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RESEARCH ARTICLE

THE LEVEL OF PROCRASTINATION AMONG DENTAL POST GRADUATE STUDENTS IN ANDHRAPRADESH, INDIA

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ABSTRACT

Introduction: The dental post graduate students are under continuous stress to achieve the impeccable standards expected by the trainers. Lack of time management can lead to procrastination of academic and clinical tasks that ultimately could impact their academic performance. The aim this study to assess the level of procrastination among dental post graduate students in Andhra Pradesh, India.

Material and Methods: A descriptive cross-sectional study was conducted over a period of 2 months from August to September 2013 among dental post graduate students of nine different specialities in Andhra Pradesh, India.Data was collected using a self-administered questionnaire. Finally data was collected to assess the participant's academic performance by collecting their under graduate academic grades.

Results: There was higher representation of dental post graduate students from department of oral pathology in higher procrastinators category (28.57%) and most of the subjects from department of orthodontics were in lower procrastinators category (31.3%).As the age increased the level of procrastination decreased. Majority of the subjects aged ≥28 years were identified as low procrastinators (33.3%). Overall 15.94% of dental post-graduates who were considered high procrastinators had below average under graduate academic grades. 17.64%of dental post-graduates who were considered low procrastinators had above average under graduate academic grades.

Conclusion: There was an inverse relation between the level of procrastination and academic performance indicating that dental post graduates who were considered high procrastinators had below average under graduate academic grades.

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INTRODUCTION

Procrastination is a prevalent and pernicious form of self-regulatory failure (Steel, 2007 and Vodanovich, 2008). The lack or absence of self-regulated performance has been labelled procrastination, the tendency to put off or completely avoid an activity under one's control (Tuckman, 1989). The term "procrastination" has been defined as "the act of needlessly delaying tasks to the point of experiencing subjective discomfort or putting off that which is necessary to reach some goal" (Lay, 1986).

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It has been proposed that procrastination results from a combination of (a) disbelieving in one's own capability to perform task (Lay, 1986), (b) being unable to postpone gratification, and (c) assigning blame for one's own "predicament" to external sources (Ellis, 1977 and Tuckman, 1989). Procrastination is a current topic of interest across multiple fields, from finance (as people defer dealing with their financial troubles) to health care (as people delay seeing their physicians) (Steel, 2010). Unfortunately, procrastination has also been associated with numerous negative outcomes including neuroticism, depression, anxiety, impulsivity, aversiveness, task delay, and low self-efficacy and conscientiousness, in addition to its facets of self-control,

distractibility, organization, achievement motivation, and poor academic performance[9].Hence, such negative outcomes are believed to interfere with task performance. Postponing a task frequently leads to a larger task and more serious problems like stress, a sense of guilt and crisis, severe loss of personal productivity, and social disapproval for not meeting responsibilities or commitments.

When these feelings are combined, they may promote further delays or procrastination (Lakshminarayan, 2013). In fact, Watkins has stated that "chronic procrastination may be a sign of an underlying psychological disorder (Watkins, 2011). Many reasons have been offered as to why people procrastinate. Either situational or temporary factors are related to procrastination such as task aversiveness, evaluation concerns and poor time management skills, either procrastination has been conceptualized as an aspect of personality and has been linked to low self-confidence, self-esteem, and self-efficacy, as well as perfectionism and fear of failure (Vodanovich, 2008). Procrastination is clearly prevalent.

Though virtually all of us have at least dallied with dallying, some have made it a way of life. Estimates indicate that 95% of college students engage in procrastination (Ellis, 1977), approximately 75% consider themselves procrastinators (Potts, 1987), and almost one-half do it consistently and problematically (Day, 2000). It was also demonstrated that among students, high procrastination was associated with lack of self-determined motivation and low incidence of flow state. Also in the medical field it was reported that procrastination on the part of patients is a major problem (Bogg, 2004 and Steel, 2007). Stress appears to be an unavoidable and common aspect of daily life. It may have positive aspects that some individuals may feel challenged and may be able to raise productivity and standard to meet increasing demands (Newbury-Birch, 2001 and Stebbing, 2004). However, among students, work related stress and anxiety have been shown to lead to a morale and poorer work performance and to adversely affect the quality of work delivered (Newbury-Birch, 2001; Frank, 1999 and Firth-Cozens, 2001). Stress, burnout and overload are factors in the underperformance (Paice, 2002). Dental students are no exception for procrastination because they frequently must balance their academic, preclinical, and clinical responsibilities simultaneously. In dentistry there are nine different specialities in post-graduation, among this there are clinical and non-clinical specialities. Depending on the clinical and non-clinical specialities the workload varies.

