

Relation between critical thinking and motivation to learn among nursing students at Zagazig University

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Abstract

Back ground: The need for critical thinking in nursing has been accentuated in response to the rapidly changing health care environment .Nurse must think critically to provide effective care whilst coping with the expansion in role associated with the complexities of current health care system. **The aim of the present study** was conducted to assess the critical thinking on developing & motivation to learn among nursing students. **Subject & method:** **Research design:**, Descriptive correlation design was used to conduct the present study: **Setting:** the current study was conducted at faculty of nursing, zagazig university. **Subject** of the study will include all nursing students enrolled in the academic year 2017-2018. **Tools of data collections:** **Tool I:** Nurse Student's knowledge assessment questionnaire to assess nurse student's knowledge about critical thinking, **Tool II:** California critical thinking skills test it was to assess the nurse student's skills& **Tool III:** Motivation to learn questionnaire. **Results** the present study reveals there's statistically significant between critical thinking, and motivation to learn. **Conclusion:** it could be concluded that: all nursing student had inadequate level of knowledge regarding critical thinking, the highest percentages of them had a weak level of critical thinking skills and a moderate level of motivation to learn. **Recommendations:** Development of curriculum contents, which concentrates on improving thinking skills-in general- and critical thinking skills-in specific.

Key words: critical thinking, motivation to learn, knowledge of critical thinking, skills

Introduction

In today's technologically sophisticated healthcare globe, nursing students should be active learners and think critically about providing secure patient care. The capacity to think critically is also an important component of higher education and more specifically of education. Nurses need critical thinking to handle patients ' increasing cognitive ability and adapt to the-changing nature of the healthcare system ⁽¹⁾

Critical thinking can be defined as a rational reflective thinking on what to do or believe ⁽²⁾. Additionally, critical thinking is the disciplined process of conceptualizing, applying, evaluating, analyzing, synthesizing, and evaluating information gathered or produced by observation, experience, reasoning ⁽³⁾.

Modern society is becoming more complex, information is becoming available, and changing more rapidly prompting user to constantly rethink, switch directions, and change problem-solving strategies more. Thus, it is increasingly important to promote reflective thinking during learning to help learners develop strategies to apply new knowledge to the complex situations in their day-to-day activities ⁽⁴⁾

Most researchers recognize critical thinking to include both skills/abilities and agreements. Student motivation is thus viewed as an essential precondition for critical thinking skills and abilities. Motivation, which is one of the main variables in academic achievement, can be quickly sustained through fulfillment and engagement ⁽⁵⁾. Students' motivation has been described as the students' energy to learn, work efficiently, and achieve to

their potential at faculty ⁽⁶⁾. It is also, important not only because it apparently improves learning, but also because it mediates learning and educator knew that when learners are motivated during the learning phase, things go more smoothly, communication flows, anxiety decreases and creativity and learning are more apparent ⁽⁷⁾.

Motivation in relation to learning is defined as encouraging the student's mind to receive instruction. Motivation to learn also referred to the learner's meaningfulness, values, and benefits of academic assignments, fact, studying motivation refers mainly to the cognitive performance of the students ⁽⁸⁾. Motivation research indicates that perhaps the motivation of the student for any particular position can change from intrinsic to extrinsic. When intrinsically motivated, a student require effort for the fun or challenge involved in the task (enjoyment) rather than seeking extrinsic motivation such as rewards or avoiding pressure or punishment ⁽⁹⁾.

Significance of the study

Currently, faculties across the nation are under pressure to meet academic standards by preparing well equipped students to meet the demands of the market. Additionally, some studies mentioned that critical thinking skills are very important to students where it fell more confident in them and their abilities are more liked and respected by others, and think reflectively. Furthermore, motivation to learn plays a central role in student's academic engagement, success, attitude toward class, and choice of new learning activities. So, this study aims to the important of training program of critical thinking skills for developing reflective thinking and motivation to learn among nursing students in faculty of nursing at Zagazig University.

