

Assess Critical Thinking Skills among Psychiatric Mental Health Nursing Students

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Abstract

Background: This study aimed to assesses critical thinking skills among psychiatric mental health nursing students. Study design was a descriptive research design. The study was conducted on 90 psychiatric mental health students at Faculty of nursing, affiliated to Ain Shams University. The type of sample was convenient sample. Data were collected using The California Critical Thinking Dispositions Inventory questionnaire (CCTDI) it divided into two parts (1) socio-demographic characteristics sheet (2) critical thinking assessment sheet. The results: this study revealed that the majority of sub-scales of CCTDI students showed a negative disposition toward critical thinking. No statistical significant difference was found in relation of critical thinking disposition and age and residence. The study concluded that, the majority of psychiatric mental health's nursing students have the highest mean percentage about skills of critical thinking in "truth seeking followed by open mindedness and inquisitiveness meanwhile, the lowest mean percentage of dispositional level characteristics of "self-confidence" among psychiatric mental health students. The most of psychiatric mental health nursing students have negative disposition toward clinical thinking. The study recommended that, Nursing educational program for enhancing critical thinking skills and how to apply, the students must play an active role in designing this program. Short courses workshops are recommended to develop critical thinking skills. Revising the curriculum and preparing nurse educators for implementation of innovative and active teaching strategies are suggested.

Key words: Critical Thinking, psychiatric Nursing Students.

Introduction:

Critical thinking is the art of thinking it refers to thinking clearer, precise, accurate, relevant, consistent, and faire. It is the art of constructive criticism; the art of identifying and removing bias, prejudice, and one sidedness of thought; the art of self-directed, in depth, rational learning, and thinking (*Harrison, 2016*).

Critical thinking is a composition of attitudes, knowledge, and skills that include "defining a problem, choosing information for the solution, recognizing stated and unstated assumptions, formulating and selecting relevant and promising hypotheses, drawing conclusions,

and judging the validity of the inferences" (*Tajvidi, ghyasvandian & salsali., 2014*).

Critical thinking is a cognitive activity, associated with using the mind. Learning to think in critically analytical and evaluative ways means using mental processes such as attention, categorization, selection and judgment. However, many people who have the potential to develop more effective critical thinking can be prevented from doing so for a variety of reasons apart from a lack of ability (*Cottrell, 2017*).

Critical thinking dispositions are the affective components of critical thinking. These affective dispositions are coupled with cognitive

skills as essential components of ideal critical thinker. Critical thinking disposition is consistent willingness, motivation, inclination and force to be engaged in critical thinking while reflecting on significant issues as making decisions, and solving problems. Critical thinking dispositions involves the seven dispositions (Analyticity, Open minded, Truth seeking, Systematicity, Self-confidence, Inquisitiveness and Maturity) that provide the students with the needed skills, primarily basic logic, the abilities or proficiencies to be critical thinkers (*Ghadi, Bakar & Njie ., 2015*).

Critical thinker is critically listening to others, giving feedback, accepting his own shortcomings and is able to postpone decision making to the end of the process to get the developmental result. It is obvious, that a critical thinker needs knowledge and awareness of those activities. However, learners need instruction. In other words, critical thinking ability can be enhanced in classes with lecturers' guidance (*Ghadi et al., 2015*).

Mental health nursing is one of the most interesting and challenging areas of nursing practice. The challenges of mental health nursing include working with people at the extremes of human experience where they can be vulnerable to doubting themselves, the environment and the people around them. Skillful mental Health nursing requires a sound knowledge of human physiology, health and disease, and bio psychological understanding of mental illness and their treatment, including pharmacology. Nurses working in mental health need to be opening minded and reflective and to have developed an understanding of esoteric concepts such as spiritually and hope (*O'Brien, Ninette & evans., 2016*).

Aim of the study

This study aimed to assess critical thinking skills among psychiatric mental health nursing students.

Research questions

This study is based on answering the following question:

-What are the critical thinking skills among psychiatric mental health nursing students?

Subjects and Methods:

Research design:

Descriptive research design was conducted to fulfill the aim of the study and answer the research question. It helps the researcher to describe and document aspects of a situation as it naturally occurs. As well, this design helps to establish a database for future research.

