RESEARCH ARTICLE

Relationship between academic procrastination and self-efficacy amongst dental undergraduate students at a public university in Karachi, Pakistan

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Abstract

Objective: To compare the procrastination and self-efficacy scores among students with respect to the academic year of dental undergraduate programme, and to assess the relationship between self-efficacy and academic procrastination among the students.

Method: The descriptive study was conducted at Sindh Institute of Oral Health Sciences, Jinnah Sindh Medical University, Karachi, from January to March 2023, and comprised medical students of either gender from all the 4 academic years. Data was collected using a structured questionnaire whose validity was assessed using a pilot study. Data was analysed using SPSS 18.

Results: Of the 136 students, 84(61.8%) were females and 52(38.2%) were males. There were 34(25%) students from the 1st year, 32(23.5%) from 2nd year, 38(28%) from the 3rd year, and 32(23.5%) from the final year. The highest mean score for procrastination was from 3rd year students 67.7±12.8, while the highest mean score for self-efficacy was from 1st year students 30.2±4. There was no significant difference in terms of gender ($p>0.05$). Procrastination scores had a significant association with the academic year ($p=0.016$).

Conclusion: Procrastination scores were high among the dental students with the highest score from 3rd year students. The academic environment should provide support help the students devise strategies to optimally utilise the available time.

Key Words: Procrastination, Suicidal ideation, Workload, Motivation, Depression.

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Introduction

Procrastination has been called a multifactorial phenomenon that includes various elements ranging from behaviour to genetics. It is considered the voluntary delaying of tasks and crucial decision-making, impacting an individual's performance and thus the confidence in their ability to successfully execute a task[1]. People conduct this self-destructive behaviour, irrationally and needlessly while being completely aware of the priority of the matters at hand. The purposeful delay of their work leads to consequences that include, but are not limited to, build-up of mental stress, an increased averseness to the task at hand, and an over-analysis of the workload. The front-running causes of procrastination include cultural and societal pressures, familial and parental roles, conflicting environmental responses, and fallacious thinking[2]. Others may include emotional distress. Procrastination may be associated with fear of failure and negative feelings towards work. Students who suffer from this phenomenon are more likely to develop mental stress that may involve symptoms of depression, suicidal thoughts, heightened aggression, anxiety, and ill health, or increase its prominence in individuals with pre-existing mental conditions[3-5].

Procrastination has been found to be endemic in every high-stress academic setting, and has an apparent negative relationship between academic efficiency and physical as well as mental aspects of health[2]. Students may deem setting and achieving high goals to be tedious and exhausting. This feeling of anxiety is often amplified by great expectations from oneself and one's family. As a result, they prefer to invest a greater portion of their time in diversions and leisure activities[6]. This draws them away from the important academic tasks at hand, allowing them to temporarily forget their obligations, but also increasing their tendency to procrastinate.

Procrastination can manifest in many forms, but the most common type is 'academic procrastination'. This specific form of procrastination encompasses the intentional delay in completion and submission of various academic tasks. Research shows that nearly half of the student population and a fifth of the adult population perceive themselves as extreme, chronic procrastinators[7]. This shows that though common amongst adults, procrastination is strikingly prominent in the student population. This can be attributed to students being subjected to tight deadlines with serious consequences repeatedly over the course of their rigorous study programme.

In educational settings, procrastination is linked to academic self-efficacy, but weakly so[8]. Procrastination is primarily due to low self-active learning and poor ability

to self-regulate day-to-day activities. An individual finds it difficult to propel themselves towards the tasks they need to accomplish. Self-efficacy is a mirror of self-assuredness, and, hence, is a strong predictor of performance. Individuals with strong self-efficacy tend to be strategic when solving their problems, efficient in managing resources, and positive in analysing risks[9]. When students are proactive in their decision-making, it should be expected that they will exhibit fewer procrastination tendencies as they actively work towards their goals. They are also more likely to address their personal issues and seek social support[10].

The dental curriculum is designed to integrate cognitive behaviour, such that the students' acquired theoretical knowledge can be applied to individual clinical practice as well as interpersonal competencies. Since the curriculum is meant to be interconnected, delays in any aspect of academics negatively impacts every part of a student's academic life. Academic procrastination leads to anxiety and negative repercussions on students' diligence. Exam stress, coupled with patient interactions, treatments and facultative expectations develops a highly demanding and arduous environment for dental students[11]. When the students observe this loss, it discourages them further, and they gravitate towards avoidance of their tasks, damaging both their work ethics and productivity. A research showed that the lack of resources and infrastructure in developing countries may present constraints in the training of dental students and may be a stress provoking factor[12]. To develop a deeper understanding of academic procrastination, there is a need to investigate its relationship with self-efficacy, which focuses on students' confidence in their ability to achieve excellence pertaining to a specific task. Limited research has been conducted on procrastination among dental students in Karachi, and none has assessed the relationship involving academic stress, procrastination and coping strategies among dental students. [13]

The current study was planned to compare procrastination and self-efficacy among students with respect to the academic year of dental undergraduate programme, and to assess the relationship between self-efficacy and academic procrastination among the students.

