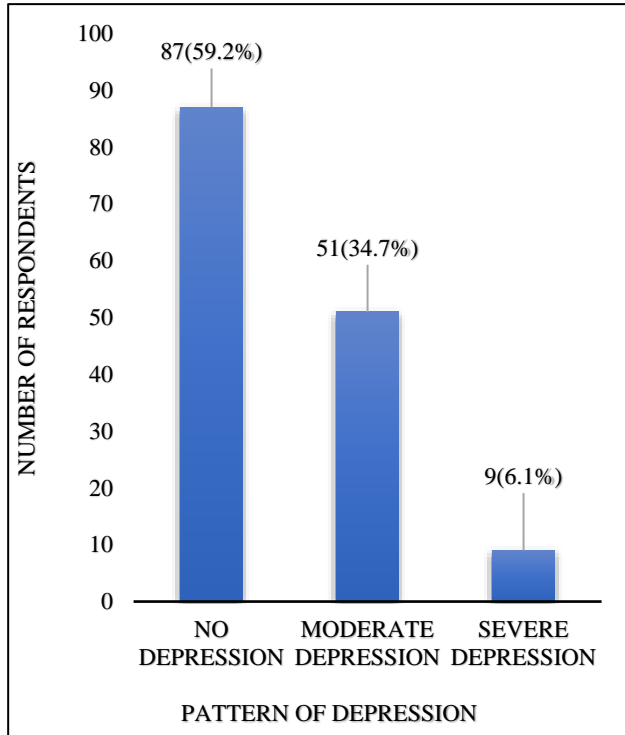

Figure 2: Pattern of depression among respondents.

From Table 3 the relationship between age and perceived social support was statistically significant (p<0.05). Of the different respondent age groups, the age group 70-74 years had the highest proportion (51.9%) of low perceived social support while the age group 65-69 had the least proportion (11.1%) of low-level support. Respondents between the age 65-69 years had the highest proportion (58.6%) of high perceived social support while age 75 and above had the least (17.2%). Male respondents had a higher proportion of high perceived support (55.2%) than females who had higher proportions than their male counterparts in moderate (58.2%) and low perceived support (81.5). the statistical relationship between gender and perceived social support was also significant (p<0.05).

Also, the findings were statistically significant (p<0.05) in relationships with marital status, type of marriage, family type and living arrangement. Respondent's religion was however statistically significant (p<0.05) in relationship to perceived social support (Table 3).

Table 4 age groups between 60-64 years reported no severe depression while 70-74 years and above 75 years of age reported the highest frequency (44.4%) of severe depression respectively. Age group 65-69 years reported the highest frequency forty respondents representing 46.0% of total respondents with no depression. Age 75 and above have the least frequency (5.7%) of respondents reporting no depression. The relationship of age with the pattern of depression was statistically significant (Pp<0.05). Forty-five females (30.6% of total respondents) were depressed as against fifteen in males (10.2% of total respondents). Male to female (M:F) ratio was 1:3 this is statistically significant (<0.05). Twenty (24.4%) of the married respondents, fifteen (48.6%) widows, seven (77.7%) divorced and fifteen (78.9%) separated respondents reported depressed. Marital status and marriage type were both statistically significant (p<0.05). Religion, tribe, and level of education were not statistically significant. Forty-eight (49% of respondents of nuclear family type) respondents of the nuclear family type reported depressed while forty-nine (51% of respondents of nuclear family type) reported not depressed. Twelve (24%) respondents of the extended family type reported depressed while thirty-eight (76%) were not depressed. The family type was statistically significant. Relationship between the pattern of depression and living arrangement of respondents was statistically significant (p<0.05)

Table 3: Socio-demographic data with perceived social support (n=147).

Variables	Level of perceived social support			P value
	Low, (n=27)	Moderate, (n=91)	High, (n=29)	
Age (in years)				
60-64	4 (14.8)	18 (19.8)	5 (17.2)	0.005
65-69	3 (11.1)	30 (33.0)	17 (58.6)	
70-74	14 (51.9)	35 (38.5)	5 (17.2)	
75-Above	6 (22.2)	8 (8.8)	2 (6.9)	
Gender				
Male	5 (18.5)	38 (41.8)	16 (55.2)	0.018
Female	22 (81.5)	53 (58.2)	13 (44.8)	
Marital status				
Married	5 (18.5)	49 (53.8)	28 (96.6)	<0.0001
Widowed	15 (55.6)	21 (23.1)	1 (3.4)	
Divorced	2 (7.4)	7 (7.7)	0 (0.0)	
Separated	5 (18.5)	14 (15.4)	0 (0.0)	

Continued.

