The state-trait anxiety level in nursing students

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ABSTRACT

During the training of nursing students, anxiety has emerged as a significant concern, impeding their academic progress and leading to a substantial increase in anxiety levels. The clinical field, where students undertake their practical experiences, introduces negative stressors that further exacerbate anxiety. This research adopts a quantitative approach, utilizing a non-experimental, descriptive, and cross-sectional design. The study encompasses a population of 150 nursing students from diverse universities across various regions in Peru. The study's focus lies on examining anxiety levels among nursing students in different universities and regions of Peru. Among the 150 participants, the results reveal that 40.7% experienced low state anxiety, while 59.3% displayed a moderate level of state anxiety. Similarly, in terms of trait anxiety, 58.7% of the students exhibited low levels, 34.0% displayed a moderate degree, and 7.3% presented high trait anxiety. In light of these findings, it is evident that effective curricular planning strategies should be developed to address anxiety-related challenges faced by nursing students. Additionally, implementing counseling services and tailored programs that equip students with coping mechanisms for both academic and clinical stressors are deemed crucial. These initiatives are expected to positively influence students' overall well-being and academic performance in the nursing field.

1. Introduction

The issue of anxiety levels among nursing students during their academic training has garnered increasing concern (Vural et al., 2019). This anxiety hinders their ability to perform optimally, leading to academic stagnation, and contributes to the escalation of anxiety levels (Plaiti et al., 2016; Alshammari, 2019). Although anxiety is found to be relatively scarce in the clinical setting among nursing students (Kenny et al., 2020), situations in unfamiliar environments can trigger stressors that negatively impact students, ultimately resulting in heightened anxiety levels (Castillo Pimienta et al., 2016; Simpson and Sawatzky, 2020).

Furthermore, the nature of clinical practices exposes nursing students to varying levels of anxiety (Turner and McCarthy, 2017), as they care for hospitalized patients in different stages of illness, which may induce fluctuations in anxiety levels

based on the individual students' personalities (Sancar et al., 2018). Notably, anxiety levels among nursing students tend to surpass those of students in other fields due to the demanding nature of nursing programs, courses, and clinical practices, which subject students to intense pressure as they progress, leading to decreased academic performance, stress, and exhaustion during clinical training (Chaves et al., 2015; Wedgeworth, 2016; Sakellari et al., 2020).

The significance of this research topic lies in its addressing of the challenge faced by nursing students. It aims to equip them with strategies to maintain balanced mental health and alleviate anxiety symptoms. By doing so, the well-being of both their physical and mental health can be safeguarded, enabling students to function effectively in both academic and clinical settings.

2. Literature review

In the research study conducted in Poland, the data gathered from the state-trait anxiety questionnaire revealed a substantial level of state anxiety in 51.19% of the participants and trait anxiety in 32.14%. Regarding gender differences, 47.62% of female participants exhibited higher state

anxiety compared to 61.9% of males. Similarly, in trait anxiety, 31.75% of females and only 3.33% of males demonstrated elevated levels of anxiety (Gerreth et al., 2019).

In a separate research endeavor conducted in Brazil, 609 university students participated, and the findings indicated that a significant majority of them, 92.9%, experienced high levels of state anxiety, while 91.5% displayed high levels of trait anxiety. Based on these results, it was concluded that as students progressed in their academic pursuits, they tended to manifest symptoms of anxiety (Gerreth et al., 2019).

These research outcomes shed light on the prevalence of anxiety among students in Poland and Brazil, underscoring the importance of understanding and addressing anxiety-related concerns in academic settings (Chaves et al., 2015).

3. Methodology

This section of the study outlines the research type, design, population, sample, inclusion and exclusion criteria, and the data collection technique and instrument.

The present study adopts a quantitative approach, employing a non-experimental, descriptive, and cross-sectional design (Meneses-Claudio et al., 2020). The target population comprises nursing students nationwide, totaling 150 participants. The research includes nursing students from the III semester to the X semester, while those from the I semester to the II semester are excluded.

