

Clinical Decision Making and Critical Thinking Dispositions among Students at Faculty of Nursing in Port- Said University

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ABSTRACT

Background: the dynamic health care system requires newly graduate nurses who can collect pertinent data, access to resources, prioritize the information, solve the problems, and ultimately make sound clinical decisions **Aim:** to study the relationship between clinical decision making with critical thinking dispositions among students at faculty of nursing in Port- Said University. **Subject and Methods:** The Research design was a co-relational descriptive design. Setting the study setting was conducted at the Faculty of Nursing, Port Said University. **Subject:** Consisted of all (155) nursing students who were regular attendants at the third and fourth academic year at Faculty of Nursing in Port- Said University. Tools of data collection: Two tools were used for data collection. I) Clinical decision making nursing scale. II) California critical thinking disposition inventory. **Results:** The study results revealed that, the second dimension canvass for objectives and values scored the highest mean (36.26) clinical decision making. The nursing students had high ability in total clinical decision making, while has the highest mean score for critical thinking characteristics was inquisitiveness for nursing students, followed by analyticity among nursing students, as well as followed by self-confidence among nursing students. However, the lowest mean score was in truth seeking for nursing students. Nursing students had a moderate level of the critical thinking disposition **Conclusion:** there was no statistical significant correlation between, Critical thinking disposition of nursing student, although there is a statistical significant correlation among some dimensions of these variables. **Recommendations:** the study recommended that nursing educational programs need to be revised for the inclusion of resources needed to implement critical thinking to nursing students and continuous training for nursing educator and students about CT whether the theory and practice and how to evaluate its dispositions effectively and starting early when student admission.

Key words: Critical thinking disposition, clinical decision making, nursing student.

INTRODUCTION

Nursing literature tends to use the concepts of critical thinking and decision making interchangeably in reference to clinical decision making, and many of the components related to critical thinking can be found within the framework of clinical decision making (*Tanner, 2006*). Clinical Decision Making (CDM) is a complicated process involving scientific discipline, critical thinking, evaluating proof, applying data, problem-solving skills, reflection, and clinical judgment to implement the most effective course of action (*Standing, 2007*). According to *Jones (2007)* there are two types of decisions that are routine decisions and innovative decisions. Routine decisions used to respond to often occur, common, and fairly well defined problems. Innovative decisions are created once the case or problem is uncommon and also the rules and tips were not clearly defined or dictate a course of action.

However, *Kelly (2012)* added that the decision making process composed of five steps, the first step including, establish the requirement for a choice and gather knowledge, establish key participants. The second step including, confirm the goal or outcome desired. The third step including, identify alternatives as identify consequences of every alternative and identify advantages of every alternative. The fourth step including, make the decision, act on it. The fifth step including, evaluate the decision. *Byrnes (2005)* described some of the characteristics of successful decision-makers that are decision-makers should be able to discriminate between good options and inappropriate good options; have interaction in behaviors that maximize their probabilities that they're going to discover adequate or higher options as well as ways to control their attention and emotions.

The need for critical thinking in nursing has been accentuated in response to the rapidly changing health care environment. Nurses must think critically to provide effective care whilst coping with the expansion in roles associated with the complexities of current health care systems (*Simpson & Courtney, 2010*). *Facione (2015)* suggests the most effective defines critical thinking as the ability to interact in purposeful, self-regulatory judgment. Also, critical thinking is short, self-reliant, self-disciplined, self-monitored, and self-corrective thinking (*Scriven and Paul, 2009*).

Brookfield (2005) was focused on both cognitive and affection components through identifying four components of critical thinking. First, a significant principle of critical thinking that is distinctive and difficult assumptions. People should challenge their current assumption or belief about a topic and examine for accuracy. Second, thoughts and actions are influenced by the context or environment in which they're conferred. Third, alternatives are fanciful and explored more of the truth. Last, imagining and exploring results in reflective skepticism. *Moreover, Facione (2015)* characterized critical thinking as an interaction between skills and dispositions. Dispositions and skills are connected, however, not interchangeable, critical thinking skills relate to the cognitive ability to reason and interact in active inquiry, whereas

critical thinking disposition refers to a person's tendency to exercise the skills and get pleasure from doing this (*Bensley, 2006*).

