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RESEARCH ARTICLE

High Levels of Academic Procrastination do not Influence the Academic Performance of Nursing Students during Internship

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Abstract:

Introduction:

Academic procrastination (AP) is a global phenomenon that significantly affects college students, potentially influencing their academic performance and mental well-being.

Objective:

To investigate the relationship between levels of academic procrastination and the academic performance of nursing students during their internship in Peru.

Methods:

A cross-sectional study was conducted, involving 112 nursing interns aged 18 years and above and enrolled in the 2019-I semester. The participants completed the Academic Procrastination Scale (EPA), a Likert-like scale consisting of 12 items, which measured two dimensions: academic self-regulation (9 items) and procrastination of activities (3 items). A threshold score of 36 points was used to identify high levels of academic procrastination. Academic performance was assessed on a scale of 0-10 (failed), 11-14 (passed), 15-17 (remarkable), and 18-20 (outstanding).

Results:

The average age of the participants was 29 years, with 88.4% being female. The study found that 72.3% of nursing students exhibited higher levels of AP, particularly among women (62.5%) and younger students (59.8%). On a global scale, 70.3% of students achieved a remarkable grade, with 51.8% of these students also exhibiting a high level of AP. However, no significant differences were found in academic performance based on the level of AP ($p=0.918$).

Conclusion:

Although nursing students displayed a higher level of AP, this study did not find a significant association between academic procrastination and academic performance during the internship period. However, it is crucial to monitor AP in nursing students throughout their studies to identify potential factors that may contribute to its impact and develop strategies to mitigate its effects.

Keywords: Nursing students, Procrastination, Academic performance, Internship, Residency, Stress.

Article History

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1. INTRODUCTION

Procrastination refers to the tendency of delaying or postponing assignments or projects, often disregarding the associated responsibilities and disregarding the negative con-

sequences that may arise [1,2]. While procrastination can manifest in various areas of life, evidence suggests that it is particularly prevalent within an academic context. Globally, the rate of academic procrastination (AP) among college students ranges from 10.2% to 75%, and in Peru, it can range from 14.1% to 63.8% [3,4]. These statistics are highly concerning as AP can significantly impact academic

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performance and jeopardize the emotional well-being of students, leading to increased levels of stress, anxiety, and depression [5].

The phenomenon of academic procrastination (AP) is influenced by two key components: the procrastination of activities and academic self-regulation. However, academic self-regulation plays a more significant role as it involves planned-action behaviors aimed at achieving goals [6]. It is important to note that certain factors are associated with procrastination behaviors, such as age, which has a strong correlation with AP. Young college students are particularly prone to procrastination due to the ongoing development of their cognitive functions, which can impact their academic self-regulation [7]. Furthermore, research indicates that procrastination levels tend to decrease considerably as individuals age [1,8]. This reduction can be attributed to the accumulation of experience, which enables the development of self-regulation strategies, thereby avoiding unwarranted delays and maintaining focus on goals.

Gender is another characteristic associated with AP, as men tend to procrastinate slightly more than women. This disparity can be attributed to higher levels of impulsiveness and lower levels of self-control observed in men [9]. This gender difference in procrastination tendencies has been observed among Peruvian college students, where men exhibited less favorable academic conduct compared to women [10].

The academic performance in science involves that students must study hard to have an outstanding theoretical and clinical yield [11]. Despite this, some studies have shown that between 13.8% and 49.9% of college students studying in the health field, procrastinate their academic assignments until the deadline [12]. As the AP gets interrupted in their academic training, avoiding knowledgeable and necessary skills to provide good care for their patients. Besides, this can lead to academic deflection because it creates negative emotions such as embarrassment or guilt [12].

The demand for nurses is rapidly increasing worldwide, creating a significant need for health professionals. To address this demand, the field of professional nursing training is expanding, particularly in regions where there is an unequal distribution of healthcare resources. Out of the 28 million nurses globally, 3.8 million (30%) are concentrated in the Americas. Additionally, there are 81.2 nursing school graduates per 100,000 people annually in this region [13]. In order to meet the growing healthcare demand, it is crucial to identify and address any obstacles or challenges faced by nursing students early on. This proactive approach will contribute to the development of highly skilled professionals in the field [12]. Self-efficacy plays a vital role during nursing training, especially during the undergraduate internship phase, where students must effectively organize themselves, apply theoretical knowledge, and develop strategies for their clinical practice [14]. Procrastination or delays in patient care are not viable options in this context.

