

Gender differences in suicidal ideation and somatic symptoms in adolescents with depressive features

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ABSTRACT

Background: Patients with depression may show a variety of symptoms that range from cognitive symptoms to affective features, somatic symptoms and suicidal ideation. The aim of the present study was to assess suicidal ideation and somatic symptoms across gender amongst adolescents that reported depressive features when compared to those who did not do so.

Methodology: Sixty adolescent males and sixty adolescent female students were screened for depressive symptoms. The adolescents were then screened on basis of high depressive symptoms and low or no depressive symptoms. They were given the Beck Depression Inventory, Patient Health Questionnaire and Suicide Behavior Questionnaire – revised for assessment. MANOVA was used in the statistical assessment.

Results: It was found that females scored significantly higher on somatic symptoms as compared to males. Those who scored high on depressive symptoms scored significantly higher on suicidal ideation and somatic symptoms. As a group women with high depressive symptoms scored highest on both somatic symptoms and suicidal ideation.

Conclusion: The present study revealed that adolescents with depressive symptoms show both significantly higher rates of suicidal ideations and somatic symptoms. Female students were more likely to experience somatic symptoms.

Keywords: gender, gender differences, suicidal ideation, somatic symptoms, adolescents, depressive features.

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INTRODUCTION

Depression is a state of low mood and aversion to activity that can affect a person's thoughts, behaviour, feelings and sense of well-being. Depression is an affective, or mood disorder. It is an illness that immerses its sufferers in a world of self-blame, confusion, and hopelessness. It is an illness of the mind and the body. Some could argue depression is a way of coping with life's pressures [1]. Depressive symptoms include frequent sadness, tearfulness, crying, hopelessness, decreased interest in activities, persistent boredom; low energy, social isolation, poor communication, low self-esteem and guilt, extreme sensitivity to rejection or failure, increased irritability, anger, or hostility, difficulty with relationships, a major change in eating and/or sleeping patterns with poor concentration [2].

An offshoot of the behavioural model in depression is Beck's cognitive-behavioural view of depression. Depressed patients suffer from a kind of basic thinking that distorts reality. They distort reality by harbouring negative feelings about anything and everything. They tend to take things too personally and believe the future is bleak and dim. These inferior feelings, lead to more negative experiences for the depressive. In turn, the patient develops thoughts of worthlessness and inferiority [3-4].

In particular, social environment plays a large role in many of the theories of depression. Continuous flawed or negative perceptions and interpretations of social surroundings can be detrimental to emotional state. In addition to social aspects, psychological and biological factors expand upon our knowledge of depression [5].

Women are twice more likely than men to suffer from depression. Women have a 20 percent to 26 percent lifetime risk of developing depression, compared to an 8 percent to 12 percent lifetime risk for men. 6 % of women who suffer from depression require hospitalization, while half as many men (3%) require hospitalization [6]. There are several explanations for the discrepancy of rates of depression in men and women. The first explanation is women are more likely than men to seek treatment [7]. Another theory is psychologists and psychiatrists are more likely to diagnose a woman as having depression than they would diagnose a man as suffering from depression as an extension of the stereotype women are the weaker sex [8].

Suicidal ideation is a term for thoughts about or an unusual preoccupation with suicide. The range of suicidal ideation varies greatly from fleeting to detailed planning and unsuccessful attempts, which may be deliberately constructed to fail or be discovered, or may be fully planned to result in death. Although most people who undergo suicidal ideation do not go on to make suicide attempts, a significant proportion do [9]. Suicidal ideation is generally associated with depression; however, it seems to have associations with many other psychiatric disorders, life events, and family events, all of which may increase the risk of suicidal ideation [10].

