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A Cross-Sectional Study Of Depression And Stress Levels Among School Teachers Of Bangalore

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Abstract:
Background*: In many countries a teacher's job is often considered to be one of the most stressful professions. In India, teaching is regarded as a noble profession and teachers are accorded much respect. Even though there are multiple studies on stress experienced by teachers, only a few studies have been done so far to explore the depressive symptoms among teachers.*
Aims And Objectives:
- *To estimate the prevalence of depression among school teachers*
- *To study the socio-demographic and occupational characteristics of teachers*
- *To determine percentage of teachers having depression and its severity*
- *To study work related stress among teachers and its severity*
- *To study relationship of depression with work related stress*

Methodology: *In this cross-sectional study, 105 teachers who gave informed consent were included. Semi structured questionnaire for collecting socio-demographic and occupational profile, Beck's Depression Inventory II (BDI-II) and Teachers stress Inventory (TSI) were used.*
Results*: 55 out of 105(52.38) had depression while 50(47.52%) of the study population were not depressed based on BDI score. Among the depressed group, 28.6% had mild depression, 18.1% had moderate depression and 5.7% had severe depression. Around 20% indicated high levels of stress in different areas as mentioned in the TSI. Significant correlation between TSI scores and BDI scores was not seen.*
Conclusion: *From our study it is evident that, when compared to general population, group of teachers has increased prevalence of depression. There are a number of studies about the stressors among the teaching job, but there are not many studies about the mental health of teachers in view of the stressors.*
Keywords: *Teacher, Stress, Depression, BDI, TSI*

I. Introduction

Teaching is considered to be one of the most stressful professions chosen by many in India. Stress experienced by the teachers is steadily increasing due to many additional roles and requirements from the institute, boards of education, and universities etc.[1] Depression, anxiety and somatoform disorders are known to occur among working professionals.[2] According to WHO'S Global Burden of Disease 2001, about 450 million people suffer from a Mental or Behavioural disorder, and 33% of the years lived with disability (YLD) are due to neuropsychiatric disorders. In many developed countries, 35% to 45% of absenteeism from work is due to mental health problems. More than 150 million persons suffer from depression at any point in time.[3] A study from Spain published in the European Psychiatry showed 35.3% prevalence of depression.[4] Even though, there are multiple studies on stress experienced by teachers; only a few studies have been done so far to explore the depressive symptoms among teachers. Other interesting aspect to note is that women are at heightened risk for mood disorders with a typical female to male ratio of 1.5 to 2.0.[5] A study done in India during 2002, to know the gender differences in occupational stress of professional and non- professionals revealed that women professionals experience significantly higher occupational stress than men.[6] As teaching job may be more stressful, the job may make female teachers more vulnerable to depression. In addition to stress leading to depression, a study on primary school teachers from Dharwad city also revealed that more than half of the teachers(55.2%-64.8%) having average to high levels of stressors, showed a positive significant relationship between stressors and health status.[7] A study done at Varanasi, India targeting middle aged female teachers during 2006 showed 54% of teachers experienced moderate to high levels of stress, 32% reported moderate anxiety, 44% exhibited somatic symptoms and low level of depression was present in 92% of subjects.[8] Teachers with certain temperament and character traits appeared to be more prone to psychiatric morbidity.[9]Both cross-sectional and longitudinal studies reveal that the work stress as a independent risk factor for depression and precipitator of depression[10,11,12] and anxiety in young, working women and men.[(13)] A study done in India during 2002, to know the difference in occupational stress experienced by professionals of different gender revealed that women professionals experienced higher occupational stress than men.[6] Some

studies from India and other countries indicate that there is not much of psychiatric morbidity among teachers[14], and male teachers face more stress than female teachers.[15,16]Most of the Indian studies focused only on the stress level in teachers, and neither assessed psychiatric morbidity, nor used appropriate scales to assess common disorders among teachers such as depression or anxiety disorders .With this background the aim and objectives of our study were,

- To estimate the prevalence of depression among school teachers
- To study the socio-demographic and occupational characteristics of teachers
- To determine percentage of teachers having depression and its severity
- To study work related stress among teachers and its severity
- To study relationship of depression with work related stress