The dental post graduate students are under continuous stress to achieve the impeccable standards expected by the trainers. Lack of time management can lead to procrastination of academic and clinical tasks that ultimately could impact their academic performance. With so many scheduled activities on students, they must possess the skills needed to set goals, achieve those goals and in the process, avoid procrastination (Lakshminarayan, 2013). According to Sujit et al., "better time management skills, precludes 'cramming' for examinations at the last minute and can result in diminished anxiety and improved academic performance (Sujit, 2006). It is very important to identify such students and make them aware of the negative impact of procrastination on their academic performance. So this study was aimed to assess the level of procrastination among dental post graduate students of Andhra Pradesh, India.

MATERIAL AND METHODS

A descriptive cross-sectional study was conducted over a period of 2 months from August to September 2013among dental post graduate students of nine different specialities in Andhra Pradesh, India.

Source of Data

The source of data was primary in nature and the data was obtained from dental post graduate students in Andhra Pradesh.

Study Setting

The study was carried out in their college premises and respective departments.

Study Duration

Study was conducted out over period of two months from August 2013 to September 2013.

Eligibility Criteria

- All dental post graduates of different speciality from the selected colleges who gave an informed consent were involved in the study.
- Dental post graduates who were present on the particular day of data collection were involved in the study.

Ethical Clearance

The ethical clearance was obtained from the institutional review board of Narayana Dental College and Hospital, Nellore, Andhra Pradesh, India. The purpose of the study was explained to all the dental post graduates and informed consent was obtained from them before the start of the study.

Study Procedure

A list of dental colleges with post-graduation training programme was obtained from the state university. Out of fifteen colleges in the state with post-graduation training programme, proportionately five colleges were selected from different university regions of the state. Two colleges from Osmania, two from Andhra and one from Sri Venkateswara university region of the state were randomly selected by lottery method. All dental post graduate students of different speciality from the selected colleges who gave an informed consent and who were present on the particular day of data collection were involved in the study.

Collection of Data

Data was collected using a self-administered questionnaire containing three parts. First part recorded the demographic details, which include the speciality of post-graduation training programme and the year of the post-graduation. Second part collected information pertaining to the level of procrastination using sixteen-item, prevalidated questionnaire (Bruce W. Tuckman, 1991). Finally data was collected to assess the participant's academic performance by collecting their grades in previous university examination. A pilot study was conducted among thirty dental post graduate students prior to the start of main study to evaluate the reliability of the

questionnaire. The resulting reliability coefficient was r=0.97 at p<0.00001 and Cronbach's alpha is 0.8. The questionnaire was administered to the participants in their respective departments. Interaction among participants were minimised to prevent distortion of the results. Students were instructed not to disclose their names in the questionnaire and anonymity was maintained. If difficulties were encountered in understanding the questionnaire, the investigator explained the questions in simple terms.

The range of procrastination scores obtained from the students was divided in to three groups. Group 1 included those students in the 33.3 percentile or lower range, who were considered to have low procrastination scores. Group 2 included those students in the 33.4 percentile to 66.6 percentile, and they were considered moderate procrastinators. Group 3 included those students in the 66.7 percentile, and they were considered to have high procrastination scores (Lakshminarayan et al) (Lakshminarayan, 2013).

