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RESEARCH ARTICLE

KNOWLEDGE OF RISK FACTORS FOR DEPRESSION AMONG HOSPITALIZED ELDERLY PATIENTS WITH DEPRESSIVE CASES IN TEACHING HOSPITALS IN SOUTHEAST NIGERIA

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ABSTRACT

The present study was a surface survey that determined the level of knowledge of risk factors for depression possessed by hospitalized elderly patients with depressive cases in teaching hospitals in Southeast Nigeria. The study adopted a descriptive survey research design. A total of 200 eligible participants were studied. Data was collected through interview method and questionnaire. Descriptive statistics was used for data analysis. The study revealed that the level of knowledge of risk factors for depression possessed by hospitalized elderly patients with depressive cases in teaching hospitals in Southeast Nigeria was adequate. The study further showed the socio-demographic differences on the level of knowledge of risk factors for depression among the participants. Statistically, significant difference existed on some socio-demographic variables while no significant difference was indicated on others at 0.05 level of significance. The hospitalized elderly patients with depressive cases in teaching hospitals in Southeast Nigeria possessed adequate knowledge of risk factors for depression. However, their level of knowledge regarding the risk factors for depression differed within variables, thus suggesting the crucial need for optimization and effective education intervention such as public health education regarding risk factors for depression and other chronic diseases particularly in elderly.

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INTRODUCTION

Depression is a major public health problem and a treatable medical condition (Mayo Clinic, 2016). It is a non-communicable disease, just like high blood pressure (Ugwu *et al*., 2016) that is common in elderly population. A comprehensive understand and knowledge of the risk factors for depression would enhance effective treatment, recovery and maximum control. A risk factor is something that increases the likelihood of getting a disease or condition. However, depression may also have damaging effects on individual's health, if treatment and knowledge of the risk factors are inadequate or ineffective. The obvious manifestation of depression has traditionally been described as a relatively uniform entity with rather consistent symptoms. For instance, the primary symptoms of depression are sad mood and/or loss of interest in life (Mayo Clinic, 2016); difficulty concentrating, remembering details, and making decisions; fatigue and decreased energy; feelings of guilt, worthlessness, and/or helplessness (National Institute of Mental Health, 2016). These symptoms usually result to severe mental stress. Available research showed that mental stress reactions can manifest as mental exhaustion, depression, anxiety, memory problems, somatic symptoms, and sleep-related disturbances (Potter *et al*., 2009; Nakao, 2010). These conditions have the potentials of decreasing the quality of life and life satisfactions (Strine *et al*, 2009). There are also evidence that depression increases the degree of utilization of medical services (Katon *et al*., 1992), health care costs (Unutzer *et al*., 1997) and the perception of poor health (Wells and Burman, 1991). In older age, depression is considered as a major public health concern due to the risk of associated long-term disability, costly hospitalizations, limited physical performances and subsequent poor functioning abilities. Studies indicated that major depression occurs in 1% to 3% of the general elderly population (NIH consensus development Conference, 1992; Cole and Yaffe, 1996) and additional 8% to 16% have

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clinically significant depressive symptoms (Blazer, 1989; NIH consensus development Conference, 1992; Cole and Yaffe, 1996). There are also reliable indications that depressed adults with depressive symptoms, with or without depressive disorder, have poorer functioning, comparable to or worse than those with chronic medical conditions such as heart and lung disease, arthritis, hypertension, and diabetes (Gurland *et al*., 1988; Wells and Burman, 1991; Von Korff *et al*., 1992). Additional report also showed that depressive elderly patients may be haunted by a sense of guilt or worthlessness, lack of hope, or recurring thoughts of death or suicide (Mayo Clinic, 2016).