II. Methodology

This was a population based cross-sectional study done at various schools in and around the Bangalore city. Data collection was done from April, 2014 to November, 2014 for a period of six months. Inclusion criteria were: All teachers working in Government and Private English medium schools of Bangalore, teachers working for elementary, middle, and high schools, teachers from schools which gave permission to participate in the study, teachers who gave informed consent, teachers whose ages were > 21 and < 65, teachers with > 1 year of teaching experience, and teachers who were full time permanent employees. Exclusion criteria were: Teachers who did not give informed consent, Teachers working in special schools and kindergarten, Teachers who were diagnosed with depression and were on psychotropic medication, Teachers who were suffering from debilitating medical conditions & on ongoing treatment. Four schools were selected, following which the selected school authorities were approached. After briefing about the study, the questionnaires were distributed to the 105 teachers who gave informed consent. As advised by the TSI, sensitizing the teachers about the questionnaire was avoided. The Questionnaires were administered at their work place.

2.1 Tools: Following were used in the study

(1) Semi-structured questionnaire for Socio-demographic and Occupational profile was designed specifically to suit the need of this study to determine respondent's demographic profile and occupational characteristics.

(2) Beck's depression inventory (BDI) [17, 18]is a self –administered tool for screening and assessing the severity of depression in adults. Clinical interpretation of total scores uses the following guidelines.0 to 13 (minimal depression), 14 to 19(mild depression), 20 to 28 (moderate depression), and 29 to 63(severe depression).

(3)Teacher stress inventory (TSI) [19]: This instrument measures stress factors and manifestations of stress exhibited in teachers. It is a self- administered 49- item, 10-factor instrument that assess the degree of strength of occupational stress experienced by teachers.

The data was analyzed using SPSS version- 19. Pearson's rank co-efficient correlation applied to find out relationship between socio-demographic and occupation related variables and BDI scores and Chi Square test was used to analyze the difference between the BDI scores of different groups. ANOVA was applied to analyze the variations in scores between different groups. Pearson's correlation was applied to find out the correlation of age, experience and TSI scores with BDI score.

III. Results

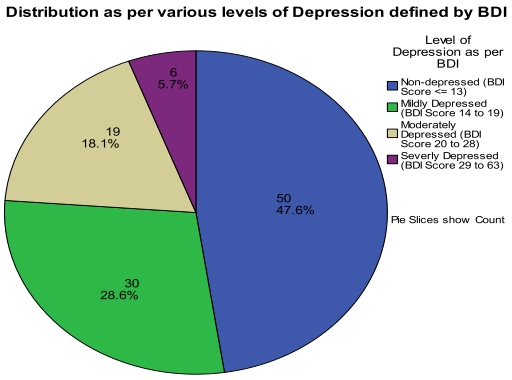
Table 1: Summary of Sociodemographic profile and other details

Age	**N**	**105**	
	Mean	**33.5048**	
	Median	**33.0000**	
	Mode	**28.00**	
	Std. Deviation	**9.41574**	
	Range	**60.00**	
	Minimum	**20.00**	
	Maximum	**80.00**	
Teaching Experience		**Frequency**	**Percentage**
	2 years or less	**33**	**31.4**
	More than 2 up to 5 years	**25**	**23.8**
	More than 5 up to 10 years	**30**	**28.6**
	More than 10 up to 20 years	**10**	**9.5**

	More than 20 years	**7**	**6.7**
Nature of Job	**Only Subject Teacher**	**23**	**21.9**
	Subject and Class Teacher	**79**	**75.2**
	Administrative work + Teaching	**3**	**2.9**
Educational Qualification	**Diploma**	**18**	**17.1**
	Graduate	**54**	**51.4**
	Post Graduate	**33**	**31.4**
Marital Status	**Unmarried**	**25**	**23.8**
	Married	**77**	**73.3**
	Widowed	**3**	**2.9**
Number of Children	**No Children**	**36**	**34.3**
	One or Two	**66**	**62.9**
	More than two	**3**	**2.9**
Type of School	**Government**	**5**	**4.8**
	Private	**100**	**95.2**
Classes Handled	**Primary**	**66**	**62.9**
	Middle	**25**	**23.8**
	High School	**14**	**13.3**
Gender of Students taught	**Only Male**	**3**	**2.9**
	Only Female	**5**	**4.8**
	Both	**97**	**92.4**
Medium of Instruction	**Kannada**	**3**	**2.9**
	English	**102**	**97.1**

