

# Perception of Stress among Clinical Undergraduates in A Dental Institution in the Neo Capital Region of Andhra Pradesh

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## I. INTRODUCTION

Dentistry is a profession requiring physical as well as mental efforts. According to a 2008 report of the Global Congress, "dental education is regarded as a complex, demanding and often stressful pedagogical exposure". It involves an acquisition of academic, clinical and interpersonal skills during the period of learning<sup>1</sup>. Dental students have to face the additional stress of their academics in addition to the stress correlated to the dentistry as a profession. Furthermore, increasing stress may result in declining student performance. Stress in dental students may involve many factors, arising from both the academic and socio-cultural environment, and attributable to the social support issues (emotional and financial)<sup>2</sup>.

One of the most common stressors is the academic stressor, which if not addressed properly, may lead to many serious and lasting consequences that later lead to occupational stress. Many studies have reported that higher levels of stress and psychological morbidity occurs in the students of the health care profession, and it is generally accepted that dentists work at the levels of anxiety, higher than that of medical doctors; a fact that is evident starting from their undergraduate training. Dental schools are known to be the highly challenging and stressful learning environments in most of the studies, which were previously conducted<sup>3</sup>.

Several studies conducted in different parts of the world found that dental students experienced significant levels of stress throughout their training. The clinical years are perceived to be more stressful than the preclinical years due to such issues like dealing with patients, dental staff and academic pressure.<sup>4</sup>

In a study conducted previously it was concluded that many factors led to dentistry being particularly stressful. The combination of time pressure, frightened patients, financial problems, staff supervision and the routine and boring work

regime are the most stressful factors<sup>5</sup>. Dentists suffer from especially high degrees of stress when compared with that of other health care professions<sup>6</sup>. Either diverse and extreme demands or lack of resources which exceed the coping capacities of the professional that can be viewed as the sources of occupational stress. It is important for dental schools to recognize stress levels among its students while planning the curriculum and working environment for oral health care education to create a more student friendly with minimal stressful atmosphere.

In India, the course duration of the Bachelor of Dental Surgery programme is of four calendar years with progressive final examination of the entire year will be at the end of each year, followed by 1 year rotatory internship in the dental colleges which were governed by the Dental Council of India. During the preliminary 2 years of graduation, students will be taught with basic life sciences and preclinical dental subjects whereas the later years are completely dedicated for imparting their clinical education. Although there is a high prevalence of disease in the country there are currently few employment opportunities in India.

The aim of the present study was to assess perceived sources of stress amongst dental clinical undergraduate students at a private dental institution located in the neo capital region of Andhra Pradesh.

## II. MATERIALS AND METHODS

A descriptive cross-sectional study was conducted in November 2017 among dental students attending the clinical years in a dental college located in the neo capital region of Andhra Pradesh. An ethical clearance was obtained from the institutional ethical committee. The purpose of the study was first explained and informed consent was obtained from all the participants.

The questionnaire was distributed to the 3<sup>rd</sup> and 4<sup>th</sup> year students after their theoretical classes and to the interns during their lunch break. Students who were present during study period were voluntarily taken and those who were absent and shown no interest were excluded.

The students were administered modified dental environmental stress questionnaire<sup>3</sup> form consisting of demographic data regarding gender and year of study and 20 closed ended questions. The internal reliability measured by cronbach's alpha was 0.78, which was acceptable for a questionnaire.

The questionnaire comprises of questions regarding the level of impact of examinations, grades, amount of time, work load, financial responsibilities, relation with the classmates, criticism and learning environment created by the college and the faculty during the theoretical sessions as well as during their clinical postings that are leading to the stress on the students and also the questions relating to the apprehensions like fear of getting infectious diseases, marital problems as well as relationship adjustment issues and their future employment opportunities and job insecurity concerns were included.

The response for each question was based on a four point likert scale with response options 1- not stressful, 2- slightly stressful, 3- moderately stressful, 4- severely stressful. The respondent has to choose any of the four options based on the level of the stress they perceive.

After the data was collected anonymously from students, it was analyzed using SPSS V.20 software. Statistical analysis was done by chi- square test.