Previous studies have shown that experience of depression is strongly associated with poor health. For instance, depression can increase the risk of excess weight or obesity; Pain and physical illness, panic disorder or social phobia; alcohol or substance misuse; anxiety (Mayo Clinic, 2016); heart rate and blood pressure level (De Vente, 2003); risk of cardiovascular diseases (Kivimaki, 2006); diabetes (Mayo Clinic, 2016; Melamed, 2006); family conflicts, relationship difficulties, and work problems; social isolation; suicidal feelings, suicide attempts or suicide; self-mutilation, such as cutting and premature death from other medical conditions (Mayo Clinic, 2016). However, information about the quality of knowledge possessed by individuals on the risk factors for depression is scarce. It is possible that depression accelerates the deterioration of health and results in unhealthy lifestyle, all of which may expedite the progression of disabilities, mild cognitive impairment, severe Parkinson's disease, or death. A good number of studies have examined the role of psychosocial symptoms such as depression, other aspects of mental health and sleeping problems on later life functioning (Schillerstrom *et al*., 2008; Hybels *et al*., 2009; Iwasa *et al*., 2009) with little or no emphasis on the knowledge of the risk factors such as personality traits; traumatic or stressful events; sleep disorder; unplanned retirement psychosocial factors; among others (Mayo Clinic, 2016; Psych Central, 2016). Despite the overwhelming evidence on the prevailing risk factors, symptoms and complications for depression, data regarding the quality of knowledge possessed by individuals especially the elderly patients with depressive cases is lacking. Thus, the need for the present study which aimed at determining the level of knowledge of risk factors for depression possessed by hospitalized elderly patients with depressive cases in teaching hospitals in Southeast Nigeria and to verify the null hypotheses of no significant differences on socio-demographic characteristics. This was the gap the present study filled.

MATERIALS AND METHODS

The study adopted the descriptive survey research design. The participants were hospitalized elderly patients with depressive cases from the teaching hospitals in the five states (Abia, Enugu, Imo, Ebonyi and Anambra) that formed the south-eastern part of Nigeria. A total of 231 elderly patients were assessed by the researchers. From these, 200 hospitalized elderly men (43.5%) and women (56.5%) with depressive cases aged 65 and over were eligible. The main purpose of using teaching hospitals was to ensure accuracy in patient's clinical records. Prior to the study, the medical history of all the patients as contained in their folders was assessed for eligibility to participate. The elderly patients with dementia, mild cognitive impairment and severe Parkinson's disease were excluded. Thus, only 31 hospitalized elderly patients with depressive cases fall in these categories: dementia =23; mild cognitive impairment =5; and severe Parkinson's disease =3. The eligible participants were used to achieve the aim of the study. The socio-demographic characteristics of the eligible participants are shown in Table 1. The researchers' employed the services of fifteen research assistants who are professional nurses and also full-time staff in the teaching hospitals during the course of the study (three research assistants per state). The professional nurses (research assistants) were used for the purpose of accessing patients' folders; evaluating medical history of the patients for eligibility and data collections. Data was generated through interview method and well-constructed questionnaire. The content of the questionnaire was structured to measure the quality of knowledge possessed by the elderly patients on the risk factors for depression. The researchers and the assistants went to the patients' hospital beds to administer the questionnaire and generate qualitative data through interview. The copies of the questionnaire were completed by the patients and returned directly to the researchers on the spot. The descriptive statistics involving mean scores, standard deviation, t-Test, Analysis of Variance, frequency and percentages was employed for data analysis. All the analyses were done using SPSS version 21. The decision on the quality of knowledge possessed by the participants was based on the mean scores. The cut-off point for the weighted mean was 2.50 accrued from the four-point response options, that is to say, any item that weighed 2.50 and above signifies adequate knowledge while any item less than 2.50 implies inadequate knowledge of risk factors for depression by the participants. All the postulated null hypotheses were verified at 0.05 level of significance. The written informed consent was obtained for all participants. The ethical approval for conducting this study was obtained from the Faculty of Education Research Grants Committee, University of Nigeria, Nsukka. (Ethical approval code: ERA.011).