Subjects and Methods

The descriptive study was conducted at Sindh Institute of Oral Health Sciences, Jinnah Sindh Medical University (JSMU), Karachi, from January to March 2023, and comprised medical students of either gender from all the 4 academic years. All dental undergraduate students who consented to be part of the study were included, while year-backs and pregnant individuals were excluded as both scenarios cause stress on the individuals and could have affected their scores.

The sample size was calculated using OpenEpi 3.01 at 95% confidence level. The sample was raised using non-probability convenience sampling technique [14].

Data was collected using standard scales [15-17] The General Procrastination Scale (GPS) is a more general measuring scale of procrastination that is simple and easy to administer. It constitutes a list of self-reporting 20 items and is scored on a 5-point Likert scale, ranging from 1 = extremely uncharacteristic to 5 = extremely characteristic. Of the total items, 10 are scored directly, while the rest are scored reversibly. The total score on the scale ranges 20-100 and is calculated by the addition of all the ratings of the 10 items that are positively worded. Higher scores indicate higher procrastination by students. The scale has a Cronbach alpha value of 0.82 and a retest reliability of 0.80[15, 16].

The Self-Efficacy Scale (SES) is self-administrative. It consists of 10 items that are scored on a 4-point Likert scale, ranging from 1 = not at all true to 4 = exactly true. The sum of all responses range 10-40. Cronbach's alpha values have ranged from 0.76 to 0.90[17].

The questionnaire developed for the current study had closed-ended questions, and both GPS and SES, which are available free online, were subjected to a few changes to make them relevant to the local context. After approval from the JUSMU ethics review board, a pilot study was conducted on 10% of the actual sample for face-validity and reliability of the questionnaire, showing a good face validity and reliability (0.7).

Data was analysed using SPSS 18. Data was expressed as frequencies and percentages or mean ± standard deviation, as appropriate. Spearman's rank correlation was computed to assess the relationship between GPS and SES scores. $P<0.05$ was considered significant.

Results

Of the 136 students, 84(61.8%) were females and 52(38.2%) were males. There were 34(25%) students from the 1st year, 32(23.5%) from 2nd year, 38(28%) from the 3rd year, and 32(23.5%) from the final year. The highest mean GPS score was from 3rd year students 67.7±12.8, while the highest mean SES score was from 1st year students 30.2±4. The scores were not significantly different with respect to gender (Table 1-2). Overall, 105(77.2%) students scored high (>62) on PGS, while 22(16.2%) scored low (<55) (Table2)

Table-1: Mean Self-Efficacy and Procrastination Scale scores with respect to academic year and gender.

Scale	Variable		N	Mean±SD Score	Minimum Score	Maximum value	p-
Procrastination Scale	**Academic Year**	1	34	66.8±7.1	50	89	0.16
		2	32	64.5±7.9	51	84	
		3	38	67.7±12.8	41	140	
		4	32	61.8±11.4	34	87	
	Gender	Female	84	65.3±8.2	34	87	
		Male	52	65.1±15.2	41	140	
Self-Efficacy Scale	**Academic Year**	1	34	30.2±4	19	36	0.346
		2	32	29.9±3.9	20	38	
		3	38	29.2±2.9	23	39	
		4	32	29±4.9	18	38	
	Gender	Female	84	29.6±3.6	18.00	37.00	
		Male	52	29.3±4.9	19.00	39.00	

SD: Standard deviation.

There were changes across academic years with reference to the GPS and SES scores, but only PGS scores showed statistical significance (Table 3). There was a positive correlation between the procrastination and self-efficacy variables (Table 4).

Table-2: Procrastination Scale scores with respect to the academic year.

Academic Year	Procrastination Score	
	Low (<55)	High (>62)
First Year	3.8%(N=2)	63.4%(N=32)
Second Year	14%(N=6)	54%(N=26)
Third Year	10.7%(N=4)	66%(N=30)
Fourth Year	20%(N=10)	34%(N=17)

Discussion

The study showed that procrastination was prevalent among the undergraduate dental students, and it was especially high in 3rd year students. It is the academic year incorporating clinical exposure to patients and requires managing lectures/tutorials with harnessing clinical skills. These findings are similar to those reported by previous studies [18-20].

