

Relationship Between Academic Procrastination Behavior and Self-Regulation Among Nursing Students

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Abstract

Background: Academic procrastination is a widespread problem that affects many students. It refers to the behavior of postponing academic tasks to the point that leads to negative consequences. One of the factors that lead to academic procrastination is lack of self-regulation among students, where there is a lack of motivation and taking the responsibility of the learning process. **Aim:** Assess the levels of academic procrastination behavior and self-regulation and explore the relationship between academic procrastination behavior and self-regulation among nursing students. **Setting:** Faculty of Nursing, Alexandria University, Egypt. **Subjects:** 400 nursing students who were selected randomly by using the stratified sample method and distributed by proportional allocation technique to represent all nursing students (N=2695) who enrolled in the four academic levels, during the second semester of the academic year 2021-2022. **Tools:** Two tools were used. Tool one: "Academic Procrastination Scale (APS)". Tool two: "Motivated Strategies for Learning Questionnaire (MSLQ)". **Results:** The majority of nursing students had moderate levels of academic procrastination behavior and self-regulation. In addition, there was a negative, moderate correlation between academic procrastination behavior and self-regulation among nursing students. **Conclusion:** Nursing students require programs that enhance self-regulated learning (SRL), especially regarding time and study environment in addition to considering appropriate strategies to overcome the additional causes of academic procrastination. **Recommendation:** Training programs should be conducted to nursing students to improve self-reflection skills that raise their awareness in relation to academic procrastination and self-regulated learning.

Keywords: Academic Procrastination Behavior, Self-Regulation, Nursing Students.

Introduction

Almost all individuals exhibit procrastinated behavior that is observed through postponing the initiation or completion of obligations and tasks across different aspects of life, including profession, home, academics, and appointments.

Although this tendency often results in feelings of unease, increased anxiety, time pressure, and suboptimal outcomes, in addition to making promises about timely completion, individuals frequently find themselves trapped in such postponement or procrastinated behavior again (Naz et al., 2021). The term procrastination refers to the

deliberate postponement of a planned task, that is characterized by the failure to take action, despite the intention to do so. It is considered irrational because it involves voluntary delay and is accompanied by a sense of subjective discomfort or unease (Bobe et al., 2022). The postponement behavior in academic works is known as academic procrastination, which is a widespread phenomenon among students and is described as a deliberate and unnecessary delay in beginning or finishing an academic task such as preparing assignments and preparing for exams, for irrational reasons, even though the student expects to suffer negative consequences as a result of the delay (Bobe et al., 2022; Mortensen, 2022; Nieberding & Heckler, 2021; Ugwuanyi et al., 2020).

One of the important professions that is affected by procrastination is the nursing profession, as it is a challenging profession that requires the ability to operate in a very demanding environment, busy schedules, and unanticipated situations in hospitals. So, it is required from nursing students to be well trained from the first year of nursing school to be prepared for the future nursing career (Nayak, 2019; Nebhinani et al., 2020; Shahbal et al., 2022). During the clinical training period, the nursing students are exposed to a variety of difficult circumstances; one of the important reasons of these difficult circumstances is procrastinating academic tasks which has a negative impact not only on the learning process and academic performance, but also on the professionalism of nursing students and the quality of patient care provided afterward (Ghaffari et al., 2021; Nebhinani et al., 2020).

The negative consequences of academic procrastination can be divided into academic and non-academic consequences. Academic ones include assignments withdrawal, completing academic tasks quickly because of a shortage of time, and low achievement, while non-academic include emotional and physical outcomes, such as stress, feelings of

guilt, anxiety, depression, and overall poor mental health. These negative consequences become at a low level at the beginning of the academic semester and increase as the semester progresses due to increased academic duties and examinations approaching (Cho & Lee, 2022; Grunschel et al., 2013; Kurtovic et al., 2019; Sapancı, 2021).

There are many different causes of academic procrastination, according to Klingsieck, (2013), divided antecedents of academic procrastination into four perspectives which are the differential psychology, the clinical psychology, the situational and contextual, and the motivational and volitional psychology perspectives. Firstly, the differential psychology perspective, according to this perspective academic procrastination correlates to personality traits (Bushra & Suneel, 2021; Kathleen & Basaria, 2021; Klingsieck, 2013; Kurtovic et al., 2019; Naz et al., 2021). Secondly, the clinical psychology perspective suggests that academic procrastination may be related to underlying psychological factors, such as anxiety, depression, and stress (Klingsieck, 2013; Kuftyak, 2022; Nazari et al., 2021). Thirdly, the situational or contextual perspective focused on procrastination that is evoked by situational features such as task characteristics and teacher characteristics (Afzal & Jami, 2018; Asri et al., 2017; Klingsieck, 2013; Nordby et al., 2017).

