ORIGINAL ARTICLE OPEN ACCESS

The Level of Critical Thinking Skills of Nursing Students at International Islamic University Malaysia (IIUM), Kuantan, Pahang

Aisyah Ruslan[1] & Rusila Ruslan[2]*
[1]National Heart Institute, Kuala Lumpur, Malaysia
[2]Department of Critical Care Nursing, Kulliyyah of Nursing, International Islamic University Malaysia, Pahang, Malaysia

ABSTRACT

Background: Critical thinking is a vital competence in the nursing profession, essential for providing safer and higher-quality patient care. The rapid evolution and constant changes in the healthcare industry necessitate a teaching and learning environment that offers ample opportunities for students to engage in activities that enhance critical thinking, beyond traditional role-playing methods. This study aims to assess the level of critical thinking among undergraduate nursing students at International Islamic University Malaysia (IIUM) Kuantan Campus, Pahang, Malaysia.
Methods: A quantitative cross-sectional study was conducted using an online survey. Participants were selected based on inclusion and exclusion criteria. The brief version of the Critical Thinking Disposition Inventory (CTDI-CV) questionnaire was utilized. All undergraduate students at the Kulliyyah of Nursing were invited to complete the survey online. The data were analysed using Chi-Square and descriptive statistics.
Results: A total of 152 students participated in the online survey. Results showed that 54.6% of respondents demonstrated strong critical thinking ability, with a mean critical thinking score of 72.14. Analysis of the socio-demographic profiles showed a significant correlation between the level of critical thinking and gender and year of study with p-values of 0.018 and 0.038 respectively.
Conclusion: The study highlights the need for more effective teaching strategies specifically designed to promote critical thinking skills in nursing students.

Keywords: Level of critical thinking; Nursing students; Nursing education; Problem-based learning

***Corresponding author**
Rusila Ruslan
Department of Critical Care Nursing,
Kulliyyah of Nursing,
International Islamic University Malaysia,
Pahang, Malaysia
E-mail: rusilaruslan@iium.edu.my

Article History:
Submitted: 17 July 2024
Revised: 10 September 2024
Accepted: 13 September 2024
Published: 30 November 2024

DOI: 10.31436/ijcs.v7i3.382
ISSN: 2600-898X

INTRODUCTION

Critical thinking is essential for future nurses and is taught in nursing education. It includes interpretation, reasoning, analysis and evaluation. Fundamentals in Nursing courses have been shown to promote critical thinking in students, resulting in improved quality of patient care. Problem-solving learning methods are important in bridging the gap between theory and practice in healthcare. With advances in technology, changes in nursing practice, and the increasing acute nature of patients, it is increasingly important to foster critical thinking skills in nursing students.

This study aims to assess the level of critical thinking among undergraduate nursing students at International Islamic University Malaysia (IIUM) Kuantan Campus, Pahang. The study will examine the relationship between socio-demographic profiles, academic achievement, self-directed learning and clinical experience. The findings will inform educational curricula to better prepare students for their future nursing roles and ensure patient safety, which is a major concern in the Malaysian healthcare system.

LITERATURE REVIEW

We, the researchers, used the Proquest, ScienceDirect and Pubmed databases to obtain reliable and relevant articles for this study. We conducted Boolean searches and used terms such as "AND" and "OR" to refine our results. The primary keywords we used were "level of critical thinking"," "nursing students"," "nursing education" and "problem-based learning" Our selection followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyzes (PRISMA) flowchart. We only considered articles that met the following criteria: Full-text accessibility, peer-reviewed status, publication between 2019 and 2023, English language, and focus on the level of critical thinking in undergraduate nursing students. We excluded qualitative studies.

Critical thinking is an essential skill for nursing students that allows them to interpret, analyse, evaluate and draw conclusions in different clinical situations (1–3). This competence is crucial for managing complex and dynamic care needs and reflects the knowledge, experience and skills acquired through nursing education (2). Considering that nurses are constantly confronted with complex situations and patient care, assessing the level of critical thinking in nursing students is crucial. It allows educators to modify learning activities to improve these skills (4). Critical thinking helps nurses identify important data and recognise problems that require urgent intervention and includes seven subscales: Truth-seeking, Open-mindedness, Analytic, Systematic, Confidence, Curiosity, and Cognitive Maturity (5–8).

Studies have shown that critical thinking varies among nursing students in different countries. In Brazil, 55% of nursing students show moderate to high levels of critical thinking, while in Iran, 67.7% of students show good levels of critical thinking (4,9). In China, students showed positive dispositions in critical thinking overall and in six subscales (10). Several factors influence critical thinking, including socio-demographic factors, gender dynamics, and clinical experiences. Age, socioeconomic status, and cultural background shape critical thinking skills, while clinical experiences in healthcare enhance these skills through exposure to the real world (3,11,12). Understanding these factors is critical to understanding the diversity of critical thinking approaches in nursing students and improving their educational outcomes.