Nevertheless, the AP phenomenon is very frequent among nursing undergraduates, affecting their academic performance

and overall well-being. In Indonesia, a significant number of first-year nursing students (81.4%) exhibited moderate levels of procrastination, often attributed to high levels of stress (82.5% reported moderate stress) [15]. Mexico also faces a similar situation, with 55.8% of nursing students experiencing higher levels of AP, primarily due to a lack of energy and self-control. Importantly, these students did not have any intention of overcoming their procrastination tendencies [16].

In Egypt, a staggering 67% of nursing students demonstrated a higher level of AP. This is noteworthy as the majority of these students worked while studying and were burdened with numerous assignments, leading to an overwhelming workload that fueled their procrastination [14]. Likewise, in Peru, 72.7% of nursing students reported concerning levels of AP, and it was further revealed that there was a positive correlation between AP and anxiety levels [17]. Considering the widespread occurrence of AP and its detrimental consequences, it is imperative to identify the real-life challenges faced by nursing students and promote effective strategies for their personal and professional development. By doing so, we can ensure that they are equipped to provide high-quality healthcare services to their patients.

This study aims to examine the relationship between levels of procrastination and AP among nursing interns. Additionally, a multidimensional analysis was conducted to explore how social demographics influence procrastination behavior across various dimensions. The hypotheses of the study are as follows:

- (i) Nursing interns exhibit a moderate level of procrastination.
- (ii) Academic self-regulation is moderately present among nursing interns while delaying activities are relatively low. However, these levels may vary based on gender and age.
- (iii) There is a correlation between procrastination and academic performance during the internship period.

Understanding the characteristics of procrastination and its impact on academic performance is of paramount importance. By exploring these associations, we can gain valuable insights into how to address and mitigate the negative effects of procrastination, ultimately enhancing the academic performance of nursing interns.

2. MATERIALS AND METHODS

2.1. Design Study and Settings

We conducted a cross-sectional study involving nursing students from the University of Norbert Wiener in Lima (Peru). This esteemed nursing school is recognized as one of the top private institutions in the country, attracting approximately 3,400 students across different schedules. The university offers admission to both new students entering the program and those with prior technical or university backgrounds. The nursing program itself spans five years, with the final year dedicated to a communal or clinical internship requirement [18]. This study has followed the guidelines of the STROBE guide [19].

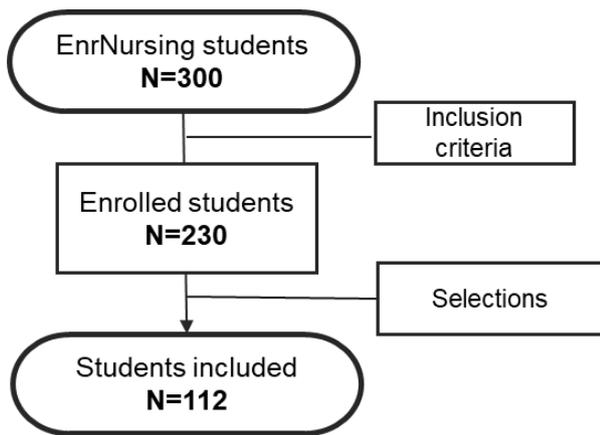


Fig. (1). Flowchart of selection of participants of the study.

2.2. Population, Inclusion Criteria, and Instruments

The population was formed by 300 interns from the School of Nursing. The inclusion criteria were from volunteers students >18 years old from both genders who are in the 5th year of their career and enrolled in the 2019-I semester (internship). The enrolled students and the ones who were withdrawn, pregnant students or with chronic diseases, and those who studied another career simultaneously were excluded from the investigation. After choosing the students from a simple random sampling were 112 interns (Fig. 1).

