Trait Procrastination Among Dental Students in India and Its Influence on Academic Performance


Abstract: Trait procrastination is believed to be highly prevalent among college students and detrimental to their educational performance. As the scenario among dental students is virtually unknown, this study was conducted to evaluate the prevalence of trait procrastination among dental students and to analyze its influence on their academic performance. A total of 174 fourth-year dental students from three dental colleges in India voluntarily completed the Lay’s Procrastination Scale-student version (LPS). The mean percentage marks scored in the subsequent final university examinations were used as a measure of academic performance. The descriptive statistics were computed to evaluate the prevalence of significant procrastination (LPS score ≥60). Mann-Whitney U test and multiple linear regressions were used to assess the influence of age and gender on procrastination severity, and the latter was again used to analyze the association between procrastination severity and academic performance. The results indicated that 27 percent (n=47) of the students exhibited a significant extent of trait procrastination; neither age nor gender affected its severity (p<0.05). Procrastination had a significant and negative impact on the academic performance of the student (beta=-0.150, p=0.039). These findings highlight the need for active measures to reduce the causes and consequences of procrastination in dental education.

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Procrastination is defined as “a trait or behavioral disposition to postpone or delay performing a task or making decisions.” Despite widespread recognition as an undesirable quality, virtually everybody has procrastinated at some point of time with little or no consequences. For those who allow it to become a lifestyle behavior, however, it could be potentially harmful. Procrastination appears to be rampant among college students with estimates as high as 95 percent for those who procrastinate at some point. Of more concern, for nearly half of such individuals, it turns out to be a consistent problem. Nearly 46 percent of the university students in a 1984 study reported that they nearly always or always procrastinate on writing a term paper, 27 percent procrastinate on studying for exams, and 30 percent procrastinate on weekly reading assignments. Perfectionism, fear of failure, and task aversiveness were found to be the most influencing factors on procrastination among college students. Significant correlations have been reported for procrastination with the personality factors conscientiousness, self-efficacy, and self-handicapping. Self-esteem and indecision have been found to account for a considerable extent of variance in procrastination among psychology students. Achievement motivation, poor time management, rebelliousness, boredom, distractibility, impulsiveness, thrill-seeking, skill deficit, depression, anxiety, and disorganization are among the other psychosocial causes and correlates of procrastination. Steel reviewed the popular theories of procrastination and found the literature to be most supportive of the Temporal Motivation Theory, which suggests that difficult tasks with lackluster qualities are the ones often postponed. Further, higher priority tasks are
more likely to be procrastinated if options with more immediate rewards and remote costs are available.

Age, gender, year of birth, and race are the demographic variables often investigated for their effect on procrastination. In general, the extent of procrastination tends to decline with advancing age. This may be due to the increase in technological distractions (television and videos, videogames, Internet including e-mail, social networking, browsing, etc.), postmodern value orientation, and the increased willingness of people to admit it. Regarding the influence of gender on procrastination, the results are mixed and inconclusive. From the meta-analytic data, Steel summarized the consequences of procrastination in two domains. The concrete consequences include missed deadlines, lost opportunities, lost income, lower productivity, waste of time, and loss of standing among associates. The emotional consequences include lower morale, heightened stress, frustration and anger, and lower motivation. The effect of procrastination on performance of an individual takes on special importance in an educational setting. Several studies have found a significant link between procrastination and unfavorable academic sequelae, represented variably as poor grades, course withdrawal, delayed submission of assignments, decreased long-term learning, lower test scores, and lower grade point average.

Time is a valuable commodity in dental education as well, but surprisingly there is a dearth of literature on procrastination-related issues among dental students. Hence, the current study was undertaken to evaluate the extent of trait procrastination among dental students in India and to analyze its influence on their academic performance.

Materials and Methods

Lay’s Procrastination Scale (LPS)-student version is a unidimensional scale that measures the extent of trait procrastination in a student. This self-report inventory has twenty statements that people may generally use to describe themselves (I do not do assignments until just before they are to be handed in, I prefer to leave early for an appointment, I usually buy even an essential item at the last minute, etc.). The respondent rates the extent to which the statements are characteristic or uncharacteristic of him or her on a five-point rating scale scored from 1 to 5. The item scores are summed up to yield the scale score, and a higher score indicates procrastinating behavior. In the context of the study, a score of ≥60 was considered to represent a significant extent of procrastination. The instrument has shown good internal consistency (Cronbach alpha of 0.82) and test-retest reliability (0.80), and the construct validity of the scale has been adequately described in the general population and university students. The simplicity in use and less than ten minutes of administration time are additional advantages of the scale.

