

## Assessment of Critical Thinking Disposition among Nursing Students



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### ABSTRACT

**Background:** A critical thinking disposition is one of the most important talents that can be attained by evaluating one's own thinking abilities, changing one's behavior, and drawing conclusions from observations, knowledge, and students' practice of all prior knowledge on a particular subject. **Aim:** To evaluate the critical thinking disposition of Damietta University nursing students. **Methods:** A convenience sample of 190 nursing students from the second semester of the academic year 2022–2023 at Damietta University's Faculty of Nursing was selected using a descriptive cross-sectional design and a critical thinking disposition questionnaire. **Results:** The majority of nursing students that took part (89.5%) strongly disagreed with the aspects of critical thinking disposition. Only nursing students' age showed a very statistically significant correlation with their critical thinking disposition. **Conclusions:** According to the study's findings, the majority of Damietta University nursing students lacked a sufficient degree of critical thinking disposition. **Recommendation:** Academic staff and management should foster a positive learning environment by employing appropriate and innovative teaching strategies, that promotes active learning and the development of critical thinking dispositions.

**Key words:** Critical thinking Disposition, Nursing Students.

### Introduction

Critical thinking disposition is described as a quality or habit of mind that is incorporated into one's beliefs or actions to successfully solve problems and make decisions as a result of thinking, is essential in nursing education and research (Grewal and Azher, 2023). Additionally, the ability of nursing students to test their ideas in solving problems that involve the art of analyzing and assessing thinking, as well as drawing conclusions and deductions from problems and facts, is known as critical thinking disposition. The capacity of an individual to examine their own cognitive processes and provide evidence for their beliefs, as opposed to only accepting their own opinions as adequate proof (Myer, 2021).

Many characteristics of a good critical thinker include the capacity to ask questions, define problems (i.e., the ability to use information and data to solve problems effectively), examine evidence (i.e., facts being asserted), avoid emotional reasoning (i.e., the desire to know the truth by following reasons), and be open-minded (i.e., willing to try new things and consider new ideas). Analytical and systematic approaches, which involve using evidence and anticipating potential outcomes to solve problems. The ability to think critically, which shows that there are several

possible viewpoints on a certain issue or circumstance, Intellectual curiosity, which is the propensity to know things and ask questions, as well as critical thinking confidence, are all considered forms of inquisitiveness (Sanchez, 2021).

For instance, critical thinking helps nursing students assess problems objectively, whereas most people approach problems differently, depending on their own beliefs, experiences, feelings, or the opinions of others. All of that has an impact on how you handle certain issues, particularly those that involve contentious subjects like immigration, abortion, the death penalty, and animal testing. Regarding credible proof, there are numerous questions that need to be addressed. And how can you collect it? Yes, critical thinking is what enables you to collect and evaluate pertinent data so that you may successfully analyze it and draw well-founded conclusions and solutions (Alhasan-2022). The seven dimensions of critical thinking that had seven dimensions aspects to think critically include truth-seeking, open-mindedness, analyticity, systematicity critical thinking self-confidence, inquisitiveness, and cognitive maturity (Young,2020).

Truth-seeking is the process of locating and assessing information that broadens our perspective on the world. Open-mindedness is the condition of being open to considering ideas and opinions that are novel or different from your own viewpoint. Analyticity is the ability to recognize issues, glean important information from data, and create practical remedies for issues found in order to test and confirm the issue's root cause. (Yuan and Williams, 2022).

Systematicity is the inclination or practice of attempting to tackle issues in a methodical, ordered, and disciplined manner. Confidence in critical thinking, the belief in one's own logic and one's capacity to assist others in reaching well-reasoned conclusions.

Inquisitiveness; the desire to study as much as possible about things or the desire to have a strong spirit of learning in order to learn as much as possible about things. The seventh component is cognitive maturity, which is the process of developing knowledge and intellectual reasoning (Azher & Grewal, 2023).

Developing independence of thought, justice, perspicacity on a personal and societal level, humility, spiritual courage, honesty, perseverance, self-

confidence, curiosity, and interest in research are all ways to help nursing students improve their critical thinking disposition. To perform nursing safely, effectively, and skillfully, critical thinking is a necessary activity. It is recommended that nursing education programs embrace mindsets that encourage critical thinking and utilize critical reasoning abilities (Martha & Ernst, 2022).

