Original Article

The Relationship between Academic Procrastination and Depression in Students of Kashan University of Medical Sciences

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Abstract

Aims: The aim of this study was to determine the relationship between academic procrastination and depression in students of Kashan University of Medical Sciences. **Materials and Methods:** In this cross-sectional descriptive-analytic study, 400 students of Kashan University of Medical Sciences were selected by stratified random sampling in 2020. Data collection tools included three sections of demographic information, the Procrastination Assessment Scale, and the Beck Depression Inventory II. Data were analyzed using SPSS version 16 software and independent t-test, ANOVA, and multivariate regression. **Results:** The results of demographic data showed that the number of females was more than the males (61.3% vs. 38.7%). The student's academic procrastination's score was 65.22 ± 14.92, indicating a moderate level of procrastination (58.4%). The variables of performing religious duties, students' depression have a significant relationship with academic procrastination ($P < 0.001$). There is a significant positive correlation between academic procrastination and student depression ($P < 0.001$, $r = 0.325$). **Conclusion:** Based on the research findings, academic procrastination among students was moderate to high. Considering the important role of academic procrastination in various aspects of education and future careers of students and future of community health, it is essential for professors and academic advisors to pay a special attention to this subject and it is suggested to investigate the causes and to propose appropriate strategies for reducing this behavior.

Keywords: Academic procrastination, depression, student

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INTRODUCTION

Academic procrastination derived from the Latin verb (procrastinate) means "cunctation, dodge, and laziness," which literally means to postpone or delay things to another day.[1] Some have considered the word of procrastination equivalent to delay, laziness, and negligence.[2] Although the definition of procrastination can be described from a delay in initiating an action to a delay in the continuation of an action with mental distress and irrational delay in behavior, it is generally defined as delaying or postponing an action that

a person must do, and as a result, they experience a level of anxiety due to procrastination.[3]

Procrastination with its complexity and multiple components of cognitive, emotional, and behavioral has had various manifestations such as procrastination in decision-making and neurotic and obsessive procrastination. The most common form in educational field is academic procrastination.[4] There

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are two types of delays among students in completing their homework. One type of delay is purposeful, planned, and thoughtful and the other is deliberate, irrational, self-defeating, and harmful. The latter is known as academic procrastination which manifests as a deliberate delay in doing things related to study, such as reading and writing articles and studying for examinations.[5]

The prevalence of academic procrastination among students is worrying because it causes students to delay their academic activities and ultimately it will be accompanied by poor academic achievement, physical problems, anxiety, disorganization, and irresponsibility.[6] Academic procrastination is one of the most important causes of failure or lack of success of learners in learning and achieving educational success.[7]

The prevalence of procrastination among students was estimated at 80%–95%, and students consider themselves as procrastinators by 75%. In addition, half of these 75% were always procrastinating and these percentages have been increasing and have reached 95%.[3] Wang *et al*. showed that about 60% of the students reported varying degrees of academic procrastination and 19% were affected by experiencing severe procrastination.[8]

Based on research, the causes of procrastination can be categorized as follows:
A. Causes related to the personality which include individual differences and individual characteristics such as fear of failure or perfectionism
B. Causes related to homework, which is based on concepts such as dislike of homework and difficulty of homework
C. Causes related to the perception of abilities including self-perception beliefs related to self-esteem, academic self-image, and self-efficacy.[9]

In Iran, the results of some studies showed that female students are less prone to procrastination, but no relationship was observed between students' age and student procrastination.[10,11] Guo *et al*. study showed that there is a significant relationship between depression and academic performance in nondepressed students. Their results also showed that there is a significant linear relationship between academic procrastination and depression in depressed students.[12]

Since academic procrastination can affect various aspects of personal and social life, mental , physical health, future job opportunities, it will definitely have consequences for health-care services, conducting research in this field can identify the main factors in creating academic procrastination behavior. Consequently, the necessary interventions can be designed to reduce or eliminate this issue. Due to the fact that academic procrastination is increasing among students and has many unpleasant side effects and also evidence showed that procrastination is related to gender, age, and field study, the researcher aimed to study the prevalence of academic procrastination and its related factors among students of Kashan University of Medical Sciences because recognizing these factors will prevent the negative effects of academic procrastination in future.

MATERIALS AND METHODS

The present study is a cross-sectional descriptive-analytic study. The study was approved by the Research Council of Kashan University of Medical Sciences (Grant No. 98223) with an ethical approval code of IR.KAUMS.NUHEPM. REC.1398.075. The total number of students in Kashan University of Medical Sciences studying in the second half of the academic year 2020 was 3047, out of which 266 students (medical emergency students, PhD students, and residents) were excluded from the statistical population due to heavy working conditions of them at the time of study and finally the number of subjects reached to 2781 students. Inclusion criteria included all students of Kashan University of Medical Sciences in undergraduate, master, and general doctorate (medicine and dentistry) degrees. Unwillingness to cooperate in the study and incomplete questionnaires were considered as the exclusion criteria. After receiving the necessary authorizations, oral and written consent was obtained from the participants. They were assured that the data would remain confidential and used for research purposes only. The participants were also given the unconditional and absolute right to withdraw from the study at any time. All the subjects received an explanation of the objectives of the study and signed an informed consent form.