Table 1: Distribution of dental post graduates according to their demographic characteristics

Variable	n=414	Percentage (%)
Males	191	46.13
Females	223	53.86
Age		
23-27 years	291	70.28
28+ years	123	29.71
Year		
First Year	166	40.09
Second Year	128	30.91
Third Year	120	28.98
Departments		
Oral Medicine & Radiology	42	10.14
Public Health Dentistry	32	7.72
Oral & Maxillo Facial Surgery	50	12.07
Oral Pathology	42	10.14
Prosthodontics	50	12.07
Endodontics	50	12.07
Pedodontics	46	11.11
Orthodontics	51	12.31
Periodontics	51	12.31

Table 2. Relationship between level of procrastination and different specialities, age, sex and year of post-graduation of study subjects

Factors	Procrastination scores				Chi-square(χ2)	p-value
	Low n (%)	Moderate n (%)	High n (%)	Total		
Departments						
Oral Medicine & Radiology	2 (4.76)	35 (83.3%)	5 (11.90%)	42 (10.14%)	25.89	0.0556
Public Health Dentistry	7 (21.8)	21 (65.6%)	4 (12.50%)	32 (7.72%)		
Oral & Maxillo Facial Surgery	13 (26%)	33 (66%)	4 (8.00%)	50 (12.07%)		
Oral Pathology	6 (14.2%	24 (57.1%)	12 (28.57%)	42 (10.14%)		
Prosthodontics	11 (22%)	34 (68%)	5 (10.00%)	50 (12.07%)		
Endodontics	12 (24%)	32 (64%)	6 (12.00%)	50 (12.07%)		
Pedodontics	8 (17.3%)	31 (67.3%)	7 (15.22%)	46 (11.11%)		
Orthodontics	16 (31.3%)	31 (60.7%)	4 (7.84%)	51 (12.31%)		
Periodontics	15 (29.4%)	27 (52.9%)	9 (17.65%)	51 (12.31%)		
Age groups						
23-27yrs	49 (16.84%)	199 (68.3%)	43 (14.78%)	291(70.28%)	13.96	0.0009*
28+ yrs	41 (33.3%)	69 (56.1%)	13(10.57%)	129(29.71%)		
Sex						
Male	64 (33.5%)	112 (58.6%)	15 (7.85%)	191(46.13%)	33.06	0.00001*
Female	26 (11.6%)	156 (69.9%)	41 (18.39%)	223(53.86%)		
Year						
First year	13 (7.8%)	126 (75.90%)	27 (16.27%)	166 (40.09%)	35.95	0.00001*
Second year	33 (25.7%)	78 (60.94%)	17 (13.28%)	128 (30.91%)		
Third year	44 (36.6%)	64 (53.33%)	12 (10.00%)	120 (28.98%)		
Total	90 (21.74%)	268 (64.73%)	56 (13.53)	414		

Chi-square *p<0.05

Table 3. Relationship between the level of procrastination and academic performance, by number and percentage of total respondents

Academic performance (UG %)	Procrastination scores			
	Low n (%)	Moderate n (%)	High n (%)	Total n (%)
Below average (≤ 60%)	9 (2.18%)	59(14.25%)	66(15.94%)	134 (32.37%)
Average (61-68%)	13 (3.14%)	119(28.74%)	0	132 (31.88%)
Above average (≥ 69%)	73 (17.64%)	75(18.11%)	0	148 (35.75%)
Total	95 (22.96%)	253 (61.1%)	66 (15.94%)	414 (100%)

This same methodology was employed for dividing academic performance based on their grades in previous university examination into below average (Group 1), average (Group 2), and above average (Group 3). Using these classification criteria, the assigned scores for procrastination were interpreted as follows: 16-36 for low procrastination (Group 1), 37-41 for moderate procrastination (Group 2), and 42-64 for high procrastination (Group 3). When classifying academic performance, scores of ≤60% were interpreted as below average, scores of 61-68% equalled average, and scores of ≥69% were considered to be above average (Lakshminarayan Net al) (Lakshminarayan, 2013).

Statistical Analysis

The completed questionnaire was collected from the participants and the raw data obtained were classified, tabulated and subjected to statistical analysis using SPSS 20 version. Tests of the association between procrastination and other factors were carried out using chi-squared test. Multiple logistic regression analysis was used to investigate the influence of various independent variables on academic performance.