#### **Significant of the study**

Critical thinking is a crucial procedure for competent, safe, and effective nursing practice. Programs for nursing education ought to embrace mindsets that encourage critical thinking and activate critical reasoning abilities (Diane, 2022). In addition, the primary goal of the baccalaureate program is to give the graduate nurse the skills, information, and attitude needed to deliver nursing care, especially in emergency situations. Additionally, it exhibits a highly developed ability to think

critically, communicate effectively, and solve problems. Thus, the purpose of this study is to assess critical thinking disposition (Tauritz, 2022).

#### **Aim of the study:**

This study aims to is to evaluate the critical thinking skills of Damietta University nursing students.

#### **Research Questions:**

- 1- What is the nursing students' perception toward critical thinking disposition?
- 2- What is the level of critical thinking disposition among nursing students at Damietta University?

#### **Method**

##### **Research design**

**This study used a descriptive cross-sectional design (Bao et al., 2016).**

##### **Study setting**

The study was carried out at Damietta University's Faculty of Nursing. It was founded in 2018. Four years are allotted for study, with an additional year for internship training. It has eight academic nursing departments,

such as the departments of critical care nursing, community health nursing, and nursing administration. Maternity and Gynecological Nursing Department, Pediatric Nursing Department, Psychiatric and Mental Health Nursing Department, and Medical-Surgical Nursing Department.

##### **Participant:**

Convenience sample (190 nursing students) from the second semester of the 2022–2023 school year.

##### **Tool of data collection:**

##### **The data was obtained through one tool California Critical Thinking Disposition**

**Part 1:** Included personal characteristics of nursing students as age

**Part 2:** Facione (2000) created this tool, which Boonsathirakul & Kerdsonboon (2021) accepted. to evaluate nursing students' capacity for critical thought. There are 24 items in total, which are categorized into 7 dimensions: truth-seeking (3 items), open-mindedness (4 items), analyticalness (3 items), systematicity (4 items), critical thinking self-confidence (4 items), inquisitiveness (3 items), and cognitive maturity (3 items).

##### **Scoring system:**

A six-point Likert scale was used to measure the subject's responses: severely disagree = 1, disagree = 2, neutral = 3, occasionally agree = 4, agree = 5, and strongly agree = 6. The overall items scores will be totaled up and grouped according to the total percentages to good

**critical thinking ( $\geq 75\%$ ) and unsatisfactory critical thinking ( $< 75\%$ ) (Bağ & Gürsoy, 2021).**

**Validity and Reliability of the tools:**

Five nursing administration professors from the Faculty of Nursing at Mansoura University evaluated the data collection instruments to confirm their content. Two professors and three assistant professors of nursing administration were among the experts who reviewed the instruments. Based on their feedback, the tools were modified. A test-retest (Cronbach alpha) was used to gauge test reliability. The critical thinking disposition inventory score for nursing students was 0.937.

**Data collection:**

- Based on the literature evaluation and the translation into Arabic of the data collecting instruments, the researcher examined the most recent relevant literature and materials that were available in textbooks, scientific journals, and online resources.
- To evaluate nursing students' critical thinking disposition, a California critical thinking disposition tool was distributed.
- Beginning in early February 2023 and ending at the end of July 2023, the data collection process was conducted. About 24 items were included in questionnaire sheets, and data was gathered three days a week. It took twenty to thirty minutes to complete the questionnaire.

**Pilot study:**

After the tools were developed and data collection began, a pilot study of the data collection instruments was carried out prior to the main study.

Nineteen students, or 10% of all nursing students at Damietta University's Faculty of Nursing, were selected to test the questionnaire. They were not allowed to participate in the study after being chosen at random. The pilot study's objectives were to identify potential barriers and issues that might arise during the data collection period, evaluate the tools' clarity, test their language, determine whether the questions were feasible, and estimate the amount of time needed to complete the questionnaire. In order to identify any issues with completing the tools, study participants were requested to fill out questionnaires. the fulfillment of every survey.

**Ethical considerations:**

The ethical approval was obtained from Scientific Research Ethics Committee, Faculty of Nursing, Mansoura University. Participants were given an explanation of the nature and purpose of the study; written informed consent was obtained from each participant prior to data collection; the study aim was explained in a straightforward and understandable manner; all data were deemed confidential and used only for this purpose; and participants were made aware of their right to withdraw from the study at any time without providing a reason.

**Data analysis:**

Software called SPSS (Statistical Package for Social Science) version 25 (IBM Corporation, Armonk, NY, USA) was used to code, enter, tabulate, and analyze the data that was gathered. The standard deviation, mean, and range were computed for quantitative data. In the case of qualitative data, each category is described by its frequency, percentage, or proportion.