### III. RESULTS

A total of 199 students of the 275 registered under graduate students participated in the study at an overall response rate of 72.36%, out of them 64 were 3<sup>rd</sup> BDS, 71 were 4<sup>th</sup> BDS and 64 were interns, with the response rate being 90.14% for 3<sup>rd</sup> BDS students, 71% for final BDS students and 62.74% from interns. The effect of academic factors and other apprehensions causing the stress in clinical undergraduates was given in the table 1 and 2 respectively. Of the total 199 respondents, 53(26.63%) were males and 146 (73.36%) were females. The most common reasons for stress among males and females was fear of unemployment after graduation, followed by insecurity concerning professional future and fear of failing course among. The distribution of stress due to various factors in males and females were given in table 3.

QUESTIONS	OPTIONS	3 <sup>rd</sup> bds		4 <sup>th</sup> bds		Interns		P value
		N= 64	%	N=71	%	N= 64	%	
1.Amount of assigned work	Not stressful	1	1.6%	9	12.7%	6	9.4%	0.000*
	Slightly stressful	12	18.8%	16	22.5%	25	39.1%	
	Moderately stressful	20	31.2%	24	33.8%	26	40.6%	
	Severely stressful	31	48.4%	22	31.0%	7	10.9%	
2.Difficulty of the course work	Not stressful	1	1.6%	3	5.6%	6	9.4%	0.000*
	Slightly stressful	13	20.3%	23	32.4%	33	51.6%	
	Moderately stressful	21	32.8%	22	31.0%	22	34.4%	
	Severely stressful	29	45.3%	22	31.0%	3	4.6%	

3.competition with classmates	Not stressful	14	21.9%	31	43.7%	22	34.4%	0.022*
	Slightly stressful	20	31.2%	14	19.7%	21	32.8%	
	Moderately stressful	14	21.9%	18	25.4%	16	25.0%	
	Severely stressful	16	25.0%	8	11.2%	5	7.8%	
4.examinations and grades	Not stressful	6	9.4%	10	14.1%	9	14.0%	0.006*
	Slightly stressful	13	20.3%	24	33.8%	32	50%	
	Moderately stressful	19	29.7%	18	25.3%	14	21.9%	
	Severely stressful	26	40.4%	19	26.8%	9	14.1%	
5.patients inability to complete the prescribed care plan	Not stressful	6	9.5%	11	15.5%	11	17.2%	0.004*
	Slightly stressful	18	28.1%	37	52.1%	31	48.4%	
	Moderately stressful	20	31.2%	16	22.5%	15	23.4%	
	Severely stressful	20	31.2%	7	9.9%	7	11.0%	
6. Difficulty in learning clinical skills	Not stressful	5	7.8%	17	23.9%	15	23.4%	0.003*
	Slightly stressful	17	26.6%	19	26.8%	29	45.3%	
	Moderately stressful	23	35.9%	23	32.4%	13	20.4%	
	Severely stressful	19	29.7%	12	16.9%	7	10.9%	
7.Learning environment created by faculty	Not stressful	4	6.2%	18	25.4%	7	10.9%	0.001*
	Slightly stressful	13	20.3%	19	26.8%	28	43.8%	
	Moderately stressful	26	40.7%	13	18.4%	14	21.9%	

	Severely stressful	21	32.8%	21	29.6%	15	23.4%	
8.Receiving criticism about work	Not stressful	3	4.6%	10	14.1%	7	10.9%	0.000*
	Slightly stressful	11	17.2%	19	26.7%	17	26.6%	
	Moderately stressful	9	14.1%	21	29.6%	27	42.2%	
	Severely stressful	41	64.1%	21	29.6%	13	20.3%	
9.inconsistency of feedback on your work among different teaching faculty	Not stressful	4	6.2%	14	19.7%	9	13.6%	0.001*
	Slightly stressful	16	25.0%	22	31.0%	26	32.2%	
	Moderately stressful	13	20.3%	20	28.2%	20	26.6%	
	Severely stressful	31	48.5%	15	21.1%	9	27.6%	
10.Lack of time for relaxation	Not stressful	7	10.9%	6	8.5%	12	18.8%	0.016*
	Slightly stressful	12	18.8%	25	35.2%	24	37.5%	
	Moderately stressful	16	25.0%	16	22.5%	17	26.5%	
	Severely stressful	29	45.3%	24	33.8%	11	17.2%	
11. Expectations of professional school versus reality	Not stressful	2	3.1%	7	9.9%	6	9.4%	0.003*
	Slightly stressful	11	17.2%	20	28.2%	23	35.9%	
	Moderately stressful	18	28.1%	27	38.0%	22	34.4%	
	Severely stressful	33	51.6%	17	23.9%	13	20.3%	
12.Distance and time needed to travel to the dental college	Not stressful	17	26.5%	20	28.2%	27	42.2%	0.037*
	Slightly stressful	17	26.6%	21	29.6%	17	26.6%	
	Moderately stressful	8	12.5%	16	22.5%	13	20.3%	