The Bachelor of Dental Surgery (B.D.S) course in India is a four-year program, with an additional year of compulsory rotation internship. The clinical dental curriculum is spread over the third and fourth years, and the final university examination is held at the completion of the fourth year. The target sample of the study was 198 students in the final year of the B.D.S program in three private dental schools in India: Sibar Institute of Dental Sciences (Guntur, Andhra Pradesh), Meghna Institute of Dental Sciences (Nizamabad, Andhra Pradesh), and Rama Dental College and Hospital (Kanpur, Uttar Pradesh). A paper-based version of the Lay’s Procrastination Scale-student version was administered to these students in a group setting during the middle of the academic year 2010–11. The demographic information collected included name, age (in years), and gender (male/female). Participation was voluntary, and consent for inclusion was implied by the handing over of the completed inventory. The mean percentage marks scored in the subsequently held university examinations, calculated from the institutional records, was considered as a measure of the individual’s academic performance. Ethics approval for the study was granted by the principal author’s Institutional Committee for Research Ethics.

The returned forms were coded in the order of receipt, and data entry was performed and verified independently by two operators. Summary statistics were calculated for the whole sample and group-wise data based on the demographic variables. Group-wise comparisons based on gender and age (in two groups as <23 years or ≥23 years) were performed with a Mann-Whitney test. To further evaluate the effect of these demographic variables, multiple linear regressions were performed with LPS score as the independent variable and age (in years) and gender as the predictor variables. The influence of trait procrastination on academic performance was also

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Discussion

Procrastination is commonly believed to be detrimental to individual performance in many walks of life, and it is logical to assume that this applies to dental education as well. Previous reports on procrastination have found it to be widespread among college students, often adversely affecting their academic performance. As the situation among dental students is largely unknown, the current study was conducted to evaluate the extent of trait procrastination among three groups of dental students in India using Lay’s Procrastination Scale. Further, the hypothesis that procrastination adversely influenced students’ academic performance was tested by analyzing its association with performance on the final university examinations.

In the results, 27 percent of the students reported a significant extent of trait procrastination based on the LPS cut-off score of 60. Lack of any similar study among dental students has left no scope for the direct comparison of these results. However, this appears to be slightly higher than the 15 to 20 percent range described for the general population and considerably lower than 40 to 95 percent described for university students. This wide variability appears to arise from the instrument used, the domain of procrastination assessed (behavioral, academic, decisional, etc.), and the cut-off points in quantifying the severity of procrastination.

Virtually everybody has procrastinated at some point in time; hence, it is not surprising that the prevalence of such procrastination has been estimated at 95 percent. Procrastination related to academic tasks has been reported to be around 40 percent among college students. Using the Aitken’s Procrastination Inventory, Balkis and Duru estimated that 23 percent

| Table 1. Summary statistics and pair-wise comparisons for the LPS score |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|                             | LPS <60 n (%)               | LPS ≥60 n (%)               | Mean                       | 95% CI                      | Med                        | SD                          | p-value        |
| Overall                     | 174                         | 127 (73.0%)                 | 47 (27.0%)                 | 55.41                       | 54.07–56.76                | 54.5                        | 8.98            |
| Male                        | 54                          | 40 (74.0%)                  | 14 (26.0%)                 | 55.87                       | 53.56–58.18                | 56.0                        | 8.45            | 0.69 (ns)      |
| Female                      | 120                         | 87 (72.5%)                  | 33 (27.5%)                 | 55.21                       | 53.54–56.88                | 54.0                        | 9.23            |
| <23 years                   | 68                          | 47 (69.1%)                  | 21 (30.9%)                 | 54.93                       | 52.35–57.51                | 53.0                        | 10.65           | 0.55 (ns)      |
| ≥23 years                   | 106                         | 78 (73.6%)                  | 28 (26.4%)                 | 55.72                       | 54.23–57.22                | 55.0                        | 7.76            |

CI=confidence interval of mean; Med=median; SD=standard deviation; ns=nonsignificant

Note: Probability value from Mann-Whitney test.
of students in the field of education exhibited a high level of behavioral procrastination. For everyday activities like paying telephone bills, personal health-related issues, etc., the prevalence of procrastination was found to be nearly 20 percent among the general population.\(^5\) The self-reported prevalence of arousal and avoidant types of chronic procrastination was found to be between 9.9 and 11.5 percent in the United States, United Kingdom, and Australia.\(^38\) The 27 percent found in our study indicates a marginally higher extent of general procrastination among dental students than those described previously for the general population.\(^4,38\)