Finally, the motivational and volitional psychology perspective postulated that academic procrastination is related to lack of motivation or volition (Harima et al., 2021; Klingsieck, 2013). Accordingly, different studies found that students with weak academic motivation tend to report high academic procrastination. On the other hand, academic procrastination behavior decreased when self-efficacy increased. In relation to volitional perspective, academic procrastination was attributed to self-

regulation failure (Grunschel et al., 2018; Güngör, 2020; Malkoç & Mutlu, 2018; Oram & Rogers, 2022; Valenzuela et al., 2020).

Self-regulation is defined by Bandura, (1991), as the process by which individuals manage their own behaviors, emotions, and thoughts consciously and voluntarily in order to achieve their goals. Self-regulation is also practiced in learning known as self-regulated learning (SRL). SRL can be described as an engaged and productive approach, whereby students set goals for learning, and then actively work to regulate and manage their motivation, cognitive and metacognitive processes, and behaviors to achieve these goals. They are guided and influenced by their goals, as well as the context in which they are learning. These self-regulatory activities act as intermediaries between students and their surroundings and playing a crucial role in their overall academic achievement (Pereira & Ramos, 2021; Pintrich, 2000). Thus, in the rapidly expanding healthcare sector, which relies heavily on knowledge and expertise, nursing students are required to possess high levels of SRL (Chen et al., 2019).

Although academic procrastination is widely recognized as having cognitive, affective, and behavioral dimensions, it remains an area of human behavior that is not well understood. It was discovered that academic procrastination can arise from different causes. Some students experience self-regulatory failure, leading to procrastination, while others engage in it as a defensive or self-handicapping behavior. Additionally, other students procrastinate as a deliberate choice, because of finding it more productive to work under pressure (Miyake & Kane, 2022; Park & Sperling, 2012; Pathak, 2021). Despite the high occurrence of academic procrastination among nursing students and the proposed link between self-regulatory failure and academic procrastination (Hayat et al., 2020; Park & Sperling, 2012), the relationship between

these two variables has not been thoroughly examined in the nursing student population.

Aim of the study

This study aimed to assess the levels of academic procrastination behavior and self-regulation and explore the relationship between academic procrastination behavior and self-regulation among nursing students.

Research Questions

The following questions were developed:

*Q1: What are the levels of academic procrastination behavior among nursing students?

*Q2: What are the levels of self-regulation among nursing students?

*Q3: Is there a relationship between academic procrastination behavior and self-regulation among nursing students?

*Q4: What is the relationship between academic procrastination behavior and self-regulation among nursing students?

Materials and method

Materials

Design: A descriptive correlational research design was used in this study.

Settings: This study was conducted at all the nine scientific nursing departments: namely: Medical Surgical Nursing, Critical Care and Emergency Nursing, Obstetric and Gynecological Nursing, Pediatric Nursing, Psychiatric and Mental Health Nursing, Community Health Nursing, Gerontological Nursing, Nursing Administration and Nursing Education departments, at the Faculty of Nursing, Alexandria University.

Subjects: The subjects of this study comprised 400 nursing students who were selected randomly by using the stratified sample method and distributed by proportional allocation technique to represent

all nursing students (N=2695) who enrolled in the four academic levels at the Faculty of Nursing, Alexandria University, during the second semester of the academic year 2021-2022.

Tools: Two tools were used in this study for data collection:

Tool I: Academic Procrastination Scale (APS).

This tool was developed by McCloskey, (2011) to assess college students' academic procrastination, it was adopted by the researcher, to assess the nursing students' academic procrastination behavior. It consists of 25 statements. It was tested for its reliability using Cronbach's alpha test and the coefficient value was 0.95 (McCloskey, 2011). Students' responses were measured on the 5-point Likert scale as follows; agree (5), slightly agree (4), neutral (3), slightly disagree (2), disagree (1). The scoring system of this tool was ranged from 25-125 distributed as follows:

- 25-30 indicates a low level of academic procrastination behavior.
- 31-90 indicates moderate level of academic procrastination behavior.
- 91-125 indicates a high-level academic procrastination behavior.