Setting of the study:

The study was conducted at Faculty of nursing, affiliated to Ain Shams University.

Subject:

Convenient sample included 90 nursing students in the study psychiatric mental health nursing students in the academic year 2017/2018.

Tools of data collection:

Data were collected using the following tools:

1- Interviewing questionnaire:

California Critical Thinking Disposition Inventory questionnaire (CCTDI), it divided into two parts:

Part 1: This part was intended to collect data related to socio-demographic characteristics of the study subjects as, age, sex, and grade, type of secondary education, place of residence, marital status and previous training in critical thinking

Part 2: This part aimed to assess critical thinking skills among psychiatric mental health nursing students. Developed by *Facione and Facione (2006)*. The CCTDI measures the "willing" dimension in the expression "willing and able" to think critically. It consists of 75 items grouped into seven dispositional characteristics [Truth seeking (12 items), analyticity (11 items), systematicity (11 items), self-confidence (9 items), inquisitiveness (10 items) and cognitive maturity (10 items)]. Scoring: the instrument uses a 5-point likert scale ranging from "strongly agree" to "strongly disagree". These are scored respectively from 1 to 5 so that a strongly agree indicate to (1), agree indicate to (2), uncertain indicate to (3),

disagree indicate to (4), and strongly disagree indicate to (5) (Facione et al., 2001). **Scoring system**

| Items | Scoring system | |
|-------------------------|----------------|----------|
| | Negative | Positive |
| Truth seeking | 1-30 | 31-60 |
| Analyticity | 1-27 | 28-55 |
| Systematicity | 1-27 | 28-55 |
| Self-confidence | 1-22 | 23-45 |
| Inquisitiveness | 1-25 | 26-50 |
| Open-mindedness | 1-30 | 31-60 |
| Cognitive maturity | 1-25 | 26-50 |
| Total critical thinking | 1-187 | 188-375 |

Pilot study:

A pilot study was carried out on 10% of students at psychiatric mental nursing department. The aim of the pilot study was to assess the understandability and applicability of the designated tool, and test the clarity of included questions related to California Critical Thinking Disposition Inventory questionnaire (CCTDI). The pilot has also served to estimate the time needed for each subject to fill in the question Data obtained from the pilot study were analyzed, and minor modifications were done. The pilot participants were not included in the main study sample.

Ethical considerations

The ethical research considerations in this study included the following:

The study proposal was approved by the Ethics committee of the Faculty of Nursing, Ain Shams University. Official permission to conduct the study was secured from pertinent authorities. An informed consent form was obtained from each participant before collecting data. This was done after explaining the study aim and demonstration of the data collection form. No harmful maneuvers were performed or used. The participants were informed about their rights to refuse or withdraw at any time without giving any reasons. Data were considered confidential and used only for scientific research

Statistical Analysis

Data entry and statistical analysis were done using SPSS 24 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, the 5-point likert scale responses were compressed into five points for the purpose of presentation of each item as follows: “strongly agree”, “agree”, “uncertain”, and “strongly disagree”, “disagree”. Quantitative continuous data were compared using the non- parametric Mann-Whitney tests were used to compare differences between two independent groups when the dependent variable is either ordinal or continuous, but not normally distributed. Statistical significance was considered at

Highly Significant (HS) P-value ≤ 0.001
Significant (S) P-value ≤ 0.05

Not significant (NS) p-value > 0.05

Results

Table (1) represents the socio-demographic characteristics of psychiatric mental health nursing students it reveal that more than half were females (52.2%). In the age group ≥ 21 years with a mean age of (21.9 ± 1.34) and the more than three quarters of psychiatric mental health nursing students under study were single representing (88.9%).

Similarly, **table (2)** this table shows the highest mean dispositional characteristics are the truth seeking $(29.87 + 5.58)$, and the open mindedness followed by systematicity $(26.37 + 5.08)$ and cognitive maturity, and while the least mean percentage was found for self – confidence $(19.52 + 4.72)$.

Figure 1 clarifies more than one third among psychiatric mental health nursing students (37%) had positive skills toward critical thinking, while more than two third of study sample (63%) had negative skills toward critical thinking.