Procrastination tends to reduce with advancing age, a finding that has been attributed to the ability of people to learn and practice measures to overcome procrastination.\(^8,16,24,25\) Yaakub\(^24\) cites the work of McCown and Roberts and found that procrastination tends to plateau in the early twenties and then decline until the sixties. However, no significant association was observed between age and procrastination in our sample. This could have resulted from the sample limitation of narrow age range (twenty-one to twenty-six years). The gender of the student also failed to have any significant impact on the procrastination severity in this sample. There is less consensus in the literature regarding the influence of gender on both the extent and psychosocial correlates of procrastination. While two studies found more procrastination in men,\(^18,25\) others have failed to establish any difference.\(^7,11,28-30\)

The meta-analytic results show that men appear to procrastinate slightly more than women although the correlation between gender and procrastination is very weak.\(^64\) Sirin found the “cultural structure” of society to be a key factor in understanding the relationship between these two variables.\(^39\)

Procrastination has been consistently reported to exert an adverse influence on the academic performance of students. The results from our sample substantiate this point, as the LPS score showed a negative association with mean percentage marks. Reduction in overall grade point average (GPA), course GPA, final exam scores, and assignment grades and reduced long-term learning, delayed submission of assignments, and course withdrawal are other undesirable academic outcomes of procrastination previously reported.\(^7,15,20,30,32-35\) The general premise is that procrastinatory behaviors leave students too little time to complete their tasks, thereby resulting in lower quality of work and poorer grades. While few studies have failed to elicit any such correlation,\(^7\) some have even shown procrastination to be beneficial.\(^40-43\) Sommer\(^42\) affirmed that adept students maximized the effectiveness of their study time by a carefully orchestrated cycle of procrastination and cramming. Schraw et al.\(^43\) reasoned that the procrastinators worked under pressure for an extended period of time during which all of their resources were focused on one goal and hence were more likely to achieve favorable results. It appears that the Stock-Sanford corollary to Parkinson’s law that “If you wait until the last minute, it only takes a minute to do” cannot be discounted totally.\(^34,45\) From the meta-analysis of available evidence, Steel concluded that “procrastination is usually harmful, sometimes harmless, but never helpful.”\(^46\) From this discussion, it is evident that there is a need for more research in this area and that the adaptive and maladaptive forms of procrastination should be differentiated before evaluating their effect on academic performance.

Our study is not without limitations. Evaluating the influence of procrastination on academic performance without considering the mediating and moderating characteristics (personality factors, academic motivation, etc.) in the model is its primary shortcoming. Another limitation arises from the fact that the LPS is a measure of general or trait procrastination. Though some studies have observed a high correlation between general and academic procrastination,\(^10,20,28,34\) the use of an instrument more specific for the latter could have yielded better results. Further, the psychometric properties of the LPS have not
yet been verified in our sample. Finally, as the results of this study are based on a convenience sample, they cannot be generalized to the whole student population in India or elsewhere without reservations.

A full set of recommendations on the management of procrastination is beyond the scope of this article, but a few salient ones directly appealing to dental education are noteworthy. Specific deadlines for task completion, particularly when externally imposed, have been found to be effective in boosting task performance.46 Configuring the tasks to be challenging but still achievable works in two ways.47 While the former reduces the boredom, the latter increases the expectation of success, both of which are directly associated with decreased procrastination. Increasing external feedback and reducing the freedom to make decisions, but at levels below where it is perceived as threatening, may favorably alter the task environment.48 Task instruction and training that encourage learning rather than anxiety provocation as an outcome of errors will reduce task avoidance.48 Yaakub34 lists five cognitive distortions that are typical of academic procrastinators: overestimation of time left to perform tasks, underestimation of time required to complete tasks, overestimation of future motivational states, relaxation on the necessity of emotional congruence to succeed at task, and belief that working when not in mood to work is suboptimal. The students must be educated to recognize and break away from these cognitive barriers. Fostering self-regulation, time management skills, and achievement motivation through cognitive-behavioral interventions may help prevent academic procrastination.5, 6, 7, 19, 21, 47 Finally, Morales’s contention that “task procrastination might sometimes be the students’ strategy of making the task interesting and hence teachers must refrain from jumping into conclusion and making a negative impression”48 appears reasonable.

Conclusions

The following are the salient results from this study: 1) just over a quarter of the dental students in this study exhibited a significant extent of general procrastination; 2) age or gender of the student did not have any significant influence on the procrastination severity in the sample; and 3) procrastination had an adverse impact on the academic performance of these students. With these findings, it is imperative that adequate measures be taken in the dental education environment to curb the causes and the unfavorable sequelae of this behavioral disposition.

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