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Association between Resilience, Test anxiety and Academic achievement among Undergraduate Nursing Students

Dr. Sahar Mahmoud Sayed Ahmed[1], Asmaa Elsayed Mohamed[2], Dr. Aliaa Mohamed Othman Elafandy[3]

[2] Clinical instructorin the faculty of Nursing at Badr University in Cairo, Egypt.
[13,] Assistant Professor of Community Health Nursing, at the Faculty of Nursing Helwan University, Egypt.

ABSTRACT

Background: Understanding the association between resilience, test anxiety, and academic achievement among undergraduate nursing students is crucial for developing effective interventions and support mechanisms for undergraduate nursing students. **Aim:** To assess the association between resilience, test anxiety, and academic achievement among undergraduate nursing students. **Design:** A descriptive research design was utilized. Setting: This study was conducted at the Faculty of Nursing at Helwan University. **Sample:** A purposive sample of 269 nursing students. **Tools**: Structured interview questionnaire that was divided into 5 parts: **part 1:** Demographic data, **Part 2:** The test anxiety scale, **Part 3:** Resilience scale, **Part 4:** Academic Achievement Factors Questionnaire, and **Part 5:** The knowledge of the exam scale. **Results**: 55% had little resilience, while 1.9% had large resilience toward the exam. Moreover, 81.4% had extremely high anxiety, while 6.3% comfortably had low test anxiety. In addition, 56.1% had low achievement factors, while 9.7% had high achievement factors. **Conclusion:** The majority of Helwan University Undergraduate Nursing Students were comfortably low in test anxiety with low academic achievement and more than half of them had little resilience. Furthermore, the present studies conduct that highly statistically positive correlation between test anxiety, resilience, and academic achievement. **Recommendations:** Social media assisted program for undergraduate nursing students about resilience, test anxiety, and academic achievement.

Introduction

Undergraduate university students face challenges like adaption to new outset and altering the routines and habits of life, also there is a great challenge and demand for success to achieve the highest level of academic achievement which in turn can affect student achievement and lead to a situation of stress, depression, and anxiety. Undergraduate students have a great possibility of developing anxiety during examinations. Anxiety disorders are rising among students. Anxiety disorders are prevalent in all societies. (Simpson & Sawatzky, 2020).

Academic achievement refers to the level of achievement a student attains in their academic pursuits, such as their grades, test scores, and overall academic standing. Academic performance is a complex phenomenon that is influenced by a variety of factors. By understanding these factors and working to address them, students can improve their academic performance and achieve their educational goals. *(National Center for Education Statistics, 2019)*.

Promoting academic achievement among nursing students requires a multifaceted approach that addresses the academic, clinical, mental health, and financial challenges of & Introduction to Nursing Education. It also involves providing resources and support for effective study techniques, time-management skills, and test-taking strategies, as well as creating a supportive and inclusive learning environment (Zhang Li, Li, & Zhang, 2021).

Anxiety is a common phenomenon that constitutes a universal cause of poor academic achievement among students worldwide. It is a common undisputable fact in human life that influences a student's accomplishment in numerous situations, an average level of anxiety is useful in sustaining people's hard work and being responsible for what they have to do. As feeling undesirable and unclear like when a person predicts a dangerous situation. (Ribeiro, Pereira, Freire, et al, 2018).

The relationship between test anxiety and academic achievement is complex and may be influenced by factors such as the type of exam, the subject matter, and the student's level of motivation and preparedness. Test anxiety can cause students to experience cognitive interference; difficulty concentrating and negative self-talk, which can impair their ability to recall and apply knowledge during exams, and avoidance behaviors; skipping class or avoiding studying. Resilience can help students cope with the challenges of test anxiety and enhance their academic performance. (Akin, & Akman, 2021).

Resilience is a crucial factor in promoting the success and well-being of nursing students. As nursing education can be demanding and challenging, developing resilience among students is important to help them cope with the stressors they may encounter. Nursing students with higher levels of resilience are more likely to succeed academically and clinically, and are less likely to experience burnout, stress, and anxiety (Simons & Mawn, 2021).