The study used as an instrument the Academic Procrastination Scale (EPA) founded in 1998 by Deborah Ann Busko [20] and adapted and verified in Spanish in 2010 by Álvarez in high school students [21] and, in 2013 by Domínguez in college students [22]. The EPA is made up of 12 items in 2 dimensions: academic self-regulation (9 items) and delaying of activities (3 items) and shows a good reliability ($\alpha=0.766$). Self-regulation refers to the ability to respond to continuous demands by generating a tolerable and flexible social environment that is permissible for emotional reactions [23]. The answers are shown in a Likert scale with an increasing ordinal type and are scored in a positive way, such as always (5 points), rarely (4 points), sometimes (3 points), hardly ever (2 points), never (1 point) and 9 questions in a reverse negative way [22]. The threshold to estimate higher levels of procrastination was 36 points, considering higher levels (>36 points) and low ones (<36) of procrastination.

2.3. Variables, Processing, and Data Analysis

The variables of the study were procrastination which consists of two dimensions (academic self-regulation and delaying of activities) and academic performance, in which it will be based on the overall grade of the academic semester following a prior report [18]. This report includes the summation of the test’s grades and theory (40%) to obtain an overall grade for each participant (from 0 fail to 20 outstanding grades). The overall academic performance was interpreted following the RAG score: 0-10 (failed), 11-14 (passed), 15-17 (remarkable), and 18-20 (outstanding).

Additionally, this study incorporated secondary variables, including demographic information, academic background, and

work experience. Invitations to participate voluntarily were sent to nursing students *via* email, followed by face-to-face meetings. The surveys were designed to be completed within approximately 20 minutes, with participants providing informed consent. All answers were carefully reviewed for accuracy.

The collected data were then coded and entered into the IBM SPSS v25.0 (Armonk, USA) data matrix. A descriptive statistical analysis was conducted to determine the frequencies of categorical variables, mean, and standard deviation. The normality of the data was assessed using the Kolmogorov-Smirnov test, while the Pearson test was employed to analyze correlations. To examine differences in procrastination levels based on demographic variables, the non-paired T-test was utilized. For all tests conducted, a significance level of p-value < 0.05 and a confidence interval of 95% were considered statistically significant.

2.4. Ethical Aspects

This study was approved by IRB from the Universidad de Ciencias y Humanidades (ACTA CEI N°083-2019, Jun 19, 2019) and the guidelines declaration of Helsinki were met [24].

Table 1. Baseline characteristics of nursing students enrolled in the study.

Variable	Category	Total	
		N	%
Gender	Male	13	11.6
	Female	99	88.4
Age (years)	20 to 35	96	85.7
	36 to 50	16	14.3
Civil Status	Single	101	90.2
	Married	11	9.8
Origin	Coast	102	91.1
	Highlands	9	8
	Amazon Rainforest	1	0.9
Occupation	Dependent	50	44
	Independent	2	1.8
	Part-time job	1	0.9
Academic Performance Grades	Unemployed	59	53
	11-14 (passed)	8	7.1
	15-17 (remarkable)	79	70.5
	18-20 (outstanding)	25	22.3

3. RESULTS

The 112 students participating in this study were from the ages of 20 to 50 years old, where the age group from 20 to 35 years (85.7%) and from 36 to 50 years (14.3%) were the most frequent. 99 (88.4%) were women, 101 (90.2%) were single and 102 (91.1%) came from the coast of Peru. When it comes to employment, 59 (53%) were unemployed and only 2 (1.8%) were independent. The analysis of the academic performance showed that 79 (70.3%) were students who had outstanding academic performance globally (grades between 15 to 17) (Table 1). The 72.3 (81/112) of students who had higher levels of AP especially women with 62.5% (70/112) and those who are from the ages of 20 and 35 years old with 59.8% (67/112)

(Table 2).

Table 2. Academic Procrastination based on sex and gender. Data in N (%), p<0.05 (significant).