Tool II: Motivated Strategies for Learning Questionnaire (MSLQ).

This tool was developed by Pintrich et al., (1991) to assess SRL, it was adopted by the researcher to assess the nursing students' SRL. It is composed of two parts, the first part related to motivation and the second part related to learning strategies. It consists of 81 statements and was tested for its reliability using Cronbach's alpha test and the coefficient value was 0.91 (Aguila-Gomez, 2016; Pintrich et al., 1991)

Part1: The motivational orientation scale consists of 31 statements distributed over three components namely: value, expectancy and affective components. The value component consists of 14 statements divided into three subscales (1) intrinsic goal orientation consists of 4 statements, (2) extrinsic goal orientation consists of 4 statements and (3) task value consists of 6 statements. The expectancy component consists of 12 items divided into two subscales (1) control of learning beliefs consists of 4 statements and (2) self-efficacy for learning & performance consists of 8 statements. The affective component consists of 5 statements related to test anxiety.

Part II: The learning strategy scale consists of 50 statements distributed over two strategies namely: cognitive & metacognitive strategies and resource management strategies. Cognitive and metacognitive strategies consists of 31 statements, divided into five subscales (1) rehearsal consists of 4 statements, (2) elaboration consists of 6 statements, (3) organization consists of 4 statements, (4) critical thinking consists of 5 statements, and (5) metacognitive self-regulation consists of 12 statements. Resource management strategies consists of 19 statements, divided into four subscales (1) time & study environment consists of 8 statements, (2) effort regulation consists of 4 statements, (3) peer learning consists of 3 statements, and (4) help seeking consists of 4 statements. Students' responses were measured on the 5-point Likert scale as follows: very true of me (5), moderately true (4), neutral (3), hardly true (2), not all true of me (1) (Dayupay et al., 2022; Kranjec & Bakracevic, 2023). The scoring system of this tool was ranged from 81-405 distributed as follows:

- 81-100 indicates a low-level SRL.
- 101-300 indicates a moderate SRL.
- 301-405 indicates a high-level SRL.

Attached to the previously mentioned tools is a sheet that contains personal and academic data about nursing students such as age, gender, residence, last previous GPA and working hours if they are working. In addition to, four open ended questions about the number of courses they registered during the academic semester, the most procrastinated courses, causes of academic procrastination, and interventions used to overcome this behavior from the nursing students' perspectives.

Methods

Permission to conduct the study was obtained from the Research Ethics Committee (REC) at the Faculty of Nursing, Alexandria University. Permission to conduct the study was obtained from the Dean of the Faculty of Nursing and the Heads of all nine scientific departments, Alexandria University. The tools were adopted by the researcher. They were tested for their content validity by five experts in Nursing Education and Psychiatric and Mental Health Nursing departments then the necessary modifications were accordingly done. A pilot study was carried out on 40 nursing students who were selected randomly from the previously mentioned academic levels to assess the feasibility, clarity and applicability of the tools. Those students were excluded from the total study sample. Moreover, the reliability of the tools was tested using Cronbach's Alpha Test. For tool I (APS) was 0.89. Tool II (MSLQ) was 0.94 and for its dimensions ranged from 0.70 to 0.85. The students were selected randomly by using the stratified sample method and distributed by proportional allocation technique from each academic level. Data collection was conducted on the four academic levels during the second semester of the academic year 2021-2022. Data were collected through a questionnaire over a period of two months starting from the beginning of April 2022 and continued till the beginning of June 2022. The researcher introduced herself to students, the aim of the study was explained to them, and

they were assured that their responses would be kept secret. The questionnaire was distributed to each nursing student at the end of the clinical day to prevent learning interruption; they were asked to fill it in and return it to the researcher. All nursing students were given the same instructions by the researcher about how to fill the questionnaire. They also were instructed that only one answer is required and not to leave any item without an answer. The researcher responded to any questions raised by the students. Each student needed about 30-45 minutes to complete the study tools. After completion of the data collection, the necessary statistical analysis was done.

Ethical considerations

A written informed consent was obtained from nursing students after explaining the purpose of the study. The student's right to refuse to participate or to withdraw from the study at any time was assured. Anonymity of participants and confidentiality of data were maintained.

Statistical Analysis

Data was fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp) Qualitative data were described using number and percent. Quantitative data were described using mean, and standard deviation. The significance of the obtained results was judged at the 5% level. The used tests were:

1. Bonferroni test
For normally distributed quantitative variables, to compare between more than two groups.
2. Pearson coefficient
To correlate between two normally distributed quantitative variables.
3. Cronbach's Alpha

Reliability Statistics was assessed using Cronbach's Alpha test.