The sample size, using Krejcie–Morgan table, was determined to be 338, which changed to 400 for more accuracy. The male and female students were selected in the same proportion of the research community and study field. The subjects of the study were selected from all faculties of Kashan University of Medical Sciences, including medical, dental, nursing and midwifery, health, and paramedical faculties, and in different levels (bachelor, master, and doctorate) by stratified random sampling. Then, research questionnaires were provided to students and they completed it. Data were collected by three questionnaires including:1.Demographic information including age, sex, marital status, place of residence (city and village), child order, employment, , and university degree. 2. Solomon and Rothblum academic procrastination questionnaire. 3. Beck Depression Inventory - Second Edition.

Demographic information including age, sex, marital status, place of residence (city and village), child order, employment, field of study, and university degree. Solomon and Rothblum academic procrastination questionnaire was designed in 1984 and consisted of 27 items, in which 21 items measure the three components of "procrastination in preparing for examinations," "procrastination in preparing homework," and "procrastination in preparing end-of-term projects" and the other 6 items are used to measure the two components of "discomfort after procrastination" and "tendency to change the habit of procrastination." The response to the items was based on a five-point Likert scale. The format of a typical five-level

Likert item was as follows: 1: never, 2: rarely, 3: sometimes, 4: often, and 5: always. The items 25, 23, 16, 15, 13, 11, 6, 4, and 2 had inverse scoring. In general, the minimum score was 27 and the maximum was 135. In other words, a high score of academic procrastination indicates more student's procrastination in completing and presenting assignments.[13] The reliability of the Academic Procrastination Scale was conducted by Solomon and Rothblum in 1994, and Cronbach's alpha coefficient was 0.79 for the scale. Regarding the validity scale, using the internal consistency validity, a coefficient of 0.84 was obtained.[14] Beck Depression Inventory - Second Edition: This inventory consists of 21 questions and covers all elements of depression, based on cognitive theory. Beck Depression Inventory is classified into three groups: emotional symptoms, cognitive symptoms, and physical symptoms.[15] The subjects were asked to give their answers on 4° one continuum from 0° to 3°. The score obtained from this scale varies from 0 to 64, in which a higher score indicates more depression. The diagnostic cutoff point in this inventory was 21 and higher. The internal consistency coefficient using Cronbach's alpha was calculated to be 0.86.[16]

In this study, data analysis with SPSS (IBM SPSS Statistics for Windows, version 18.0, Chicago, IL, USA: SPSS Inc.; 2009) was performed and using descriptive statistics (mean and standard deviation) and inferential statistics (independent *t*-test, ANOVA, and multivariate regression). $P < 0.05$ was considered statistically significant.

RESULTS

The mean score of total academic procrastination of subjects was 65.22 ± 14.92, and 74.9% of them had moderate and high academic procrastination [Table 1].

The results of demographic data showed that the number of females was more than the males (61.3% vs. 38.7%). The mean age of the students was 23.51 ± 5.08 years, and the majority of them were in the age group of 20–30 years (81.2%), mostly single (84.1%), and unemployed (77%). Approximately half of the students (48%) were doing for a bachelor's degree. In terms of study field, medicine (27.2%) and nursing (17.1%) had the highest frequency. Among the demographic variables, there was only a significant positive correlation between academic procrastination and student's depression ($P < 0.001$). The rate of their academic procrastination also increased significantly. Although the mean of procrastination was higher among male, single, and unemployed students, they were not significantly associated with academic procrastination [Table 2].

While the homework preparation accounted for the highest correlation (0.909) among the three components, the tendency to change the habit of procrastination had the lowest one (0.109) [Table 3]. The rate of student's depression was 12.06 ± 9.53 [Table 4]. There was a significant positive correlation between academic procrastination and student's depression [$P < 0.001$, $r = 0.325$) [Table 5].

Table 1: Academic procrastination in students

Academic procrastination	Frequency (%)	Mean±SD (minimum-maximum)
Minimal academic procrastination	87 (25.1)	65.22±14.92 (27-135)
Moderate academic procrastination	202 (58.4)	
Severe academic procrastination	57 (16.5)	
Total	346 (100)	

SD: Standard deviation

Table 2: Relationship between academic procrastination of students with demographic variables and depression

Variables	Mean±SD	P
Sex		
Women	65.54±15.55	0.283*
Men	66.31±13.84	
Age	65.66±15.21	0.619**
Marital status		
Single	65.66±15.21	0.698*
Married	63.34±13.09	
Birthplace		
City	65.39±14.58	0.442*
Village	62.96±19.06	
Child rating		
First	65.52±14.62	0.178***
Second	65.30±15.83	
Third	67.90±12.21	
More than three	61.24±15.93	
Employment		
Yes	64.76±15.50	0.754*
No	65.36±14.76	
Grade		
PhD	67.53±14.57	0.066***
Master of Science	62.42±15.27	
Undergraduated	64.41±14.90	
College		
Medical	66.43±14.69	0.332***
Dentistry	68.85±14.80	
Paramedical	63.33±14.12	
Health	64.68±15.99	
Nursing and midwifery	63.68±15	
Field of study		
Medicine	67.24±14.5	0.118
Dental	68.85±14.80	
Nursing	64.59±14.15	
Other disciplines	63.52±15.31	
Depression	65.22±14.92	0.000***

