JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH

How to cite this article:
RAMESH MG, SATHIAN B, SHREEVATSA BM, BEDANTA R, RAMESH K, BUDHACHANDRA Y, BABOO NS. GENDER VARIATION OF SOMATIC SYMPTOMS OF DEPRESSION AS POSSIBLE INDICATORS OF ITS DIAGNOSIS AND SEVERITY.Journal of Clinical and Diagnostic Research [serial online] 2010 September [cited: 2010 October 14]; 4:3095-3099.

Available from
http://www.jcdr.in/article_fulltext.asp?issn=0973-709x&year=2010&volume=&issue=&page=&issn=0973-709x&id=884

ORIGINAL ARTICLE

Gender Variation Of Somatic Symptoms Of Depression As Possible Indicators Of Its Diagnosis And Severity

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ABSTRACT

Depression is a common mental health problem around the world and is responsible for a wide range of problems in all the aspects of a person's functioning. It is the 4th in the list of the most urgent health problems worldwide, as per the World Health Organization (WHO) and its lifetime prevalence is around 10-25% for women and 5-12% for men. Several studies estimate the prevalence for major depression as around 5%, making it one of the most common clinical problems. Among them, only around 10% are referred to psychiatric services and get treated, but many others suffer in silence and solitude. The present study was carried out in 131 patients who were diagnosed as having depression according to the Structured Clinical Interview for ICD. The Beck Depression Inventory (BDI) was routinely administered as part of the standard intake assessment battery. When patients scored >1 on each of the four somatic BDI items, they were considered as having moderate to severe somatic depression. Descriptive statistical methods and confidence intervals were used to find out the severity of the symptoms among males and females. There were 65 (98.5%) females and 56 (94.9%) men who could be classified as having somatic depression and 1 (1.5%) female and 3 (5.1%) men who were classified as having non-somatic depression. The somatic symptoms of depression are always associated with the pathophysiological changes in the brain. There are evidences that changes in the cortisol, nor adrenalin (NE) and serotonin activities cause abnormal physiological activity of the brain, which is responsible for the somatic symptoms in depression. In the present study, a significant difference was found in appetite and fatigue in moderate to severely depressed female patients than in the males. Therefore, the somatic symptoms can be considered as indices while diagnosing depressive disorders.

Key words: Depressive disorders, somatic depression, diagnosing depressive disorders

Introduction:

Depression is a common mental health problem around the world and is responsible for a wide range of problems in all the aspects of a person's functioning[1]. It is the 4th in the list of the most urgent health problems worldwide, as per the World Health Organization (WHO) and the lifetime prevalence is around 10-25% for women and 5-12% for men[2]. It is also called as unipolar-depression, which may manifest as a single episode or recurrent episodes and usually, the age of onset of depression is around 28 yrs, but the first episode can occur almost at any age[3]. Several studies have estimated the prevalence for major depression as around 5%, making it one of the most common clinical problems. Among them, only around 10% are referred to psychiatric services[4] and get treated, but many others suffer in silence and solitude.[5] The major depressive disorder is widely distributed and is usually associated with substantial symptom severity and functional impairment[6]. There is a positive and strong association between the severity of depressive illness and somatic symptoms[7],[8]. A study in Asian ethnic groups reveals that non-affective symptoms in depression have large health and functional significance and important implications for the diagnosis and management of depression among the elderly in primary care[9]. Approximately two thirds of the patients with depression present with somatic symptoms at the primary care centres[10]. It was reported that the female to male ratio of the somatic symptoms was approximately 2:1[11]. This study aims to evaluate the utility of the gender variation in self-reported somatic symptoms as indicators for the diagnosis and staging of depression as measured by the Beck Depression Inventory (BDI)[12].