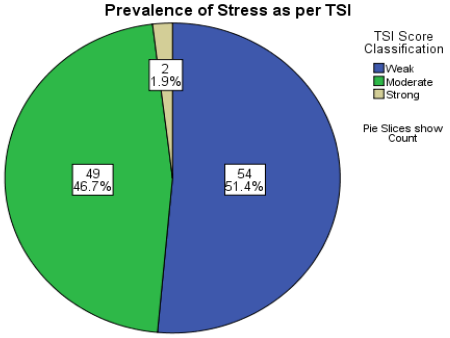
As shown in Figure 1, as per BDI, 55 (52.38%) out of 105 teachers included in the sample had depression while 50(47.52%) were not depressed. Among the 55 depressed, 30 had mild depression, 19 had moderate depression, and 6 had severe depression.

Figure 1: Distribution as per levels defined by BDI



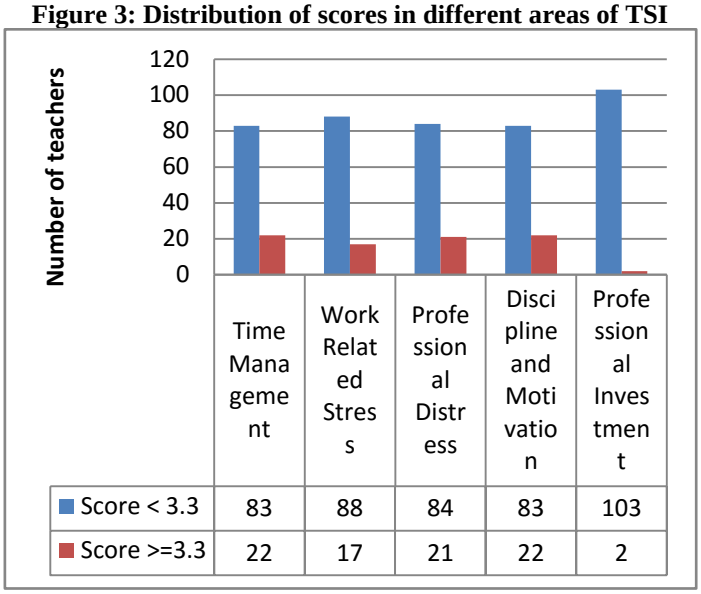
Around 20% indicated high level of stress in different areas as per TSI (Figure 2).

Figure 2: Prevalence of Stress as per TSI



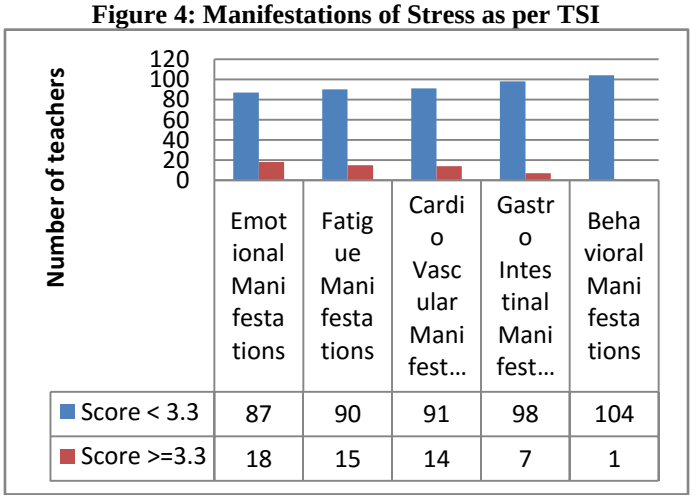
Among those who perceived stress of more than medium strength, the main stressor areas were found to be discipline and motivation and time management related. These areas were followed by professional distress (21%) and work related stress (17%) – Figure 3. Among the stress manifestations, emotional manifestations 18% followed by fatigue manifestations (15%) – Figure 4.

Figure 3: Distribution of scores in different areas of TSI



Less than 20% exhibited the various manifestations of stress as identified by TSI – Figure 4.