RESULTS

A total of 200 hospitalized elderly patients with depressive cases in teaching hospitals in Southeast Nigeria were studied. The frequency and percentage representatives of the socio-demographic characteristics of the participants were critically verified and presented (see Table 1). From the Table, it was indicated that a greater number of the participants were females with approximately 57% while only 43.5 participants were males. The chronological ages of the participants varied greatly. Thus, majority of eligible participants were within the ages of 85 years and above with approximately 53%. Surprisingly, only 10% of the participants fall within the ages of 65-74 years while approximately 38% were within the ages of 75-84 years. Interestingly, a good number of the participants indicated living with family members with about 68%. The participants who indicated living with relatives were about 23% while only 5% and 4% indicated living alone and living with friends respectively. A greater percentage of the participants were Christians with about 78% while about 10% indicated being traditionalists. Approximately 8% of the participants indicated being Muslims while only 5% were Pagans respectively. It was obvious that a greater percentage of the participants were Bachelor's degree holders with about 51% while only 19% indicated having Master's Degree as their highest educational qualification. Surprisingly, approximately 13% of the participants were Doctorate Degree holders while about 15% indicated having WASSC/GCE as their highest

educational qualification. Only 2.5% of the participants indicated having FSLC as their highest educational qualification.

Table 1. Socio-Demographic Characteristics of the Participants (N = 200)

Variables	F (%)
Gender	
Male	87 (43.5)
Female	113 (56.5)
Age Distribution	
65-74	20 (10.0)
75-84	75 (37.5)
85+	105 (52.5)
Living Condition	
With Family	136 (68.0)
Alone	10 (5.0)
With Relatives	46 (23.0)
With Friends	8 (4.0)
Religious Affiliation	
Christianity	155 (77.5)
Muslim	15 (7.5)
Pagan	10 (5.0)
Traditional	20 (10.0)
Highest Educational Qualifications	
FSLC	5 (2.5)
WASSC/ GCE	30 (15.0)
Bachelor's Degree	102 (51.0)
Master's Degree	38 (19.0)
Doctorate Degree	25 (12.5)
Occupation	
Civil Servant	15 (7.5)
Professional	12 (6.0)
Self-employed	65 (32.5)
Farmer	5 (2.5)
Trader	8 (4.0)
Retired	95 (47.5)

F= Frequency; % = Percentage

Table 2. Level of Knowledge of Risk Factors for Depression Possessed by the Participants (N = 200)

Risk Factors	M ± SD	Remark
Recent Bereavement	2.62 ± .012	Adequate
Sleep Disorder/ Insomnia	2.55 ± .092	Adequate
Unplanned Retirement	2.83 ± .120	Adequate
Medications	2.09 ± .210	Inadequate
Female Gender	2.42 ± .201	Inadequate
Low Education Level	2.56 ± .032	Adequate
Poor Health Status	2.41 ± .012	Inadequate
Cognitive Impairment	2.35 ± .001	Inadequate
Disability	2.88 ± .320	Adequate
Medical Illnesses	2.69 ± .071	Adequate
Major Life changes and stresses	2.56 ± .043	Adequate
No Social Support	2.67 ± .101	Adequate
Psychological Factors	2.54 ± .103	Adequate
Low Socioeconomic Status	2.61 ± .014	Adequate
Unmarried/ Living Alone	2.33 ± .032	Inadequate
Grand Mean Value	**2.54 ± .091**	**Adequate**

A greater number of the participants were retirees and self-employed individuals with approximately 48% and 33% respectively. Interestingly, about 6% of the participants indicated being professionals while approximately 8% were civil servants. Nonetheless, approximately 3% of the participants were farmers while only 4% were traders. From Table 2, it was found that the average mean value (M=2.54, SD=0.091) on the level of knowledge of risk factors for depression possessed by the participants was above the cut-off point (M > 2.50). This indicated that the hospitalized elderly patients with depressive cases in teaching hospitals in southeast Nigeria possess adequate knowledge of risk factors for depression. The Table also showed that the level of knowledge possessed by the participants on the items: Medication (M=2.09, SD=.210); Female Gender (M=2.42, SD=.201); Poor Health Status (M=2.41, SD=.012); Cognitive Impairment (M=2.35, SD=.001) and Unmarried/ Living Alone (M=2.33, SD=.032) were inadequate with their mean values below the cut-off point (M < 2.50). Furthermore, the Table equally indicated that the participants possess adequate knowledge on the items: Recent Bereavement (M=2.62, SD=.012); Sleep Disorder/ Insomnia (M=2.55, SD=.092); Unplanned Retirement (M=2.83, SD=.120); Low Education Level (M=2.56, SD=.032); Disability (M=2.88, SD=.320); Medical Illnesses (M=2.69, SD=.071); Major Life Changes and Stresses (M=2.56, SD=.043); No Social Support (M=2.67, SD=.101); Psychological Factors (M=2.54, SD=.103); and Low Socioeconomic Status (M=2.61, SD=.014) with their mean values above the cut-off point (M > 2.50).