The relationship between resilience and test anxiety; strategies aimed at enhancing resilience and reducing test anxiety may be beneficial for improving academic performance among this population. It is also worth noting that there may be other factors that mediate or moderate the relationship between resilience, test anxiety, and academic achievement among undergraduate nursing students. The self-efficacy partially mediated the relationship between resilience and academic achievement among nursing students and also moderated the relationship between test anxiety and academic achievement. (Kim, Park, & Kim, 2021) .

Community health nurses can provide health education to undergraduate nursing students, both in the classroom and during clinical experiences. By promoting health literacy and disease prevention, community health nurses can help students develop a deeper understanding of the factors that influence health and wellness, which can enhance their academic performance also prepare them for future nursing practice. (Gao, & Wu, 2020).

Significance of the study:
Most nursing students experience a high level of anxiety during exams even though their marks are good throughout the semester. Nursing students have nearly double the rate for moderately high to high test anxiety in comparison to the general public and high school students. Nursing programs can be viewed as highly stressful settings. (Ribeiro, et al, 2018). The prevalence of test anxiety among nursing students in Egypt was 54.5%, which is higher than the rates reported in some other countries. (Abd El-Halim, & El-Masry, 2019).

Students who have higher levels of resilience tend to perform better academically. This is because resilient individuals are better able to cope with the stress and pressure that comes with academic life, and are more likely to persist in the face of challenges. There is a positive relationship was found between resilience and academic performance among nursing students in Saudi Arabia. (Alharbi, & Alshammari, 2021).

AIM OF THE STUDY
This study aims to assess the association between resilience, test anxiety, and academic achievement among undergraduate nursing students through the following objectives:
1. Determine the test anxiety level among undergraduate nursing students during the duration of exams.
2. Appraise resilience among undergraduate nursing students.
3. Assess knowledge of undergraduate nursing students about test anxiety.
4. Assess the effect of test anxiety level on academic achievement of undergraduate nursing students.
5. Evaluate the relationship between resilience, test anxiety, and academic achievement of undergraduate nursing students.

Research Questions:
1. What is the test anxiety level experienced by undergraduate nursing students at Helwan University?
2. What is the level of resilience of undergraduate nursing students at Helwan University?
3. Is there relationship between test anxiety and academic achievement of undergraduate nursing students?
4. Is there relationship between resilience and academic achievement of undergraduate nursing students?

SUBJECT AND METHODS
The methodology of this study was presented with four main designs as follows:
i. Technical item
ii. Operational item
iii. Administrative item
iv. Statistical item

I. Technical item:
The technical design for this study included research design, research setting, subjects of the study, and tools of data collection.

Research item:
A descriptive design was used to achieve the aim of the current study.

Study Setting:
The current study was conducted at the Faculty of Nursing at Helwan University in the first level, second level, third level, and fourth level. The first level is located on the first floor which is composed of two classes and three

labs for practice training. The second and third level is located on the second floor which is composed of two classes. The fourth level is located on the third floor which is composed of two classes.

Sampling type and size:
A convenient sample was used to choose (269) from (900) according to the following sample size equation n=N(1+N(e2)); where,
n= sample size,
N= population size is 900,
e=,05 is the level of perception (Krejci and Morgan, 2018), and
n= 900(1+900(,005) = 269

Tools of Data Collection:
The data in this study were collected by structured interview questionnaires that were divided into 5 parts:
Part I: Demographic data:
Composed of four closed-ended questions on age, sex, academic level, and specialization.

Part II: The test anxiety scale:
Adapted from (Sarson scales (1978), that prepares a scale to detect test anxiety: It consists of four dimensions: worry, tension, thinking not related to the test, and physical symptoms. It consists of (29) items, containing (24) positive items and (5) negative items, the validity and reliability of the test anxiety scale are in its original form. It is categorized into four dimensions:
Worry; the feelings a person has about a situation (7) item.
Tension: is an emotional state of feeling restless and disturbed (11) items.
Thinking not related to the test: it is the set of thoughts that the student has during the exam and that affect the cognitive processes (6) items.
Physical symptoms: they are the physical effects that appear on the student before and during the exam (5) items.
Scoring system for test anxiety:
29 closed-ended questions equal an 87 score. Each question was scored by one for « not convenient », two for « somewhat convenient » and three for «very convenient»
Total score test anxiety:
 The sum of the 29 questions and divided the sum by 10. And then divided into:
1.0—1.9 comfortably low-test anxiety
2.0—2.5 Normal test anxiety
2.5—2.9 High normal test anxiety
3.0—3.4 moderately high
3.5—3.9 High test anxiety