Data collection was accomplished through a survey employing the State-Trait Anxiety Inventory (STAI) questionnaire, designed to assess anxiety levels among nursing students across the country. The STAI consists of 40 items, divided into two subscales: anxiety as a state (S) and anxiety as a trait (T). The items are measured on a 4-point Likert scale, ranging from 1 to 4. For the anxiety as a state (S) subscale, scores are rated from "not at all" (1) to "a lot" (4). For the anxiety as a trait (T) subscale, scores are rated from "never" (1) to "almost always" (4). The total score for each subscale can range from 20 to 80, with higher scores indicating higher anxiety levels.

Specific items are reversed to determine low anxiety levels, with items 1, 2, 5, 8, 10, 11, 15, 16, 19, and 20 considered for the anxiety as state (S) subscale, and items 21, 23, 26, 27, 30, 33, 34, 36, and 39 for the anxiety as a trait (T) subscale (Islam et al., 2020). Scores falling within 20 to 39 are considered low anxiety, 40 to 59 indicate medium anxiety, and 60 to 80 suggest high anxiety.

The virtual survey was conducted at various universities in different regions of Peru to assess anxiety levels in nursing students on a national scale. Collaboration was sought from nursing students at Universidad de Ciencias y Humanidades, Universidad San Agustin de Arequipa, Universidad Nacional de Cajamarca, Universidad Nacional de Ucayali, Universidad Nacional de la Amazonia Peruana, Universidad Nacional San Antonio Abad del Cusco, Universidad San Martin de Porres, Universidad Privada Antonio Guillermo Urrelo, and Universidad Cesar Vallejo. However, limitations were encountered in the recruitment process, as not all nursing students were available to participate in the study.

It is essential to recognize the pivotal role of nursing professionals in nurturing the intellectual and practical capabilities of nursing students, facilitating their effective performance in clinical practices, and equipping them with coping skills to manage stress and anxiety-related situations effectively.

4. Results

Table 1 presents a comprehensive overview of the surveys conducted in accordance with the prescribed guidelines for this research endeavor. It displays the total anxiety levels experienced by the study participants, consisting of 150 nursing students. Among these participants, 40.7% exhibited low state anxiety, while 59.3% manifested a medium state anxiety. Table 2 showcases the overall anxiety as a trait among the study participants, also comprising 150 nursing students. Of these students, 58.7% displayed low trait anxiety, 34.0% presented medium trait anxiety, and 7.3% indicated a high level of trait anxiety.

Table 1: Anxiety as a state in nursing students at the national level, 2020

		Frequency	Percentage	Valid percentage	Accumulated percentage
	Low	61	40.7	40.7	40.7
Valid	Medium	89	59.3	59.3	100.0
	Total	150	100.0	100.0	

Table 2: Anxiety trait in nursing students nationally, 2020

		Frequency	Percentage	Valid percentage	Accumulated percentage
	Low	88	58.7	58.7	58.7
Valid	Medium	51	34.0	34.0	92.7
	High	11	7.3	7.3	100.0
	Total	150	100.0	100.0	

Table 3 provides a comparative analysis of the state anxiety levels among nursing students from various participating universities. Specifically, the data indicates the distribution of students exhibiting

low and medium state anxiety at each respective institution.

At "Universidad César Vallejo," 50.0% of the nursing students displayed low state anxiety, while

the remaining 50.0% showed medium state anxiety. Similarly, at "Universidad de Ciencias y Humanidades," 48.6% of students presented low state anxiety, and 51.4% exhibited medium state anxiety. Moving on to "Universidad Nacional de Cajamarca," 42.9% of students demonstrated low state anxiety, and 57.1% displayed medium state anxiety.

Among the nursing students at "Universidad Nacional de la Amazonía Peruana," 40.0% showed low state anxiety, while 60.0% indicated medium state anxiety. At "Universidad Nacional de San Agustín," 16.7% of students presented low state anxiety, and 83.3% had medium state anxiety. Meanwhile, at "Universidad Nacional de Ucayali,"

58.3% of students exhibited low state anxiety, and 41.7% displayed medium state anxiety.

Furthermore, among students at "Universidad Nacional San Antonio Abad del Cusco," 36.4% experienced low state anxiety, and 63.6% presented medium state anxiety. At "Universidad Privada Antonio Guillermo Urrelo," 28.6% of students showed low state anxiety, and 71.4% had medium state anxiety. Lastly, at "Universidad San Martín de Porres," 45.5% of students demonstrated low state anxiety, while 54.5% displayed medium state anxiety.