Aim of the study

To assess the relation between critical thinking skills and motivation to learn

Research questions:

Is this relation between critical thinking knowledge and motivation to learn?

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Subject and methods:

Research design:

Descriptive correlation design was used to achieve the aim of the present study. Nursing at zagazig university.

Study setting:

This study was conducted at the Faculty of Nursing, Zagazig University which include seven scientific departments: nursing administration, psychiatric and mental health nursing, medical surgical nursing, maternal and newborn health nursing, pediatric nursing, community health nursing, and geriatric nursing, and the faculty consisted of five floors.

Study subjects:

It includes all under graduate students in the academic year2017/2018 in the faculty the total sample of the study was 317 students.

Tools of data collection:

In order to fulfill the objectives of the study three tools were used to collect necessary data

Tool 1: Critical thinking knowledge questionnaire.

It was developed by the researcher to assess nursing students' knowledge about critical thinking. It consisted of 26 multiple choice questions such as: Thinking is the action of using one's mind to produce: A- Thoughts, B- Opinions, C- Judgments, D- All the above.

Scoring system:

The responses of questions were one for the correct answers and zero for the incorrect answers. The total score of all questions were 26. The total score for each nursing student was calculated and then converted into percent by dividing the nursing students' total score by the maximum possible score. If the score was $\geq 60\%$ it was considered satisfactory and unsatisfactory if less than 60%.

Tool 2: The California critical thinking skills test

It was developed by Facion⁽¹⁰⁾ to assess level of critical thinking skills among nursing students. It consisted of 34 multiple choice questions grouped into five critical thinking cognitive skills domain as follows: analysis, inference, evaluation, deductive reasoning and inductive reasoning.

Scoring system:

Questions were scored as One for correct answer and Zero for incorrect answer, then, the total score was calculated and converted into percent by dividing nursing student's total score by the maximum possible score and then multiply by 100 and then classified into three categories as the following: Weak $\leq 35.3\%$, Moderate 35.3- 53%, Strong 53%

Tool 3: Students' motivation to learn questionnaire:

It was developed by Glynn and Koballa⁽¹¹⁾ and modified by the researcher to assess nursing students' motivation to learn level. It included 30 questions categorized under six dimensions such as (Intrinsic motivation to learn, Extrinsic motivation to learn, Personal relevance of learning, Self determination to learn, Self-efficacy for learning, Anxiety about assessment.

Scoring system:

The responses of the participants were measured on a four point Likert scale rating always, sometimes, rarely and never scored as 4, 3, 2 and 1

respectively for each statement. While, the reverse questions were scored as 1, 2, 3 and 4 for always, sometimes, rarely and never respectively.

Content Validity and Reliability:

The tools of data collection were tested for their content and face validity sheet by a jury of five experts from which 3 assistant professor of nursing administration, 2 professors of community health nursing at the faculty of nursing at Zagazig University. The face & content validity sheet involved two parts. The first part: included the opinions of the experts for each item that were recorded on a two point scale: relevant, and not relevant. The second part: covered general or overall opinion about the form which expressed their opinions and comments on the tools for clarity, applicability, comprehensiveness, understanding, any suggestions for any additional or omissions of items and ease of implementation. According to their opinions all recommended modifications were performed by the researcher. Tool was tested for their reliability using Cronbach's alpha. The values were revealed as (0,95).

Field work:

The data collection phase of the study lasted long two months from the beginning of March to the end of April 2017. The final form of questionnaire sheet was handed to nursing students in their class setting by the researcher to elicit their opinions. The purpose of the study was explained to the participated students and ways to fill in the questionnaire sheets. They were completed in the same time of distribution and took about 20-30 minutes. The researcher checked each questionnaire sheet after they had been completed to ensure the completion of all information. The researcher met nursing students three times weekly in their class. The researcher collected data by herself

Pilot study:

A pilot study was carried out to test the tools feasibility, understandability and to estimate the time consumed for filling in the forms. It was carried out on 10% of study sample (32) nursing students. A brief explanation of the purpose of the study was provided to every nursing student in the pilot study, and then they were provided with a copy of each study tools. The times consumed in filling the tools were about 20-30 minutes. Data collected from the pilot study were reviewed and no modifications to items of the tools and those students were included in the main study sample.