Significant of Study:

Rubinfeld and Scheffer (2010) described Critical thinkers in nursing exhibit these habits of the mind: confidence, context, perspective, creativity, flexibility, curiosity, intellectual integrity, intuition, open-mindedness, perseverance, and reflecting. *Turner (2005)* identified CT in nursing as purposeful, self-regulatory judgment associated in some way with clinical decision making, diagnostic reasoning, nursing process, clinical judgment, and problem solving. This process provides reasoned thought to evidence, contexts, conceptualizations, methods, and criteria (*Facione & Facione, 2008*). Critical thinking in nursing is an essential component of skilled accountability and quality nursing care *Rubinfeld & Scheffer, 2010*.

Decision-making is the contextual application of critical thinking to establish concepts resulting in a description of a phenomenon (*Darby & Walsh, 2010*). Moreover, clinical decision making has been linked to critical thinking (*Ozturk et al., 2008*), clinical judgment (*Thompson et al., 2004*), problem solving (Lee & Brysiewicz, 2009), and clinical reasoning (*Banning, 2008*). Critical thinking involves good strategies of problem solving and decision making; it is a reflective problem solving style of thinking (*Tomey, 2009*).

AIM OF THE STUDY:

Assess clinical decision making and critical thinking dispositions among students at faculty of nursing in Port- Said University

Research Questions:

- 1-Do nursing students have clinical decision making abilities?
- 2-What are the levels of critical thinking dispositions among nursing students?
- 4- Is there a relationship between clinical decision making and critical thinking dispositions of nursing students?

SUBJECT AND METHODS:**Research design:-**

The design of the present study was a co-relational descriptive research design.

Setting:

The present study carried out at the Faculty of Nursing, Port Said University

Subjects:

The study were consist of all (155) nursing students who were regular attendants at the third and fourth academic year at the faculty of nursing in Port- Said University.

Tools for data collection:

Data for this study were collected using the following two tools:

I- Clinical Decision Making in Nursing Scale (CDMNS)

II- California Critical Thinking Disposition Inventory (CCTDI)

First tool: is aimed to measure clinical decision making of nursing students. It was named as Clinical Decision Making in Nursing Scale (CDMNS). The CDMNS is self-report of an individual's perception regarding his/her behavior while caring for Clients (Jenkins, 2001) and developed by (Edelen, 2009) translated tool by a researcher. It is consisted of 40 items grouped into four sub-scales, related to different clinical decision-making behaviors, namely: (a) search for alternatives and options (10 items), (b) Canvass for objectives and values (10 items), (c) evaluate and re-evaluates consequences (10 items), (d) Search for information and unbiased assimilation of new information (10 items). Reliability and Validity for the CDMNS, A Cronbach's alpha of the mean scores was used to establish reliability for the CDMNS instrument. The reliability coefficient for the entire set of items was reported as 0.83. After reviewing the test, a panel of expert nurses determined its face validity by attesting that the instrument measures what it is purported to measure.

Second tool: is consisted of two parts: **Part I:** This part was geared to collect data about the personal and academic characteristics of the students, i.e., students' name, age, gender, academic year. **Part II:** is aimed to assess the critical thinking dispositions of nursing students. This part was named as The California Critical Thinking Disposition Inventory (CCTDI), developed by Facione and Facione (1992), updated by them in 2000. It was used after testing it by Dogham (2008) and Abd - El hady (2010). The California Critical Thinking Disposition Inventory (CCTDI), it consists of 75 items grouped into seven dispositional characteristics, namely: Truth seeking (12 items); open-mindedness (12 items); analyticity (11 items); systematicity (11 items); self-confidence (9 items); inquisitiveness (10 items); maturity (10 items), **Reliability and Validity for the CCTDI.** A Cronbach's alpha of the mean scores was used to establish reliability for the CCTDI instrument. The reliability coefficient for the entire set of items was reported as 0.78. After reviewing the test, a panel of expert nurses determined its face validity by attesting that the instrument measures what it is purported to measure.