Results

Table 1 shows the distribution of the nursing students according to their personal and academic data. It was found that the age of almost half of nursing students ranged from 20 to less than 22 years old (51.25%). More than two-thirds of them were females (68.25%). The majority of them were single and from urban areas (90.25%, 92.75%) respectively. Around one-third of them (31.00%) were working during their study for 6 hours and more per week as revealed by 91.12% of working students. More than half of them (56.75%) didn't practice any recreational activities at all. In addition, almost two-thirds of them (67.00%) were wasting their time on the internet for 6 hours and more per week. Moreover, the descending percentile distribution of students according to their academic semester were 35.00%, 30.00%, 20.00%, and 15.00% for the second, fourth, sixth and eighth academic semesters respectively. The GPA of nearly three-quarters of them (74.50%) ranged from B+ to B-, 61.50% of them registered 5 to 7 courses per semester and the study hours of 64.75% of them ranged from 1-5 hours per week.

Table 2 reveals the distribution of nursing students according to their levels of academic procrastination behavior. It was found that the majority of nursing students (80.50%) had moderate levels of academic procrastination behavior and 19.25% of them had high levels, while only 0.25% of them had low levels of academic procrastination behavior.

Table 3 reveals the distribution of nursing students according to their levels of SRL, it was found that more than two-thirds of nursing students (74.25%) had a moderate level of SRL while, the rest of them 25.75% had a high level of SRL.

Table 4 reveals the correlation between academic procrastination behavior and domains of SRL. It was found that there was a significant negative correlation between academic procrastination and intrinsic goal orientation, task value, self-efficacy for learning and performance, rehearsal, elaboration, organization, critical thinking, metacognitive self-regulation, time and study environment, effort regulation and peer learning. The only positive significant correlation was found between academic procrastination and test anxiety. Moreover, there is no significant correlation between academic procrastination and extrinsic goal orientation, control beliefs and help seeking.

In relation to the correlation between academic procrastination and overall SRL, it was found that there was a negative significant correlation between academic procrastination behavior and self-regulated learning.

Table (1): Distribution of nursing students according to their personal and academic data as presented by number and percentages.

Personal and academic Data	No	%
Age	N=400	
18<20	112	28.00%
20<22	205	51.25%
22≤	83	20.75%
Gender		
Male	127	31.75%
Female	273	68.25%
Marital status		
Single	361	90.25%
Engaged	27	6.75%
Married	12	3.00%
Residence		
Rural	29	7.25%
Urban	371	92.75%
Working during study		
Yes	124	31.00%
No	276	69.00%
Average of working hours per week (N=124)		
1-5	11	8.87%
6≤	113	91.12%

Recreational activities' hours per week		
zero	227	56.75%
1-5	131	32.75%
6≤	42	10.50%
Hours of wasting time on the internet per week		
1-5	132	33.00%
6≤	268	67.00%
Academic semester		
Second	140	35.00%
Fourth	120	30.00%
Sixth	80	20.00%
Eighth	60	15.00%
Last GPA		
A-	9	2.25%
B+ to B-	298	74.50%
C+ to C-	93	23.25%
Registered courses per semester		
5-7	246	61.50%
7<	154	38.50%
Study hours per week		
1-5	259	64.75%
6≤	141	35.25%

Table (2): Distribution of nursing students according to their levels of academic procrastination behavior as presented by numbers and percentages.

Levels of Academic Procrastination Behavior	No	%
Low level (25-30)	1	0.25%
Moderate level (31- 90)	322	80.50%
High level (91-125)	77	19.25%

Table (3): Distribution of nursing students according to their levels of self-regulated learning (motivational orientation and learning strategies) as presented by numbers and percentages.