Figure 2 illustrates students' responses to various skills of critical thinking. It demonstrates the highest skills of critical thinking had positive in inquisitiveness (73.3%) and cognitive maturity followed by truth seeking (48.9%), systematicity and analyticity, while the least skills had positive found in open-mindedness and self-confidence (31.1%)

Part III: Relation between student's critical thinking subscales and socio demographic characteristics

Table (2) indicate statistical significant relation between psychiatric mental health nursing students' skills of critical thinking and

Table (1): Socio-demographic characteristics of studied psychiatric mental health nursing students (n=90).

| Items | No. | % |
|--|-----|------|
| Age | | |
| 21≤ | 23 | 25.6 |
| > 21 | 67 | 74.4 |
| Mean ± SD (21.9±1.34) | | |
| Sex | | |
| Female | 47 | 52.2 |
| Male | 43 | 47.8 |
| Pre-university qualification: | | |
| Secondary school education | 55 | 61.1 |
| Technical institute | 35 | 38.9 |
| Residence | | |
| Urban | 58 | 64.4 |
| Rural | 32 | 35.6 |
| Previous attending training program about critical thinking: | | |
| No | 75 | 83.3 |
| Yes | 15 | 16.7 |
| Marital status | | |
| Single | 80 | 88.9 |
| Married | 9 | 10 |
| Divorced | 1 | 1.1 |

their gender and pre-university qualification and previous attending training program about critical thinking $P < 0.001$.

Part III: Relation between total student's critical thinking and socio demographic characteristic

Table (3) reveals that, there is significant relation between the sex and previous attending program about critical thinking among psychiatric mental health nursing students under study and their total critical thinking $P < 0.001$, while there is no significant relation regarding to age pre-university qualification, residence and marital status.

Table (2): Items related to CCTDI.

| Dispositional characteristics | Mean+SD | Median |
|-------------------------------|----------------|--------|
| 1-Truth seeking | 29.87 + 5.58 | 30 |
| 2- Analyticity | 26.04 + 4.82 | 26.5 |
| 3- Systematicity | 26.37 + 5.08 | 27 |
| 4- Self-confidence | 19.52 + 4.72 | 20 |
| 5- Inquisitiveness | 28.35 + 5.33 | 29 |
| 6- Open-mindedness | 28.35 + 5.33 | 29 |
| 7- Cognitive maturity | 26.12 + 5.93 | 27 |
| Total critical thinking | 176.92 + 25.74 | 179 |

Figure (1): Total critical thinking among students in the study sample (n=90)

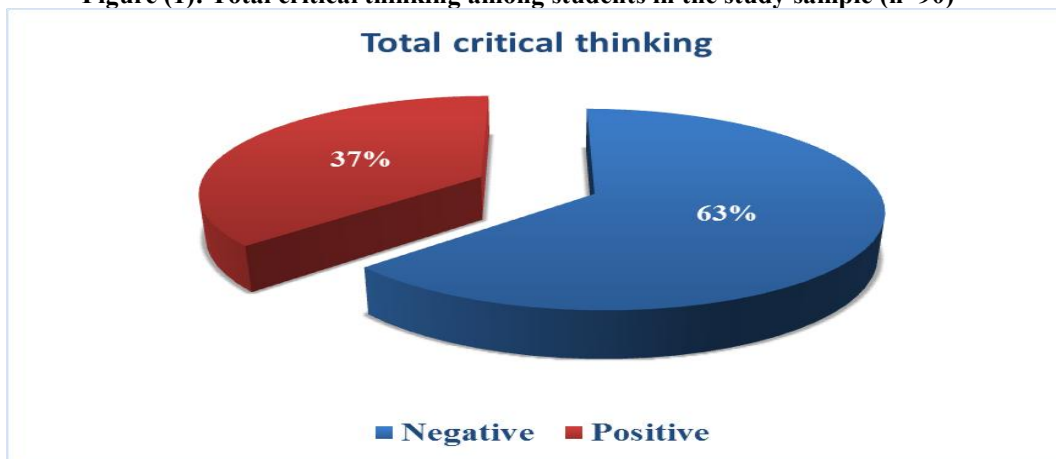


Figure (2): Total critical thinking among students in the study sample (n=90)