	Severely stressful	22	34.4%	14	19.7%	7	10.9%	
13.Lack of cooperation from chair assistants and laboratory technicians	Not stressful	11	17.2%	8	11.3%	15	23.4%	0.021*
	Slightly stressful	17	26.6%	27	38.0%	24	37.5%	
	Moderately stressful	18	28.1%	7	9.9%	11	17.2%	
	Severely stressful	18	28.1%	29	40.8%	14	21.9%	

Table 1 Academic Factors Leading to the Stress Among Clinical Students

QUESTIONS	OPTIONS	3 <sup>rd</sup> bds		4 <sup>th</sup> bds		Interns		P value
		N= 64	%	N=71	%	N= 64	%	
1.fear of failing course or an academic year	Not stressful	4	6.2%	7	9.9%	10	15.6%	0.010*
	Slightly stressful	6	9.4%	11	15.5%	19	29.7%	
	Moderately stressful	17	26.6%	14	19.7%	15	23.4%	
	Severely stressful	37	57.8%	39	54.9%	20	31.3%	
2.Relationships with other members of the class	Not stressful	27	42.1%	39	54.8%	33	51.5%	0.080
	Slightly stressful	14	21.9%	18	25.4%	22	34.4%	
	Moderately stressful	11	17.2%	8	11.3%	6	9.4%	
	Severely stressful	12	18.8%	6	8.5%	3	4.7%	
3.Marital/relationship adjustment problems	Not stressful	36	56.2%	42	59.2%	31	54.8%	0.086
	Slightly stressful	6	9.4%	14	19.7%	19	19.6%	
	Moderately stressful	10	15.6%	6	8.5%	8	12.1%	
	Severely stressful	12	18.8%	9	12.6%	6	13.6%	
4.Financial responsibilities	Not stressful	23	46.0%	18	25.4%	10	25.6%	0.203
	Slightly stressful	20	31.2%	22	31.0%	22	32.2%	

	Moderately stressful	7	10.9%	14	19.7%	15	18.1%	
	Severely stressful	14	21.9%	17	23.9%	17	24.1%	
5. Insecurity concerning your professional future	Not stressful	4	6.2%	6	8.5%	8	12.5%	0.044*
	Slightly stressful	5	7.8%	13	18.3%	15	23.4%	
	Moderately stressful	15	23.5%	22	31.0%	19	29.7%	
	Severely stressful	40	62.5%	30	42.4%	22	34.4%	
6.Fear of unemployment after graduation	Not stressful	4	6.2%	8	11.3%	8	12.5%	0.262
	Slightly stressful	8	12.5%	9	17.2%	11	17.2%	
	Moderately stressful	9	14.1%	15	26.7%	17	26.5%	
	Severely stressful	43	67.2%	39	43.8%	28	43.8%	
7.Fear of getting infectious diseases like HIV,HBV	Not stressful	5	7.8%	7	9.9%	6	9.4%	0.001*
	Slightly stressful	13	20.3%	21	29.6%	24	37.5%	
	Moderately stressful	14	21.9%	20	28.2%	26	40.6%	
	Severely stressful	32	50.0%	23	32.1%	8	12.5%	

Table 2 Apprehensions Leading to the Stress

QUESTIONS	MALES N= 53				FEMALES N= 146				P value
	Not stressful N= %	Slightly stressful N= %	Moderately stressful N= %	Severely stressful N= %	Not stressful N= %	Slightly stressful N= %	moderately stressful N= %	Severely stressful N= %	
1.amount of assigned work	4 7.5%	16 30.2%	18 34.0%	15 28.3%	12 8.2%	37 25.4%	52 35.6%	45 30.8%	0.924
2.difficulty of the course	4 7.5%	23 43.4%	15 28.3%	11 20.8%	7 4.8%	46 31.5%	50 34.2%	43 29.5%	0.305