These findings offer valuable insights into the variation of state anxiety levels among nursing students across different academic institutions.

Table 3: Comparison of anxiety state of different universities at the national level, 2020

| | | Total anxiety state | | Total |
		Low	Medium	
Universidad César Vallejo	Count	6	6	12
	% in the university	50.0%	50.0%	100.0%
Universidad de Ciencias y Humanidades	Count	17	18	35
	% in the university	48.6%	51.4%	100.0%
Universidad Nacional de Cajamarca	Count	12	16	28
	% in the university	42.9%	57.1%	100.0%
Universidad Nacional de la Amazonía Peruana	Count	4	6	10
	% in the university	40.0%	60.0%	100.0%
Universidad Nacional de San Agustín	Count	4	20	24
	% in the university	16.7%	83.3%	100.0%
Universidad Nacional de Ucayali	Count	7	5	12
	% in the university	58.3%	41.7%	100.0%
Universidad Nacional San Antonio Abad Del Cusco	Count	4	7	11
	% in the university	36.4%	63.6%	100.0%
Universidad Privada Antonio Guillermo Urrelo	Count	2	5	7
	% in the university	28.6%	71.4%	100.0%
Universidad San Martín de Porres	Count	5	6	11
	% in the university	45.5%	54.5%	100.0%
Total	Count	61	89	150
	% in the university	40.7%	59.3%	100.0%

Table 4 presents a comprehensive comparison of trait anxiety levels among nursing students from different participating universities. The data reveals the distribution of students with low, medium, and high trait anxiety at each respective institution.

At "Universidad César Vallejo," 75.0% of nursing students displayed low trait anxiety, while 8.3% exhibited medium trait anxiety, and 16.7% presented high trait anxiety. Similarly, at "Universidad de Ciencias y Humanidades," 71.4% of students showed low trait anxiety, 25.7% had medium trait anxiety, and 2.9% experienced high trait anxiety. Moving on to "Universidad Nacional de Cajamarca," 67.9% of students demonstrated low trait anxiety, 28.6% displayed medium trait anxiety, and 3.6% presented high trait anxiety. Among the nursing students at "Universidad Nacional de la Amazonia Peruana," 50.0% exhibited low trait anxiety, and the other 50.0% presented medium trait anxiety. At "Universidad Nacional San Agustín," 20.8% of students displayed low trait anxiety, 66.7% experienced medium trait anxiety, and 12.5% manifested high trait anxiety. Furthermore, at "Universidad Nacional de Ucayali," 91.7% of students showed low trait anxiety, and 8.3% displayed medium trait anxiety. Additionally, among students at "Universidad Nacional San Antonio Abad

Del Cusco," 45.5% exhibited low trait anxiety, 45.5% had medium trait anxiety, and 9.1% presented high trait anxiety. At "Universidad Privada Antonio Guillermo Urrelo," 57.1% of students demonstrated low trait anxiety, and 42.9% presented medium trait anxiety. Lastly, at "Universidad San Martín de Porres," 45.5% of students displayed low trait anxiety, 27.3% experienced medium trait anxiety, and 27.3% presented high trait anxiety.

These findings offer valuable insights into the variation of trait anxiety levels among nursing students across different academic institutions.

Table 5 provides a detailed breakdown of state anxiety levels in relation to the different semesters of the study. The data reveals the percentage of students experiencing low and medium state anxiety in each academic term.

In the third semester, 20.0% of students displayed low state anxiety, while 80.0% exhibited medium state anxiety. Moving on to the fourth semester, 22.2% presented low state anxiety, and 77.8% manifested medium state anxiety. In the fifth semester, 35.1% of students experienced low state anxiety, and 64.9% displayed medium state anxiety. Similarly, in the sixth semester, 62.5% showed low state anxiety, and 37.5% demonstrated medium state anxiety.