Material and Method:

An observational descriptive study was conducted during the years 2006-2007, on patients who reported to the psychiatric out patients department in the Department of Psychiatry, Manipal Teaching Hospital (MTH), Pokhara, Nepal. The study was carried out with permission from the hospital ethical committee. Verbal consent was taken from the patient or the patient's relatives. The study includes 131 patients (male=64 and female=67) who were diagnosed as having unipolar depression according to the Structured Clinical Interview for ICD-10: Classification of Mental and Behavioural Disorders - Diagnostic Criteria for Research[13]. The Beck Depression Inventory (BDI) was routinely administered as part of the standard intake assessment battery. It is a 21-item self-report depression scale. Overall, the scores of this scale range from 0 to 63, which is obtained by summing the severity of individual symptoms rated from 0 to 3. The somatic symptoms of the BDI items consist of sleeping patterns, appetite, fatigue and weight loss. A patient was classified as having somatic depression if he or she rated all four of these items as >1 on the 0–3 rating scale. If the rating for any of these items was 0 or 1, then the patient was classified as having non-somatic depression. This strategy identified patients with somatic depression whose severity ranged from moderate to severe, which is similar to the Amy Wenzel definition of somatic depression[14]. The total number of patients (n=131) [mean (SD) age, 32.53(12.50) years and (30.39, 34.67 CL)] who reported to the psychiatric department were divided into two groups as males (n=64) [mean (SD) age, 33.31(13.75) years and (29.94, 36.67 CL)] and females (n=67) [mean (SD) age, 31.79(11.24) years and (29.10, 34.48CL)].

Statistical Methods:

Descriptive statistics methods and confidence intervals were used to find out the severity of the symptoms among males and females. The χ^2 test was used to detect the differences in the presence or absence of the symptoms of somatic depression as a function of gender. The Yates correction for the χ^2 test was applied to correct the problems with the discontinuity of the χ^2 distribution, when two dichotomous variables were being compared. The Fisher's exact test (φ value) was used for testing the null hypothesis of independence for categorical data. The statistical software SPSS 16.0 version and the Epi-Info windows version were used for the assessments.

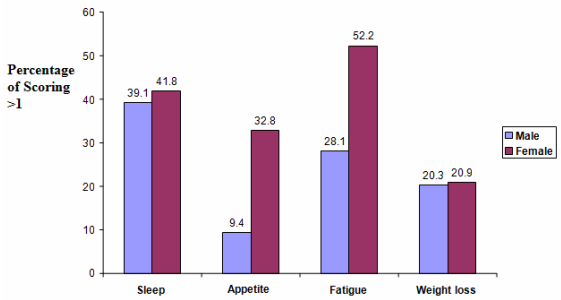
Result:

The patients who scored >1 on each of the four somatic BDI items were considered as having somatic depression and among the somatic depressive subjects, 56 (94.9%) were males and 65 (98.5%) were females. Among them, 3 (5.1%) were males and 1 (1.5%) was a female. The index of somatic depression was $\chi 2$ Yates (N =131) = 0.3881, p >.05, φ=.27. The odds of a female, as opposed to that of a male, describing somatic depression was 0.2872; 95% Confidence Level 0.029–2.839 and the risk ratio was 0.2980, with 95% Confidence Level 0.0319 - 2.7873. It showed no significant difference. Further analyses were performed to determine whether all four of the symptoms used in defining somatic depression did vary in males and females. Change in sleeping patterns, $\chi 2$ Yates (N =131) = 0.0196, p >.05, φ=.44 and weight loss, $\chi 2$ Yates (N =131) = 0.0178, p >.05, φ=.55 did not discriminate the females from the males. But, the females were discriminated from the males on the basis of both the items, appetite, $\chi 2$ Yates (N =131) = 9.3700, p <.05, φ=.0009 and fatigue, $\chi 2$ Yates (N =131) = 6.9318, p < .05, φ=.004, which is shown [Table/Fig 1].

