



## Comparative study of anxiety index and stress coping skills in first and second year BDS students of Sinhgad Dental College, Pune

Rajeev Saxena<sup>1</sup>, Vidya Bhat<sup>2</sup>, Ravi V Shirahatti<sup>3</sup>, Shiv Prasad<sup>4</sup>, Shivprasad Gaudar<sup>5</sup>, Chinmay Shah<sup>6</sup>

### ABSTRACT

#### Objectives

To know the Anxiety index and stress coping skills in first and second year BDS students.

#### Methods

188 students received a pre-validated module by Zung anxiety self-assessment tool, and Coping as measured by "Ways of coping scale by Folkman and Lazarus.

#### Results

Overall results show higher anxiety levels amongst first BDS students compared to second BDS.

#### Conclusions

Stress coping module should be introduced at the earlier stage i.e. First BDS which would help them to be competent.

**Keywords:** Anxiety, Dental Student, Zung Anxiety Score, Coping Scale of Folkman and Lazarus

### INTRODUCTION

The term "stress" was firstly employed in the 1930's by the endocrinologist Hans Selye. Stress is a response to any event which is perceived to alter or threaten our well-being and is a cognitive (thought) process<sup>1-5</sup>; is the body's reaction to a change that requires a physical, mental, or emotional response. Indian education system resembles colonial legacy: educational structure, curriculum design, and pattern of examination. But too much stress can cause a lot of discomfort and can get in the way of being able to focus and achieve.<sup>6-10</sup>

Stress is common among dental students and there are many causes for this stress. Too much stress can

hamper teaching and learning process and results in poor academic and clinical performance.

Students are unable to focus on study<sup>5,11,12</sup>; stress can lead to increased depression, anxiety and suicidal tendency. Students resort to smoking, alcoholism<sup>13-16</sup>, drug abuse, procrastination etc to cope with stress. All these factors hamper the process of a student becoming a good dentist.

By this study we were able to understand the complexity of stress in first year and second year students and accordingly the intervention of stress

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<sup>1</sup>Professor and Head, Department of Pathology, Sinhgad Dental College and Hospital, Pune, Maharashtra

<sup>2</sup>Senior Resident, Department of Medicine, Malla reddy Medical College for women.

<sup>3</sup>Reader, Public Health Dentistry, A.B. Shetty Memorial Institute of Dental Sciences, Deralakatte, Mangalore, Karnataka

<sup>4</sup>Assistant Professor, Department of Biochemistry, KLE University's J N Medical College, Belgaum

<sup>5</sup>Professor of Physiology and Research Coordinator, Women's and Children's Health Research Unit, KLE University's J N Medical College, Belgaum

<sup>6</sup>Associate Professor, Department of Physiology. Government Medical College, Bhavnagar, Gujarat  
Department of Statistics, Manipal University

\*Corresponding Author: Dr Rajeev Saxena, Professor and Head, Department of Pathology, Sinhgad Dental College and Hospital, Pune, Maharashtra.  
E-mail: rajeevsaxenak2010@gmail.com

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management may be implemented. Thus this study was planned with the following aims and objectives:

### Aim

The aim of this study is to know the Anxiety index and stress coping skills in first and second year BDS students.

### Objectives

1. To assess the stress level of the students through validated questionnaires
2. To assess the Anxiety index of the students through validated questionnaires (Zung scale)
3. To assess the stress coping skills of the students through validated questionnaires (Folkman and Lazarus scale)

### MATERIAL AND METHODS

Students of first year and second year BDS were invited to participate in the Medical education research with written informed consent & ethical approval. All the Students (n=100) were included from first year and second year BDS student (n=88),

to assess the Anxiety index of the students through validated questionnaires (Zung scale) and to assess the stress coping skills of the students through validated questionnaires (Folkman and Lazarus scale)

### STATISTICAL ANALYSIS

Analysis was conducted using the Trial version of statistical computation software SPSS Version 17. All the continuous variables were first checked for normalcy using Shapiro-wilk test. P-value of <0.05 was assumed to be significant deviation from normal distribution. Since application of Shapiro-Wilk test showed p value <0.05 for some variables hence application of non-parametric tests was done.

### RESULTS

First BDS students displayed higher anxiety levels as measured by raw score as well anxiety index scores of Zung's index. There was no significant difference in overall ways of coping between the first and second BDS students.