Table-3: Comparison between procrastination and self-efficacy with respect to academic year.

Variables	Year of study(I)	Year of study(J)	Mean Difference	Standard (I-J)	Sig. Error	95% Confidence Interval Lower bound	Upper bound
Procrastination	1	2	2.2	2.0	.3	-1.7	6.2
		3	-.9	1.9	.6	-4.8	2.9
		4	5*	2.0	.01	1.0	8.9
	2	1	-2.2	2.0	.3	-6.2	1.7
		3	-3.2	1.98	.1	-7.1	.7
		4	2.7	2.0	.2	-1.3	6.7
	3	1	.9	1.9	.6	-2.9	4.8
		2	3.2	1.98	.1	-.7	7.1
	4	4	6	1.98	.0	2.0	9.8
		1	-5*	2.0	.01	-8.9	-1.0
		2	-2.8	2.0	.2	-6.7	1.3
		3	-6*	1.98	.0	-9.8	-2.0
Self-Efficacy	1	2	.3	.8	.7	-1.3	1.8
		3	1.0	.8	.2	-.5	2.5
		4	1.2	.8	.1	-.3	2.8
	2	1	-.3	.8	.7	-1.8	1.3
		3	.7	.8	.3	-.8	2.2
		4	.9	.8	.2	-.6	2.5
	3	1	-1.0	.8	.2	-2.5	.5
		2	-.7	.8	.3	-2.2	.8
	4	1	-1.2	.8	.1	-2.8	.3
		2	-.9	.8	.2	-2.5	.6
		3	-.2	.8	.8	-1.7	1.3

*Mean difference significant at the 0.05 level.

The highest total and mean scores for procrastination were from the 3rd year, while the lowest score was from the final year. This showed that the initial exposure and workload increase negatively affected their efficiency and time management to complete tasks, and by the time they reached the final year of their studies, they developed coping strategies to better manage and adjust according to the requirement of the situation, resulting in meeting various deadlines. A local study in Rawalpindi on procrastination and coping strategies reported scores that were higher than the current study's,

Table-4: Correlation between procrastination and self-efficacy.

			Procrastination Score	Self-Efficacy Score
Spearman Rho	Procrastination Score	Correlation-coefficient	1	0.367**
		Sig. (2- tailed)		.000
		N		136

**Correlation is significant at the 0.01 level (2-tailed).

while a Malaysian study reported lower mean scores [19, 20].

Self-efficacy is linked with procrastination, having a reverse relationship [20]. In the current study, first year students had higher self-efficacy scores and comparatively low procrastination scores, while the third year had higher procrastination score and lower self-efficacy score.

The current study found no gender-based differences, but similar studies showed that self-efficacy scores of male students were higher than those of the females.[19, 20]

Procrastination was most prevalent in third year students, while it was least prevalent among final year students in the current study, which also found a strong correlation between procrastination and stress. This was in contrast with earlier findings. [8]

The students of health sciences are under stress and have limited time to deliver the tasks assigned. Every year, the medical and dental curriculum across the world is evolving and certain competencies are being required of the medical professionals. These competencies include time management, leadership skills and lifelong learning[21-23]. Helping students cope with the stress and designing coping strategies according to the need of the individual students will decrease the stress, and eventually procrastination scores will decrease, which, in turn, will add to the sense of self-efficacy among the students.

A local study explored the coping strategies utilised by the students to overcome procrastination, and identified them as time management, self-regulation, prioritisation and self-reward[18]. These findings were similar to previous studies[24-26].

The current study has limitations as the study design was cross-sectional which limited the understanding of the causes of procrastination and mechanism of coping of the students with the stress or demotivation. A mixed-method study could have addressed this shortcoming. Also, it was a single centre study, and non-probability convenience sampling was used, hence the generalisability of results was limited. Simple randomisation of data could have taken care of this flaw.

Conclusion

Procrastination is a negative habit that was found prevalent among dental undergraduate students. Increase in its intensity over the academic years requires coping strategies to deal with the stress and workload. Relief in the form of workshops to effectively manage time and stress and counselling should be provided to the students.

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Author's Contributions
HS: Concept, acquisition, data collection and interpretation, statistical analysis, writing.
SA: Study design, data collection, writing.
SMR: Questionnaire design, interpretation of data.
MI: Questionnaire design, review, approval.
HF & TU: Data collection, statistical analysis, editing.