**Result:**

Table (1) shows personal characteristics of the nursing students at Damietta University under study. The mean age of these individuals was  $20.96 \pm 0.74$ , and practically all of them were female.

Table (2) shows the number and percentage of nursing students who were the subject of the study should be shown in relation to the critical thinking disposition aspects. The majority of nursing students, as this table demonstrates, strongly disagree with every aspect of critical thinking dispositions. In addition, the majority of nursing students were unsatisfactory toward critical thinking disposition.

Table (3) illustrates total critical thinking disposition level of nursing students. Results shows that most of students were unsatisfactory toward critical thinking disposition.

Table (4) reports the overall disposition score for critical thinking in regard to personal characteristics. There is no statistically significant correlation between nursing students' personal characteristics and their critical thinking disposition, according to the results

**Table 1: Personal Characteristics of the Studied Nursing Students (n=190).**

Personal characteristics	The studied nursing students(n=190)	
	No	%
<b>Gender</b>		
Female	104	54.7
Male	86	45.3
<b>Age years</b>		
20	56	29.5
21	86	45.2
22	48	25.3
Range	20-22	
Mean±SD	20.96±0.74	

**Table 2: Total Number and Percentage of the Studied Nursing Students Regarding Dimensions of Critical Thinking Disposition.**

Dimensions of critical thinking disposition	Agreement of the studied nursing students(n=190)											
	Strongly disagree		Disagree		Neutral		Sometimes Agree		Agree		Strong agree	
	No.	%	No	%	No.	%	No.	%	No.	%	No.	%
1-Truth-seeking dimension	153	81.0	27	14.0	3	2.0	3	2.0	3	2.0	1	1.0
3-Analyticity dimension	164	86.0	15	8.0	5	3.0	4	2.0	2	1.0	0	0
3-Analyticity dimension	144	76.0	32	17.0	6	3.0	5	3.0	3	2.0	0	0
4-Systematicity dimension	135	71.0	42	22.0	9	5.0	3	2.0	1	1.0	0	0
5-Critical thinking self-confidence dimension	107	56.0	67	35.0	13	7.0	2	1.0	1	1.0	0	0
6-Inquisitiveness dimension	113	59.0	71	37.0	5	3.0	1	1.0	0	0	0	0
7-Cognitive maturity dimension	113	59.0	74	39.0	3	2.0	0	0	0	0	0	0
Total critical thinking disposition	133	70.0	47	24.7	6	3.2	3	1.6	1	0.5	0	0

**Table 3 Total Critical Thinking Disposition level of Nursing Students (n=190)**

Total critical thinking disposition	No.	%
Unsatisfactory level (<75%)	190	100%
Satisfactory level (≥75%)	0	0

**Table 4: Total Critical Thinking Disposition Score of the Studied Nursing Students in Relation to Personal Characteristics(n=190).**

Personal characteristics	No.	Mean±SD	Z value	P value
<b>Gender</b>			1.479 0.139	
Female	104	32.84±3.11		
Male	86	33.65±3.65		
<b>Age years</b>			0.092 0.927	
20	56	32.95±2.86		
21	86	33.41±3.29		
22	48	33.14±3.93		

### Discussion:

Being able to think critically is essential for nurses to provide professional and high-quality care, both of which may be achieved through excellent education. Since it is thought that the cornerstone of teaching and learning is assisting nursing students in developing CT dispositions so they can meet the challenges of the twenty-first century and are ready to handle unforeseen situations in highly diverse environments (Younis et al., 2024). The current study aims to assess the critical thinking disposition among Damietta University nursing students.

This The current findings show that women made up more than half of the participants. One explanation for this could be because women work harder than men to enroll in more training and educational programs. In Egypt, women also tend to receive more nursing education than men. Men also think that other occupations are more respected by society than nursing, that nursing requires lengthy, irregular hours, that working night shifts is not as significant as other careers, and that there are other career possibilities that offer greater financial and ethical rewards than nursing. This result is consistent with Aref, Mohammed, & Mohammed, (2020) who assessed relation between Time Management Skills and Stress Level among Fourth Year Students at Faculty of Nursing and reported that more than half of the nursing students were female. Additionally, Biresaw, Asfaw, & Zewdu, (2021) who assessed knowledge and attitude of nurses towards patient safety and its associated factors and reported that more than half of the participants were female. This finding also consistent with Moselhy, (2022) who examine nursing students' perception regarding community health nursing practical modules experience, at the faculty of nursing and stated that less than two thirds of nursing students were female. On other hand, this finding disagree with the results of Ozdemir & Akansel, (2021) who reported that highest percentage of the nursing students were males.