Data in Table 3 presented the socio-demographic differences on the level of knowledge of risk factors for depression possessed by the hospitalized elderly patients with depressive cases in teaching hospitals in southeast Nigeria and the significant differences between variables. From the Table, it was found that the level of knowledge of risk factors for depression possessed by the participants differ within variables. Firstly, Table 3 indicated that the cluster mean value of male participants (M=2.35, SD=.181) was below the cut-off point while their female counterparts (M=2.56, SD=.019) was above the cut-off point of 2.50. This implied that the female participants possessed adequate knowledge of risk factors for depression while the male counterparts possessed inadequate knowledge. Statistically, the Table also indicated that there was significant difference on the level of knowledge of risk factors for depression possessed by male and female hospitalized elderly patients with depressive cases in teaching hospitals in Southeast Nigeria (P-value .23 > 0.05). Secondly, the Table also indicated that the cluster mean value of the participants within the chronological age of 65-74 years (M=2.13, SD=.121) was below the cut-off point while those within the ages of 75-84 (M=2.71, SD=.291) and 85 years and above (M=2.55, SD=.310) were above the cut-off point of 2.50. This signified that the elderly participants within the age of 65-74 years possessed inadequate knowledge of risk factors for depression while those within the ages of 75-84 and 85 years and above possessed adequate knowledge. The Table further showed that there was no statistically significant difference on the level of knowledge of risk factors for depression possessed by the participants in teaching hospitals in Southeast Nigeria according to age (P-value .03 < 0.05).

Thirdly, the Table further revealed that the cluster mean value of the participants living with relatives (M=2.30, SD=.012) was below the cut-off point while those living with family (M=2.61, SD=.409); living alone (M=2.50, SD=.103); and living with friends (M=2.60, SD=.606) were above the cut-off point of 2.50. This implied that the participants living with relatives possessed inadequate knowledge of risk factors for depression while those living with family; living alone and living with friends possessed adequate knowledge. From the Table, it was indicated that there was statistically significant difference on the level of knowledge of risk factors for depression possessed by hospitalized elderly patients with depressive cases in teaching hospitals in Southeast Nigeria based on living condition (P-value .31 > 0.05). Fourthly, data in Table 3 indicated that the cluster mean value of the participants who were Muslims (M=2.35, SD=.029); and

Table 3. Presenting Socio-demographic Differences on the level knowledge of risk factors for depression possessed by the participants and Significant Differences between Variables (N = 200)

Variables	N	Mean	SD	Status	t-cal	P-value	Remark	Decision
Gender					**-0.3**	**.23**	*	**Rejected**
Male	87	2.35	.181	Inadequate				
Female	113	2.56	.091	Adequate				
Age Distribution					**-1.6**	**.03**	**	**Accepted**
65-74	20	2.13	.121	Inadequate				
75-84	75	2.71	.291	Adequate				
85+	105	2.55	.310	Adequate				
Living Condition					**.010**	**.31**	*	**Rejected**
With Family	136	2.61	.409	Adequate				
Alone	10	2.50	.103	Adequate				
With Relatives	46	2.30	.012	Inadequate				
With Friends	8	2.60	.604	Adequate				
Religious Affiliation					**-2.0**	**.61**	*	**Rejected**
Christianity	155	2.75	.042	Adequate				
Muslim	15	2.35	.029	Inadequate				
Pagan	10	2.50	.022	Adequate				
Traditional	20	2.15	.210	Inadequate				
Highest Educational Qualifications					**-1.4**	**.04**	**	**Accepted**
FSLC	5	2.33	.025	Inadequate				
WASSC/ GCE	30	2.05	.812	Inadequate				
Bachelor's Degree	102	2.51	.028	Adequate				
Master's Degree	38	2.70	.509	Adequate				
Doctorate Degree	25	2.65	.010	Adequate				
Occupation					**-3.1**	**.01**	**	**Accepted**
Civil Servant	15	2.75	.073	Adequate				
Professional	12	2.60	.202	Adequate				
Self-employed	65	2.25	.037	Inadequate				
Farmer	5	2.05	.129	Inadequate				
Trader	8	2.40	.025	Inadequate				
Retired	95	2.75	.073	Adequate				

