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RESEARCH ARTICLE
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A CROSS-SECTIONAL STUDY OF SOMATIZATION IN PATIENTS WITH DEPRESSION IN A TERTIARY CARE HOSPITAL

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ABSTRACT:

Introduction: Major Depressive Disorder (MDD) is one of the most common mental health disorders and was the second highest cause of Years Lived with Disability (YLDs) in 2021 globally, reflecting a 36.5% increase in burden since 2010. MDD is a major contributor to the global disease burden, significantly affecting not only individuals but also families and communities by impairing social functioning and economic productivity. According to WHO data, approximately 70% of patients in primary care settings who meet the diagnostic criteria for depression primarily present with somatic symptoms. This high prevalence of somatization presents significant medical, social, and economic challenges.

Methodology: This is a cross-sectional study started on February 2021 and was carried out until May 2022 after obtaining scientific and ethical approval from S.V.Medical college , Tirupati. Patients enrolled in the study were all diagnosed with depression fulfilling the criteria for depressive disorder according to ICD-10, and were on treatment for the same at the Department of Psychiatry. Samples of 100 patients were assessed. Somatization was assessed using patient health questionnaire – 15(PHQ-15), and depression severity was assessed using Hamilton 17-item scale.(HAM-D).

Results: Majority (38.5%) were aged between 41-50 yr, Female gender, had primary education, married, Hindu religion, belongs to nuclear family, from Urban domicile and from lower socio-economic status. The prevalence of somatization was found to be 88.6% and majority of participants were found to have mild somatization. Among patients with mild somatization, 48.6% were found to be suffering from mild depression. Among those with moderate somatization, 20% were found to have moderate and severe degree of depression each. Finally, among those with severe somatization, 60% were found to have very severe depression and 40% were found with severe depression (40%).

Conclusion: The prevalence of somatization among depressed patients was found to be 88.6%.Majority of the patients were having mild somatization and only 4.8% were having severe somatization. Increasing age, lower education status and lower socioeconomic status were found to be associated with somatization. Though majority of study patients were having mild depressive episode, 48.6% were having somatization and severity of somatization increases proportionately with the severity of depression.

Key words: Depression, Major Depressive Disorder, Somatization

Introduction:

Major depressive disorder is one of common mental health disorders which significantly impairs functioning in various domains like work productivity, education, employment status and even activities of daily living which profoundly impairs the quality of life leading to social withdrawal, reduced motivation and even physical health complications. [1,2] Depressive disorders were the second highest cause of YLDs in 2021 globally with a 36.5%rise in burden since 2010 and is the major contributor to the global disease burden. [3, 4] Apart from the individual, depression also affects families, communities impairing social functioning and economic productivity.

Somatic symptoms refer to physical sensations, experiences or movements such as dizziness, pain, nausea, fainting etc. most of the symptoms may be somatic in nature, but not all symptoms affect activities of daily living, or cause distress or impairment to the individual. Hence, somatization as such is a normal human experience, but sometimes these bodily symptoms interfere with everyday life. [5, 6] Imbalance in norepinephrine and serotonin which normally inhibit sensory input from musculoskeletal systems, intestine and other regions in the body may accentuate pain sensitivity. [7]

WHO data demonstrated that in the primary care setting about 70% of patients had diagnostic criteria for depression that present with somatic symptoms. [8] Since the psychosocial stressors could affect health, some of the researches were showed that anxiety and depression increase unexplained somatic complaints more than twice. [9] Somatization poses a major medical, social, and economic problem. Its persistent form makes it challenging to treat and prevent, and increases the cost of treatment significantly. [4] The majority of patients with depression having physical symptoms or somatic complaints first present to general practitioners. [10] Hence it is important to extensively study the relation of somatization with depression for early and more effective intervention.

Methodology:

This cross-sectional study started on February 2021 and was carried out until May 2022. After receiving approval from the ethics committee (Lr.No.25/2021), participants who met the specified inclusion and exclusion criteria were selected using purposive and convenient sampling methods to form the sample size. Subjects were recruited from those patients who attended Department of Psychiatry, S. V. Medical College, Tirupati, Andhra Pradesh from February 2021 to may 2022. The patients enrolled into the study were all diagnosed with depression prior, on fulfilling the criteria for a depressive episode according to ICD-10, and were on treatment for the same.