As a result, men frequently switch between nursing and other outfits. Wang et al.'s (2024) findings are in line with in their 2020 study, Hassan et al. 2020 evaluated the relationship between fourth-year nursing students' stress levels and time management abilities. They found that over half of the nursing students were female. Furthermore, more than half of the participants were

female, according to Younis et al. (2024), who evaluated nurses' attitudes and knowledge regarding patient safety and related issues. According to the results of the current survey, less than half of the students were 21 years old because the study sample consisted of fourth-year students between the ages of 20 and 22, and as a result, the majority of the students were regular and typically upgrading. According to Sultana and Gul's (2024) assessment of nursing students' satisfaction and anxiety levels during clinical training, approximately half of the nurses in the study "gender and career: female and male nursing students' perceptions of male nursing role in Turkey" were between the ages of 20 and 22. This is also in line with Park et al. (2024), who reported that around half of the students who took part were between the ages of 20 and 22.

However, this finding contradicts that of Nuuyoma, Munangatire, and Nghiweni (2022), who discovered that the minority of nursing students were between the ages of 20 and 24. Different study settings and samples could be the cause of these discrepancies. The results of the current study showed that the majority of nursing students who participated had inadequate levels of

critical thinking disposition across all dimensions. This result is consistent with a study by Boso et al. (2023), which sought to assess the variables related to nursing students' critical thinking skills. The study found that roughly two-thirds of the nursing students in the study had low levels of overall critical thinking and suggested using educational programs to help nursing students develop their critical thinking disposition.

Additionally, El Bardeny, Adam, and Hassan (2023) endorsed these findings. They evaluated how online psychiatric practicum, including virtual simulation, affected participants' goal commitment, self-efficacy, critical thinking disposition, and problem-solving skills and discovered that their critical thinking disposition was lacking. However, this outcome contradicts the research conducted by Seddik, Yakout, and Morsy (2024). They found that all nursing students had a sufficient level of critical thinking and studied the "effect of critical thinking training program on improving knowledge and skills of nursing students at technical institute of nursing."

The current study demonstrated that the students' critical thinking dispositions did not significantly correlate with their age or gender. The results of the study by Melikoğlu et al. (2024) and

shows that there was no significant correlation between the critical thinking dispositions of the students under study and their age or **gender**.

**Conclusion: -**

According to the study's conclusion all of the nursing students at Damietta University's Faculty of Nursing had unsatisfactory dispositions toward critical thinking, and the majority of them had an inadequate level of overall critical thinking.

**Recommendation: -**

Based on the findings of this study, the following recommendations are suggested:

- It is necessary to develop nursing curricula, and understanding various teaching and learning approaches helps students become more proficient communicators and develop their critical thinking disposition skills.
- Academic staff and administration must create a supportive learning environment that encourages active learning and the development of critical thinking disposition skills via the use of suitable and creative instructional methodologies.

**Conflicts of interest**

No conflicts of interest are disclosed by the researchers.

**References**

- Myer, O., (2021): Investigation the effect of pretraining when learning through immersive virtual reality and video: A media and methods experiment. *Computers & education*, 140(6),117<http://doi.org/10.1016/j.compedu.2021.103603>.
- Sanchez, C., (2021): Critical Thinking Disposition as a Measure of Competent Clinical Judgment: The Development of the California Critical Thinking Disposition Inventory. Library of congress control number: 2010936298. International Edition: ISBN-13:978-1-111-30773-8. ISBN-10: 1-111-307773. For permission use. Retrieved from [www.cengage.com/permissions](http://www.cengage.com/permissions).
- Young, E., (2020): The Effects of Self-efficacy, Critical Thinking Disposition, Self-leadership, and Communication Competency on the Core Competencies of the Preceptor in Advanced General Hospital. *Journal of Business Research*, 68(9), 1919–1927. Retrieved from. <https://doi.org/10.1016/j.busrres.2015.01.001>.
- Azher, S., & Grewal, K., (2023): Virtual Simulation in Nursing Education: Headset Virtual Reality and Screen-based Virtual Simulation Offer A Comparable Experience. *Journal of Service Research*, 14(4), 397–409. Retrieved from: <https://doi.org/10.1177/1094670511410304>.
- Zhang, M., (2023): The effectiveness of concept mapping on development of critical thinking in nursing education: A systematic review and meta-analysis. *The Journal of Social Psychology*, 147(6), 631-655. Retrieved from <https://doi.org/10.1037/a0018869>.
- Yuan, H., & Williams, B., (2019): A systematic review of selected evidence on developing nursing students' critical thinking through problem-based learning. *Safety and Health at Work*, 8(1), 67–71. Retrieved from <https://doi.org/10.1016/j.shaw.2016.07.002>.
- Alhasan, S., (2022): Learning Critical Thinking in Saudi Arabia: Student Perceptions of Secondary Pre-Service Teacher Education Programs. *International Journal of Caring Sciences*. Vol 6 Issue 3 .53. Retrieved from <https://doi.org/10.5171/2011.166128>.
- Martha, V., & Ernst, R., (2022): The effects of environment - based education on students' critical thinking skills and disposition toward critical thinking. *International Journal of Production Economics*. Retrieved from <https://doi.org/10.1016/j.ijpe.2015.10.015>.
- Diane, Z., (2022): Development and Evaluation of Web-Based Animated Pedagogical Agents for Facilitating Critical Thinking in Nursing. *International Journal of Production Economics*. Retrieved from <https://doi.org/10.1016/j.ijpe.2015.10.015>.
- Tauritz, R., (2022): Creating a sense of community and space for subjectification in an online course on sustainability education during times of physical distancing. *Organization Science*, 22(6), 1464–1480. Retrieved from <https://doi.org/10.1287/orsc.1100.0600>.
- Boso, C. M., van der Merwe, A. S., & Gross, J. (2023). Critical thinking disposition of nursing students: a quantitative investigation. *Nurse education in practice*, 55, 103167.