Depressive symptoms may also affect the process of socialization, family relationships and school performance [11]. Adolescents presenting depressive symptoms are also at increased risk for alcohol or substance abuse and antisocial behaviours [12]. Most young people with suicide ideation also show strong signs of depression [13]. Thus suicidal ideas and acts relate strongly to depression. However depression does not always lead to suicidal thoughts and behaviours. Around 40% of adolescents with diagnosed depression do not report suicide ideation [14]. Female adolescents have rates of depression that are approximately twice those of males and these gender differences appear to be reflected in the higher rates of suicidal ideation and attempts by females [15].

Somatic symptoms are defined as distressing physical or bodily symptoms that are medically unexplained, including pain. In somatic symptom disorder the responses to somatic symptoms is excessive and causes intense fear, concerns, and disturbances in optimal functioning. Somatic complaints without an apparent physical cause are common among children and adolescents. The most common complaints include headaches, stomach aches, musculoskeletal pains, back pain, dizziness, and fatigue [16-17]. Young boys and girls are equally likely to have somatic symptoms, but girls begin to report more somatic symptoms than boys in adolescence, and this difference continues into adulthood [18].

Children often present with multiple somatic complaints. It has been stated that 50% of children report more than one somatic complaint. About 15% report four or more and 1% have as many as 12 symptoms. This pattern is more common in adolescents than children and among girls than boys. Apart from somatisation disorder, children with multiple somatic symptoms show more symptoms of depression and anxiety than children with fewer or no somatic symptoms [19-20]. Many factors may contribute to the form and extent to which depression presents in the form of somatic symptoms. Female gender has been confirmed to be closely associated with somatization in many studies covering differential aspects on various theoretical levels [21].

In the Indian education system, board examination, which starts at the secondary level of education, is very important because this level provides the base for future education and students face excessive anxiety. Students have anxiety about their marks, performance and also for their academic achievement. The board exam is the fear in itself. On one hand they wish to secure good percentage of marks for getting admission for their future education and the other hand they also want to prove themselves better than others in this highly competitive age. Sometimes children are pressurized by their parent's expectations, so they suffer from pre-examination anxiety. Persistent level of examination anxiety (EA) causes a state of distress one experiences when being evaluated or when thinking about prospective evaluations, which typically lead to reduced performances. In fact, academic examinations have been considered as one of the most acute stresses experienced by students.

The purpose of this study was to understand the suicide behaviour/ideation and somatic symptoms expressed by students appearing for their 10th and 12th grade board exams.

METHODOLOGY

Research Hypothesis

Hypothesis 1: Females will have significantly more somatic symptoms than males.

Hypothesis 2: Females will have significantly more suicidal ideations symptoms than males.

Hypothesis 3: Groups with higher depressive symptoms will have higher somatic symptoms than group with low depressive symptoms.

Hypothesis 4: Groups with higher depressive symptoms will have higher suicidal ideations than group with low depressive symptoms.

Hypothesis 5: There will be a significant interaction between gender and levels of depression

Sampling strategy

The survey method will be used to recruit participants using the snowball sampling technique. This can be considered a 2 (depression) x 2 (gender of the adolescent) design as there are two independent variables. The first independent variable depressive symptoms, has to two levels, high and low, and gender will have two levels, males and females. The dependent measures will be the students rating on suicidal ideation and somatic symptoms.

Participants

The participants selected for the study were adolescents of age from 15 to 17, this criteria was also set as BDI can be used for adolescents of age only 15 and above. Also, the participants who were appearing for 10th and 12th grade boards were targeted. This selection was made specifically made as there has been reported a significant rise in suicide attempts made by students appearing for board exams. The total sample size was 120, 30 participants in each group. The four groups categorised were females with high depressive symptoms, females with low depressive symptoms, males with high depressive symptoms, males with low depressive symptoms. Assent from the participants and informed consent from the parents were obtained.