Part III: Resilience scale:
The psychological Resilience Scale was used, adapted from (Connor Davidson, 2016), in its original form, has four dimensions with a total of 25 sub-items:
Hardness: It is a process by which the individual can transform stressful situations into less threatening situations (7) items.
Optimism: It is a kind of positive outlook on the

bright side of events and expects the best results (7) items.
Assumption or goal: It is what the individual seeks to achieve, and it is the end of a process for a beginning theory to achieve the desired end (5) items.
Multiple sources: It is the diversity that an individual possesses to reach the goal positively and smoothly, depending on his capabilities and surrounding circumstances (6) items.

Scoring System for Resilience:
 25 closed-ended questions. Each question was scored by one for a « Little degree », two for an « Average degree » and three for a «Large degree
Total score resilience:
Little resilience of less than 50% (1: 37.4)
Average resilience from 50%:75% (37.5:56.2)
Large resilience of more than 75 % (56.3: 100)

Part IV: Academic Achievement Factors Questionnaire:
Adapted (Perger and Takacs (2016) to assess nursing students' perceptions regarding factors of success. It consists of 31 items. It is categorized into eight dimensions:
Support by family and friends (3) items.
Practice-oriented education (6) items.
Social relationships in university (4) items.
Support for students learning in the classroom (4) items.
Assistance provided by the remedial courses (3) items.
Conscious career choice (2) item.
Student's study habits (5) items.

Scoring System for Academic Achievement Factors:
31 closed-ended questions equal a 93 score. Each question was scored by one for «not important», two for «important » and three for very important questions.
Low academic achievement actors   less than 50% (0: 46.4)
Medium academic achievement factors from 50%:75% (46.5:69.7)
high academic achievement factors more than 75% (69.99: 100)

Part IIV: The knowledge of the exam scale:
Knowledge scale guided by (Keller & Szakál, 2021). It consists of 14 items:
Keep calm and take a deep breath. Read the entire exam paper before starting to answer.
Organize the answer time. Move on to the next question if you get stuck on an answer to a question.
Scoring system for knowledge:
Each knowledge question was scored by one for never answer, two for «sometimes » and three for (always). The total knowledge scores ranged from 1-42, and were evaluated as follows:
Total score knowledge
Poor less than 50% (1: 20.9)
Average from 50%:75% (21:31.5)
Good more than 75 % (32.5: 42)

Validity and reliability:
- The study tools were tested for content and face validity by a jury test of five experts in the field of the nursing community and pediatrics to evaluate the individual items as well as the entire instrument as being relevant and appropriate to test what they wanted to measure. The face validity of the questionnaire was calculated based on experts' opinions after calculating the content validity index (%) of its items and it was 94%.

- The experts were asked to evaluate the individual items on the study tools about their relevance and appropriateness in terms of the construct and if the items adequately measure all dimensions of the construct. The experts were asked to evaluate individual items and rate items on a 4-point scale as follows; not relevant scored (1), little relevant scored (2), relevant scored (3), and very relevant (4).

- A pilot study was carried out on 10% of the study subjects and was excluded from the total sample. To assess reliability, the study tool was tested by the pilot subjects for calculating Cronbach's Alpha which was 0.80 for the knowledge questionnaire, 0.89 for anxiety, 0.99 for academic achievement factors, and 0.88 for the resilience questionnaire.

Ethical considerations:
Official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee faculty of nursing at Helwan University. Participation in the study was voluntary and subjects gave complete full information about the study and their role before signing the informed consent. The ethical considerations included explaining the purpose and nature of the study, stating the possibility to withdraw at any time, and confidentiality of the information where it will not be accessed by any other party without obtaining the permission of the participants. Ethics, values, culture, and beliefs were respected.