RESULTS:

Table (1): Indicates personal and academic characteristics of nursing students. As shown in the table, about two thirds of them, (67.7%) are included in age group with more than 20 years old; in addition to both male and female are equal in number.

Table (2): Indicates distribution of the mean scores and Std. Deviations for total and the four sub- scales of clinical decision making. Regarding first dimension, it is found that nursing students mentally list options before making a decision scored the highest mean (4.05). Whereas in the second dimension, finding out about the client's

objectives is a regular part of my clinical decision-making scored the highest mean (4.01), concern in the third dimension, it is found that, consider even the remotest consequences before making a choice scored the highest mean (3.93), whereas in the fourth dimension, use books or professional literature to look up things I don't understand scored the highest mean (3.92). In addition, the second dimension canvass for objectives and values scored the highest mean (36.26). In general, the nursing student has high ability in total clinical decision making.

Table (3): Shows the distribution of the CTD total and subscale scores among nursing students. It is found that about three fourth of nursing students (76.1%, 74.2%, 75.5%, respectively) has a positive disposition towards analyticity, Self-confidence and inquisitiveness. Moreover, about three fourth (74.2%) nursing students had ambivalent disposition towards open-mindedness followed by more than half of nursing students (52.9%, 58.7%, and 53.5% respectively) has ambivalent disposition towards truth seeking, systematicity; maturity. Totally more than half (55.5%) of nursing student had an ambivalent disposition towards critical thinking, whereas, none of the nursing students has negative disposition towards critical thinking. The table depicts, the highest mean score for critical thinking characteristics are inquisitiveness for nursing students, followed by analyticity among nursing students, then followed by self-confidence among nursing students. However, the lowest mean score is in truth seeking for nursing students.

Table (4): Reveals the relation between total CTD of nursing student and their personal dispositions. This table shows that total CTD scores is positive disposition by increasing the age with a statistically significant difference. Also, this table clarifies that males' students has positive disposition in total CTD scores than females with a statistically significant difference.

Table (5): shows the relation between total CTD and CDM of nursing student with their age groups and gender. Clinical Decision Making of nursing student has statistical significant difference with age groups and gender.

Table (6): shows the correlation between total CDM and subscale scores with total and subscale scores CTD for nursing student. It is found that there is a positive statistical significant correlation between total CDM of nursing student and subscale scores with analyticity, self confidence in addition to inquisitiveness, while, being a negative statistical significant correlation with truth seeking.

Table (1): Personal and academic characteristics of nursing students (N = 155)

Personal characteristics of nursing students	Frequency N= 155	Percent 100%
Academic year		
Third academic year	73	47.1 %
Fourth academic year	82	52.9 %
Age (years):		
<=20	50	32.3 %
> 20	105	67.7 %
Gender		
Male	78	50.3 %
Female	77	49.7 %

Table (2): Distribution of the mean scores for total and the four sub- scales of clinical decision making among nursing student (N = 155).