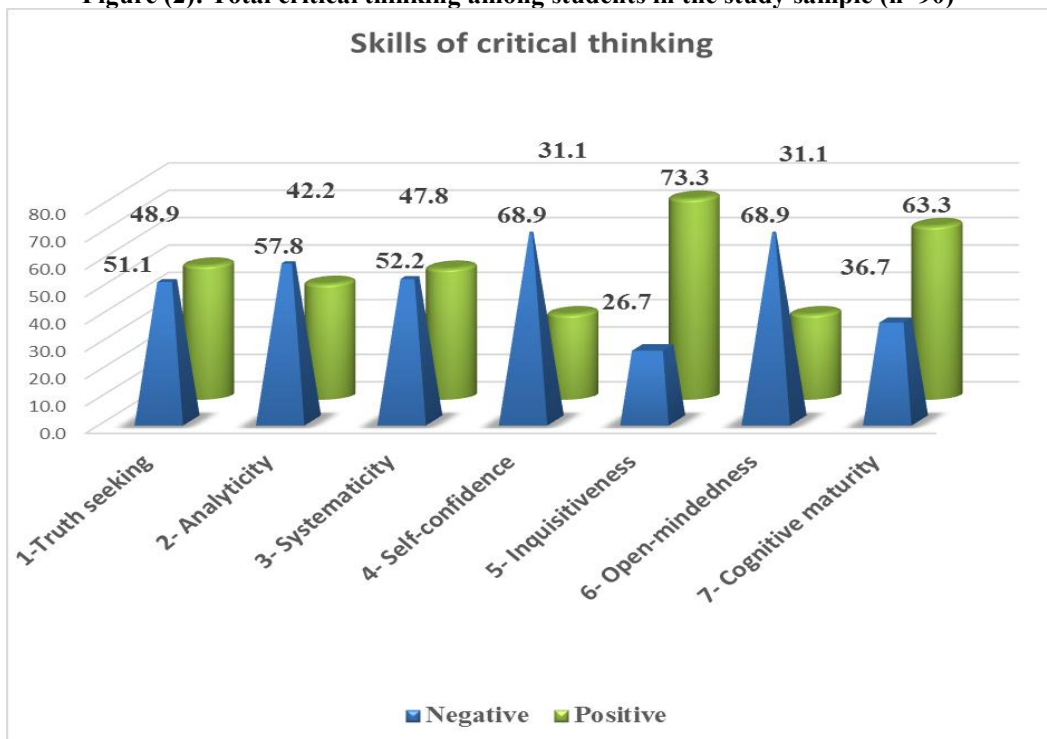


Table (3): Relation between psychiatric mental health nursing student's critical thinking skills and socio demographic characteristics

| Demographic data | Truth seeking | analyticity | systematicity | Self-confidence | inquisitiveness | Open-mindedness | Cognitive maturity | Total | Mann Whitney test | p-value |
|--|---------------|-------------|---------------|-----------------|-----------------|-----------------|--------------------|-------|-------------------|--------------|
| Critical thinking | | | | | | | | | | |
| Age | | | | | | | | | | |
| ≤21 | 32 | 26 | 27 | 19 | 29 | 29 | 28 | 179 | 731.5 | 0.71 |
| > 21 | 30 | 27 | 28 | 20 | 29 | 29 | 26 | 180 | | |
| Sex | | | | | | | | | | |
| Male | 31 | 28 | 29 | 20 | 30 | 30 | 29 | 186 | 669 | 0.006 |
| Female | 29 | 26 | 26 | 19 | 27 | 27 | 26 | 172 | | |
| Pre-university qualification: | | | | | | | | | | |
| Secondary school education | 30 | 26 | 27 | 18 | 27 | 27 | 27 | 177 | 620 | 0.005 |
| Technical institute | 32 | 28 | 27 | 20 | 30 | 30 | 27 | 178 | | |
| Residence | | | | | | | | | | |
| Urban | 31 | 26 | 27 | 20 | 29 | 29 | 26 | 177 | 915.5 | 0.91 |
| Rural | 30 | 27 | 27.5 | 20 | 29 | 29 | 27 | 180 | | |
| Previous attending training program about critical thinking | | | | | | | | | | |
| No | 30 | 27 | 28 | 20 | 29 | 29 | 27 | 181 | 242.5 | 0.004 |
| Yes | 28 | 22 | 24 | 17 | 26 | 26 | 26 | 161 | | |