METHODS

In this quantitative study, a cross-sectional design was used to investigate the level of critical thinking among undergraduate nursing students at IIUM Kuantan Campus. Participants were selected based on predefined inclusion and exclusion criteria. The cross-sectional approach was chosen due to its cost-effectiveness and rapid implementation. The study was conducted at the Kulliyyah of Nursing at IIUM Kuantan and focused on students from year 1 to 4. A convenient, non-probability sampling method was used where participants were recruited based on availability and accessibility. The sample size was set at 249 students using Raosoft based on the total active students, allowing for a 10% dropout rate.

Inclusion criteria included students living on campus and enrolled as undergraduates' students at the Kulliyyah of Nursing, while those on study leave were excluded. The research instrument was an adapted version of the Short Form-Critical Thinking Disposition Inventory-Chinese Version (SF-CTDI-CV) (13), which was translated and validated (8). The independent variables included socio-demographic profiles and clinical experience, while the dependent variable was the level of critical thinking. Reliability was

confirmed with a Cronbach's alpha of 0.783. Ethical approval was obtained from the Kulliyyah of Nursing Postgraduate Research Committee (KNPGRC) and the IIUM Research Committee (IREC). Data collection included collecting socio-demographic data and clinical experiences and answering questions on the Critical Thinking subscale. Data were analysed using descriptive statistics and chi-square tests.

RESULTS

As shown in **Table 1**, total of the 553 nursing students at the Kulliyyah of Nursing, 249 were randomly selected for this study using Raosoft. 152 responded, representing a 61% response rate. Participants were categorised into age groups: 61.2% were older than 21 years and 38.8% were 21 years or younger. Female participants made up 86.8% of the sample. Year 4 students had the highest participation rate at 36.2%, followed by year 2 (23.7%), year 1 (21.1%) and year 3 (19.1%). In terms of clinical experience, 75.7% of respondents had more than four weeks of experience, while 24.3% had less than four weeks.

The study found that 54.5% of students demonstrated good critical thinking skills, while 45.4% were rated as poor. The chi-square revealed no significant association between clinical experience and level of critical thinking. However, gender and year of study were significantly associated with critical thinking: male students and third-year students showed higher levels of critical thinking. No significant association was found between age and critical thinking. The results highlight the need for tailored interventions to improve critical thinking skills according to gender and year of study.

Table 1: Summary of the association between sociodemographic profiles, clinical experience and critical thinking (N=152)

Variables	Critical Thinking			
	Poor (%)	Good (%)	χ^2	*p-value*
Age				
21 years old and below	59.3	40.7	0.865	0.352
22 years old and above	51.6	48.4		
Gender				
Male	30.0	70.0	5.625	*0.018
Female	58.3	41.7		
Year of study				
Year 1	56.3	43.8	8.432	*0.038
Year 2	63.9	36.1		
Year 3	31.0	69.0		
Year 4	60.0	40.0		
Clinical Experience				
Less than 4 weeks	56.8	43.2	0.091	0.762
More than 4 weeks	53.9	46.1		

Note: * significant value is set at $p < 0.05$

DISCUSSION

Interestingly, this study showed no significant correlation between the year of study and the level of critical thinking. This contrasts with previous research which found that critical thinking skills tend to improve as nursing education progresses (19). The lack of correlation between year of study and level of critical thinking in this study suggests that factors other than academic progression may play a more important role in the development of critical thinking skills in nursing students (14). Further research is needed to determine these factors and their impact on critical thinking skills. The significant association between year of study and critical thinking, with third-year students having the highest scores, suggests that critical thinking development peaks in the middle of the program. This is in line with the previous findings, who found a significant correlation between the year of study and critical thinking (11). However, the observed decline in the fourth year indicates a possible plateau or regression, which is contrary to the expectation of continuous growth. This could be due to academic fatigue, stress related to impending graduation, or insufficient advanced critical thinking challenges in the curriculum. Similar patterns have been found in other studies, highlighting the need for sustained critical thinking development throughout the nursing program.

Implications for Nursing Education

The results underline the importance of tailored educational interventions to promote critical thinking at different stages of nursing education (15). The observed gender differences suggest

that educational strategies need to be gender-specific and may need to address different learning styles and support mechanisms (16). Furthermore, the lack of correlation between clinical experience and critical thinking emphasises the need for high-quality, well-structured clinical education that truly engages students in critical thinking processes (17,18).

Comparison with International Studies

Compared to international studies, the results of this study show both similarities and differences. For example, the proportion of students with good critical thinking skills at IIUM Kuantan is lower than in some studies from Iran and China (7,11), indicating possible areas for curriculum improvement. The findings in terms of gender and year of study reflect broader trends, but also emphasize the unique context of IIUM Kuantan and point to the need for context-specific educational strategies.

CONCLUSION

The study provides valuable insights into the critical thinking levels among undergraduate nursing students at IIUM Kuantan and highlights areas for improvement in nursing education. By comparing these findings with previous studies, it becomes clear that both universal and context-specific factors influence critical thinking development. Future research should focus on exploring these factors in depth, particularly the quality of clinical experiences and the impact of educational interventions tailored to different demographics, to enhance critical thinking skills in nursing students comprehensively.

CONFLICT OF INTEREST

The author(s) state(s) that there are no conflicts of interest.

FUNDING

No funding from commercial, nonprofit, or public entities was used for this research.