Figure 4: Manifestations of Stress as per TSI



Following indicates the correlations between the scores generated in various segments of TSI and the corresponding BDI scores. Significant correlations were observed between TSI scores of emotional manifestation, fatigue manifestation, gastronomic manifestation of stress and the BDI scores

Table 1: Correlation between TSI segment scores and BDI

	Correlation With BDI Score	Sig. (2-tailed)	Significant at 0.05?
TSI Time Management (TM) Score	**-.185**	**.059**	**No**
TSI Work Related Stressor (WRS) Score	**.003**	**.973**	**No**
TSI Professional Distress (PD) Score	**-.010**	**.921**	**No**
TSI Discipline and Motivation (DM) Score	**.075**	**.447**	**No**
TSI Professional Investment (PI) Score	**.000**	**.992**	**No**
TSI Emotional Manifestation (EM) Response Score	**.226**	**0.021**	**Yes**

TSI Fatigue Manifestation (FM) Response Score	**.201**	**0.039**	**Yes**
TSI Cardio Vascular (CV) Response Score	**.154**	**.117**	**No**
TSI Gastronomic Manifestations (GM) Response Score	**.293**	**.002**	**Yes**
TSI Behavioral Manifestation (BM) Response Score	**0.075**	**.462**	**No**

Among the teachers with stress there were significant difference among the number of depressed based on their place of stay, type of school, type of classes handled, type of syllabus, medium of instruction, nature of the responsibility / job, gender of students taught, history of psychiatric illness, occurrence of significant life event in the immediate 6 months that preceded the survey, & history of substance abuse. No significant difference was observed based on Gender, Religion, Marital status, Family type, History of Medical Illness, and Educational qualification.

Table 2: BDI Scores of various groups in specific categories & significant differences between grouped scores

Category		N	Mean	Std. Deviation	F	Is difference Significant at 0.05?
Place of residence	**Rural**	**60**	**17.30**	**6.985**	**19.972**	**Yes**
	Urban	**45**	**10.93**	**7.533**		
Type of School	**Government**	**5**	**24.20**	**7.855**	**8.453**	**Yes**
	Private	**100**	**14.09**	**7.577**		
Type of Syllabus	**State**	**56**	**16.29**	**7.439**	**14.522**	**Yes**
	CBSE	**14**	**20.00**	**6.552**		
	ICSE	**35**	**9.66**	**6.403**		
Classes Handled	**Primary**	**66**	**13.38**	**7.895**	**3.612**	**Yes**
	Middle	**25**	**18.16**	**7.324**		
	High School	**14**	**13.79**	**7.095**		
Gender of students taught	**Male**	**3**	**26.00**	**4.583**	**3.786**	**Yes**
	Female	**5**	**17.00**	**3.742**		
	Both	**97**	**14.09**	**7.824**		
Medium of Instruction	**Kannada**	**3**	**26.00**	**4.583**	**6.908**	**Yes**
	English	**102**	**14.24**	**7.690**		
Nature of the job	**Only Subject Teacher**	**23**	**14.09**	**7.669**	**6.925**	**Yes**
	Subject and Class Teacher	**79**	**14.11**	**7.333**		
	Administrative work + Teaching	**3**	**30.33**	**9.018**		
History of Psychiatric illness	**No**	**101**	**13.96**	**7.226**	**18.784**	**Yes**
	Yes	**4**	**30.00**	**8.287**		
Major Life Event in past 6 months	**No**	**103**	**14.34**	**7.551**	**4.876**	**Yes**
	Yes	**2**	**26.50**	**17.678**		
History of Substance abuse	**No**	**102**	**14.10**	**7.372**	**14.668**	**Yes**
	Yes	**3**	**30.67**	**8.021**		

IV. Discussion

The mean age of the teachers included was 33.5 Years. Majority of the teachers were married and had one or two children. With regard to educational qualification, 33 were postgraduate degree holders and worked in private schools. Majority of teachers taught students of both male and female genders and the medium of

instruction was English. The schools included were following the State, ICSE and CBSE syllabus. As most of the teachers were from private schools, the findings of this study may represent the teacher population of similar schools in Indian context. As evident from results among the 105 teachers included in the study, 54(51.43%) of the teacher population perceived only weak stress whereas 49(46.67%) of them perceived moderate stress and 2(1.90%) of them perceived strong stress. These findings are much similar to the findings from Aligarh university study from India done among secondary school teachers, where the percentages of more, moderate, and less stressed groups of teachers were 8.56%, 36.70% and 54.74% respectively. [16] A study among primary school teachers from Karnataka also revealed nearly similar percentage of occupational stress and the study also showed positive significant relationship with stressors and health status. This is also reflected in our study.[7]Of those who perceived stress of more than medium strength, discipline and motivation related stress and time management were most common followed by professional distress and work related stress.