Table (4): Relation between psychiatric mental health nursing students of total critical thinking and socio demographic characteristic

| Items | Total critical thinking | | chi-square | P value | Significance |
|--|-------------------------|-------------|------------|---------|--------------|
| | Negative | Positive | | | |
| Age | | | | | |
| 21≤ | 15 65.2% | 8 34.8% | .04 | 0.8 | N.S |
| 21> | 42 62.7% | 25 37.3% | | | |
| Sex | | | | | |
| Female | 35 74.5% | 12 25.5% | 5.25 | 0.02 | S |
| Male | 22 51.2% | 21 48.8% | | | |
| Pre-university qualification: | | | | | |
| Secondary school education | 39 70.9% | 16 29.1% | 3.49 | 0.06 | N.S |
| Technical institute | 18 51.4% | 17 48.6% | | | |
| Residence | | | | | |
| Urban | 20 62.5% | 12 37.5% | .01 | 0.9 | N.S |
| Rural | 37 63.8% | 21 36.2% | | | |
| Previous attending training program about critical thinking: | | | | | |
| No | 44 58.7% | 31 41.3% | 4.22 | 0.04 | S. |
| Yes | 13 86.7% | 2 13.3% | | | |
| Marital status | | | | | |
| Single | 50 62.5% | 30 37.5% | .64 | 0.72 | N.S |
| Married | 6 66.7% | 3 33.3% | | | |
| Divorced | 1 100.0% | 0 0.0% | | | |

Discussion:

Socio-demographic characteristics of participants:

The present study sample included 90 psychiatric mental health nursing students. The study had been conducted faculty of nursing, Ain Shams University, at psychiatric Mental Health nursing department. Nursing students who were available at the time of the study, with criteria: Fourth academic year, students ranged between 19-≥21years old.

Regarding age of the students, this study showed that three quarter of nursing student's age represented ≥ 21 . About more than half of nursing students were females, while males were nearly to half and more than three quarter of nursing students under study were single.

The results of the current study consistent with *Kim and Choi (2014)*, these studied "The Relationship between Problem Solving Ability, Professional Self-Concept, and Critical Thinking Disposition of Nursing Students", and stated that the age of participant

was 20.2±1.2. Also, study by *Ragab (2016)* who studied Critical Thinking Dispositions among Students of Nursing Faculty. Showed that the under graduate nursing students age between 17-21 years old. This is may be due to that the age of mental health nursing students enrolled in psychiatric and mental health nursing department ranged between 19-24 years old.

As regard pre university qualifications of the current study the majority of the study sample had secondary school certification. This result is in accordance with *Wafeek (2014)*, who studied Critical Thinking Teaching Skills among Faculty Nursing Students”, and stated that the majority of nursing students were secondary education compared to those with technical institute diploma. Also study by *Mohamed et al. (2016)* show that the majority of nursing students was secondary school certificate compared with technical health institute diploma. This is may be due to that the technical institute students enrolled in faculty of nursing is limited in number according to the coordinating admission office rules, so the highest percentage came from secondary schools.

Regarding to residence, slightly more than one third of the study sample were from urban areas. This is may be due to that the enrolling of mental health nursing students are controlled by geographical distribution, and the study was carried out in faculty of nursing Ain Shams University, so the students were from Cairo (urban areas).

Regarding to pervious attending training programs about critical thinking this study revealed that more than three quarter of the study students reported having no pervious attending training programs about critical thinking, this is may be contributed to that the curriculum of nursing didn't apply critical thinking and problem solving skills throughout different academic years.

Part II. Critical thinking dispositions among nursing students:

Concerning truth seeking which measures the disposition to evaluate alternatives or differing thoughts, this indicate that students base their practice on how procedures have always been done and they unwilling or hesitating to reevaluate new information. In the current study the mean scores of truth seeking were the highest among psychiatric nursing students. Also have a positive inclination towards truth seeking. This is may be due to the nursing students at this stage of education may be more accepting of others view and interaction between the teacher and students to be open to new information.