Levels Self-Regulated Learning	No	%
Low level (81-100)	0	0.0
Moderate level (101-300)	297	74.25
High level (301-405)	103	25.75

Table (4): Correlation between academic procrastination behavior and overall self-regulated learning (N=400)

Domains	Academic Procrastination behavior	
Part One:		
Motivational orientation for self-regulated learning		
Intrinsic goal orientation	r	-0.174*
	p	0.001
Extrinsic goal orientation	r	-0.014
	p	0.773
Task value	r	-0.188*
	p	0.000
Control beliefs	r	0.013
	p	0.791
Self-efficacy for learning and performance	r	-0.209*
	p	0.000
Test anxiety	r	0.248*
	p	0.000
Part Two:		
Learning strategies for self-regulated learning		
Rehearsal	r	-0.254*
	p	0.000
Elaboration	r	-0.292*
	p	0.000
Organization	r	-0.269*
	p	0.000
Critical thinking	r	-0.189*
	p	0.000
Metacognitive self-regulation	r	-0.379**
	p	0.000
Time and study environment	r	-0.490**
	p	0.000
Effort regulation	r	-0.464**
	p	0.000
Peer learning	r	-0.160*
	p	0.001
Help Seeking	r	.017
	p	0.730
Overall Self-Regulated Learning	r	-0.372**
	p	<0.001

**r: Pearson's correlation coefficient

*Significant results ≤ 0.5

Pearson correlation coefficient (r) value	Strength	Direction
More than 0.5 (***)	Strong	Positive
From 0.3 to 0.5 (**)	Moderate	Positive
From 0.0 to 0.3 (*)	Weak	positive
Zero (0.0)	No Correlation	
From 0.0 to -0.3(*)	Weak	Negative
From -0.3 to -0.5 (**)	Moderate	Negative
Less than -0.5 (***)	Strong	Negative

Discussion

Concerning the levels of academic procrastination among nursing students, the current study showed that most of nursing students reported engaging in academic procrastination, while only a few reported not procrastinating. However, the majority of students had a moderate level of academic procrastination followed by a high level, with only one student had a low level. Similarly, Muliani et al (2020) and Novitarum et al., (2022) found that the majority of nursing students had moderate level of academic procrastination.

There are several reasons for academic procrastination. The causes of academic procrastination among nursing students in the present study may be due to the following reasons: Inability to manage time effectively. This observation was supported by the results of the present study which revealed that around one third of nursing students neutrally optimize study time by effectively utilizing it, keep up with weekly readings and assignments. However, it is common to allocate limited time to studying as other activities often take precedence, in addition to rarely finding opportunities for reviewing material before exams. Consistent with Ghaffari et al., (2021) who showed the nursing students in Iran procrastinated their academic works due poor time management skills.

Also, lack of motivation or interest in studying nursing science which may be related to increased demand of nursing profession in labor marketing without thoroughly assessing the interests and abilities. Whereas the findings of the current study indicated that the primary focus for nursing students is enhancing their overall grade point average rather than understanding the courses materials as thoroughly as possible. On the same line, Roshanisefat et al., (2021) showed that the causes of academic procrastination among nursing students in Iran include lack of interest in studying nursing which is

considered as the main reason. Moreover, the development of procrastination as a habit due to a lack of awareness about this behavior, causes and its negative consequences, especially significant number of students engage in academic procrastination without fully understanding the reasons behind their behaviors.

In addition, the nursing courses in Bachelor nursing program which are the core courses that require much time, effort, and attendance. These courses have included formative and summative evaluations result in increased the feeling of pressure, where the present study showed that around two thirds of nursing students procrastinate because of feeling pressured. Also, teacher characteristics such as teaching style like using traditional teaching methods where there is a lack of student engagement. This observation is supported by Samawi et al., (2021) who suggested that lack of students' engagement by using traditional teaching methods increase the probability of academic procrastination.

Finally, the non- academic stressors that are faced by nursing students such as working during study can also contribute to feeling of being overwhelmed and increase the risk of burnout. Where it was found that around one third of the nursing students were working during their study and the majority of working students were working for six hours and more per week. Consistent with Kamaratih & Malada, (2022) showed that there is a relationship between academic procrastination and working, whereas higher levels of working burnout are associated with higher levels of procrastination.

Concerning the levels of SRL among nursing students, the results of the present study revealed that the majority of nursing students had a moderate level of SRL. Similarly, Chen et al (2019) who found that Chinese nursing students had moderate level of SRL. This result made the researcher emphasizes the importance of developing

nursing educational programs that improve SRL in order to foster lifelong learning to meet the requirements of the healthcare system which require the nursing students to have high level of SRL.