3.competetion with classmates	17 32.1%	15 28.3%	13 24.5%	8 15.1%	50 34.2%	40 27.4%	35 24.0%	21 14.4%	0.994
4.examinations and grades	11 20.8%	20 37.7%	10 18.9%	12 22.6%	14 9.6%	49 33.5%	41 28.8%	42 7.5%	0.118
5.fear of failing course or an academic year	10 18.9%	10 18.9%	15 28.2%	18 34.0%	11 7.5%	26 17.8%	31 21.2%	78 53.5%	0.034*
6.patients inability to complete the prescribed care plan	7 13.2%	25 47.2%	13 24.5%	8 15.1%	21 14.4%	61 41.8%	38 26.0%	26 17.8%	0.919
7.difficulty in learning clinical skills	12 22.6%	18 34.0%	11 20.8%	12 22.6%	25 17.1%	47 32.2%	48 32.9%	26 17.8%	0.380
8.learning environment created by faculty	8 15.1%	15 28.3%	14 26.4%	16 30.2%	21 14.4%	45 30.8%	39 26.7%	41 28.1%	0.984
9.receiving criticism about work	3 5.7%	19 35.8%	16 30.2%	15 28.3%	17 11.6%	28 19.2%	41 28.1%	60 41.1%	0.052
10.inconsistency of feedback on your work among different teaching faculty	11 20.8%	17 32.1%	11 20.8%	14 26.3%	16 11.0%	47 32.2%	42 28.7%	41 28.1%	0.293
11. relationships with other members of the class	26 49.1%	17 32.1%	1 1.8%	9 17.0%	73 49.7%	37 27.1%	24 12.6%	12 10.6%	0.018*
12.lack of time for relaxation	8 15.1%	17 32.1%	13 24.5%	15 28.3%	17 11.6%	44 30.1%	36 24.7%	49 33.6%	0.861
13. marital/relationship adjustment problems	30 56.6%	12 22.6%	2 3.8%	9 17.0%	79 54.1%	27 18.5%	22 15.1%	18 12.3%	0.163
14. financial responsibilities	8 15.1%	22 41.5%	10 18.9%	13 24.5%	43 29.5%	42 28.8%	26 17.7%	35 24.0%	0.163

15. expectations of professional school versus reality	6 11.3%	12 22.6%	18 34.0%	17 32.1%	9 6.2%	42 28.8%	49 33.5%	46 31.5%	0.590
16. insecurity concerning your professional future	8 15.1%	9 17.0%	14 26.4%	22 41.5%	10 6.8%	24 16.4%	42 28.7%	70 48.1%	0.340
17. fear of unemployment after graduation	7 13.2%	7 13.2%	14 26.4%	25 47.2%	13 8.9%	21 14.4%	27 18.5%	85 58.2%	0.424
18. fear of getting infectious diseases like HIV,HBV	7 13.2%	10 18.9%	21 39.6%	15 28.3%	11 7.5%	48 32.9%	39 26.7%	48 32.9%	0.093
19. distance and the time needed to travel to the dental college	17 32.1%	11 20.8%	13 24.5%	12 22.6%	47 32.2%	44 30.1%	24 16.5%	31 21.2%	0.450
20. lack of cooperation from chair assistants and laboratory technicians	10 18.8%	17 32.1%	9 17.0%	17 32.1%	24 16.4%	51 34.9%	27 18.6%	44 30.1%	0.955

Table 3 Distribution of Stress Among the Males and Females

#### IV. DISCUSSION

Stress was prevalent in all the years, but comparatively, of all the three years, 3<sup>rd</sup> BDS students were more stressful than rest of the clinical students. This could have happened due to their initial clinical exposure in 3<sup>rd</sup> BDS; Owing to inadequate experience and knowledge, attending the clinicals may have lead to the increased stress relative to the somewhat experienced final BDS students and interns. This result was consistent with the earlier studies conducted by Zyed H<sup>7</sup> and Khalid H AI-Samadani<sup>3</sup> revealed that the students attending the initial clinical year were having severe stress relative to their counter parts of the other clinical years. But study conducted by S Shasidhar<sup>8</sup> 4<sup>th</sup> year student are more stressful than 3<sup>rd</sup> bds.

