

## Anxiety among male nursing students in a Saudi University

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### ABSTRACT

Anxiety and eventually depression are primary concerns in the academic life of students. When ignored, this anxiety may subsequently lead to more serious mental health problems that could imperil the educational experience of the students and worst making them unable to finish their studies. Objectives: This study determined the anxiety perceived by male nursing students using the State-Trait Anxiety Inventory or STAI scale when compared to their profile variables such as year level, units enrolled, student status, history of traumatic experience and presence of an academic problem. Methods: A cross-sectional design was utilized using the STAI scale as survey instrument among male nursing students (n=100) at a Saudi University. Results: It showed that regarding year level, student status and presence of an academic problem, they are significantly correlated whereas, for units enrolled in a semester and history of traumatic experience, no correlation exist. Discussions: The STAI scale determined the 'present state' of anxiety term as 'state anxiety' as well as 'the response to anxiety' in the future termed as 'trait' anxiety.' Both the 'state' and 'trait' anxiety of the participants, when compared to their profile variables, are diverse showing that their response to anxiety at present may vary in the future. Conclusion: Individual reactions to anxiety are unique to each of the participant, and the academic environment of the students influences their responses and coping.

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### 1. Introduction

Anxiety and eventually depression are primary concerns in the academic life of students. These problems when ignored can lead to more serious mental illness. These disturbances in the life of students may affect their performance in school and yet its impact is not well understood until today (Zhang et al., 2018). A higher level of stress and anxiety is seen among health professionals such as doctors and nurses compared with other professions. This uncontrolled and unmanaged anxiety may lead to more serious mental health problems. This is a result of a study conducted among students in medicine, nursing, dentistry, and speech therapy in Sarajevo, Bosnia and Herzegovina (Racic et al., 2017).

Nursing students are not only exposed and trained within the four walls of the classroom. As part of the curriculum, they are required to

accumulate duty hours in hospitals, another domain that could cause more anxiety to them in many ways. Related learning experiences on clinical setting can be a source of anxiety. Villeneuve et al. (2018) determined the relationship between students profile such as gender among other to their perceived anxiety whole in the clinical tour of their duties (Villeneuve et al., 2018).

Clinical learning experiences are essential in nursing education, but they are often anxiety provoking for learners. Understanding the factors associated with the anxiety levels of nursing students in clinical placements has become more complex over the years with increasing heterogeneity within the nursing population.

Published studies in different countries focused on the risk factors and other associated factors of anxiety to students' academic performance during their nursing course studies (Malak and Khalifeh, 2018; Luo et al., 2018; Alshahrani et al., 2018; Carey et al., 2018). However, there is only one study that focused on male nursing students' experience of anxiety during their BS Nursing course. It was a study published in 1989 at Kamuzu College of Nursing in Malawi. No studies specific to anxiety on male nursing students as the main participants ever published since this time more than 20 years thus a study of the same focus and participants is therefore

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timely and relevant to determine any change or development on this issue.

Several proposed methods were published to enhance the nursing students' readiness in alleviating anxiety during their nursing years. Simulation is an effective method of reducing students' anxiety during their nursing undergraduate program. It is useful in enhancing the knowledge and competencies of the students despite having some anxiety problems (Vandyk et al., 2018). Another study determined mindfulness as an alternative method in managing anxiety. The study found that there is a definite benefit when students engage in mindfulness meditation programs while having some issues counteracting anxiety, depression, burnout and other related problems that may interfere with their studies (van der Riet et al., 2018).

Over the years, the number of males entering the nursing profession has increased dramatically but still, its percentage compared to female nurses is not even a quarter of all nurses in the world. With this fact known, male nurses and nursing student's profiles on many aspects including perceived anxiety, fears, frustrations towards their career and even social issues they are involved in still is less explored (Ndou and Moloko-Phiri, 2018).

With all the issues mentioned and studies that show the negative impact of anxiety that may lead to depression among students, there is, therefore, a need to determine a solution. Tung et al. (2018) provided updated demographics and factors on the rising prevalence of depression among students. The group suggested that nursing schools must do something to alleviate it if cannot entirely give a long lasting solution to this problem. They indicated that educational reforms must focus on providing programs that will help students combat their anxiety and fears thus making the learning experience one that is effective and relevant (Tung et al., 2018).

## 2. Methods

### 2.1. Aim

The study aims are a) to determine the profile variables of the students that are related to their experience of anxiety; b) to know the state of anxiety of the male nursing students as reflected in their responses to the STAI questionnaire; and c) the degree of relationship of the students' perceived anxiety when measured based on their profiles.