This result is consistent with the finding of *Mahmoud (2012)* who studied critical thinking dispositions of baccalaureate nursing students and relation to their achievement reported that the highest score achieved by students was on the subscale of truth seeking. This result not supported by *El-Molla, Abed and Nagib (2009)* studied the disposition of the undergraduate university nursing students toward critical thinking; they reported that nursing students had the lowest mean scores in truth seeking.

As regard analyticity is a core disposition for the inquiring mind, it means being able to foresee potential problems and to make use of objective evidence in the face of complicated problems. In the current study the mean score of analyticity are moderate among psychiatric nursing students. This may be due to the psychiatric nursing students hesitating to break down information into its parts to discover their nature, function and the relationships among these parts. To develop that the students require synthesizing and analyzing material are better suited to develop analyticity.

These findings agree with the finding by *Beşer & Kissal (2009)* who studied Critical Thinking Dispositions and Problem Solving Skills among Nursing Students state that the students received moderate scores of analyticity in the first, the second and the fourth years. While in the opposite study by *McGrath (2003)*, who studied “The Relationship of Critical Thinking Skills and Critical Thinking Dispositions of Baccalaureate

Nursing Students”, who stated that, the participants mean score was high in analyticity

Concerning Systematicity is a tendency to conduct organized, planned and careful investigations; Systematicity plays an important role in professional decision making in the present study the psychiatric nursing students had moderate mean score toward systematicity disposition. This finding may be due to the students at this stage had the ability to perform organized well planned and careful investigations.

This result is agreement with *Beşer & Kissal (2009)* these stated that the students received moderate scores of systematicity in the first, the second and the fourth years. While this result in accordance with *Ragab (2016)* who state that the mean scores of systematicity were low among nursing students.

As regard to self-confidence which refers to the tendency to trust one place in one's own reasoning processes. Results of the current study revealed that the mean scores of self-confidence are low and more half of students were negative disposition toward critical thinking. This may be due to lack the assurance of their reasoning abilities, and the negative interpersonal relationship with clinical instructors, peer, hospital staff, patients and visitors in which not supporting error with patient.

This result is accordance with *Mohamed & Mohammed (2016)* these studied Relationship between critical thinking disposition of nursing Students and their performance for patients on hemodialysis. These state that reported that self- confidence was achieved by students with lowest score. And more than half of students were negative disposition toward self-confidence subscale.

As regard to inquisitiveness, this reflects the tendency to obtain information and learn new things without self-interest. The result of the current study denoted that the psychiatric nursing students had a positive inclination towards the inquisitiveness. Also, they had high

mean score toward this disposition. This finding may be due to their exposition to a wide variety of diverse situations during their education which reflects eagerness to obtain knowledge even when it may not have immediate use.

These results are consistent with *Wangenstein et al. (2010)* who studied Critical thinking dispositions among newly graduated nurses who found that the majority of the nurses were positively disposed on the Inquisitiveness subscale. as well as *Beşer & Kissal (2009)* these stated that the students had high mean score toward inquisitiveness at fourth year of academic. This finding contradicted with *Mohamed & Mohammed (2016)* these state that the students were negative disposition toward inquisitiveness as well as *Mahmoud (2012)* who study Critical Thinking Dispositions and Learning Styles of Baccalaureate Nursing Students and its Relation to Their Achievement, found critical thinking inquisitiveness subscales were achieved by students with lowest score.

Concerning open-mindedness is a predictor of individuals' tolerance to different approaches and individuals' ability to recognize their own mistakes. The results of the current study showed that the mean scores of this dispositional characteristic were the highest among nursing students. This result may be contributed to that the students mean scores of truth seeking and inquisitiveness were high among psychiatric nursing students of the current study, which courage the students to express their opinions freely and reflect on their own views that indicate that students became more tolerant of different points of view and receptive to the recognition of their own mistakes. Which courage the students to express their opinions freely and reflect on their own views that indicate that students became more tolerant of different points of view and receptive to the recognition of their own mistakes.