Items	Mean	SD
(A) Search for alternatives and options		
• If the clinical decision is vital and there is time, I conduct a thorough search for alternatives	3.93	.97
• The situational factors at the time determine the number of options that I explore before making a decision.	3.70	.89
• A random approach for looking at options works best for me	2.59	1.09
• Brainstorming is a method I use when thinking of ideas for options	3.54	1.07
• I mentally list options before making a decision	4.05	.97
• If an instructor recommends an option to a clinical decision making situation, I adopt it rather than searching for other options	3.34	.94
• I select options that I have used successfully in similar circumstances in the past.	3.78	.97
• I do not ask my peers to suggest options for my clinical decisions	2.74	1.16
• My finding of alternatives seems to be largely a matter of luck.	3.23	1.06
• In my search for options, I include even those that might be thought of as "far out" or not feasible.	3.87	.98
Total (A)	34.77	4.54
(B)Canvass for objectives and values		
• When a person is ill, his or her cultural values and beliefs are secondary to the implementation of health services.	3.48	1.09
• I assist clients in exercising their rights to make decisions about their own care.	3.97	.98
• When my values conflict with those of the client, I am objective enough to handle the decision-making required for the situation	3.93	1.02
• I consider the future welfare of the family when I make a clinical decision, which involves the individual.	3.73	1.12
• I consider what my peers will say when I think about possible choices I could make.	3.74	1.01
• My professional values are inconsistent with my personal values.	2.62	1.31
• In the clinical setting, I keep in mind the course objectives for the day's experience	3.46	1.12
• When I have a clinical decision to make, I consider the institutional priorities and standards.	3.77	.99
• Finding out about the client's objectives is a regular part of my clinical decision-making.	4.01	.96
• The client's values have to be consistent with my own in order for me to make a good decision	3.55	1.17

Total (B)	36.26	4.64
Items	Mean	SD
(C) Evaluate and re-evaluate consequences		
• I don't always take time to examine all the possible consequences of a decision I make.	2.94	1.24
• When examining consequences of options I might choose, I generally think through "If I did this, then..."	3.47	1.11
• I consider even the remotest consequences before making a choice.	3.93	.89
• If a benefit is great; I favor it without looking at other options.	3.81	.97
• My past experiences have little to do with how accurately I look at risks and benefits for decisions about clients	2.93	1.21
• When examining consequences of options I might choose, I am aware of the positive outcomes of my client	3.45	1.05
• If the risks are serious enough to cause a problem, I reject the option.	3.81	.99
• I write out a list of positive and negative consequences when I am evaluating an important clinical decision.	3.89	.98
• The risks and benefits are the farthest thing from mind when I have to make a decision	2.95	1.05
• I examine the risks and benefits only for consequences that have serious implications	3.88	1.025
Total (C)	35.06	4.71
(D)-Search for information and unbiased assimilation of new information		
• Looking for new information in making a decision is more trouble than it is worth	3.26	.92
• I use books or professional literature to look up things I don't understand.	3.92	.99
• I go out of my way to get as much information as possible to make decisions.	3.67	1.06
• I listen to or consider expert advice or judgment, even though it may not be the choice I would make.	3.43	.93
• I solve a problem or make a decision without consulting anyone, using information available to me at the time	3.33	1.18
• I have little time or energy available to search for information	3.80	.94
• Consensus among my peer group is important to me in making a decision	3.87	.88
• I include clients as sources of information	3.48	1.12
• I search for new information randomly	2.89	1.25
• I involve others in my decision making only if the situation calls for it.	3.50	.99
Total (D)	35.14	4.75
Total Clinical Decision Making	141.24	15.79

Table (3): Distribution of the critical thinking dispositions total and subscale scores among nursing student (N = 155).

Critical thinking dispositions Subscale	Negative disposition		Ambivalent		Positive disposition				
	N	%	N	%	N	%	Mean	SD	Rank order
Truth seeking	48	31.0	82	52.9	25	16.1	33.48	6.91	7
Open-mindedness	23	14.8	115	74.2	17	11.0	34.71	4.83	6
Analyticity	2	1.3	35	22.6	118	76.1	43.85	5.46	2
Systematicity	5	3.2	91	58.7	59	38.1	38.97	4.94	5
Self-confidence	6	3.9	34	21.9	115	74.2	43.82	6.41	3
Inquisitiveness	2	1.3	36	23.2	117	75.5	44.59	6.29	1
Maturity	3	1.9	83	53.5	69	44.5	39.43	5.25	4
TOTAL CTD	----	----	86	55.5	69	44.5	278.34	24.52	----

Table (4): Relation between level CTD of nursing student and their Personal dispositions (N = 155).