### 2.2. Method

This study utilized a cross-sectional design with the use of a survey tool. At the start of data gathering, 150 questionnaires were distributed with a return of 110. After checking the questionnaires and the responses for completeness and accuracy,

100 questionnaires were considered for the final tabulation and analysis.

### 2.3. Sampling

Convenience sampling was used for this study. The students' schedules were first determined, and questionnaires were distributed after their classes. An ample time was given to them to fill up the questionnaires. Questions and clarifications were answered so not to affect the reliable outcomes. This was done during the second semester of the academic year 2017-2018 from March to May 2018.

### 2.4. The Participants

Data were procured from the male nursing students of the College of Nursing at the University of Ha'il, Saudi Arabia. The eligibility criteria set for this study are that the participants should be a) bonafide nursing students either in the second, third, fourth or fifth year level; b) male student enrolled in the main campus of the University of Ha'il and c) enrolled during the 2nd semester of academic year 2017-2018 with specific academic load for the semester. The students are considered enrolled in the nursing course during their second year since during the first year is classified as general education curriculum where no nursing subjects or courses are offered yet and students are not considered enrolled in the nursing program. Further, the fifth year level students are classified as 'interns' where they spend the whole academic year equivalent to two semesters in the affiliating hospitals rendering actual nursing functions with the supervision of the clinical instructors. They no longer attend the usual classes in the University. However, they are still considered enrolled in the BSN program and not classified as 'graduates.'

### 2.5. Locale

The University of Ha'il is a state funded university in the province of Ha'il situated in the capital city called Ha'il city which is 592 km. north of Riyadh, Kingdom of Saudi Arabia. The nursing program of the University was established in 2010 with the Male College situated in the main university campus and the female college located in the Aja campus and has satellite campuses in the villages of Shanan and Hayat in Ha'il province.

### 2.6. The tool

The instrument used in this study is the State-Trait Anxiety Inventory for Adults or the STAI developed by O'Roark et al. (2014). The form Y1 of the questionnaire has 20 items, and another 20 items for the Y2 form and the two forms are numbered continuously from 1 to 40. The Y1 form is called the 'State Anxiety' form that determines the present state of anxiety of the participants at the

time of data gathering while the Y2 form is the 'Trait Anxiety' form that measures the relative proneness of a person towards anxiety when faced with a stressful or dangerous situation. The STAI forms Y1 and Y2 assesses the present feeling of apprehension, tension, nervousness, and worry of the person answering the questionnaire as well it also determines responses to anxiety in the future (Zhang and Gao, 2012; Guillen-Riquelme and Buela-Casal, 2011).

The tool was primarily designed to measure the state of anxiety among military recruits, high school, and college students thus making it fit for use in this study. Each item of the 20 item questionnaire has a given weight of 1 to 4 where a rating of 4 indicates a high level of anxiety. The score for each the questionnaire may vary from a minimum of 20 to a maximum of 80. In administering the STAI, the S-Anxiety (Y1 form) should be answered first followed by the T-Anxiety (Y2 form). Each of these forms has 20-items. For S-Anxiety, it describes the intensity of the feelings of the participants and they will choose from (1) not at all; (2) somewhat; (3) moderately so; (4) very much so; and to answer the T-Anxiety (Y2 form), the choices are (1) almost never; (2) sometimes; (3) often; (4) almost always. The T-Anxiety, on the other hand, determines how participants generally feel by rating the frequency of their feelings on anxiety (Hodapp, 1989; Perpina-Galvan et al., 2013).

All the 20 items in each of the forms have above 0.90 alpha coefficients using the KR-20 scale by Cronbach (1951) when used for working adults and 0.93 alpha coefficient when used among military recruits. When it was administered to a group of male college students, the alpha coefficient is much higher at 0.94 making this tool relevant and specifically appropriate for this group of participants as for this study (Guillen-Riquelme and Buela-Casal, 2011).

To determine the score for the S Anxiety (State of Anxiety) and T Anxiety (Trait Anxiety) of the participants in the scale, the scores should be summed up to obtain the weighted mean for the 20-items in the Y1 Form (State Anxiety Form) and 20-items in the Y2 Form (Trait Anxiety Form). The scores for both forms can be anywhere between the range of 20 (the minimum possible score) to a maximum score of 80 (Guillen-Riquelme and Buela-Casal, 2011).

## 2.7. Ethical approval

The University Ethics Committee of the University of Ha'il approved the conduct of the study with Ethical Approval Number H-2016-044 series of 2017 during the committee meeting dated March 21, 2017.

## 2.8. Analysis of data

To analyze the data from the participants' responses, the SPSS 22.0 version was utilized.