Table 4. Relationship between level of procrastination and academic performance across first, second and third year dental post graduates, by number and percentage of total respondents

Year	Academic performance (UG %)	Procrastination scores				Chi-square(χ2)	p-value
		Low n (%)	Moderate n (%)	High n (%)	Total n (%)		
First year	Below average (≤ 60%)	5 (2.77%)	27(15%)	37(20.25%)	69 (38.33%)	68.41	0.001*
	Average (61-68%)	7 (3.88%)	53(29.44%)	0	60 (33.34%)		
	Above average (≥ 69%)	15 (8.33%)	36(20%)	0	51 (28.33%)		
	Total	27 (15%)	116(64.44%)	37(20.25%)	180 (100%)		
Second year	Below average (≤ 60%)	3 (2.47%)	18(14.87%)	17 (14.04%)	38 (31.40%)	79.54	0.001*
	Average (61-68%)	3 (2.47%)	37(30.57%)	0	40 (33.06%)		
	Above average (≥ 69%)	25 (20.66%)	18(14.87%)	0	43 (35.54%)		
	Total	31 (25.61%)	78(64.46%)	17(14.04%)	121 (100%)		
Third year	Below average (≤ 60%)	1 (0.88%)	14(12.38%)	12(10.61%)	27 (23.89%)	82.82	0.001*
	Average (61-68%)	3 (2.65%)	29(25.66%)	0	32 (28.32%)		
	Above average (≥ 69%)	33 (29.20%)	21(18.58%)	0	54 (47.79%)		
	Total	37 (32.74%)	64(56.63%)	12(10.61%)	113(100%)		

Chi-square *p<0.05 is significant

Table 5: Multiple logistic regression analysis of academic performance with independent variables

Academic performance (UG %)	Independent Variable	p-value	Odds ratio(CI)
Below average	Age	0.8	1.1(0.3-3.1)
	Gender	0.02*	0.6(0.3-0.9)
	Procrastination	0.00*	4.7(2.1-10.3)
Average	Age	0.7	0.8(0.3-1.9)
	Gender	0.03*	2.0(1.0-3.9)
	Procrastination	0.00*	0.2(0.1-0.5)

Note: The reference category (Academic performance) is above average
*p<0.05 is significant, CI=confidence interval

DISCUSSION

Procrastination is a current topic of interest across multiple fields from finance to health care (Steel, 2010). The dental post graduate students are under continuous stress to achieve the impeccable standards expected by the trainers. Lack of time management can lead to procrastination of academic and clinical tasks that ultimately could impact their academic performance. Stress, burnout and overload are factors in the underperformance (Paice, 2002). Dental post-graduate students are no exception for procrastination because they frequently must balance their academic, preclinical, and clinical responsibilities simultaneously. In our study first, second and third year dental post graduates with their previous university examination grades were taken because, their academic performance could be measured. The scale used to classify academic performance of students as below average (≤60 percent), average (61-68 percent), and above average (≥69 percent) is applicable and relevant only in India, so it would need to be revised for the other countries depending on the local standards (Lakshminarayan, 2013). The first null hypothesis was that there would be no difference in procrastination scores between different departments in post-graduation in the study. This null hypothesis also was rejected because, the dental post-graduates from the department of oral pathology showed higher procrastination scores (28.57%) and most of the subjects from department orthodontics were in lower procrastinator's category (31.3%). It was demonstrated that among students, high procrastination was associated with lack of self-determined motivation and low incidence of flow state (Steel, 2007; Bogg, 2004). So this situation may have negatively influenced their future plans and cause delay towards their academic and daily tasks. The second null hypothesis was that there would be no difference in procrastination scores between age groups of dental post-graduates in the study. This null hypothesis also was rejected because, as the age increased the level of procrastination decreased. Majority of the subjects aged ≥28 years were identified as low procrastinators (33.3%). Age has a negative relationship with procrastination. As most people get older, they can better evaluate the benefits of the present and future, leading to a decline in the hyperbolic discounting of time. By increasing age, sensitivity to delay is decreased which causes the utility of a task to increase. The third null hypothesis was that there would be no difference in procrastination scores between male and female participants in the study. This null hypothesis also was rejected because female participants (18.39%) were identified as high procrastinators and the difference identified was statistically significant in accordance with the study by Lakshminarayan Net al in under graduate dental students where they found higher percentage of males had high procrastination scores