Table 4: Comparison of trait anxiety of different universities nationally, 2020

		Total trait anxiety			Total
		Low	Medium	High	
Universidad César Vallejo	Count	9	1	2	12
	% in the university	75.0%	8.3%	16.7%	100.0%
Universidad de Ciencias y Humanidades	Count	25	9	1	35
	% in the university	71.4%	25.7%	2.9%	100.0%
Universidad Nacional de Cajamarca	Count	19	8	1	28
	% in the university	67.9%	28.6%	3.6%	100.0%
Universidad Nacional de la Amazonía Peruana	Count	5	5	0	10
	% in the university	50.0%	50.0%	0.0%	100.0%
Universidad Nacional de San Agustín	Count	5	16	3	24
	% in the university	20.8%	66.7%	12.5%	100.0%
Universidad Nacional de Ucayali	Count	11	1	0	12
	% in the university	91.7%	8.3%	0.0%	100.0%
Universidad Nacional San Antonio Abad Del Cusco	Count	5	5	1	11
	% in the university	45.5%	45.5%	9.1%	100.0%
Universidad Privada Antonio Guillermo Urrelo	Count	4	3	0	7
	% in the university	57.1%	42.9%	0.0%	100.0%
Universidad San Martín de Porres	Count	5	3	3	11
	% in the university	45.5%	27.3%	27.3%	100.0%
Total	Count	88	51	11	150
	% in the university	58.7%	34.0%	7.3%	100.0%

Upon reaching the seventh semester, 43.2% of students exhibited low state anxiety, while 56.8% presented medium state anxiety. In the eighth semester, 62.5% displayed low state anxiety, and 37.5% manifested medium state anxiety. Moving forward to the ninth semester, 22.7% experienced low state anxiety, and 77.3% demonstrated medium state anxiety. Finally, in the tenth semester, 66.7% of students showed low state anxiety, and 33.3% presented medium state anxiety.

These findings illustrate the variation in state anxiety levels among nursing students across different academic semesters, shedding light on the potential impact of academic progress on anxiety manifestations.

Table 5: State anxiety regarding study semester

		Total state anxiety		Total
		Low	Medium	
Third semester	Count	1	4	5
	% in semester	20.0%	80.0%	100.0%
Fourth semester	Count	2	7	9
	% in semester	22.2%	77.8%	100.0%
Ninth semester	Count	5	17	22
	% in semester	22.7%	77.3%	100.0%
Fifth semester	Count	13	24	37
	% in semester	35.1%	64.9%	100.0%
Sixth semester	Count	10	6	16
	% in semester	62.5%	37.5%	100.0%
Seventh semester	Count	19	25	44
	% in semester	43.2%	56.8%	100.0%
Eighth semester	Count	5	3	8
	% in semester	62.5%	37.5%	100.0%
Tenth semester	Count	6	3	9
	% in semester	66.7%	33.3%	100.0%
Total	Count	61	89	150
	% in semester	40.7%	59.3%	100.0%

Table 6 provides a comprehensive examination of trait anxiety levels concerning the different semesters in the study. The data highlights the percentages of students with low, medium, and high trait anxiety across various academic terms.

In the "third semester," 80.0% of students displayed low trait anxiety, while 20.0% exhibited high trait anxiety. Moving to the "fourth semester," 66.7% had low trait anxiety, and 33.3% manifested medium trait anxiety. In the "fifth semester," 43.2% experienced low trait anxiety, 45.9% displayed medium trait anxiety, and 10.8% showed high trait anxiety. Similarly, in the "sixth semester," 56.3% demonstrated low trait anxiety, 25.0% had medium trait anxiety, and 18.8% presented high trait anxiety. Proceeding to the "seventh semester," 65.9% exhibited low trait anxiety, 31.8% showed medium trait anxiety, and 2.3% displayed high trait anxiety. In the "eighth semester," 62.5% displayed low trait anxiety, and 37.5% had medium trait anxiety. In the "ninth semester," 68.2% exhibited low trait anxiety, and 31.8% displayed medium trait anxiety. Finally, in the "tenth semester," 44.4% presented low trait anxiety, 33.3% had medium trait anxiety, and 22.2% showed high trait anxiety.