Procedure

Data collection was done by purposive and snow ball sampling. The tests were administered in various settings home, tuitions, field, classroom and one-on-one basis. The participants were made to a consent form by their parents or guardians for participation in the study. The instructions given to the participants were that they have to go through each question and select or tick against answer that best applies to them in the last two weeks. The tests were administered in the following order (the tests were attached one behind the other) viz. Beck Depression Inventory (BDI), Patient Health Questionnaire – 15 and The Suicide Behaviours Questionnaire – Revised (SBQ-R). This order was formulated so that screening of students with depressive symptoms and their scores on each of the following inventories could be calculated correspondingly. Data collection was completed within a period of 1 month.

Instruments used in the study

1. **Beck Depression Inventory (BDI):** This is a scale that evaluates depression in its emotional, cognitive and motivational components with 21 items and a total score of 0-63. Scores in the range of 10-15 reflect mild depression while 16-23 reflect moderate depression and scores above 24 indicate severe depression [21-22].
2. **Patient Health Questionnaire -15 (PHQ-15):** The scale is a self-administered version of the PRIME-MD diagnostic instrument for common mental disorders. The PHQ-15 comprises 15 somatic symptoms from the PHQ, each symptom scored from 0 ("not bothered at all") to 2 ("bothered a lot") [23].
3. **The Suicide Behaviours Questionnaire – Revised (SBQ-R):** It is a psychological self-report questionnaire designed to identify risk factors for suicide in children and adolescents

between ages 13 and 18. The four-question test is filled out by the child and takes approximately five minutes to complete. The questionnaire has been found to be reliable and valid in recent studies [24].

STATISTICAL ANALYSIS

A MANOVA was conducted since there are two dependent variables. The analysis is to compare suicidal ideation and somatic symptoms between males and females and also between high depressives and no depressives. It is also assumed that high depressive females will show the highest amount of somatic symptoms and suicidal ideation. All the assessments were done using the computerised software SPSS version 16.0

RESULTS

Table 1: Mean and SD for the different groups

Descriptive Statistics				
	Gender	Depression Levels	Mean	Std. Deviation
Suicidal Ideation	Female	Low	4.1	1.494
		High	8.57	3.812
		Total	6.33	3.648
	Male	Low	4.67	2.963
		High	8.07	3.423
		Total	6.37	3.608
	Total	Low	4.38	2.344
		High	8.32	3.601
		Total	6.35	3.613
Somatic Symptoms	Female	Low	6.13	2.529
		High	12	4.136
		Total	9.07	4.506
	Male	Low	4.6	4.399
		High	9.73	3.75
		Total	7.17	4.809
	Total	Low	5.37	3.64
		High	10.87	4.077
		Total	8.12	4.737

Although Box's test is significant, since the sample sizes are equal, the results can be discarded. Pillai's Trace test gives us significance for gender ($p = 0.01$) and depression level ($p=0.0001$). Based on these p -values it can be said that there is a significant difference between males and females, and between those with high depression and low depression for somatic symptoms and suicidal ideation. Levene's test is non-significant for somatic symptoms ($p=0.183$) but it is significant for suicidal ideation ($p=0.001$) indicating that the assumption of homogeneity of variance has not been met for suicidal ideation.

The multivariate table is especially useful because it takes into account the correlation between the dependent variables and so for these data has more power to detect group differences. The values of p in Table 2 indicate that the depression level has a significant impact on both the dependent variables but the gender impacts only somatic symptoms. So hypotheses 3 and 4 are proved. There was no significant interaction between gender and depression levels. Based on the data from both tables it appears obvious

that somatic symptoms and suicidal ideation are significantly higher in those with high depression. Somatic symptoms are significantly higher in females than in males proving hypothesis 1. Finally women with high depression scores have more somatic symptoms and suicidal ideation than any other group.

Table 2: Multivariate test results for gender, depression levels and the interaction between the two for both the dependent variables.