Variable	Category	Global Procrastination		Total	p-value*
		High	Low		
Gender	Men	11 (9.8)	2 (1.8)	13 (11.6)	0.267
	Women	70 (62.5)	29 (25.9)		
Age	20 a 35	67 (59.8)	29 (25.9)	96 (85.7)	0.127
	36 a 50	14 (12.5)	2 (1.8)		

Note: *Non-paired T test

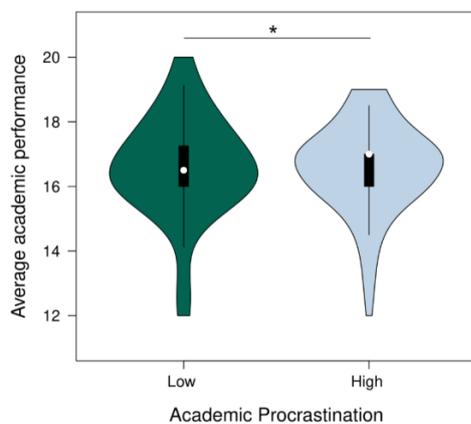
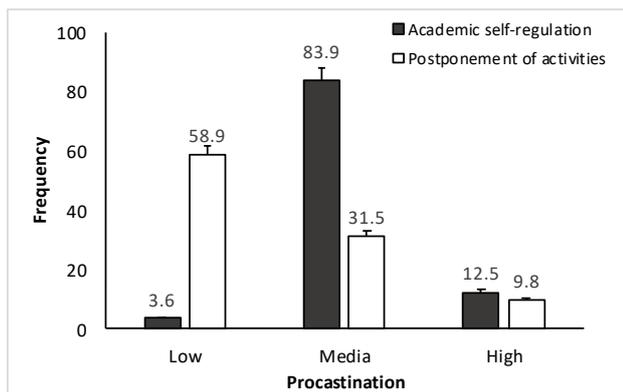


Fig. (2). Procrastination and Academic Performance in Nursing students. (A). Multidimensional Analysis of Procrastination. (B). Academic Performance Grades based on Procrastination. *p>0.05 (significant, Non-paired T test).

The AP in the two dimensions came at 83.9% (94/112) and 12.5% (14/112), students had a standard level and higher from self-regulation, respectively. Moreover, 58.9% (66/112) of students had a low delay of activities, 31.3% (35/112) of students had a medium level of procrastination and 9.8%

(11/112) had higher levels (Fig. 2a). We could not find any significant differences based on gender or age group for the AP (p=0.468 and p=0.267) and neither the academic performance nor the average procrastination (p=0.127 and p=0.595).

Among the gathered answers from the EPA, we found that 47.3% (53/112) of students always attend classes and also 40.2% (45/112) answered that they almost always try to motivate themselves and improve their study skills. Still, 32.1% (36/112) answered that sometimes they put off some assignments because they do not like the courses. The AP did not associate with any of the analyzed variables (p>0.05) nor the average academic performance (p=0.844) of the students.

51.8% (58/112) of nursing students had a high level of AP and the multidimensional analysis showed that 59.8% (74/112) of the students had a medial level of academic self-regulation, while 42.9% (47/112) and 20.5% (30/112) of students had a low level of putting off some activities, respectively (Table 3). We could not find any differences in the academic performance according to the level of procrastination (p=0.918) (Fig. 2b).

4. DISCUSSION

This study reveals that nearly three-fourth of nursing students exhibit a high level of AP, with a particular impact on women and a younger group. Interestingly, among those with a moderate level of academic performance, there was a higher prevalence of AP. Surprisingly, despite their procrastination tendencies, these students demonstrated noteworthy grades, distinguishing themselves from their peers. It is important to note that while these students displayed a moderate level of academic self-regulation and a low inclination towards delaying assignments, their overall academic performance remained notable. This highlights the complex interplay between procrastination habits and academic outcomes, suggesting that there may be additional factors contributing to their success despite their procrastination tendencies.

To the best of our knowledge, one of the main strong points is that this is the first study about AP in Peruvian nursing students during their undergraduate internship. There are previous studies about students being evaluated in the first year of college, where there had already been estimated that they will have even higher levels of procrastination because they are young [17], and the AP could get worse during their whole career, as we have shown, in the final semesters. Also, this study determines for the first time the relationship between the AP and academic performance [14 - 17]. On the other hand, the majority of studies about procrastination had been tested in Asian college students [14, 15] so this report is one of the few studies being done in Latin America [16, 17], having said that this is one of the strongest pieces of the investigation. Overall, we would like to show our results as a scientific contribution to the Spanish-speaking countries to understand the AP of undergraduate students.

Table 3. Multidimensional analysis of ap and the academic performance. Data in N (%), p<0.05 (significant).