Descriptive statistics such as frequency and percentage distribution were used to determine the distribution for the profile variables of the participants and to answer the second question which is the state of anxiety level of the participants using the STAI questionnaire, mean and standard deviations were used to illustrate the results. For the inferential statistics to analyze the correlation between the profile of the participants and their responses to the 40-item (20 for Y1 form and 20 for Y2 form) STAI questionnaire, Spearman's rho was used for the profile variables year level and units enrolled while Mann Whitney U test for the students' status, history of traumatic event and presence of an academic problem. The determination of the degree of correlation was set at 0.05 level of significance.

## 3. Results and discussion

### 3.1. Results

A total of 100 participants were included in the study and their responses and demographic profiles were tabulated and measured (Table 1). Table 2 shows the profile variables of the 100 participants. These variables are year level, student status, units enrolled, history of traumatic event and presence of academic problems. For the profile year level, most of the students are in the 4th year level with 41% followed by the 5th year level at 27%; then 3rd and 4th year levels at 25% and 7% respectively. It is revealed as well that most of the students who participated in the study are classified as bridging with 58% and regular 42%. In terms of the units enrolled, 86% of the participants have enrolled more than 10 units while a small percentage of 14% of them enrolled less than 10 units. One important variable included is a history of a traumatic event which shows that 29% of the participants had an experience of a traumatic event while 71% of them never had any experience. For the last variable which is the presence of academic problems, 15% of them stated that they do have academic problems while 85% responded not having the said problem.

Tables 3 and 4 presents the degree of correlation between the responses of the participants to the STAI questionnaire and their profile variable. The statistical test Spearman's rho was used for the profile variables year level and units enrolled while Mann Whitney U Test for the profile variables student status, history of traumatic experience and presence of an academic problem.

For the year level, the Spearman's rho result shows 0.219 and units enrolled at 0.120 with the p-value of 0.029 for year level and 0.234 for units enrolled. There is a significant correlation between year level and the items in the STAI while it is not significant for units enrolled. The students who are classified as 'bridging' has the most number of participants that were surveyed at 58 of 100 while 42 are 'regular' students. It shows that there is a significant correlation between 'student status' to their responses to their level of anxiety reflected in

their responses to the STAI. In terms of the profile variable history of a traumatic event, 29 of the 100 participants stated 'yes' they experienced a traumatic event in their life while 71 of them responded 'no'. Therefore, there is no significant correlation between having traumatic life experience and the present level of anxiety of the participants.

For the profile variable 'presence of academic-related problem' 15 of the 100 participants are experiencing an academic-related problem while a vast majority which is 85 of the 100 participants have no academic related problem. This relates, therefore, to have a significant correlation to their responses to the STAI items (Tables 4 and 5).

**Table 1:** Participants' responses in the 40-item STAI questionnaire

	Statements	Not at all	Somewhat	Moderately So	Very Much So	Total	
STAI Form Y1	1. I feel calm	9	20	38	33	100	
	2. I feel secure	6	10	34	50	100	
	3. I am tense		49	17	6	100	
	4. I feel strained	37	49	8	6	100	
	5. I feel ease	9	26	37	28	100	
	6. I feel upset	44	42	17	12	100	
	7. I am presently worrying over possible misfortune	44	27	17	12	100	
	9. I feel satisfied	9	20	27	44	100	
	10. I feel frightened	11	15	39	35	100	
	11. I feel comfortable	9	17	50	24	100	
	12. I feel self-confident	47	20	38	33	100	
	13. I feel nervous	48	36	10	6	100	
	14. I feel indecisive	36	37	25	2	100	
	15. I am relaxed	13	31	39	17	100	
	16. I feel content	10	30	42	18	100	
	17. I am worried	49	34	16	1	100	
	18. I feel confused	42	28	23	7	100	
	19. I feel steady	6	28	35	31	100	
	STAI Form Y2	20. I feel pleasant	6	33	35	26	100
		21. I feel pleasant	7	22	42	29	100
22. I feel nervous and restless		31	37	25	7	100	
23. I feel satisfied with myself		6	15	41	38	100	
24. I wish I could be as happy as others seem to be		6	26	36	32	100	
25. I feel like a failure		61	17	16	6	100	
26. I feel rested		3	19	41	37	100	
27. I am 'calm, cool and collected'		10	32	34	24	100	
28. I feel that difficulties are piling up so that I cannot overcome them		37	35	18	10	100	
29. I worry too much over something that really doesn't matter		33	44	17	6	100	
30. I am happy		8	23	33	36	100	
31. I have disturbing thoughts		49	33	15	3	100	
32. I lack self-confidence		64	25	1	10	100	
33. I feel secure		8	19	25	48	100	
34. I make decisions easily		5	39	37	19	100	
35. I feel inadequate		60	22	5	13	100	
36. I am content		12	34	40	14	100	
37. Some unimportant thought runs through my mind and bothers me		31	37	29	3	100	
38. I take disappointments so keenly that I can't put them out of my mind		49	34	12	5	100	
39. I am a steady person		3	30	39	28	100	
40. I get in a state of tension or turmoil as I think over my recent concerns and interest	35	42	16	7	100		