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Suicidal Ideation	472.700 ^a	3	157.567	16.914	0.0001	.304
	Somatic Symptoms	1019.833 ^b	3	339.944	23.891	0.0001	.382
Intercept	Suicidal Ideation	4838.700	1	4838.700	519.424	0.0001	.817
	Somatic Symptoms	7905.633	1	7905.633	555.610	0.0001	.827
Gender * Depression Level	Suicidal Ideation	8.533	1	8.533	.916	0.341	.008
	Somatic Symptoms	4.033	1	4.033	.283	0.595	.002
Gender	Suicidal Ideation	.033	1	.033	.004	0.952	.000
	Somatic Symptoms	108.300	1	108.300	7.611	0.007	.062
Depression Level	Suicidal Ideation	464.133	1	464.133	49.824	0.0001	.300
	Somatic Symptoms	907.500	1	907.500	63.779	0.0001	.355
Error	Suicidal Ideation	1080.600	116	9.316			
	Somatic Symptoms	1650.533	116	14.229			
Total	Suicidal Ideation	6392.000	120				
	Somatic Symptoms	10576.000	120				
Corrected Total	Suicidal Ideation	1553.300	119				
	Somatic Symptoms	2670.367	119				

DISCUSSION

The present study attempted to find gender differences in reporting of suicidal ideations and somatic symptoms by adolescents. It also aimed to find the differences in reporting of suicidal ideation and somatic symptoms by depressed group as compared to the group which show low or no depressive symptoms. The hypothesis that females will report higher suicidal ideations than males was rejected as the analysis showed no significant difference in reporting higher of suicidal ideation by females as compared to males.

This could be explained by other researchers that have studied the strong influence of depression on college students and high school students, especially the development of their suicide behaviour. Researchers studied the relationship between depression and suicidality in a sample of college students and found that only depression scores predicted current and past suicidality among college student participants, and scores on locus of control, hopelessness, masculinity, and femininity did not make significant contribution to the prediction of suicidality. But women did significantly differ from men when it came to somatic symptoms. This adds credence to the general belief that women experience more aches and pains as compared to men [25-26].

The group with depressive symptoms showed significantly greater somatic symptoms than group with low depressive symptoms. This finding is in line with previous researches identifying several psychosocial factors that predict the development and maintenance of pain and somatic complaints in children and adolescents, including depressive symptoms and stressful life events. Higher levels of depressive symptoms are related to higher pain intensity and more pain-related disability in adults, children, and adolescents. Depression has also been shown to increase the risk for pain occurrence in population-based studies. There is some evidence that psychosocial factors such as depression and stress play a stronger role in the development of recurrent pains for girls, as has been demonstrated in adult women, but additional work is needed to understand the role of these factors in adolescents [27-28].

The hypothesis that group with depressive symptoms will report higher suicidal ideations than group with low or no depressive symptoms was accepted. This is again in line with findings from other studies [29]. There was no interaction found between the gender and the levels of depression in impacting the suicidal ideation or somatic symptoms. Although the mean scores did vary, it was independent of the interaction of these two variables. In other words, it is important for therapists and researchers to study to look at gender only when considering somatic symptoms. Thoughts about suicide are a function of depression level and not of gender. It reinforces the idea that individuals with depression are more likely to consider ending their lives and this is not specific to women [30].

The foremost limitation of this study can be cited as limited sample size. The use of self-report measures of suicidal behaviours, somatic symptoms and depressive symptoms may be seen as a limitation of the current study. Participants may have provided certain responses for a variety of reasons (e.g., to please the experimenter or exaggerate current problems or faking good). Suicidal ideation and somatic symptoms are difficult outcomes to study because they are necessarily self-reported. The use of a non-clinical sample and a brief, general measure of suicide risk and somatic symptoms may also be the limitations of this study.

CONCLUSIONS

The present study revealed that adolescents with depressive symptoms show both significantly higher rates of suicidal ideations and somatic symptoms. Female students were more likely to experience somatic symptoms. As the group of adolescents selected for the study were appearing for their board exams and show these results, it is all the more alarming as previous studies have shown rise in suicide attempts made by this age group.

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