Variables	Level of perceived social support			P value
	Low, (n=27)	Moderate, (n=91)	High, (n=29)	
Marriage type				
Not married	22 (81.5)	42 (46.2)	1 (3.4)	
Monogamy	2 (7.4)	37 (40.7)	20 (69.0)	<0.0001
Polygamy	3 (11.1)	12 (13.2)	8 (27.6)	
Family type				
Nuclear	24 (88.9)	59 (64.8)	14 (48.3)	0.005
Extended	3 (11.1)	32 (35.2)	15 (51.7)	
No. of children				
1-2	2 (7.4)	8 (8.8)	3 (10.3)	
3-5	17 (63.0)	55 (60.4)	15 (51.7)	0.923
6-above	8 (29.6)	28 (30.8)	11 (37.9)	
Living arrangement				
Living alone	4 (14.8)	4 (4.4)	0 (0.0)	
Living with spouse	3 (11.1)	14 (15.4)	7 (24.1)	
Living with spouse and children	2 (7.4)	34 (37.4)	18 (62.1)	<0.0001
Living with sig. others	18 (66.7)	39 (42.9)	4 (13.8)	
Education				
No education	6 (22.2)	15 (16.5)	9 (31.0)	
Primary level	9 (33.3)	21 (23.1)	9 (31.0)	0.085
Secondary level	5 (18.5)	41 (45.1)	6 (20.7)	
Tertiary level	7 (25.9)	14 (15.4)	5 (17.2)	
Tribe				
Yoruba	24 (88.9)	84 (92.3)	23 (79.3)	
Igbo	3 (11.1)	6 (6.6)	6 (20.7)	0.254
Others	0 (0.0)	1 (1.1)	0 (0.0)	
Religion				
Christianity	5 (18.5)	43 (47.3)	14 (48.3)	
Islam	20 (74.1)	45 (49.5)	12 (41.4)	0.042
Traditional	2 (7.4)	3 (3.3)	3 (10.3)	

Table 4: Sociodemographic characteristics with pattern of depression among respondents.

Variables	Level of depression			P value
	No depression, (n=87)	Moderate depression, (n=51)	Severe depression, (n=9)	
Age (in years)				
60-64	21 (24.1)	6 (11.8)	0 (0.0)	
65-69	40 (46.0)	9 (17.6)	1 (11.1)	<0.0001
70-74	21 (24.1)	29 (56.9)	4 (44.4)	
75-above	5 (5.7)	7 (13.7)	4 (44.4)	
Gender				
Male	44 (50.6)	13 (25.5)	2 (22.2)	0.008
Female	43 (49.4)	38 (74.5)	7 (77.8)	
Marital status				
Married	62 (71.3)	19 (37.3)	1 (11.1)	
Widowed	19 (21.8)	13 (25.5)	5 (55.6)	
Divorced	2 (2.3)	7 (13.7)	0 (0.0)	<0.0001
Separated	4 (4.6)	12 (23.5)	3 (33.3)	
Marriage type				
Not married	25 (28.7)	32 (62.7)	8 (88.9)	
Monogamy	46 (52.9)	12 (23.5)	1 (11.1)	<0.0001
Polygamy	16 (18.4)	7 (13.7)	0 (0.0)	
Family type				
Nuclear	49 (56.3)	40 (78.4)	8 (88.9)	0.010
Extended	38 (43.7)	11 (21.6)	1 (11.1)	

Continued.

Variables	Level of depression			P value
	No depression, (n=87)	Moderate depression, (n=51)	Severe depression, (n=9)	
No. of children				
1-2	10 (11.5)	2 (3.9)	1 (11.1)	
3-5	43 (49.4)	38 (74.5)	6 (66.7)	0.061
6-above	34 (39.1)	11 (21.6)	2 (22.2)	
Living arrangement				
Living alone	0 (0.0)	0 (0.0)	2 (22.2)	
With spouse	18 (20.7)	22 (43.1)	2 (22.2)	<0.0001
With spouse and children	64 (73.6)	26 (51.0)	4 (44.4)	
With sig. others	5 (5.7)	3 (5.9)	1 (11.1)	
Education				
No education	20 (23.0)	7 (13.7)	30 (20.4)	
Primary level	22 (25.3)	13 (25.5)	4 (44.4)	0.418
Secondary level	29 (33.3)	21 (41.2)	2 (22.2)	
Tertiary level	16 (18.4)	10 (19.6)	0 (0.0)	
Tribe				
Yoruba	77 (88.5)	46 (90.2)	8 (88.9)	
Igbo	10 (11.5)	4 (7.8)	1 (11.1)	0.677
Others	0 (0.0)	1 (2.0)	0 (0.0)	
Religion				
Christianity	40 (46.0)	21(41.2)	1 (11.1)	
Islam	42 (48.3)	27 (52.9)	8 (88.9)	0.243
Traditional	5 (5.7)	3 (5.9)	0 (0.0)	

DISCUSSION

A total of one hundred and forty-seven elderly patients with knee OA were studied. The mean age (SD) was 68.65(± 4.73 years with an age range of 60 to 79 years. The majority belonged to the young elderly (60-69 years) age group accounting for half of respondents.