* Significant; ** Not Significant at 0.05; N = Number of Participants; M = Mean Score; SD = Standard Deviation

Traditionalists (M=2.15, SD=.210) were below the cut-off point while those in the religious affiliations of Christianity (M=2.75, SD=.042); and Pagan (M=2.50, SD=.022) were above the cut-off point of 2.50. This implied that the participants who are in the affiliations of Muslim and Tradition possessed inadequate knowledge of risk factors for depression while those in the affiliations of Christianity and Pagan possessed adequate knowledge. Statistically, the Table further indicated that there was significant difference on the level of knowledge of risk factors for depression possessed by hospitalized elderly patients with depressive cases in teaching hospitals in Southeast Nigeria according to religious affiliations (P-value .61 > 0.05).

Furthermore, Table 3 also indicated that the cluster mean value of the participants whose highest educational qualifications were FSLC (M=2.33, SD=.025); and WASSC/GCE (M=2.05, SD=.812) were below the cut-off point while those whose highest educational qualifications were Bachelor's Degree (M=2.51, SD=.028); Master's Degree (M=2.70, SD=.509); and Doctorate Degree (M=2.65, SD=.010) were above the cut-off point of 2.50. This implied that the participants whose highest educational qualifications are FSLC and WASSC/GCE possessed inadequate knowledge of risk factors for depression while those whose highest educational qualifications are Bachelor's Degree; Master's Degree; and Doctorate Degree possessed adequate knowledge. Statistically, the Table further indicated that there was no significant difference on the level of knowledge of risk factors for depression possessed by hospitalized elderly patients with depressive cases in teaching hospitals in Southeast Nigeria according to highest educational qualifications (P-value .04 < 0.05).

Finally, data in Table 3 equally indicated that the cluster mean value of the participants who were self-employed (M=2.25, SD=.037); Farmers (M=2.05, SD=.129) and Traders (M=2.40, SD=.025) were below the cut-off point while the participants who were civil servants (M=2.75, SD=.073); Professionals (M=2.60, SD=.202); and Retired (M=2.75, SD=.073) were above the cut-off point of 2.50. This implied that the participants who are self-employed; Farmers and Traders possessed inadequate knowledge of risk factors for depression while those who are civil servants; Professionals; and Retirees possessed adequate knowledge. Statistically, the Table further indicated that there was no significant difference on the level of knowledge of risk factors for depression possessed by hospitalized elderly patients with depressive cases in teaching hospitals in Southeast Nigeria according to occupation (P-value .01 < 0.05).

DISCUSSION

This descriptive survey has shown that the level of knowledge of risk factors for depression possessed by hospitalized elderly patients in teaching hospitals in southeast Nigeria was adequate. The expected finding was quite encouraging as it reflected the present situation regarding the prevalence of the disease in the study location. However, such expected finding could be attributed to some obvious factors. For instance, it could be that the participants' level of education influenced their knowledge and responses since greater percentage were well-educated. As shown in the study, only 2.5% and 15.0% of the participants indicated having FSLC and WASSC as their highest educational qualification while about 51.0 were bachelor's degree holders (Table 1).

Secondly, approximately 78% of the participants were Christians which was also an indication that religious affiliation has played significant role on their level of knowledge, experiences and exposures to risk factors for depression. Thirdly, it was evidenced that only 7.5% were civil servants with approximately 48% retirees. Thus, occupation was also considered very expedient in contributing to the knowledge of the participants on the concept. In addition, relevant review showed that about 1-5% of elderly people suffer from depression (Health Guide, 2016) indicating the significant role of age. Surprisingly, the participants indicated that they possess inadequate knowledge of medication; female gender; poor health status; cognitive impairment and unmarried/ living alone as risk factors for depression (see Table 2). Contradictorily, relevant reports indicated that any chronic or serious illness, such as diabetes, stroke, hypertension, or chronic pain conditions that is life-threatening or out of a person's control could trigger depression (Kessler *et al*., 1993; Robert and Myrna, 2002; Psych Central, 2016; Health Guide, 2016).