Sample Size:

For the purpose of this hospital based cross-sectional study, the prevalence of somatization in depression was considered based on earlier studies 7%. [11] The sample size was then calculated by the formula used for cross-sectional studies: 4pq/L2 . -The sample size thus obtained was 99, and so it was decided to enroll 100 patients into the study.

Inclusion Criteria:

1. Patients diagnosed with depressive disorder as per ICD-10 research diagnostic criteria
2. Age group: 18-60 years

Exclusion Criteria:

1. Patients with history of intellectual disability, seizure disorder;
2. Patients with other psychiatric conditions like schizophrenia;

3. Patients suffering from depression with psychosis, somatization disorder;
4. Patients with chronic inflammatory diseases such as rheumatoid arthritis;
5. Individuals who do not give consent
6. Patients who are unable to provide adequate information were excluded from the study.

Study Procedure:

Socio demographic data was collected using semi structured proforma containing details of name, age, educational status, sex, socio economic status, family type and locality . The scales used were: PHQ-15(Patient Health Questionnaire-15), HAM-D(Hamilton Depression Rating Scale,17 items).

PHQ-15 is a brief, self-administered questionnaire that is useful to screen for somatization and to monitor somatic symptom severity in clinical practice and research, and has proved to be a valid and reliable scale .PHQ-15 (patient health questionnaire) assesses the domain of somatic symptoms. Each items suggest the individual to rate the severity of individual somatic symptoms Each item helps to rate the severity of individual somatic symptoms Each item on PHQ -15 is rated on a 3 point Likert scale: 0- not bothered ,1- bothered ,2. 2-bothered a lot. total score ranges from 0-30, with a higher score indicating greater severity of somatic symptoms.Minimal :0-4,Low :5-9, Medium:10-14, High :15-30. [12]

The HDRS (also known as the HAM-D) is the most widely used clinician-administered depression assessment scale.The original version contains 17 items (HDRS17) pertaining to symptoms of depression experienced over the past week. Severity: 7-17 Mild depression; 18-25 Moderate depression, >25 :Severe depression. [13]

Statistical Analysis:

The data for the current study was entered into Microsoft Excel 2007 version, and the results were analysed using Statistical Package for Social Sciences (SPSS). -The proportions were calculated using Chi Square test and Fischer's test. -Confidence interval was set at 95% with p value < 0.05 considered as significant.

Results:

Majority (38.5%) were aged between 41-50 yr , Female gender , had primary education, married, Hindu religion ,belongs to nuclear family ,from Urban domicile and from lower socio economic status.Table 1 showsThe prevalence of somatization was found to be 88.6% and majority of participants were found to have mild somatization . Table2 shows Participants with mild and moderate somatization mostly were in the age group of 41-50 years, while those with severe somatization were more from the age group of 51-60 yrs. This is statistically significant ($p<0.001$). Therefore, in this study population as age increases, prevalence of somatization also increasesAmong mild, moderate and severe degrees of somatization, there were more female participants compared to males, but this was not statistically significant.

In this study population, the ones with severe somatization comprised those who were illiterate or had discontinued education right at primary school. Also those without any somatization were more with high school or graduate level education. This was statistically significant ($p<0.001$).In the current study population, among married participants, 66 (70.2%) had mild somatization, and 5 (5.3%) had severe somatization. 88% of the married study population had somatization as opposed to 80% of the unmarried participants. This difference was not statistically significant.

100% of the Muslim participants hadsomatization, compared to 85.4% of the Hindu participants and the association was statistically significant. 5.1% of individuals from nuclear families had severe somatization compared to 3.8% from joint families but this finding was not statistically significant. 5.9% of those in urban areas had severe somatization compared to 2.8% from rural areas. While, 22.2% of those from rural areas had moderate somatization as compared to 10.3% from urban population. 88.3% of the urban study population and 88.9% of the rural participants had somatization. This was statistically significant with $p<0.001$.

Table 3 shows -Among patients with mild somatization, 48.6% were found to be suffering from mild depression. Among those with moderate somatization, 20% were found to have moderate and severe degree of depression each. Finally, among those with severe somatization, 60% were found to have very severe depression and 40% were found with severe depression (40%).