I. Operational Item:
Preparatory phase:
It included reviewing past, current, national, and international related literature, and theoretical knowledge of various aspects of the study using books, articles, the internet, periodicals, and magazines to develop tools for data collection.
Pilot study:
- A pilot study was carried out on 10% of the study subjects and was excluded from the total sample. To assess reliability, the study tool was tested by the pilot subjects for calculating which was 0.80 for the knowledge questionnaire, 0.89 for anxiety, 0.99 for academic achievement factors, and 0.88 for the resilience questionnaire.

Fieldwork:
- The data were collected to assess test anxiety, academic achievement factors, and resilience among nursing students through period of (3) months& (2) weeks two days per week, and interviews were conducted with (10) students per day.

II.Administrative Item:
Approval to carry out this study was obtained from the dean of the faculty of nursing at Helwan University.

III. Statistical Item:
The collected data were organized, tabulated, and statistically analyzed using SPSS software (Statistical Package for the Social Sciences, version 16, SPSS Inc.
Chicago, IL, USA). For quantitative data, the range, mean, and standard deviation were calculated. Qualitative data, which describes a categorical set of data by frequency, percentage, or proportion of each category, using the Chi-square test (x^2). The Correlation between variables was evaluated using Pearson's correlation coefficient (r). Significance was adopted at $p<0.05$ for interpretation of results of tests of significance. (Dawson, and Trapp, 2001)

Results

Table (1): Number and percentage distribution of undergraduate nursing student's demographic characteristics (N=269):

Items	No	%
Age:		
Mean SD	21.25±1.52	
Sex:		
Males	116	43.1
Females	153	56.9
Academic levels:		
First level	42	15.6
Second level	7	2.6
Third level	112	41.6
Fourth level	108	40.1
Specialization:		
General Nursing	42	15.6
Adult nursing	7	2.6

Obstetric and paediatric	112	41.6
Community and administration	108	40.1

Table (1) shows the mean age is 21.25±1.52. Regarding gender, 56.9 % are Female. Regarding Academic levels, 41.6% are in the third level. Regarding Specialization, 41.6% &40.1% study Obstetric & Ped, and Community & Administration, respectively.

Table (2): Number and Percentage Distribution of Total resilience among undergraduate nursing students (N=269)

Total Resilience	Studied Sample		x2	P
	No.	%		
Levels of total resilience:				
Little resilience	148	55		
Average resilience	116	43.1		
Large resilience	5	1.9	142.80	0.000
Range	40			
Mean ± SD	37.61±7.43			

Table (2): demonstrates that 55% had little resilience, while 1.9% had large resilience, with a mean± SD 37.61±7.43.

Figure (1): Percentage distribution of total resilience among undergraduate nursing students (N=269):
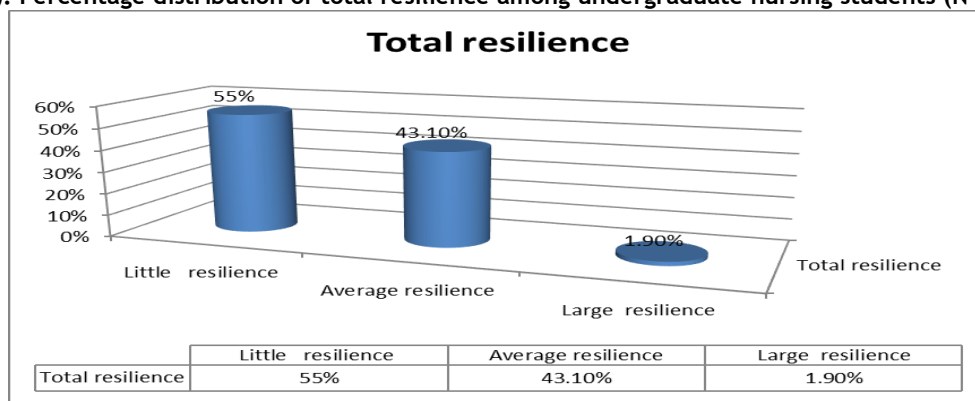

Figure (1): shows that 55% had little resilience, while 1.9% had large resilience, with a mean± SD 37.61±7.43.