Administration and Ethical consideration:

The study was approved by Ethics Committee at the Faculty of Nursing, Zagazig University. Verbal and written explanation of the nature and aim of the study have been explained to the nursing students included in the study sample. They were given an opportunity to refuse or to participate, and they were notified that they could withdraw at any stage of filling in the questionnaire. As well, they were assured that the information would be utilized confidentially and used for the research purpose only. Confidentiality was confirmed by not writing names.

Statistical Analysis:

Data entry and statistical analysis were done using Statistical Package for Social Sciences (SPSS) version 25. Quality control was done at the stage of coding and data entry. Data were presented using descriptive statistics in the form of frequencies and percentages for means, and standard deviations. Independent t-test was used for comparison of means of two independent groups of normally distributed data. Paired t-test was used for comparison of repeated observation on the same individuals (pre and post result) of normally distributed quantitative data. Pearson correlation analysis was used for assessment of the inter-relationships among quantitative variables. Analysis of variance (ANOVA) test for

comparison of means of multiple independent groups of normally distributed data. P- Value <0.05 was considered to be statistically significant and a highly significant level value was considered when p

Results:

Table (1) indicates that, the mean age of the nursing students was 21.85 ± 2.095 years and 54.50% of them aged more than 21 years. The highest percentages of nursing students were female, not married, in the 4th year, (71%, 95.9% & 29.7%, respectively).

Table (2): Level of critical thinking knowledge among nursing students It well- defined from the table that there is a weak percentage was 74.4%.4.

Table (3): Level of critical thinking skills among nursing students, it well-defined from the table that 74.4% of nursing students had a weak level of critical thinking

Table (4) shows the total level of motivation to learn scores among nurses' student. It well- defined from the table that there is a moderate percentage was 80.1%

Discussion

Concerning the personal characteristics of nursing students. The findings of present study indicated that slightly more than half of nursing students aged more than 21 years old, with mean age 21.85. Additionally, the highest percentages of them were female and single. This may be due to that entering of male to the faculties of nursing is recent in Egypt in general and in Zagazig in particular. Likewise, studying in the faculty of nursing is practical and taking a lot of time from students and it is difficult for them to study and take responsibility of family.

The current study findings illustrate that all nursing student had inadequate level of knowledge regarded critical thinking, This might

be due to that the nursing students had lack of knowledge about critical thinking and the curriculum of different nursing courses in the Faculty does not include critical thinking concept. As well as, the fact that the critical thinking concept was new to the majority of nursing students. The previous findings agreed with a study conducted, in Egypt, by Gonami⁽¹²⁾, who assessed critical thinking knowledge among nursing students and showed that there was a highly Likewise, Facione⁽¹³⁾, who developed a training program conducted in U.S.A to improve critical thinking disposition and its skills among nursing students; and showed that there was an improvement in the nursing students' knowledge. Additionally, these findings are similar is that of a study conducted by Khalli⁽¹⁴⁾, who showed that the nursing students had adequate level of knowledge about critical thinking

However, the previous findings are in disagreement with that of study carried out by Halpern⁽¹⁵⁾, who examined students' knowledge with nursing program in the faculty of nursing, in California, and found that the student nurses had a moderate level of knowledge. Additionally, Leonardi et al.⁽¹⁶⁾, who compared the critical thinking skills among Chinese baccalaureate nursing students; found that the nursing students had a moderate level of knowledge. The findings of the present study indicated that the highest percentages of nursing students had a weak level of critical thinking skills. This might be due to that nursing students had inadequate knowledge regarding critical thinking .