than females (Lakshminarayan, 2013). Several studies have emphasized that procrastination behaviour does not vary according to gender, which is not consistent with the results (Akinsola, 2007 and Watson, 2001). The anticipated influence of gender on procrastination is difficult to predict. Previous investigation into gender differences and the related construct of self-control has found mixed results (Effert, 1989). Men may score higher, lower, or the same as women depending on the measure. However, meta-analytic results do show that girls score higher on effortful control than boys (Feingold, 1994). On balance then, one could expect procrastination to be weakly associated with males. In dental post-graduation training programme students are under continuous stress because of poor time management, fear, anxiety, restlessness, trouble concentrating, perfectionism, lack of interest, marriage and several other factors.

The comments of the staff on the failures to meet standard of expected competence are felt as causative factors for procrastination. However, our study population was not equally distributed between male and female participants, so the gender difference found may be due to the unequal sample sizes, which could be a limitation of this study in contrast with the study by Lakshminarayan Net al (Lakshminarayan, 2013) in under graduate dental students. Consequently, additional studies with an equal distribution of men and women are needed to determine if procrastination differs between males and females. The fourth null hypothesis was that there was no relationship between the level of procrastination and academic performance among first, second and third-year dental post graduate students of Andhra Pradesh, India. This hypothesis was rejected because, overall 15.94% of dental post-graduates who were considered high procrastinators had below average under graduate academic grades. 17.64%of dental post-graduates who were considered low procrastinators had above average under graduate academic grades and the difference identified was statistically significant. Majority of the first years were identified as high procrastinators (22.28%) and post graduates from first, second and third years who were considered high procrastinators had below average under graduate academic grades in accordance with a study by Lakshminarayan Net al (2013) where they found that dental under graduate students with a high level of procrastination scores performed below average in their academics. These findings of a negative correlation between procrastination and academic performance are in agreement with a study conducted among university mathematics undergraduate students (Else-Quest, 2006).

The results of our study also are consistent in contrast with other studies in which it was found that procrastination was associated with below average academic achievement (Wolters, 2003; Wesley, 1994; Tuckman, 2002 and Fritzsche, 2003). The reason behind the wide variation of findings may be due to the fact that first years whose personal encounter with staff and higher authorities would be much lower when compared to that of second and third year dental post graduates. The reason for below average academic performance among students who procrastinate might be attributed to their low level of self-esteem and self-efficacy (Tice, 1997). Students seem to feel an implicit pressure from their peers and professors to produce very good ideas and research on the very first try. As a reaction to this socially-prescribed perfectionism, students delay their work. However, others have reported that procrastinators' performance is as sound as non-procrastinators on course exams and grades (Lay, 1986; Sujit, 2006 and Beck, 2000). Although procrastination affects virtually everyone to some degree, academic procrastination among college students is omnipresent, at levels perhaps as high as 95 percent (Ellis, 1977). However, among students, work related stress and anxiety have been shown to lead to a low morale and poorer work performance and to adversely affect the quality of work delivered (Newbury-Birch, 2001; Frank, 1999 and Firth-Cozens, 2001).

Academic success could be attributed to skills such as organi-zation of time with execution of duties on schedule, determination of aims, prioritization of tasks, and creating a pattern of studying systematically. Associations between undergraduate academic grades and the variables under study were investigated through processes of multiple logistic regression analyses. A multiple logistic regression analysis contributed to eliminate confounding factors that may mask an actual association or falsely demonstrate an apparent association between the study variables. The results of logistic regression analysis demonstrated that gender and procrastination was significantly associated with below average and average under graduate academic grades.

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