Table (3): The mean and standard Distribution of Total resilience sub-items among undergraduate nursing students (N=269)

Total Resilience Sub-items	The studied sample	
	mean	SD
Hardness	11.34	2.58
Optimism	11.54	2.67
Assumption or goal	6.57	1.57
Multiple sources	8.15	2.29

Table (3): Reveals that the Mean, SD 11.3 ± 2.58, and 11.5 ± 2.6 represent Hardness and optimism respectively, 6.5 ± 1.5, and 8.1 ± 2.2 represent assumption or goal and multiple sources respectively.

Table (4): Number and Percentage Distribution of Total anxiety among undergraduate nursing students (N=269)

Total anxiety	Studied Sample		x2	P
	No.	%		
Levels of total anxiety:				
Comfortably low-test anxiety	17	6.3		
Normal test anxiety	9	3.3		
High normal test anxiety	5	1.9		
Moderately high-test anxiety	12	4.5		
High test anxiety	7	2.6	1525.8	0.000
Extremely high anxiety	219	81.4		
Range	4			
Mean ± SD	4.2±1.02			

Table (4): Reveals that 81.4% had extremely high anxiety while 1.9% had a high normal test anxiety level.

Figure (2): Percentage Distribution of Total anxiety among undergraduate nursing students (N=269)
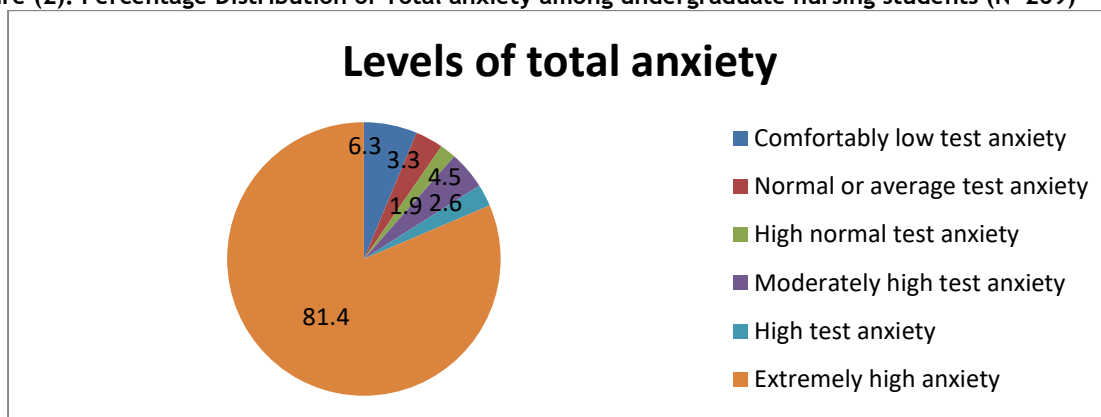

Figure (2): Reveals that 81.4% had extremely high anxiety while 1.9% had a high normal test anxiety level.

Table (5): The mean and standard Distribution of Total anxiety sub-items among undergraduate nursing students (N=269)

Total anxiety sub-items	The studied sample	
	mean	SD
Worry	13.21	2.22
Tension	23.05	4.78
Thinking not related to the test	13.33	3.14
Physical symptoms	10.04	2.98

Table (5): Reveals that the Mean, SD 13.2 ± 2.2, and 23.0 ± 4.7 represent worry and tension respectively, 13.3 ± 3.1, and 10.0 ± 2.9 represent thinking and physical symptoms respectively.