These findings are in accordance with that of a study conducted, in Maryland, by Lauren⁽¹⁷⁾, who investigated the effect of critical thinking skills on developing reflective thinking among undergraduate nursing students, and found that there were significant differences of total critical thinking skills. Additionally, these

findings are consistent with that of previous studies conducted in U.S.A by Dalir et al.⁽¹⁸⁾, Kaya et al.⁽¹⁹⁾ and Mahasneh et al.⁽²⁰⁾, which investigated critical thinking among nursing students, and they found that the undergraduate nursing students had a weak level of critical thinking skills. Moreover, Ghiasvand et al.⁽²¹⁾, conducted a study, in Malaysia, to examine the critical thinking skills among nursing students and found that the most nursing students had a weak level of critical thinking skills.

The findings of the current study clarified that the highest percentages of nursing students had a moderate level of motivation to learn .This might be due to that student nurses were highly anxious about exams and assessments that could negatively affect their motivation to learn.

This finding is in the same line with a study carried out, in China, among baccalaureate nursing students by Lee⁽²²⁾, who assessed the relationship between intrinsic motivation, critical thinking and academic performance, and found that more than half of nursing students had a moderate level of motivation to learn. Likewise, in a study conducted, in Sweden, by Stomberg and Nilsson⁽²³⁾, who explored the variation in nursing students' motivation and found that the nursing students had a high level of motivation to learn.

Conclusion

Based on the study findings, it could be concluded that: all nursing student had inadequate level of knowledge regarding critical thinking, the highest percentages of them had a weak level of critical thinking skills and a moderate level of motivation to learn. Additionally, there is a positive correlation between critical thinking skills and motivation to learn among nursing students

Recommendation

In the light of the study findings, the following recommendations can be suggested:

1. Development of curriculum contents, which concentrates on improving thinking skills-in general-and critical thinking skills-in specific
2. Critical thinking as a process involved in the learning process, should be integrated in administration curriculum.
3. Developing culturally appropriate critical thinking evaluation methods should be seen as a challenge for researchers who are dedicated to enhancing nursing practice.
4. Critical thinking of nurse educators should be explored together with

their self-directedness and learning styles.

5. Nurse educators should develop more strategies for motivating students such as become a role model for nursing students, get to know students, use a variety of student active teaching activities and. set realistic performance goals and help students to achieve them by encouraging them to set their own reasonable goals.

Further researches:

- Replication of the study in other universities is highly recommended to achieve generalization results.

Table (1): Personal characteristics of nursing students (n= 317)

	No	%
Age(years)		
≤ 21years	144	45.5%
> 21years		
	173	54.5%
Mean ±SD		21.85±2.095
Gender		
Female	225	71.0
Male	92	29.0
Marital status		
Not married	304	95.9
Married	13	4.1
Academic year		
First year	66	20.8
Second year	78	24.6
Third year	79	24.9
Fourth year	94	29.7

Table (2): Total knowledge of critical thinking level among nursing students throughout program phases (n=317)

Total knowledge scores		Paired t	P-value
Mean ±SD	Range		
7.7±2.5	0-15	96.428	<0.001**
22.4±1.9	16-26		

Table (3) Level of critical thinking skills among nursing students

Total critical thinking skills		
	No.=317	
	No.	%
Weak	236	74.4
Moderate	80	25.2
Strong	1	0.3

Table (4): Level of motivation to learn among nursing students

Total motivation to learn		
	No.=317	
	No.	%
Low	0	0.0
Moderate	254	80.1
High	63	19.9