These results are agree with *Wafeek (2014)* that stated open-mindedness mean scores were the highest among nursing students, as well as *Ragab (2016)* who state that the mean scores of this dispositional characteristic were the highest among nursing students. On the

other hand the findings of the current study didn't similar to the study performed by *Naguib (2009)* who study assessing the disposition of the undergraduate university nursing students toward critical thinking who reported that the nursing students failed to show a positive disposition toward open-mindedness.

Concerning to cognitive maturity targets disposition to be judicious on one's decision making and approaching problems in time-pressured environment. The current study revealed that the students got moderate mean score towards the cognitive maturity, while more than two third of students had positive inclination toward cognitive maturity. This may due to adolescent age is the period of shaping cognitive maturity which marked by liability of opinions, thoughts and believes and the students at this age had the ability to be judicious in their own decision-making.

The results of the current study contrary to the result of the study performed by *Mohamed & Mohammed (2016)* these state that more than third of subject have a negative disposition in maturity. As well as Also findings of *Kyungrim Shin et al. (2006)* who study critical thinking dispositions and skills of Senior Nursing Students in Associate, Baccalaureate, and RN-to-BSN Programs, their result showed the lowest score in maturity.

Results of the current study revealed that slightly more than one third of psychiatric nursing students showed positive disposition towards critical thinking. This may be due to inadequate inclusion of critical thinking in undergraduate nursing programs, also due to the application of traditional methods in nursing education, which shows the need to revise the nursing curriculum.

This finding disagrees with study by *Wangensteen et al. (2010)* who studied critical thinking dispositions among newly graduated nurses. It showed that more than two third of the respondents reported a positive disposition towards critical thinking.

Part III. 1) Relations between students' critical thinking dispositions subscales and their demographic characteristics.

The present study demonstrates that there are statistical significant relation between nursing students' skills of critical thinking and their pre-university qualification. Which the technical institute students enrolled in faculty of nursing is limited in number according to policy of the coordinating admission office, so the total grade the student acquire in the secondary education. Also the current study show that there are statistical significant differences of critical thinking dispositions between sexes, male students showed more critical thinking dispositions.

The study agree with this findings by *Kim and Choi (2014)*, who reported that there were statistical significant differences of critical thinking dispositions between sexes, male students showed more critical thinking dispositions and differences of critical thinking ability depending on students' college experiences. On the other hand the study disagrees with this finding by *Gurol et al (2013)* who studied Critical thinking disposition in students of vocational school of health services, state that no statistical significant differences of critical thinking dispositions and gender.

The present study demonstrates that no statistical significant differences between students' critical thinking and their age, also, the current study indicate that no statistical significant differences between students' critical thinking and their residence

The results of the current study are consistent to the result of the study performed by *Gurol et al (2013)* who state that was no statistically significant between the age and total score of critical thinking ($p>0.05$).

Part III.2) Relation between total student's critical thinking and socio demographic characteristic

The present study demonstrates that there is statistical significant relation between the sex, that the majority of female had negative relation about critical thinking also and previous attending program about critical thinking among psychiatric mental health nursing students under study and their total critical thinking, may be due to the majority the nursing students not attended to program about critical thinking had negative inclination toward critical thinking. So the department of psychiatric mental health nursing should interest to attending the students to program and work shop about critical thinking.

The results of the current study are consistent to the result of the study performed by *Rudd et al. (2000)*, who study Undergraduate agriculture student learning styles and critical thinking abilities: Is there a relationship stated that there are significant gender differences in critical thinking dispositions with females having a greater disposition to think critically.

Conclusion

The majority of psychiatric mental health's nursing students have the highest mean percentage about skills of critical thinking in "truth seeking followed by open mindedness and inquisitiveness meanwhile, the lowest mean percentage of dispositional level characteristics of "self-confidence" among psychiatric mental health nursing students. The most of psychiatric mental health nursing students have negative disposition toward critical thinking.

Recommendations:

1-Nursing educational program for enhancing critical thinking skills and how to apply, the students must play an active role in designing this program.

2-Short courses workshops are recommended to develop critical skills

3-Revising the curriculum and preparing nurse educators for implementation of

innovative and to meet the opportunities of critical thinking practices

4- Design active teaching strategies are suggested and how to use these strategies in effective ways for developing critical thinking skills of nursing students.