Table (6): Number and Percentage Distribution of Total achievement factors among undergraduate nursing students (N=269)

Total achievement factors	Studied Sample		x2	P
	No.	%		
Levels of achievement factors:				
Low achievement factors	151	56.1		
Medium achievement factors	92	34.2		
High achievement factors	26	9.7	62.39	0.002
Range Mean ± SD	49 45.85±9.89			

Table (6): Represent that, 56.1% had low achievement factors, while 9.7% had high, with a mean ± SD 45.85±9.89

Figure (3): Percentage Distribution of Total achievement factors among undergraduate nursing students (N=269)
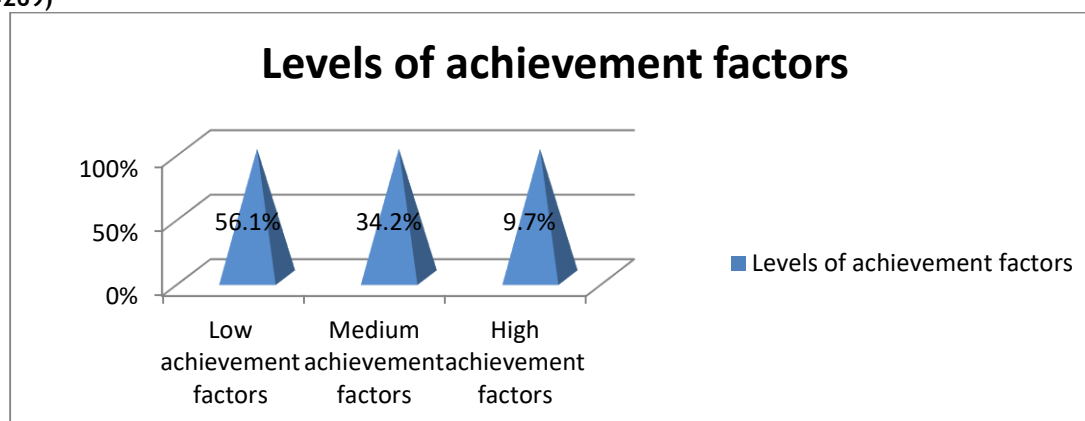
Figure (3): Represent that which, 56.1% had low achievement factors, while 9.7% had high achievement factors.

Table (7): The mean and standard Distribution of Total achievement factors sub-items among undergraduate nursing students (N=269)

Total achievement factors sub-items	The studied sample	
	mean	SD
Support from family and friends	4.28	1.36
Practice-oriented education	8.81	2.43
Social Relations at the University	7.78	2.37
Support for students learning in the classroom	5.84	1.74
Student's study habits	5.35	1.64
Student's attitude towards responsibilities in university	5.86	1.45
Assistance provided by the remedial courses	4.13	1.33
Conscious career choice	4.18	1.37

Table (7): Displays that the Means, SD of practice-oriented education had 8.8 ± 2.4 and social relations at the university had 7.7± 2.3, respectively.

Table (8): Correlation between Total Resilience, Anxiety, and Academic Achievement Factors (N=269).

Resilience, anxiety, and academic achievement factors	Changes in scores of total resilience, anxiety, and academic achievement factors					
	Resilience		Anxiety		Academic achievement factors	
	r	p	r	P	r	p
Resilience	------	----	0.161	0.002**	0.341	0.000**
Anxiety	0.161	0.002**	----	-----	0.278	0.000**
Academic achievement factors	0.341	0.000**	0.278	0.000**	-----	------

Table(8): displays that, there is a highly statistically significant relation between resilience, and anxiety with a p-value <0.01, and a highly statistically significant relation between resilience, and academic achievement p-value <0.01. In addition, there is a highly

Statistically significant relation between resilience, and academic achievement p-value <0.01. In addition, there is a highly statistically significant relation between anxiety and academic achievement with a p-value <0.01. Moreover, there is a highly statistically significant relation between academic achievement and anxiety with a p-value <0.01.

DISCUSSION:
Part I: Demographic characteristics of undergraduate nursing students:
Regarding the demographic characteristics of Undergraduate Nursing Students, the current study found that the mean age was 21.25±1.52. This might be due to the mean age being relatively high, which means that the current study of Undergraduate Nursing Students includes more non-traditional students (may be from technical secondary school, or diploma), who may have different needs and experiences compared to traditional college students. Also, more than two-fifths of the current study students were in the third level and fourth level.