ACKNOWLEDGEMENT

We would like to thank all the participants who contributed to this study.

AUTHOR CONTRIBUTIONS

AR: drafted the manuscript and contributes to the concept development and design of the article through data collection, analysis and data interpretation for the article.
RR: revised the manuscript critically with intellectual contents and approved the final version of the manuscript.

REFERENCES

1. Arizo-Luque V, Ramirez-Baena L, Pujalte-Jesús MJ, Rodríguez-Herrera MÁ, Lozano-Molina A, Arrogante O, et al. Does Self-Directed Learning with Simulation Improve Critical Thinking and Motivation of Nursing Students? A Pre-Post Intervention Study with the MAES© Methodology. Healthcare (Switzerland). 2022 May 1;10(5).
2. Jin M, Ji C. The correlation of metacognitive ability, self-directed learning ability and critical thinking in nursing students: A cross-sectional study. Nurs Open. 2021 Mar 1;8(2):936–45.
3. Martínez-Momblan MA, Aguilar IB, Alonso-Fernández S, García MR, Zuriguel-Pérez E, Falcó-Pegueroles A, et al. Critical thinking among institutional academic advisors and sociodemographic, professional and academic variables: A multicenter correlation study. Nurse Educ Pract. 2023 Aug 1;71.
4. Nes AAG, Riegel F, Martini JG, Zlamal J, Bresolin P, Mohallem AG da C, et al. Brazilian undergraduate nursing students' critical thinking need to be increased: a cross-sectional study. Rev Bras Enferm. 2023;76(1).
5. Facione Peter. The Disposition Toward Critical Thinking: Its Character, Measurement, and Relationship to Critical Thinking Skill. Informal Logic. 2000;20(1):61–84.
6. Ludin SM. Does good critical thinking equal effective decision-making among critical care nurses? A cross-sectional survey. Intensive Crit Care Nurs. 2018 Feb 1;44:1–10.
7. Sun Y, Yin Y, Wang J, Ding Z, Wang D, Zhang Y, et al. Critical thinking abilities among newly graduated nurses: A cross-sectional survey study in China. Nurs Open. 2023 Mar 1;10(3):1383–92.
8. Ruslan Rusila. The level of critical thinking among nurses in Kuala Lumpur Hospital. [Serdang, selangor]: Universiti Putra Malaysia; 2013.
9. Vasli P, Mortazavi Y, Aziznejadroshan P,

Esbakian B, Ahangar HG, Jafarpoor H. Correlation between critical thinking dispositions and self-esteem in nursing students. J Educ Health Promot. 2023 Jan 1;12(1).

10. Liu T, Yu X, Liu M, Wang M, Zhu X, Yang X. A mixed method evaluation of an integrated course in improving critical thinking and creative self-efficacy among nursing students. Nurse Educ Today. 2021 Nov 1;106.
11. Shirazi F, Heidari S. The Relationship Between Critical Thinking Skills and Learning Styles and Academic Achievement of Nursing Students. 2019.
12. Liu N, Zheng Z, Liao J, Li J, Yang Z, Lai X. The Effectiveness of Student-Led Ward Round Training on Knowledge Acquisition, Critical Thinking Ability, and Self-Confidence of Acute Upper Gastrointestinal Bleeding for Nursing Students. Adv Med Educ Pract. 2023;14:21–30.
13. Hwang SY, Yen M, Lee BO, Huang MC, Tseng HF. A critical thinking disposition scale for nurses: Short form. J Clin Nurs. 2010 Nov;19(21–22):3171–6.
14. Sacgaca L, Dagdagui R, Alrashedi N, Buta J, Maestrado R, Villareal S, et al. Factors influencing critical thinking skills among nursing students: Reports from a cross-sectional study. International Journal of Advanced and Applied Sciences. 2022 Nov 1;9(11):93–8.
15. López M, Jiménez JM, Martín-Gil B, Fernández-Castro M, Cao MJ, Frutos M, et al. The impact of an educational intervention on nursing students' critical thinking skills: A quasi-experimental study. Nurse Educ Today. 2020 Feb 1;85.
16. Aguillon SM, Siegmund GF, Petipas RH, Drake AG, Cotner S, Ballen CJ. Gender differences in student participation in an active-learning classroom. CBE Life Sci Educ. 2020 Jun 1;19(2).
17. Amoo SA, Aderoju YBG, Sarfo-Walters R, Doe PF, Okantey C, Boso CM, et al. Nursing Students' Perception of Clinical Teaching and Learning in Ghana: A Descriptive Qualitative Study. Nurs Res Pract. 2022;2022.
18. Kasalaei A, Amini M, Nabeiei P, Bazrafkan L, Mousavinezhad H. Barriers of critical thinking in medical students' curriculum from the viewpoint of medical education experts: A qualitative study. J Adv Med Educ Prof. 2020 Apr 1;8(2):72–82.
19. Smith L, Gillette C, Taylor SR, Manolakis M, Dinkins M, Ramey C. A semester-long critical thinking course in the first semester of pharmacy school: Impact on critical thinking skills. Curr Pharm Teach Learn. 2019 May 1;11(5):499–504.