The present study equally revealed that differences existed on the level of knowledge of risk factors for depression according to socio-demographic variables of the participants. Surprisingly, the male participants; those aged 65-74 years; those living with relatives; Muslims; Traditionalists; participants with FSLC; WASSC/ GCE as their highest educational qualification; self-employed; farmers and traders indicated possessing inadequate knowledge of the risk factors for depression while others indicated adequate knowledge. Interestingly, the Muslim participants indicated possessing inadequate knowledge of risk factors for depression. This could be attributed to other factors including religious doctrine which restricted the Muslims from embracing early western education –popularly known as Bokoharam (Western Education is forbidden). Studies had earlier indicated that spiritual practices (Weaver and Koenig, 2006; Boelens *et al*., 2009; Bussing *et al*., 2009); faith and practicing of religion are connected with lower anxiety levels, reduced incidences of depression and lower level of stress and even decreased number of suicides (Seeman *et al*., 2003; Weaver and Koenig, 2006). Similarity occurred in other study (Andrzej *et al*., 2013). There is also strong evidence that the rate of depression is twice higher in women than the men regardless of nationality, race, ethnicity or socioeconomic level (Health Guide, 2016). However, other factors such as low educational qualifications and type of occupation could be responsible for the inadequate knowledge among FSLC and WASSC/ GCE holders as well as farmers and traders. Statistically, the study found that significant differences existed on the socio-demographic variables of gender; living condition; and religious affiliation of the participants while no significant differences were found on age distribution; highest level of education and occupation. The implications of the above findings were obvious. Firstly, with adequate knowledge of risk factors for depression; the elderly patients as well as other individuals would be well-informed of the disease and thus, adopt appropriate managerial and control measures in prospect. Secondly, mortality rates due the disease and further degenerative complications would drastically be reduced. The strength of the present study lied in its descriptive nature to determining the level of knowledge using questionnaire and interview method. However, there are also obvious limitations. Firstly, this study was primarily educational research and null hypotheses generation. Thus, other confounders, such as hospital settings, could have influenced the result of the study. Secondly, the findings may not be applicable to other populations, such as older adults with depressive cases who are not hospitalized, since our participants consisted of only the hospitalized elderly patients with depressive cases in teaching hospital at the time of study. This is confounded further by the fact that 31 (13.4%) of the hospitalized elderly patients from the original sample size of 231 did not participate for the study because they had dementia, mild cognitive impairment and severe Parkinson's disease. Thirdly, it is possible that the participants' present health status may have affected the soundness of their mental health, which might also influence their responses either positively or negatively. Finally, the knowledge of the participants was determined using questionnaire instrument and limited to the responses alone. Thus, our findings cannot be generalized to other measures involving clinical apparatus, observation and focus group discussion guide.

Conclusion

The present study in its modest and humble effort has attempted to establish that the level of knowledge of risk factors for depression possessed by hospitalized elderly patients with depressive cases in teaching hospitals in southeast Nigeria was adequate. The result was quite encouraging as it reflected the prevailing circumstance regarding the disease as well as the socio-demographics particularly on education and religion. Statistically, significant differences were found on the variables of gender; living condition; and religious affiliation while no significant differences was found on age distribution; highest level of education and occupation of the participants. The outcome of the present study would enhance appropriate control measures and contribute immensely in the broad areas of health, education, science and general wellbeing. There is need for optimum knowledge empowerment regarding the risk factors for depression and other chronic diseases in elderly.

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Competing Interest

The authors have no competing interests.

Authors' Contributions

UCU conceived the study and wrote the manuscript. OPC and UBN did the literature search. All the authors contributed to the study concept, design and manuscript review. All the authors analyzed and interpreted the data. UCU drafted the manuscript and revising it critically for important intellectual content. All the authors have read and approved the final version of the manuscript.

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