This finding agreed with *(Mushtaq, et al., (2019),* whose study entitled "Factors Affecting the Academic Performance of Undergraduate Student Nurses", in Pakistan, carried out on two hundred and thirty nursing students, found that most of their studied undergraduate nurses were between twenty to twenty-four years.

While, this finding was contradicted by *Wang, et al, (2020)* whose study entitled" The Relationship among Resilience, Test Anxiety, and Clinical Performance of Nursing Students", in China, carried out on six-hundred and twenty-two undergraduate nursing students, and found that the mean age of their studied undergraduate nurses was 20.23 years (SD = 1.47).

In terms of gender, the current study revealed that less than three-fifths of them were females.

This might related to nursing education was a field that was more commonly pursued by women. This could have implications for the recruitment and retention of male nursing students and the development of gender-specific support services or instruction.

This finding was consistent with, *Zhang, et al., (2021)* the relationship among resilience, test anxiety, and academic achievement in

nursing students: A structural equation modeling analysis, who found that more than three-quarters of their studied undergraduate nurses were females. Furthermore, incongruently found that the majority of their studied undergraduate nurses were females *(Mushtaq, et al., (2019)*.

Regarding the academic level, the present study found that more than two-fifths of studied undergraduate nurses were third-level and fourth-level. This finding might be due to the mean age of them being above twenty-one years. This stage was critical for students as they were expected to demonstrate mastery of the knowledge and skills required to become competent nurses. They were nearing the end of their academic journey.

This finding was congruent with *Almalki, et al., (2021)*, whose study entitled" Level of academic stress among Saudi nursing students", was conducted on three-hundreds and forty-four nursing students at the College of Nursing at the University of Tabuk in Saudi Arabia, found that more than two-fifths of their studies nursing were in third-year students. While, this finding was contradicted by *(Wang, et al., (2020)* who found that less than three-quarters were third-level.

Part II: Psychological Resilience Measurements:
Regarding the total resilience among undergraduate nursing students, the present study found that more than half had little resilience, while more than two-fifths had average, by a mean± SD 37.61±7.43
This finding might be related to the need for developing resilience and coping strategies that will be beneficial for nursing students to achieve academic success and prepare for their future careers as nurses.

This finding was supported by *Alkaissi, et al., (2023)*, whose study entitled" Factors associated with perceived resilience among undergraduate nursing students" in Palestine, found that the mean score for perceived resilience among undergraduate nursing students in Palestine was 3.21 out of 5 (SD = 0.48), indicating moderate levels of resilience.

While, this finding was contradicted by *(Zhang, et al., (2021)*, who found that three-quarters of their studied undergraduate nursing students had moderate levels of resilience (SD = 13.80).

Concerning total resilience sub-items among undergraduate nursing students, the present study revealed that hardness and optimism were more than eleven M ± SD.

This finding may be related to that the nursing students had moderate levels of overall resilience, with both hardness and optimism being important components of their resilience.

These findings were consistent with *(Yin et al., (2021)*, whose study entitled" Test anxiety and academic performance among undergraduate nursing students", in China, conducted on four-hundreds and twenty-nine nursing students, found that the mean score for the hardness sub-item was 11.34, with a standard deviation of 2.58, indicating that the students had moderate levels of hardness (i.e., the capacity to endure difficult circumstances). In addition, the mean score for the optimism sub-item was 11.54, with a standard deviation of 2.67, indicating that the students had moderate levels of optimism (i.e., a positive outlook on life and belief in one's abilities to succeed).
Part III: Test Anxiety Measurements:
Regarding total anxiety among undergraduate nursing students, the present study found that the majority of them had extremely high anxiety with a mean ± SD 4.2±1.02.

These high levels of anxiety could negatively impact the academic performance and well-being of students, and it might also impact their ability to provide effective patient care in the clinical setting. Therefore, educators and healthcare professionals need to develop strategies and interventions to help undergraduate nursing students manage their anxiety. This could include providing stress-reduction techniques, such as mindfulness exercises or relaxation techniques, and promoting a supportive learning environment that fosters open communication and encourages students to seek help when needed.