**Table 1 Comparison of first and second year BDS students based on "Zung anxiety self-assessment tool" and Folkman and Lazarous Index**

Measurement scale	Statistical parameter	First BDS students (n = 100)	Second BDS students (n=88)
Zung's raw scores	Mean + Standard deviation	40.93±6.48	36.28± 6.5
	Median ( 25 <sup>th</sup> and 75 <sup>th</sup> percentiles)	40 (36, 45)	36 (32,40)
	p-value and significance*	p <0.001, Significant	
Anxiety index scores	Mean + Standard deviation	51.29± 8.08	45.5± 8.14
	Median ( 25 <sup>th</sup> and 75 <sup>th</sup> percentiles)	50 (45,56)	45 (40, 50.75)
	p-value and significance*	p <0.001, Significant	
Folkman and Lazarous index	Mean + Standard deviation	2.49 ± 0.22	2.56 ± 0.21
	Median ( 25 <sup>th</sup> and 75 <sup>th</sup> percentiles)	2.52 (2.30 , 2.64)	2.58 (2.40 , 2.72)
	p-value and significance*	p- 0.055, Not significant	

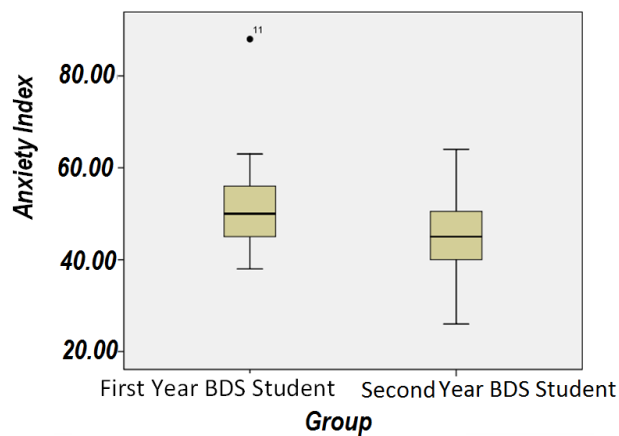
Overall results show higher anxiety levels amongst first BDS students compared to second BDS Interpretation: (Table 1, 2 and Figures 1, 2 and 3. The reason for the differences may be the following: New

environment to adjust to (First time hostel experience, Exposure to professional college set up, vast syllabus to read, and new patterns of examinations) may have elevated their anxiety levels.

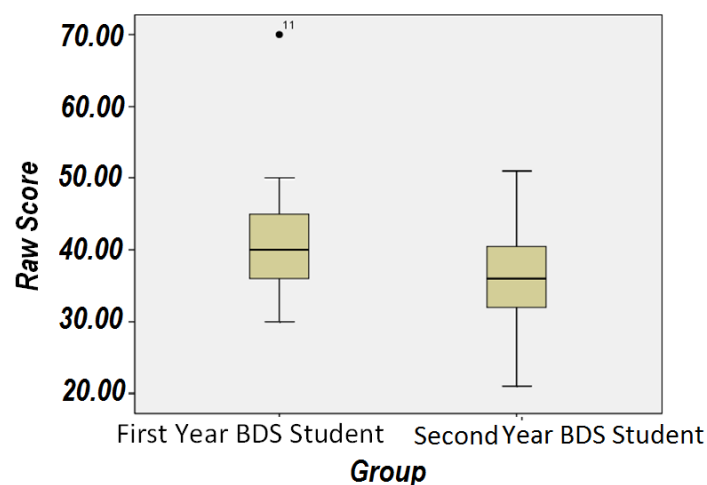


**Table 2 Comparison of first and second year BDS students based on clinical interpretations of “Zung anxiety self-assessment tool”**