This study holds significant importance as it presents original findings relevant to the promotion of mental health among nursing students. With anxiety being a pertinent factor, the research sheds light on students' ability to develop coping skills and maintain balanced mental well-being.

Table 6: Trait anxiety regarding the semester of study

		Total trait anxiety			Total
		Low	Medium	High	
Third semester	Count	4	0	1	5
	% in semester	80.0%	0.0%	20.0%	100.0%
Fourth semester	Count	6	3	0	9
	% in semester	66.7%	33.3%	0.0%	100.0%
Ninth semester	Count	15	7	0	22
	% in semester	68.2%	31.8%	0.0%	100.0%
Fifth semester	Count	16	17	4	37
	% in semester	43.2%	45.9%	10.8%	100.0%
Sixth semester	Count	9	4	3	16
	% in semester	56.3%	25.0%	18.8%	100.0%
Seventh semester	Count	29	14	1	44
	% in semester	65.9%	31.8%	2.3%	100.0%
Eighth semester	Count	5	3	0	8
	% in semester	62.5%	37.5%	0.0%	100.0%
Tenth semester	Count	4	3	2	9
	% in semester	44.4%	33.3%	22.2%	100.0%
Total	Count	88	51	11	150
	% in semester	58.7%	34.0%	7.3%	100.0%

5. Discussion

The study investigates the issue of anxiety among nursing students with a focus on promoting mental health. It aims to contribute to the development of programs that benefit students by enhancing their coping capabilities in situations involving stressors that generate anxiety, both in the clinical and academic domains, as they progress through their semesters of study.

The research findings shed light on the role of nursing students in their academic training and their specific study semester, particularly concerning the challenges they face in both clinical and academic environments. During their clinical training, students encounter stressors that hinder their ability to perform optimally and effectively, particularly during clinical practices. Factors such as unfamiliar clinical settings, caring for patients for the first time, and the workload associated with being a practitioner contribute to the generation of anxiety in students.

For instance, Alshammari (2019) highlighted that in the latter years of their clinical training, students experience increased burdens due to hospital affiliations and the completion of specific clinical hours. Additionally, Sancar et al. (2018) reported that during their final year of internship, students faced the challenge of providing care for terminally ill patients, leading to elevated stress, anxiety, and concern, ultimately impacting their mental health.

Furthermore, academic factors also contribute to anxiety among nursing students. Academic overload, time constraints for fulfilling academic obligations, and the demands of exams, especially in relation to extensive pre-clinical theoretical content, lead to students experiencing anxiety. Wedgeworth (2016) highlighted that nursing students often face anxiety disorders due to the intense academic competition to gain admission into nursing programs, as well as the rigor of nursing courses, including pharmacology. This situation compels nursing students to strive for academic success to achieve their future career aspirations. Similarly, Turner and McCarthy's (2017) systematic review emphasized that undergraduate nursing students encounter stressors related to curriculum development, necessitating the enhancement of coping skills to mitigate anxiety-generating factors.

However, the study faced limitations in terms of access to the students for conducting surveys, necessitating coordination with semester delegates to carry out the research effectively.

In conclusion, the study underscores the significance of addressing anxiety among nursing students to promote their mental well-being and equip them with effective coping mechanisms in both clinical and academic settings.

6. Conclusion

In conclusion, this study highlights the importance of seeking students' curricular planning strategies and implementing counseling and programs to equip nursing students with coping skills for managing stressful situations at both clinical and academic levels. Clinical nursing educators play a crucial role in preventing and controlling nursing students' anxiety in the clinical environment, necessitating the exploration of effective strategies to help students adapt to conflict situations.

Moreover, the findings indicate that the academic formation of students is adversely affected by non-academic factors, particularly socioeconomic factors, which have significantly impacted their academic journey. This has led to stress and academic overload among students.

The information obtained in this study presents a significant challenge for the nursing profession, both in academia and practical settings, to address the issues of stress and academic burden effectively. To tackle these challenges, the implementation of workshops focused on teaching students relaxation techniques and engaging in physical activities is deemed necessary. These workshops can prove instrumental in enhancing students' ability to cope with stressful situations and improve their overall quality of life. As the nursing career advances,

addressing these aspects will be critical in nurturing well-rounded and resilient nursing professionals.

Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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