This finding was contradicted by *(Zhang, et al., (2021)*, who found that the mean was 18.66 (SD = 4.82), indicating moderate levels of test anxiety. Furthermore, *(Han and Yin (2018)* in China, conducted on six-hundreds and thirty-four nursing students, was incongruently found that nursing students in China experienced moderate levels of anxiety. The mean score for anxiety was 38.42 (SD=9.50).

Concerning the total anxiety sub-items among undergraduate nursing students, the present study found that the highest was for tension with a mean of 23.05 SD 4.78, followed by for worry and thinking not related to the test, were 13.21, and 1 using (SD 2.22,3.24), respectively.

These findings might be due to experiencing tension as a result of the need to perform well academically, and the responsibility of caring for patients during their clinical placements. Also, worry related to future job prospects.

These findings were congruent with *Liu, et al., (2021)*, who found that in physical symptoms, the study found that worry and tension were reported as the highest means by more than half of their undergraduate nursing students.

Part IV: Academic Achievement

Measurements:

Regarding total achievement factors among undergraduate nursing students, the present study found that less than three-fifths had low achievement factors, while more than one-third had medium, with a mean ± SD of 45.85±9.89.

This finding might be related to that were strong and highly significant; the students had low achievement factors indicating that a significant proportion of the nursing students in the study may be struggling with academic performance.

Regarding total achievement factors sub-items among undergraduate nursing students, the present study found that the means were more than eight, in practice-oriented education, followed by more than seven in social relations at the university. In addition, Student's study habits by a mean of more than five.

This could be because nursing students place a high value on the practical aspects of their education. Nursing was a field that required a significant amount of hands-on experience, and students felt that the practical aspects of their education were more relevant to their future careers than other factors. In addition, it could be that nursing students face unique challenges in building social relationships while balancing the demands of their coursework and clinical rotations. Also, the level of study habits among them was slightly above average.

These findings were consistent with *(Fooladi, et al., (2022),* whose study entitled" Factors Associated with Undergraduate Nursing Students' Academic and Clinical Performance", in Saudi Arabia, conducted on one-hundred and eighty-nine nursing students, found all nursing students who reported higher levels of practical orientation were more likely to have better clinical performance.

In addition, *(Fooladi, et al., (2022),* found that more than three-fifths of nursing students reported having good social relations with their peers and faculty members. This included the majority of them having a friendly relationship with peers and respectful relationships with faculty members. Also, *(Alquwez, et al., (2021),* congruently found that the majority of their students had study habits that were at least adequate.

Regarding the correlation between total resilience, anxiety, and academic achievement factors, the present study found that there was a highly statistically significant relation between resilience, anxiety, a highly statistically significant relation between resilience, and academic achievement. In addition, there was a highly statistically significant relation between anxiety and academic achievement. Also, there was a highly statistically significant relation between academic achievement and anxiety.

These findings might indicate that higher levels of resilience were associated with better academic performance among nursing students. Also, indicated that higher levels of test anxiety were associated with lower academic performance, and, higher levels of test anxiety were associated with lower levels of resilience in nursing students.

These findings were supported by *Zhang, et al., (2021*) their study reported several statistical relationships among the variables: Resilience had a direct positive effect on academic achievement. Test anxiety had a direct negative effect on academic achievement. Resilience partially mediated the negative relationship between test anxiety and academic achievement (indirect effect), Test anxiety had a direct negative effect on resilience. Moreover, *(Alzayyat, & Al-Gamal, (2021)* congruently showed a positive correlation between resilience and academic achievement.

CONCLUSION

In light of the results of the current study and answers to the research questions, it is concluded that; the majority of Helwan University Undergraduate Nursing Students were comfortably low in test anxiety with low academic achievement and more than half of them had little resilience. Furthermore, more than three-fifths of their total resilience and total academic achievement factors were poor. Finally, there is a highly statistically significant relationship between anxiety and academic achievement, also, the same relationship between resilience and academic achievement.

RECOMMENDATIONS

- In light of the findings of the current study, the following recommendations can be suggested:
- Developing a health educational program that would help undergraduate nursing students improve resilience, decrease or control anxiety, and improve academic achievement.
- Developing counseling program.
- Further research on a large sample size and other setting.

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