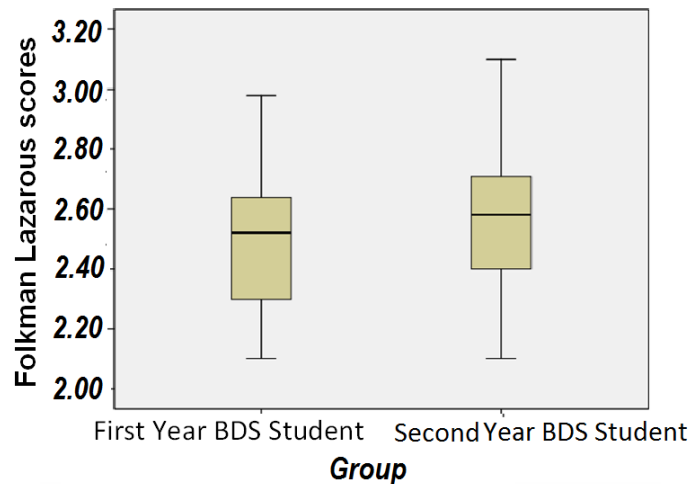
Clinical Interpretation	Number and percentage		Total	p-value and significance by Mann-Whitney test
	First BDS students (n = 100)	Second BDS students (n=88)		
Within normal range	26 (26 %)	48 (54.5%)	74 (36.9%)	P<0.001, Significant
Minimal to moderate anxiety	52 (52 %)	35 (39.8%)	87 (46.3%)	
Marked to severe anxiety	21 (21 %)	5 (5.7%)	26 (13.8%)	
Most extreme anxiety	1 (1 %)	0 (0.0%)	1 (0.5 %)	
<b>Total</b>	<b>100 (100 %)</b>	<b>88 (100%)</b>	<b>188 (100%)</b>	



**Figure 1 Anxiety index scores shows higher median and quartile values for first BDS students compared to second BDS**



**Figure 2 Zung raw scores shows higher median and quartile values for first BDS students compared to second BDS**



**Figure 3** Folkman Lazarous scores shows median and quartile values for first BDS students compared to second BDS

## DISCUSSION

Studies have revealed that being a student is stressful and it is more stressful for students of dentistry compared to medical.<sup>1,12,17</sup> Stresses may be the schoolwork related items such as amount and difficulty of class work, obtaining of grades, fear of failing a course and fear of being unable to catch up if left behind. Some potential stressors may be related to atmosphere of school like belittlement, bullying, criticism, inconsistency in feedback etc. The personal life stressors of students like financial problems, family issues and insecurities about professional future could also prove to be of detrimental effect to the students' academic life.<sup>18</sup>

Kelly JA in 1982<sup>14</sup> conducted stress management training amongst medical students and found the training group to be superior in stress management. We share the authors concerns that although there are ample studies reporting high stress amongst medical students very few studies are reported that model a training program to deal with this stress effectively. In a more recent study Rosenzweig S et. al.<sup>15</sup> and colleagues in reported reduction in psychological stress following mindfulness based training program for medical students. In another training program, Whitehouse WG et.al.<sup>16</sup> reported a reduction in stress after a stress management training using self- hypnosis techniques. These programs though based on different strategies of dealing with stress could be offered as a part of the

course itself or can be electively chosen or offered to the students in academic or personal distress. Lee J and Graham AV<sup>17</sup> reported in 2001 the effectiveness of a "wellness elective" for students in medical school. Rosenzweig S et al<sup>15</sup> conducted a study on effectiveness of mindfulness-based stress reduction to improve coping skills. It was found that mood disturbance was higher in control group compared to intervention group that received mindfulness based stress reduction program.<sup>15</sup> Similar beneficial effects have been found after students were trained in a self-hypnosis stress management program<sup>16</sup>, mindfulness based programs<sup>17</sup>, and programs based on bio-feedback-aided relaxation techniques. Iglesias SL<sup>18</sup> studied the effects of different types of stress management programs and used objective measures like salivary cortisol levels as one of the outcome measures and found that the stress management program participants did show decreased levels of cortisol in saliva.

Thus we can observe that there have been various studies performed which have shown that stress coping skills are must for the current curriculum of health professionals. The positive effects of such training programs have been reported in literature earlier and many medical and dental schools have tried to incorporate a stress control program.<sup>18-33</sup> But very minimal data is available were comparison between first and second year BDS students on stress coping skills have been done.



This study is therefore a unique for its implications where students have been previously been trained for stress coping and seen a positive in the same. The present study clearly shows that First BDS students displayed higher anxiety levels as compared to the Second BDS. This has given a clear view that we have to develop a comfortable learning environment for the First BDS students who may have various difficulties like new environment to adjust to, First time hostel experience, Exposure to professional college set up, vast syllabus to read, and new patterns of examinations, which may lead to elevated anxiety levels. This in turn would in turn impact their performance and may lead to failure creating more anxiety and depression and thus creating viscous cycle of stress which may become difficult to overcome.

#### LIMITATION

Further study with large sample size is required for generalization of study result. Time may be important factor, which may the reason for difference in score of first and second year

#### CONCLUSION

A stress coping module at the earlier stage i.e. First BDS should be introduced which would help them to be competent for managing stress

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