The participants were mostly married in monogamous family settings. This is in contrast with the report by the Nigeria national demographic census of 2006 with two-thirds of marriages belonging to the polygamous type. Yoruba was the predominant ethnicity. The Yoruba ethnic group, like other ethnic groups in Nigeria, has a strong regard for the aged, with the traditional structure of care for the elderly to be assumed by the family and extended kin. Okumagba in his study on family support for the elderly in Delta State of Nigeria revealed that support received by the elderly is not regular nor adequate and the ethnocultural perception of care for the elderly is being eroded due to various socio-economic changes and modernization.[6]

As the prevalence of knee OA increases with increasing age, the coexistence of other chronic diseases is common which further impacts the quality of life of those patients.[10] From this study, respondents reported comorbidities like diabetes, hypertension, and obesity. Above one-third of respondents were diabetic and two third were hypertensive. The majority were obese while one-third reported being overweight and only others were of normal weight. This is consistent with the findings of the study done by Leite et al.[11] In a study done by Chan et al on co-morbidities of patients with knee OA, it was reported that the three most common non-musculoskeletal co-morbidities in older adults were cardiovascular (e.g. hypertension), endocrine (e.g. diabetes), and central nervous system (e.g. stroke).[10] Most of these conditions share similar pathophysiologic pathways or common etiologic factors, and some, e. g., cardiovascular and cerebrovascular diseases, may affect physical function through musculoskeletal systems, limiting physical endurance on exertion.[12]

The overall perception of social support in the study population was good (moderate and high support) with the majority of respondents reporting moderate to a high level of perceived social support. A high proportion of respondents received strong family support. This finding is higher than the findings by Ilori et al in Ibadan who carried out a study on knee osteoarthritis and perceived social support among patients in a family medicine clinic and found that two-thirds received strong support from family sources.[13] This could be due to the age difference in the study population which included adult patients 18 years and above. Similarly, findings in the study by Aina et al carried out in Ekiti State, Nigeria also showed that the predominant source of social support was from family members.[14] Okumagba report shows that put together 6 out of 10 of the respondents received support from family members.[6] The proportion in the Aina and Okumagba studies was lesser than the findings in this study which may be attributed to the different instruments used in assessing the support of the respondents.

In this study, the relationship between sociodemographic background and perceived social support was statistically significant with respondents' age, gender, marital status, marriage type, family type, living arrangement and religion at p<0.05. Findings in a study done by Sule et al in Jos, Nigeria showed a statistically significant relationship between perceived social support and age, and gender but also with educational and employment status unlike in this study.[15] This difference could be due to the inclusion of middle-aged adults (work-age group) in the study at Jos.

This study revealed no depression in more than half of respondents, moderate depression in one-third of respondents, and severe depression in a few of respondents. The prevalence of depression among respondents in this study was close to half. This is in keeping with findings in a study by Küçükşen et al on the prevalence of depression and its relevance to clinical and radiological characteristics among older adults with knee OA. Individuals with knee OA and age-and sex-matched healthy controls found a higher prevalence of depression among individuals with OA.[16]

Odole et al in a study at Ibadan metropolis reported a prevalence of 28.8% for depression among the 80 participants of the study.[1] This is also lower than the prevalence of depression in this study. Depression in this study was found to be higher in respondents who are middle-aged (70-79 years) respondents, female gender, separated/divorced, polygamy, nuclear family type, living alone and having no education. The relationship of these variables was statistically significant to depression except for educational status.

Traditionally, a large number of children is expected to translate to increased care and support. This has reduced due to the demographic transition, increased mobility, rural-to-urban migration and increasing financial instabilities. In this study, there was a statistically significant relationship between depression and respondents having 3-5 children. In the face of the economic hardship, unemployment, and poverty being encountered by many children of the elderly, many elderlies in this environment still support their children and grandchildren from their merger pension or income and they continue to engage in menial jobs and manual work on the farms with meager earnings as long as their physical strength can afford.

This study demonstrates a statistically significant relationship between depression and respondents living alone. This relationship was found to be independent of the influence of expressive support from friends, face-to-face interaction with friends, undesirable life events, disability, and financial strain. Undesirable health events have a stronger impact on those who live alone. Moreso, depression was statistically significantly associated with non-literate respondents in this study. Education has been found to influence the development and the course of depression.

CONCLUSION

Knee OA is a chronic musculoskeletal disease capable of causing functional impairment in the elderly. As the population of elderlies increases, the role of Family physicians as primary care physicians, managing patients from cradle to grave and being at the core of geriatric care in Nigeria, in instituting measures to prevent depression in elderly with knee OA and early detection of depression where present cannot be under-estimated. Prevention of depression in the elderly with knee OA should receive more focus due to the presence of modifiable risk factors that could be amenable to intervention.

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