Time management and work related stressors are the more common sources of stress whereas feelings of fatigue and emotion related symptoms are more common manifestations of stress. These findings are similar to another study conducted in Hongkong[24] which utilized the same TSI scale as our study. There are some studies which found work stressors to be an independent risk factor for depression. Studies and review articles from various countries from west and other parts of the world have shown similar stressors with varying proportions[20,9,25,26] with students discipline related problems being the major stressor followed by workload and time management and so on. This was well reflected in our study.

Among the stress manifestations, emotional manifestations were most common followed by fatigue and cardiovascular manifestations. In each culture and community, the way individuals perceive and manifest stress might vary. The study included significantly more women teachers than men. In general compared to west, Indian women do not prefer drugs or substances to handle stress. Possibly, despite being employed and having economic freedom, dual role as homemaker and teacher might be the reason for this study population to show increased prevalence of emotional, cardiovascular manifestations. With respect to socio-demographic profile, for the teachers staying in remote rural areas without adequate transportation or other facilities, the resource constraints seemed to lead to significant stress.

Teachers were classified as depressed when they scored 14 or higher on the BDI-II. Among 105 subjects, 55 teachers had scored more than 14, indicating a prevalence of depression among 52.38% of the sample. 50(47.62%) out of 105 were not depressed. Among the depressed, with respect to the total sample size, 30% were mildly depressed, 19% were moderately depressed and 6% were severely depressed. The largest population based study from India to report on prevalence of depression reported that, among urban south Indians, the prevalence of depression was 15.1%. A German study published in 2007 reported that a sample of 949 teachers showed nearly 30% of the teachers suffered from significant mental health problems[20]. The individual attributes such as gender, marital status, educational qualification, having children did not seem to significantly influence the stress or the depression. As noted in the Table 3, place of residence, history of psychiatric illness, major life event in 6 months preceding the study and history of substance abuse seemed to be the major individual factors contributing to depression. Most of the other factors that led to depression seemed to be work related.

The correlations between either the aggregate TSI score or the specific TSI stressor area scores to the BDI scores were not statistically significant. This indicates stress may just be one of the reasons for depression. The TSI scores of Gastronomic manifestation ($p = 0.02$), emotional manifestation ($p = 0.021$) and fatigue manifestation ($p = 0.039$) were strongly correlated with the BDI scores. Thus the behavioral manifestations could serve as much better indicators of depression. Despite the fact that TSI scores did not strongly correlate with BDI scores, the work groups based on nature of the job, type of syllabus, gender of students taught, type of class handled, medium of instruction had statistically significant score differences between those who had depression and who did not. Thus even though the specific factors at work might have contributed to depression; that fact was not very evident from TSI.

Our study shows the prevalence of depression among school teachers to be nearly twice as common when compared to the prevalence in general population as reported in various studies.[21,22,23] In recent years Karnataka has made many changes in the educational system such as revision of syllabus, introduction of computer based teaching, qualification exams for teachers and so on. Due to all these factors, community of teachers seems to be facing many coping difficulties. These changes as a group could be one of the reasons for the increased prevalence of depression among the study sample. Since this is a cross-sectional study, and looked for the prevalence of depression at the time of study, the people who have been already suffering from chronic mental illnesses and depressive disorders which might have started before they entered into the teaching profession were not excluded. These all are some of the factors that may be contributing to the increased prevalence of depression in this study sample.

V. Conclusion

This study indicates that teachers face significantly higher level of stress and are more prone for depression. The other salient observation is even though stress may be one of the causes of depression, stress alone may not be the main factor leading to depression among teachers. This study included only three schools with different syllabus and thus may have limited generalizability. It also brings into discussion the need for carrying out of new distinct studies for investigating stress among teachers and depression among. Future studies should include comparison of both private and government schools and qualitative methods should be used to interpret the results in more detail.

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