### 3.2. Discussion

Anxiety among college students, in general, follows an increasing pattern of incidence. A study conducted in Jordan among college students experience of anxiety and depression was found to be high and yet the students are not aware of the resources available in the school and community where to get help from. The study purported the role of nurses in promoting awareness to the students on how to effectively manage the anxiety they experiences and if indicated, provide counseling either one-to-one or as a group (Malak and Khalifeh, 2018). Several other studies saw the growing need

for early detection of anxiety among students in order to address it at its early onset before the worst impact to the students sets in (Mortimer-Jones et al. (2018).

Year level. As students go higher in the enrolled Nursing degree, the academic challenges and demands are increasing as well. Various studies show that the subjects with the corresponding unit may be the same but the rigor of the subjects are more complex, wide and technical thus making the demand for more time, focus and competencies required much higher (Fernandes et al., 2018; Hamaideh and Hamdan-Mansour, 2014; Mahmoud et al., 2012). Year level may not be a significant factor

as far as the anxiety experience is a concern. One example is on patient care wherein students in the third and fourth-year levels make no difference in

terms of anxiety perceived while providing care to their patients who are in the terminal stage of their illness (Sancar et al., 2018).

**Table 2:** Demographic profile of the participants (n=100)

Demographic Profiles	Frequency	Percentage	
YEAR LEVEL	2nd	7	7.0
	3rd	25	25.0
	4th	41	41.0
	5th	27	27.0
	Total	100	100.0
STUDENT STATUS	Regular	42	42.0
	Bridging	58	58.0
	Total	100	100.0
UNITS ENROLLED	less than 10	14	14.0
	more than 10	86	86.0
	Total	100	100.0
HISTORY OF TRAUMATIC EVENT	Yes	29	29.0
	No	71	71.0
	Total	100	100.0
PRESENCE OF ACADEMIC RELATED PROBLEM	Yes	15	15.0
	No	85	85.0
	Total	100	100.0

**Table 3:** Correlation between anxiety score and selected profile variable

Profile	n	Mean rank	Statistical Test Spearman's rho	P value	Interpretation
Year level			0.219	0.029*	Significant
Units enrolled			0.120	0.234	Not Significant
Student Status			Mann Whitney U Test 932.500	0.46	Significant
	Regular	42			
Bridging	58	45.58			
History of Traumatic Event			848.000	0.167	Not Significant
	Yes	29			
No	71	47.94			
Presence of Academic Problem			280.500	0.001	Significant
	Yes	15			
No	85	46.30			

\* Significant at 0.05 level

**Table 4:** The level of anxiety of the male nursing students as determined by the STAI

	N	Minimum	Maximum	Mean	Standard Deviation
S* and T* Score	100	22	57	40.07	8.317

\*S State Anxiety; \*T Trait Anxiety

**Table 5:** S-anxiety and t-anxiety score of the participants

	Statistic	Std. Error
Mean	40.07	.832
95% Confidence Interval for Mean	Lower Bound	38.42
	Upper Bound	41.72
5% Trimmed Mean	40.10	
Median	40.00	
Variance	69.177	
Std. Deviation	8.317	
Minimum	22	
Maximum	57	
Range	35	
Interquartile Range	14	
Skewness	-.133	.241
Kurtosis	-.914	.478

At the University of Castilla-La-Mancha in Spain, two groups of students from different year levels were compared to determine their anxiety level before and after they perform a medical procedure such as cadaver dissection. Prior to the research, an educational program was conducted to both groups to determine its impact on their perceived anxiety during the test. The results showed that the anxiety and fearful reactions of the participants dropped dramatically (p-value>0.05) while there was a significant change in their feeling of a doubt. The

final years of nursing education create more burden to the students as reflected in the survey of this study with significant results. At the University of Ha'il, College of Nursing, the fifth year is considered as the internship year where students will have the full year assigned in the affiliated hospital and complete a certain number of clinical hours. Shahsavari et al. (2017) suggested that before students enter the internship year, a refresher course should be implemented first. In their study, it proved that having them undergo a refresher course

will make the internship clinical rotation more effective and efficient since the refresher program allow them to review the theoretical concepts previously taught to them thus they will become more familiarized with the learned theories and concepts (Shahsavari et al., 2017).