References

- Green, C. :Maslow's hierarchy of needs. Retrieved Nov. 22, 2013 from:<http://opensource.com/business/09/1/1/maslows-hierarchy-community-needs>.
- Ennis, R. H.: Problems in testing informal logic critical thinking reasoning ability, *Informal Logic*, 2008, Vol. 6, No. 1, Pp. 3–9.
- Paul, R. W. : Critical thinking and intuitive nursing practice. *Journal of Advanced Nursing*, 2017, 22, 40-47.
- Papathanasion, E.D., Karanikola, M.N., Kalafati, M., Gianakopoulou, M., Lemonidou, C. & Albarran, J.W. : Professional autonomy, collaboration with physicians and moral distress among European intensive care nurses. *American Journal of Critical Care*; 2014, 21(2), e 41-e52.
- Mart, R: Fostering critical reflection in psychological practice. *Clinical Psychology Forum*, 2013; 139, 21-24.
- Alfaro-LeFevre, R. : Critical thinking indicators. Retrieved July 2014 from <http://www.alfaroteachsmart.com/2014ctirichjan.pdf>
- Herr, K., Coyne, P., Key, T., Manworren, R., McCaffery, M., Merkel, S., Pelosi-Kelly, J., and Wild, L: Pain assessment in nonverbal patients: Clinical recommendations: Persons with advanced dementia Guiding principles for the assessment of pain. *Pain Management Nursing*, 7 (2); Retrieved July2017 from http://www.medscape.com/viewarticle/533939_4.
- Brophy, J. : Motivating students to learn. (3rded.); Ch.1 & 9. USA: Routledge Taylor & Francis Group; 2010; pp.3 – 7, 12 & 208.
- Xie L, Kang H, Xu Q, Chen MJ, Liao Y, Thiyagarajan M, O'Donnell J, Christensen DJ, Nicholson C, and Deane R: Synthesis of research on critical thinking. *Educational Leadership*, 2011; 42, 40- 46.
- Facione, P. A. : The disposition toward critical thinking: Its character, measurement, and relationship to critical

- thinking skill. *Informal Logic*, 1991; 20 (1); 61-84.
- 11-Glynn, S.M. & Koballa, T.R. : Motivation to learn in college science. handbook of college science teaching. Ch.3. Arlington, VA: National Science Teacher Association Press, 2006; pp. 25 – 32.
- 12-Gonami, A.M. :Relation between critical thinking skills and critical thinking disposition toward baccalaureate nursing students. Benha University. . 2010.
- 13-Facione, P. A. : The disposition toward critical thinking: Its character, measurement, and relationship to critical thinking skill. *Informal Logic*, 2013; 20 (1); 61-84.
- 14- Khalili H. : Investigation of reliability, validity and normality Persian version of the California Critical Thinking Skills Test; Form B (CCTST). *Journal of Medical Education*, 2014; Vol.3, No.1.
- 15- Halpern, S. : Critical thinking at the bedside: A practical perspective. *British Journal of Nursing*, 2012; 12 (19); 1142-1149.
- 16- Leonardi, B.F., Duffey, M., and Belyea, M.: An evidence based project for evaluating strategies to improve knowledge acquisition and critical-thinking, performance in nursing students. *Journal of Nursing Education*, 2014; 39 (5); 219-228.
- 17- Lauren, M.L.: Critical thinking skills and dispositions of baccalaureate nursing students—A conceptual model for evaluation. *Journal of Professional Nursing*, 2010; 13(4); 236-245.
- 18- Dalir, M.H., Stover, L.M., & Whitlow, J.F. (): A longitudinal evaluation of baccalaureate nursing students' critical thinking abilities. *Journal of Nursing Education*, 2011. 38(3); 139-141.
- 19- Kaya, B.A., Edell, V., Butell, S., Doughty, J., and Langford, C. (): Critical thinking and clinical competence: A study of their relationship in BSN seniors. *Journal of Nursing Education*, 2012. 38 (3); 100-110.
- 20- Mahasneh, D.J., & Cox, P.D. (): Measuring change in students' critical thinking ability: implications for health care education. *J Allied Health*, 2013.31(2); 64-9.
- 21-Ghisvand, C.A. & Facione, P.A. : A look across four years at the disposition toward critical thinking among undergraduate students. *The Journal of General Education*, 2017.50 (1); 29-55.
- 22- Lee, C.: The theory of critical thinking of nursing. *Nursing Education Perspectives*, 2013.23(5); 243-247.
- 23-Stombargl, J.F. & Nilson, R.J.: Critical thinking: An annotated bibliography. London: Scarecrow Press. 2014