- Wang, L., Chang, W., Tang, H., He, W., & Wu, Y. (2024). Exploring the link of personality traits and tutors' instruction on critical thinking disposition: *a cross-sectional study among Chinese medical graduate students*. *BMJ Open*, 14(8), e082461.
- Melikoğlu, S. E., Dalcı, B. K., & Demir, B. D. (2024). The Relationship between Nursing Students' Attitudes Toward Evidence-Based Nursing and Their Critical Thinking Dispositions. *Journal of Education & Research in Nursing/Hemşirelikte Eğitim ve Araştırma Dergisi*, 21(1).
- Younis, S., Anwar, N. B., & Batool, S. F. (2024). Exploring Critical Thinking Dispositions among Fourth Year BSc Nursing Students of Various Colleges of Nursing, Pakistan. *Open Journal of Nursing*, 14(6), 267-281.
- Sultana, N., & Gul, R. B. (2021). Critical thinking dispositions of baccalaureate nursing students and their educators: A cross-sectional analytical study. *Journal of Shifa Tameer-e-Millat University*, 4(1), 9-15.
- Hassan, R. M., Mohamed El Sayad, S., & Ezzat El-Sherbini, A. (2020). Critical thinking disposition and self-esteem among technical nurse students in port-said city. *Port Said Scientific Journal of Nursing*, 7(4), 122-137.
- Park, S., Shin, H. J., Kwak, H., & Lee, H. J. (2024). Effects of Immersive Technology-Based Education for Undergraduate Nursing Students: Systematic Review and Meta-Analysis Using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) Approach. *Journal of Medical Internet Research*, 26, e57566.
- Nuuyoma, V., Munangaire, T., & Nghiweni, N. (2022). Nursing students' experiences of community-based learning in an undergraduate programme at a Namibian University. *International Journal of Africa Nursing Sciences*, 17, 100458.
- El Bardeny, E., Adam, S., & Hassan, R. (2023). Implementing Different Learning Strategies: It's Effect on Nurse Students Critical Thinking Dispositions. *Egyptian Journal of Health Care*, 14(2), 208-219.
- Seddik, S., Yakout, R., & Morsy, A. (2024). Relation between Nurses' Critical Thinking Disposition and Their Professional Patient Relationship. *Alexandria Scientific Nursing Journal*, 26(2), 161-172.
- Mohamed, E., & Mohamed, R. (2020). Implementing Different Learning Strategies: It's Effect on Nurse Students Critical Thinking Dispositions. *Egyptian Journal of Health Care*, 14(2), 208-219.
- Biresaw, S., Asfaw, L., & Zewdu, H., (2021) Decision - making styles, anxiety levels, and critical thinking levels of nurses. *Japan Journal of Nursing Science*, 16(3), 309-321.
- Moselhy, E. (2022). Effect of Critical Thinking Training Program on Nurse instructor's Competency. *Egyptian Journal of Health Care*, 12(4), 1179-1198.
- Ozdemir, C., & Akansel, (2021) Effectiveness of virtual reality in nursing education: *a systematic review and meta-analysis*. *BMC Medical Education*, 23(1), 710.