References:

- Beşer, A., & KISSAL, A. (2009):** Critical thinking dispositions and problem solving skills among nursing students.
- Cottrell, S. (2017):** Critical Thinking Skills: Effective Analysis, Argument and Reflection, *Palgrave Study Skills*, Macmillan International Higher Education
- El – Molla, M. A., Abed, F. A. & Nagib, R. M. (2009):** assessing the disposition of the undergraduate university nursing students toward critical thinking at faculty of nursing, Minia University, master thesis, faculty of nursing, Cairo University.
- Facione N.C., & Facione P.A., (2006):** The cognitive structuring of patient delay in breast cancer. *Social Science and Medicine*, 63 (12) 2006: 3137–3149
- Ghadi, I. N., Bakar, K. A., & Njie, B. (2015):** Influences of critical thinking dispositions on critical thinking skills of undergraduate students at a Malaysian Public University. *Journal of Educational Research and Reviews*, 3 (2): 23-31.
- GÜROL, A., Seval, U. S. L. U., POLAT, Ö. E., YİĞİT, N., & YÜCEL, O. (2013):** Critical thinking disposition in students of vocational school of health services. *Ejovoc (Electronic Journal of Vocational Colleges)*: 3(1):
- Harrison, C. V. (2016):** *Evaluating the outcomes of a concept-based curriculum in an associate degree nursing program.* University of Missouri-Kansas City.

- Kim, K. and Choi, J. (2014):** The relationship between problem solving ability, professional self-concept and critical thinking disposition of nursing students. *International Journal of Bio-science and Bio-technology*; 6(5): 131-142.
- Kyungrim Shin, EdD; DukYoo Jung, MSN; Sujin Shin, PhD; and Myoung Soo Kim, PhD, RN (2006):** Critical Thinking Dispositions and Skills of Senior Nursing Students in Associate, Baccalaureate, and RN-to-BSN Programs June, Vol. 45, No. 6 *Journal of Nursing Education*
- Mahmoud , G.H.(2012):** Critical Thinking Dispositions and Learning Styles of Baccalaureate Nursing Students and its Relation to Their Achievement, *International Journal of Learning & Development , Vol. 2, No. 1, URL:*
- Mohamed, H. A., & Mohammed, S. S. (2016):** relationship between critical thinking disposition of nursing Students and their performance for patients on haemodialysis.at *IOSR Journal of Nursing and Health Science ,Volume 5, Issue 6 Ver. VI ,PP 45-53*
- Mohamed, M. F., Elsayed, S. G., Mohamed, T. R., & Abdelrazek, F(2016):** Internship and Clinical Decision Making combined with Critical Thinking Disposition among Nursing Students.
- Nagib, R. (2009):** Assessing the disposition of the undergraduate university nursing students toward critical thinking, Master Thesis, Minia University.
- O'Brien, A., Ninette, D., Evans, K. (2016):** *Psychiatric & Mental Health Nursing, the effective nurse*, Elsevier Health Sciences, 4TH ed, in china
- Paul, R., & Elder, L. (2013):** *Critical thinking: Tools for taking charge of your professional and personal life*. Pearson Education.
- Ragab, A. M. (2016)** Assessing Critical Thinking Dispositions among nursing Students, these master degree faculty of Nursing, Ain shams university
- Rudd R Backer M and Hoover T (2000):** Undergraduate agriculture student learning styles and critical thinking abilities: Is there a relationship. *Journal of Agricultural Education*; 41(3): 2-12.
- Salsali, M., Tajvidi, M., & Ghiyasvandian, S. (2013):** Critical thinking dispositions of nursing students in Asian and non-Asian countries: A literature review. *Global journal of health science*, 5(6): 172.
- Tajvidi, M., Ghiyasvandian, S., & Salsali, M. (2014):** Probing concept of critical thinking in nursing education in Iran: a concept analysis. *Asian nursing research*, 8(2): 158-164.
- Wafeek, A. (2014):** Assessment of critical thinking teaching skills among faculty nursing students, thesis master degree: Ain Shams University, Faculty of Nursing.
- Wangensteen S., Johanssoni. S., Björkströmm. E. & Nordström G. (2010)** Critical thinking dispositions among newly graduated nurses. *Journal of Advanced Nursing* 66 (10): 2170–2181