Academic Performance	Dimensions						Total Procrastination		p-value*
	Academic Self-regulation			Delaying of Activities			Low	High	
	Low	Medial	High	Low	Medial	High			
11-14 (passed)	0 (0)	6 (5.4)	2 (1.8)	5 (4.5)	2 (1.8)	1 (0.9)	2 (1.8)	6 (5.4)	0.918
15-17 (remarkable)	3 (2.7)	67 (59.8)	9 (8.0)	48 (42.9)	23 (20.5)	8 (7.1)	21 (18.8)	58 (51.8)	
18-20 (outstanding)	1 (0.9)	21(18.8)	3 (2.7)	13 (11.6)	10 (8.9)	2 (1.8)	8 (7.1)	17 (15.2)	
Total	4 (3.6)	94 (83.9)	14 (12.5)	66 (58.9)	35 (31.3)	11 (9.8)	31 (27.7)	81 (72.3)	

Note: *Non-paired.

Our results showed that almost 3/4 of nursing interns had higher levels of procrastination, especially in younger people. Besides, based on the two dimensions of the AP, we frequently find a medial level of self-regulation and a low level of delaying activities. Particularly, the first dimension is the one who describes a significant correlation with the AP [14]. The same way happened in Indonesia, the 81.4% of students in their first year of nursing school had a moderate level of procrastination which was linked to stress (82.5% of participants had a moderate stress level) [15]. This relation was also shown in college students in India, in spite of the fact that they had a low score for procrastination [25]. In Egypt, for example, it has been reported that 67% of nursing students had a higher level of AP [14], and another study in the same university showed that only 22% had AP, although with a moderate level of 37.9% of students [26].

Investigations in Latin America found similar results to ours, studies done in Mexico and Peru showed 55.8% and 72.5% of higher levels of AP, respectively [16, 17]. On another hand, a recent systematic revision indicated that the use of the Internet is a problematic topic and the lack of time during COVID-19 also influenced the student’s behavior on procrastination [27]. Overall, these results show an increase in the analysis and the consequences of AP for the past 20 years in college students, especially when direct consequences are low, low productivity, stress, and diseases [28]. It is worth mentioning that procrastination in college students is associated with prior factors such as social psychology, financial issues, and loneliness [29]. More studies are necessary to quantify the AP in college students before and during the internship and to give details on factors academically considering their effects and links with study and performance activities.

This study had its limitations. First of all, we focus on our analysis, trying to know what is the affiliation that AP has in college students based on their academic performance. Nevertheless, it is also important to highlight other factors such as the level of stress and anxiety, which had a positive relationship with AP [4, 15, 17]. These factors were not studied in this investigation. It has been proven that this relationship had to do with depression, unhealthy behavior in the lifestyle, and other mental issues like pain in the upper extremities [29]; which also affects academic performance. Another limitation, we did a focused study on nursing students in Lima, the capital of Peru, highly urban; however, there can be other differences between students from other faculties, such as science or health (like doctors or medical technologists) and from other regions (highlands, amazon rainforest) getting different results [3, 17].

In this way, the results from this investigation must be interpreted carefully taking into consideration the analyzed group of people.

CONCLUSION

Our results suggest that nursing students exhibit a higher level of AP while maintaining a moderate level of academic performance. However, we did not find a significant correlation between these two variables. Notably, procrastination tendencies were more prevalent among women and younger college students, who may be influenced by various factors such as their lifestyle choices. For instance, the shift to long-distance education during the COVID-19 lockdown may have impacted their academic engagement and contributed to increased procrastination.

Given these observations, it is crucial to develop effective strategies aimed at reducing procrastination among nursing students. Encouraging the adoption of healthy habits and time-management techniques can empower students to optimize their academic activities, particularly during their nursing internships. By promoting proactive behavior and providing support to overcome procrastination tendencies, students can enhance their overall academic experience and ensure successful progression in their nursing careers.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study was approved by IRB from the Universidad de Ciencias y Humanidades (ACTA CEI No.083-2019, Jun 19, 2019).

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures performed in studies involving human participants were in accordance with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from all participants.

STANDARDS OF REPORTING

This study has followed the guidelines of the STROBE guide.

AVAILABILITY OF DATA AND MATERIAL

The data and supportive information are available within the article.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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Declared none.

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