*Independent *t*-test, **Pearson correlation, ***ANOVA. SD: Standard deviation

DISCUSSION

According to the findings of the present study, the majority of students (74.9%) in Kashan University of Medical Sciences had moderate-to-severe academic procrastination, which was consistent with Abdollahi *et al*. (99.1%)[17] and Gareau *et al*. (90%) studies.[5] The average procrastination was higher among male students, which is consistent with

Table 3: Correlation between the components of academic procrastination and total score

Components of academic procrastination	The correlation coefficient	P
Examination preparation	0.829	0.000
Preparing assignments	0.909	0.000
Preparing articles	0.863	0.000
Uncomfortable feeling of procrastination	0.334	0.000
Tendency to change the habit of procrastination	0.109	0.042

Table 4: The rate of student's depression

Variable	Level	Frequencies (%)	Mean±SD (minimum-maximum)
Depression	Minimal	222 (64.2)	12.06±9.53 (0-41)
	Mild	53 (15.3)	
	Moderate	48 (13.9)	
	Severe	23 (6.6)	

There is a significant positive correlation between academic procrastination and student's depression ($P<0.001$, $r=0.325$) [Table 5]. SD: Standard deviation

Table 5: The correlation between academic procrastination and student depression

Variable	Depression	
	The correlation coefficient	P
Academic procrastination	0.325	0.000

some researches.[6,18-20] However, in other studies, academic procrastination was the same in two sexes and even higher among women, but the difference was not significant.[4,21] To explain this, it can be said that procrastination is a complex structure that is affected by many variables and it seems that the difference between both sexes in procrastination is related to the effect on mediating variables and the interaction of such variables and depends on culture and personality traits. The high level of procrastination in boys may also be related to factors such as lack of hope for future, poor time management, lack of self-esteem, and the current state of the community with regard to the prevalence of COVID-19. Indeed, based on Sepehrian study, anxiety was a predictor factor of procrastination in the boys compared to the girls.[2] In this study, procrastination was higher in doctoral students, especially in dentistry, which is inconsistent with Chehrzad *et al.*'s study,[4] which indicated a more procrastination among master's degree holders. Moreover, this finding was consistent with Chehrzad *et al.*'s study because she considered that procrastination in dentistry discipline was more than other disciplines;[4] nonetheless, Valizadeh *et al.* and Sepehrian stated that there was no significant difference between the scores of procrastination in different disciplines.[2,21] Perhaps, the limitation of samples in this group or the practical nature of courses in dentistry field led to this relationship. Procrastination among PhD students can be due to personality traits. Furthermore, maladaptive perfectionism tendency, including the selection of incredibly large and inflexible standards, a kind of obligation to achieve high goals the motivational force that is more due to fear of failure. Than success and not achieving those unrealistic goals cause the feeling of lack of frustration, helplessness and as a result they quit working hard for their studies and reach the level of academic procrastination. Valenzuela *et al.* pointed out that academic procrastination is an inappropriate strategy for coping with stress, which increases the stress and causes the accumulation of assignments and academic duties.[20]

Higher average procrastination among single and unemployed students can also be due to lack of hope for future, which is acceptable given the current situation. In this study, 35.8% of students suffer from various degrees of depression. These results are consistent with the results of Güzel and Kara. The prevalence of depression among the subjects was 45.25%.[22]

Apparently, depression is a common problem among students. The university time can be one of the most stressful periods of life. Trying to adapt oneself to this period, keeping oneself in a good academic position, planning for future, and being away from family are the main stressors of most students. Depression is one of the student's reactions to these stressors.[23] In addition to the aforementioned reasons, the current pandemic of COVID-19 disease can be another noticeable reason.

There is also a significant positive correlation between academic procrastination and student's depression ($P < 0.001$). In other words, it can be concluded that with increasing depression among students, the rate of their academic procrastination also increases significantly. This finding is consistent with other studies that were mentioned depression can be an antecedent or consequence of procrastination.[22,24]

In terms of cognitive domain, depression is associated with procrastination. For example, it has been shown that there is a relationship between procrastination subconscious thoughts, rumination, and mindfulness with depression and procrastination and it can be considered as a kind of vulnerability in depression.[25]

Conclusion

Considering the important role of academic procrastination in various aspects of education and student's future career and future of community health, it seems necessary for academic advisors to pay a special attention to this subject and it is suggested to investigate the causes and appropriate strategies to reduce this behavior. Furthermore, further studies are needed to identify other variables and find solutions to improve this problem. Further studies identify other variables and come up with solutions to do away with this problem.

Limitation

One of the limitations of the present study was the virtual completion of questionnaires at WhatsApp, in which some students were sensitive to the fact that their telephone numbers

were disclosed to others. It seems that preparing for such tests requires training and the development of related research.

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Conflicts of interest

There are no conflicts of interest.

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