Table/Fig 1: Summary of gender differences in somatic depression

	BDI Score [Mean (		% Scoring >1	
	Male	Female	Male	Female
Somatic depressior	4.02 [2.3	4.99 [2.3	94.9	98.5
Sleep	1.31 [0.9	1.34 [1.0	39.1	41.8
Appetite	0.73 [0.6	1.22 [1.0	9.4	32.8*
Fatigue	1.17 [0.9	1.54 [0.9	28.1	52.2*
Weight loss	0.80 [0.9	0.88 [0.9	20.3	20.9

*P <0.05 Statistically Significant



Table/Fig 2: Moderate to severe somatic symptoms of depression in both genders.

Discussion:

The most common somatic symptom reported by the patients with moderate or the above levels of the major depressive disorder (MDD) was feeling fatigued, weak or tired, all over[15]. Significant differences were found for increased appetite and weight in 498 moderately to severely depressed patients with unipolar MDD[16]. In an American epidemiological study in the subjects of different race, ethnicity and gender, significant differences were found in appetite and weight[17]. By considering age and gender, the level of fatigue and depression was found to be higher among young adult women and middle-aged men[18]. Overweight was strongly associated with depression in adolescent females[19]. Migraine was found to be strongly associated and was an independent predictor with more somatic symptoms in patients with MDD[20]. In a cross cultural study, it is reported that Japanese had higher levels of somatic distress than the Americans[21]. In the present study, it was found that there was no significant difference between the males and females who were categorized as having moderate to severe cases of somatic depression. When considering the four somatic items of BDI, appetite and fatigue showed significant difference, which is shown in [Table/Fig 1] and it was particularly salient in females as compared to their other symptoms. This indicates that the BDI items, appetite and tiredness were useful in detecting moderate to severe cases of somatic depression in females. It supports the view that there are gender differences in somatic depression as assessed by the BDI.

Generally, somatic symptoms such as fatigue, weakness, and pain are associated with depression[22] and may reflect underlying neurobiological abnormalities[23],[24]. The finding of a significant increase in appetite and fatigue in females with MDD in the present study indicates some biological factors which may be causing the gender differences in depression. Research evidences which have accumulated over the past 20 years indicate that corticotropin-releasing factor (CRF) plays a role in the pathophysiology of MDD[25]. The increased and decreased activities of CRF and cortisol were found in melancholia and in atypical depression, respectively[26]. MDD was first shown to involve the peripheral components of the hypothalamo–pituitary–adrenal axis when increased serum cortisol was demonstrated at all hours of the circadian rhythm in endogenously depressed subjects as compared to the non-depressed subjects[27]. Elevated amounts of tyrosine hydroxylase[28],[29] and reduced amounts of norepinephrine (NE) transporter binding[31] in the locus ceruleus have been reported in major depressive subjects as compared to the psychiatrically normal control subjects. The neurotransmitters, serotonin and NE, that influence both pain and mood, have deeper biological connections with depression[31]. Fluctuations in both mood and appetite which are associated with changes in the levels of neurotransmitters such as serotonin were seen in both men and women[32], but this can be exacerbated by changes in the balance between oestrogen and progesterone levels that a woman experiences at different stages of her menstrual cycle[33]. A functional decrease of serotoninergic neurotransmission was reported in insomnia associated with depression.[34]

Conclusion:

From foregoing, it is obvious that the somatic symptoms of depression are always associated with the pathophysiological changes in brain. There are evidences that changes in the cortisol, NE and serotonin activities cause abnormal physiological activity of the brain, which is responsible for the somatic symptoms in depression. Strong evidence for the involvement of CRF circuits in the production of depressive symptoms was also found in reports of CRF receptor antagonists having antidepressant effects[35]. Therefore, the somatic symptoms can be considered as indices while diagnosing depressive disorders. In the present study, a significant difference was found in appetite and fatigue in moderate to severely depressed female patients than the males in Pokhara. However, similar studies should be done in a large patient population to establish this finding.

Acknowledgement:

The authors would like to thank Professor Dr C.G.Saha MS. MD (physiology), Professor, Department of Physiology, Manipal College of Medical Sciences, Pokhara, Nepal, for his support and valuable advice to carry out this study.

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