Discussion:

In the current study population, the prevalence of somatization in patients with depression was found to be 88.6%Majority of the participants were found to have mild somatization (69.2%). The others included 14.4% with moderate somatization, 11.4% with no somatization, and finally 4.8% minority having severe somatization. This is in accordance with the WHO prevalence of 70% of patients presenting at primary health centres with somatic symptoms were having depression.(8)The high stigma associated with depression in South India was seen as a significant contributing factor where depressive symptoms are perceived to be more socially disadvantageous than somatic symptoms. This could explain the higher prevalence of somatization here. (Raghuram et al) [14]

Similar findings were found with Hagnell O and Rorsman B who conducted a cohort study on 28 suicide attempt patients and followed up for 25 years.Their records were analysed regarding depressive symptoms at time of death. 14 were found to have suffered from depression. In 9 out of the 14 persons (64.3%) with depression somatic symptoms were found. [15]

In this study population of patients with depression, an increasing degree of somatization was observed with increasing age. Those with mild and moderate somatization mostly were in the age group of 41-50 years, while those with severe somatization were more from the age group of 51-60 yrs. This finding was statistically significant, and in accordance with most studies. Sheehan et al for instance, concluded that somatization was mainly found in the elderly persons with depression. [16]

The study by Swartz M et al as well, showed a higher association of somatization, with the age group of 45-64 yrs [17] In the current study too, 63 of the 92 participants (nearly 68.5%) found with somatization, were of the age group 41-60 yrs. Therefore the age association with somatization signifies its impact on working age group and on the economy. Few studies shows that >70 years age is significantly associated with presenting with somatization which are explained due to functional impairment, social withdrawal among elderly. [18,19]

Among the participants with somatization (92), majority are females (54), accounting for around 59%. This trend of females more than males was observed with each degree of somatization (mild, moderate and severe). Though this study finding was not significant, it is in agreement with most of the other studies, for instance, a study conducted by Chander et al proved significant correlation of somatization with females. [11]

The trend in this study population indicated more somatization in lower education levels, and this study was statistically significant. This is in accordance with other literature including studies conducted by Chander et al[11] and Swartz M et al[17] according to which lower education level is a significant correlate for somatization.

In the current study population, among married participants, majority had mild somatization (70.2%), and least number had severe somatization (5.3%). However, there was a similar descending trend seen in unmarried participants, i.e, more number with mild somatization, followed by moderate and least in severe somatization. More number of married participants (88%) had somatization than their unmarried counterparts (80%) in the study population. Though this difference was not statistically significant, it is in agreement with certain other studies including the one by Chander et al[11] in which being married was a strong correlate in relation to somatization.

Both the Muslim and Hindu subgroups from the study showed a similar descending trend with more number having mild somatization, followed by fewer with moderate and least number with severe somatization. 64 All of the Muslim participants (100%) had somatization, compared to 85.4% of the Hindu participants, and this difference was found to be statistically significant. There is a dire paucity of studies exploring the inter religion differences in prevalence of somatization, however it has been concluded in some studies that somatization could be higher in Asian groups across ethnic origins and no association was found with race. [17, 20]

In this study population, severe somatization was seen relatively more in participants from nuclear families (5.1%) than in those from joint families (3.8%). Even the overall prevalence of somatization was more among those from nuclear families (89.7%), as compared to joint families (84.6%) in this study. This difference was not statistically significant.5.9% of those in urban areas had severe somatization compared to 2.8% from rural areas. This was statistically significant. This finding agreed with studies such as the one by Swartz M et al, where somatization was more in the urban residents studied. [17]

The percentage of participants with nil or moderate somatization was higher among the lower socioeconomic class, while that of mild and severe somatization was higher among the lower middle class. The few participants of the upper middle class all had mild somatization. Hence increased severity of somatization was more in the lower end of socioeconomic spectrum.this is in accordance with the studies which states that poverty is the leading cause and mental health policy making has to shift from psychotic disorders that need specialist services to common mental health disorders. [11, 21]

The participants with mild somatization were found to be more associated with mild depression (48.6%), while those with moderate somatization had more of moderate and severe depression (20% each). Finally, those with severe somatization were only associated with very severe depression (60%) more than severe depression (40%). These findings were statistically significant, and showed that higher level of somatization corresponded to more severe depression. This is in accordance to findings of most existing studies that state a positive correlation of level of somatization with degree of depression severity, like the study by Flecke de MP Almeida; that found more severe somatic complaints to be associated with more severe and longer depressive episodes. [22] Vonkorff and Simon demonstrated a similar study finding. [23]