Among third BDS students (N=64) the three most severe stressful factors were fear of unemployment after graduation (67.2%) followed by insecurity concerning professional future (65%) and receiving criticism about work(64.1%), where as the least stressful factor was marital or relationship adjustment problems ( 56.2%) . Among final BDS (N=71) fear of failing course (54.9%) was the most stressful factor followed by fear of unemployment after graduation (43.8%) and insecurity concerning professional future (42.4%) with the least stressful factor as was marital or relationship adjustment problems (59.2%). For the interns (N=64) the most stressful factor was

fear of unemployment after graduation (43.8%) followed by insecurity concerning professional future (34.4%) and fear of failing course (31.3%) with the least stressful factor was marital or relationship adjustment problems(54.8%). This shows that for all the three years fear of unemployment was the most common stressor comprising of about 55.27% of the total clinical undergraduate students. The least stressful factor for all the clinical undergraduates was marital or relationship adjustment problems (54.77%). similar to the studies conducted by Shaher H<sup>9</sup> among nursing students showed that assignments and work load as well as teachers and staff were the highest sources of stress in clinical training and Khalid<sup>3</sup> shows 4<sup>th</sup> year students were having more stress due to fear of failure 54.4%, examination and grading 58.4% and 5<sup>th</sup> and 6<sup>th</sup> year students were more stressed due to amount of overload 59.1%, lack of time to do assigned work 53.4% and completing examination requirements 65.7%.

The second most severe stressor for all the students was fear of failing course or an academic year that was chosen by 48.2% of the students. The third most severe stress causing factor was insecurity concerning the professional future which was spread among 46.2% of total students. The fourth most stressor was receiving criticism about the work which was selected by 37.8% of the total students. This was followed by the lack of the time for relaxation being the fifth most stressor prevailing among 32.1% of the students. Study done by Muner



G<sup>10</sup> showed that fear of failure in a course was ranked as the most stressful item across all professional years and study done by Wilson VJ<sup>11</sup> revealed that lack of leisure time, worrying about physical health, fear of failing and patient's being late were identified as huge problems.

In the present study females were more stressed than males, which is similar to the study conducted by Crego . A<sup>12</sup> reported females compared to males significantly higher perceived stress. But which is in contrast to a study conducted by S.Kumar<sup>2</sup> on undergraduate dental students of first to fourth years enrolled with the Rajasthan University of Health Sciences, the males were more stressed than females.

In this study, males (N=53) were reported with severe stress due to fear of unemployment after graduation (47.2%) followed by insecurity concerning professional future(41.5%) and fear of failing course(34%) with the least stressful factor was marital or relationship adjustment problems(56.6%). Three factors associated with severe stress for females (N=146) were the fear of unemployment after graduation (58.2%) followed by fear of failing course or academic year(53.5%) and insecurity concerning professional future (47.9%) with the least stressful factor was marital or relationship adjustment problems(54.1%), which is similar to the study conducted by Sumaya B<sup>13</sup> found that students marital status is not a significant predictors of depression.

In India there are about 310 dental colleges across the country, approximately 30,000 dentists graduate every year. Mushrooming of the dental colleges and increased pass out of dentists every year lead to the production of huge manpower of dentists, on the counter part shrinkage of the job avenues. There is no much opportunity for today's passouts, except if they want to start their own practice, which too isn't easy. It needs money, space, infrastructure and the right attitude. The vacancies for dental professionals in Government sectors are also less in number. Records show that only 5% graduated dentists are working in the government sector. The salaries in these Government hospitals vary a lot among various parts of the country. Also, the selection procedure for such posts may also be overshadowed by the growing corruption and malpractices.

Because of all these factors, the fear of unemployment may be the reason for being maximum stress creator for major percentage of the students.

## V. CONCLUSION

This study revealed that despite of the year of study, the most common stressful factor for considerable percentage of the students regardless of the gender was the fear of unemployment and insecurity concerning the professional future. There are a number of studies that were conducted in the past which concluded that the apprehensions regarding

examinations and grades, fear of failing course, learning environment and criticism about the work were the most common stress creators for the dental undergraduates. In contrast to those studies, pushing all those factors to a corner, this study reflected the present social scenario of unemployment and future insecurity, being the most stressful factor even for the dental students.

Even though the current situation of oral health in India features huge unmet treatment needs, employment opportunities are scanty because till date there is no oral health policy in India at the national level, and in many states there are no dental services offered under the public health sector. Consequently, employment opportunities for new undergraduates are mainly concentrated in the private sector where there is an increased competition that would limit their income.

All the above factors eclipsed the aspirations of the young budding dentists who thought of better and bright future through dentistry, leading to the creation of stress arising still even from their academic life due to the fear of unemployment and insecurities of their professional future.

Based on the conclusion given by this study, in this present scenario, immediate measures should be taken to sort out the issue of unemployment and future insecurities by both the government and professionals is well needed for a better future of dental fraternity as well as the public oral health.

### A. Limitations –

- Study conducted in neo capital region and cannot assume that the participants were representative of a broader population.

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