On the contrary, Aly et al., (2020) who found that the majority of nursing students at the Faculty of Nursing, Cairo University had low level of SRL. This may be as a result of the workload due to the nature of study and the use of problem-based learning strategy without support and guidance which may increase cognitive load and impede their ability to regulate their learning efficiently. However, Diğın & İřcan Atařen (2021), Dogu et al (2022), Hwang & Oh, (2021), and Subař & Karaçay (2022) found that the majority of the nursing students had a high level of SRL. Thus, they possess the ability to motivate themselves, manage their learning process, enhance their self-directed learning, and effectively solve problems. The strong SRL ability can enhance their capacity to apply nursing skills in real-life clinical situations and enable them to overcome future challenges and complexities that may arise in their professional careers.

From the researcher's point of view, the present result may be due to having a heavy workload and limited time to complete students' academic works, which make them struggle to allocate time for SRL activities such as planning and monitoring, as around two thirds of them reported feeling pressured and overwhelmed. Also, limited exposure to SRL strategies whereas traditional teaching strategy is the most used one for theoretical content in which the students are passive receivers.

Regarding the correlation between academic procrastination behavior and SRL among nursing students, the present study revealed that there is a significant negative, moderate correlation between academic procrastination behavior and SRL. This result was somewhat similar with the study

conducted by Olivianira & Hikmawati, (2022) on undergraduate nursing students who found that there was a negative, strong correlation between academic procrastination behavior and SRL. Whereas they found that the students become anxious when they feel they don't have control over their learning situation or environment which results in academic procrastination. Therefore, this study emphasized improving students' ability to self-regulate their learning as the primary preventative measure and solution for academic procrastination.

In relation to the correlation between academic procrastination behavior and domains of motivational orientation of SRL. Likewise, and similarly, San et al., (2016) concluded that there was a negative and significant correlation between academic procrastination and intrinsic goal orientation, task value, and self-efficacy for learning and performance, while academic procrastination and test anxiety had a positive and significant correlation. However, there is no correlation between academic procrastination and extrinsic goal orientation or control beliefs.

The results of Motie et al., (2012) contradicted the current study, as they discovered a negative correlation between academic procrastination and extrinsic goal orientation. Accordingly, they suggested that providing training for students in extrinsic goal orientation could lead to its internalization and eventual conversion to intrinsic goal orientation, which would help students achieve optimal function and performance.

In relation to learning strategies domains of SRL, result goes in the same line with San et al., (2016) who found that there is a negative correlation between academic procrastination and various learning strategies of self-regulated learning among nursing students, including rehearsal, elaboration, organization, critical thinking, metacognitive self-regulation, time and study environment,

effort regulation, and peer learning. However, no correlation was observed between academic procrastination and help seeking where the students in the present study spend a significant amount of time engaging in recreational activities, instead of trying to think about how to beat procrastination.

Concerning behavioral and contextual strategies such as time and study environment, effort regulation, and peer learning. There are negative correlations between these strategies and academic procrastination among nursing students. In this respect, the students who procrastinate often struggle with managing study effectively, which leads them to spend more time on non-academic activities such as spending much time on Internet for recreation rather than completing academic assignments and studying. In addition, they may have difficulty regulating their effort to understand and study difficult parts of the material. Finally, the students who procrastinate may haven't the ability for collaborative learning to discuss course material with their peers, which can lead to further difficulties in learning and understanding the learning materials.

Conclusion

It can be concluded from the findings of the present study that the majority of nursing students had moderate levels of academic procrastination behavior and SRL. Moreover, academic procrastination was moderately negatively correlated with SRL. Also, academic procrastination was negatively correlated with intrinsic goal orientation, task value, self-efficacy for learning and performance in motivational orientation of SRL. On the other hand, there was a positive correlation between academic procrastination and test anxiety, while there is no correlation between academic procrastination and extrinsic goal orientation and control beliefs. In relation to learning strategies of SRL, there was negative correlations between academic procrastination and rehearsal, elaboration, organization, critical thinking, metacognitive

self-regulation, time and study environment, effort regulation, and peer learning, while there was no correction between academic procrastination and help seeking.

Recommendations

Based on the findings of the present study, the following recommendations are proposed:

- Orientation workshops should be conducted for all nursing educators about academic procrastination behavior.
- Educational workshops should be conducted for all nursing educators about the assessment of students' academic procrastination behavior and SRL among nursing students.
- Provide training programs for all nursing educators to help them improve the students' SRL skills such as managing time and study environment, effort regulation, and self-efficacy for learning and performance.
- Training workshops should be conducted for all nursing educators about how to create a positive and supportive learning environment.
- Training programs for all nursing students about how to use relaxation techniques such as guided imagery and mindfulness meditation to reduce test anxiety.

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