Conclusion:

The prevalence of somatization among depressed patients was found to be 88.6%.Majority of the patients were having mild somatization and only 4.8% were having severe somatization.Increasing age, lower education status and lower socioeconomic status were found to be associated with somatization. Additionally, somatization was found more prevalent among the Muslim participants (100%) as compared to the Hindu counterparts in the study population (85.4%) - More studies are needed to explore the inter-religion differences in prevalence. Though majority of study patients were having mild depressive episode, 48.6% were having somatization and severity of somatization increases proportionately with the severity of depression.

Limitations of the study:

The sample size taken was small, and the study population did not reflect the general population demographic and hence the results cannot be projected to the entire community setting. Convenience sampling was done in the hospital setting with no randomization. Not all confounding factors were accounted for.

Conflict of interest: Nil

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Table 1 : SEVERITY OF SOMATIZATION IN THE STUDY POPULATION

Somatization	**No. of Patients**	**%**
Nil	12	11.5
Mild	72	69.2
Moderate	15	14.4
Severe	5	4.8
Total	104	100

Table 2: Comparison of sociodemographic variables with severity of Somatization

DEPRESSION	SOMATIZATION - n (%)				P VALUE
	NIL	MILD	MODERATE	SEVERE	
AGE (Yrs)					
20-30	6 (37.5)	10(62.5)	0(0)	0(0)	
31-40	0 (0)	15(68.2)	6(27.3)	1(4.5)	<0.001
40-50	6(15)	27(67.5)	7(17.5)	0(0)	
51-60	0(0)	20(76.9)	2(7.7)	4(15.4)	
GENDER					
MALE	4(9.5)	33(78.6)	3(7.1)	2(4.8)	= 0.293
FEMALE	8(12.9)	39(62.9)	12(19.4)	3(4.8)	
EDUCATION					
ILLITERATE	0(0)	9(52.9)	6(35.3)	2(11.8)	
PRIMARY SCHOOL	2(4.3)	38(80.9)	4(8.5)	3(6.4)	
HIGH SCHOOL	6(26.1)	13(56.5)	4(17.4)	0(0)	0.005
GRADUATE	4(23.5)	12(70.6)	1(5.9)	0(0)	
SOCIO ECONOMIC STATUS					
LOWER	8(13.8)	39(67.2)	10(17.2)	1(1.7)	
LOWER MIDDLE	4(9.5)	29(69.0)	5(11.9)	4(9.5)	0.804
UPPER MIDDLE	0(0)	4(100.0)	0(0)	0(0)	
RELIGION					
HINDU	12(14.6)	55(67.1)	12(14.6)	3(3.7)	0.207
MUSLIM	0(0)	17(77.3)	3(13.6)	2(9.1)	
DOMICILE					
RURAL	4(11.1)	23(63.9)	8(22.2)	1(2.8)	0.387
URBAN	8(11.8)	49(72.1)	7(10.3)	4(5.9)	
MARITAL STATUS					
MARRIED	10(10.6)	66(70.2)	13(13.8)	5(5.3)	0.661
UNMARRIED	2(20)	6(60.0)	2(20.0)	0(0)	
FAMILY TYPE					
NUCLEAR	8(10.3)	53(67.9)	13(16.7)	4(5.1)	0.643
JOINT	4(15.4)	19(73.1)	2(7.7)	1(3.8)	

Table 3: COMPARING PROPORTIONS OF LEVEL OF SOMATIZATION WITH SEVERITY OF DEPRESSION

Depression	SOMATIZATION									
	Nil		Mild		Moderate		Severe		Total	
	No. of Patients	%	No. of Patients	%	No. of Patients	%	No. of Patients	%	No. of Patients	%
Mild	4	33.3	35	48.6	2	13.3	0	0	41	39.4
Moderate	6 .	50.0	14	19.4	3	20.0	0	0	23	22.1
Severe	2	16.7	21	29.2	3	20.0	2	40.0	28	26.9
Very Severe	0	.0	2	2.8	7	46.7	3	60.0	12	11.5
Total	12	100.0	72	100.0	15	100.	5	100.0	104	100
Chi-square $\chi 2 = 45.384^{**}$; (p = 0.000) ; df= 9;										