Units enrolled in students with more enrolled units have been proven to experience more anxiety compared with those who enrolled less units. The prevalence of anxiety and depression was higher among those who have subjects or course beyond 3 (subjects or courses) enrolled in a semester with at least 3 units each requiring 1 hour per unit of a subject/course (Abebe et al., 2018; Fernandes et al., 2018; Mazurek Melnyk et al., 2016). A survey conducted between 2009 and 2015 on stress and anxiety among nursing students that targeted three issues that affect the students and these are stressors, coping and appraisal. The interventions in the review conducted revealed that the stressors and the intensity of the occurrence can be managed through integrating the interventions in the curriculum of the students thus enhancing their coping skills (Turner and McCarthy, 2017).

History of traumatic experience. A study in a South African university found a direct correlation between previous traumatic experiences and the present state of anxiety of the participants in the study. The 12-month long investigation showed that 1 in 6 students who have a history of a traumatic experience such as bullying, abuse, neglect and violence shown to be strong predictors of having anxiety and depression in the future. It further shows that adversity and ongoing stress perpetuate the impact of the trauma (Mall et al., 2018).

Disturbances in the psychological well-being of a person brought about by histories of maltreatment also affect the physiological regulation of stressors as observed in a group of individuals with a history of traumatic experiences and were tested for their body's response to stressors. The findings were consistent with the polyvagal theory that demonstrates the role of vagal brake in the autonomic regulation of body defenses against stressors and person's vulnerability to physical and mental health risks (Dale et al., 2018).

Regular and Bridging Status. The students' status can be correlated to either the experience of anxiety or the impact of anxiety on the students' academic performance or general well-being. Abebe et al. (2018) studied a group of enrolled regular students against those who are considered irregular (e.g., bridging students, those with schedule not the same with the regular students, etc.) and assessed the impact of anxiety in them as well as the presence of depression. The results showed that the regular students had higher level of anxiety compared to the non-regular or irregular students. The aim of the study is to determine if unless managed early, stress from academic responsibilities will not result to serious health problems (Abebe et al., 2018).

Presence of Academic Related Problem. One of the most common academic related problems that

lead to profound anxiety among college students are exams and the anticipation of having to take the exam. Test anxiety may lead to poor performance not because the student did not prepare well for the exam but for some reasons, the overwhelming feeling of fear of failure affects their concentration and focus thus affecting their performance in the exam (Custer, 2018). In this aspect, the school nurse has a responsibility to provide intervention and assist faculty members and other employees to help the students cope with it. There must be enough resources to help school nurses assist other school employees to de-escalate the impact of anxiety among students and one way to do this is to create a partnership among community members and school officials (Smith-Fromm and Evans-Agnew, 2017). It was found that anxiety have a direct effect on the sleeping pattern and quality of sleep of nursing students based on a survey conducted to 379 nursing students at a University in Western Anatolia, Turkey between 2014 and 2015 (Gunes and Arslantas, 2017).

In UAE, the presence of academic problems among students leads to frequent episodes of anxiety. The students with persistent anxiety were compared to a group called the non-anxious group or those who reported either no or less frequent experience of anxiety. The results showed that those with persistent anxiety has a high incidence of absenteeism compared to the non-anxious group (Ruz et al., 2018).

#### 4. Conclusion

Several articles written discussing the impact of anxiety among nursing students did not explore the magnitude of severity to them. College students reported several sources of anxiety affecting their academic life. They include but not limited to academic requirements and activities such exams, simulations, clinical rotations, among others and yet less is known on how to effectively manage them at least specific to these sources (Shearer, 2016). Even the most basic and physiologic needs of the students are neglected due to the inability to manage the perceived anxiety such as lack of sleep and skipping meals (Pensuksan et al., 2016).

Gender may not be a significant influence in the occurrence of anxiety. However, male nursing students' perception of anxiety would warrant a deeper understanding of how they deal with this menace in comparison to their female counterpart. It is a known fact that nursing is a female-dominated profession and symbolically a female profession in the earlier time. One study investigated the correlation between gender and the preference of hospitals and their patients to accept nurses based on gender (Chur-Hansen, 2002). It was a quantitative study based on patients' preferences, and it is recommended to conduct the same kind of study using qualitative inquiry to better understand the reasons, preferences, and attitudes of patients towards male nurses.

## Compliance with ethical standards

## Conflict of interest

The authors declare that they have no conflict of interest.

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