Personal dispositions		Total CTD				X ²	P
		Ambivalent disposition		Positive disposition			
		N	%	N	%		
Age:-	=<20	36	41.9%	14	20.3%	Fisher's Test	.003**
	>20	50	58.1%	55	79.7%		
Gender	Male	34	39.5%	44	63.8%		
	Female	52	60.5%	25	36.2%		

Table (5): Relation between total CTD, total CDM of nursing student and their age groups and gender nursing students (N = 155).

Item	Gender				T-test	P-value	Age groups				T-test	P-value
	male N = 78		female N = 77				=< 20 N =50		> 20 N =105			
	Mean	SD	Mean	SD			Mean	SD	Mean	SD		
Total CDM	142.08	14.09	140.39	17.38	.663	.50	143.30	14.53	140.26	16.32	1.17	.25
Total CTD	282.78	25.62	273.83	22.64	2.31	.02*	271.08	24.04	281.79	24.09	-2.59-	.01**

Table (6): Correlation between clinical decision-making and critical thinking dispositions for nursing student (N=155).

CDM	CTD							
	Truth seeking	Open mindedness	Analyticity	Systematicity	Self confidence	Inquisitiveness	Maturity	total CTD
	r	r	r	r	r	r	r	r
(A) Search for alternatives and options	-.33 ^{**}	-.08-	.18 [*]	-.03-	.21 ^{**}	.18 [*]	-.11-	.02
(B) Canvass for objectives and values	-.22 ^{**}	-.04-	.17 [*]	.12	.16 [*]	.25 ^{**}	-.06-	.09
(C) Evaluate and re-evaluate consequences	-.36 ^{**}	.00	.29 ^{**}	-.05-	.27 ^{**}	.22 ^{**}	.06	.11
(D) Search for information and unbiased assimilation of new information	-.28 ^{**}	.02	.22 ^{**}	-.01-	.30 ^{**}	.17 [*]	.01	.11
Total Clinical Decision Making	-.35 ^{**}	-.03-	.26 ^{**}	.01	.28 ^{**}	.24 ^{**}	-.03-	.09

DISCUSSION:

The dynamic health care system and complexity of care demands requires newly graduated nurses to collect pertinent data, access resources, prioritize information, solve problems, and ultimately makes sound clinical decisions (*Kuiper, 2005*). In addition to, *Ozturk et al. (2008)* mention that, clinical decision making has been linked to critical thinking .Critical thinking is essential to nursing education (*Romeo, 2010*) as well as nursing practice (*Kuiper, Murdock & Grant, 2010*).). The present study aimed to study the relationship between clinical decisions making with critical thinking dispositions among students of nursing faculty in Port- Said University.

The study findings revealed that nursing students had high scores in total CDM and its dimensions. Regarding higher scores for CDM dimensions is canvassing of objectives and values with the highest items was finding out about the client's objectives is a regular part of my clinical decision-making and assist patients in exercising their rights to make decisions about their own care. This result may indicate that all students are fairly homogeneous in their professional value system and nursing student has been educated to value objective data, the strength of nurses' intuition that urges them to do something more for the patient, thus supporting the element of subjectivity in the decision making process. Perhaps, with having more experience, nursing students establishing objectives may come easier. This interpretation is supported by *Johnson (2011)* who stated that students who perceive trust between faculty and students may be more likely to take objectives and values into consideration when considering decisions.

Regarding, the alternatives and options; evaluation and reevaluation of consequences. The results are congruent with **Giro** (2000). This may be referred to that many nursing students may have had more opportunities to practice decision making during their training in field work. The fermenting ability based on their past experience with similar situations and hence measuring the strengths and weaknesses in their alternative. Also, they have the chance to peers for suggestions or adopt a recommendation made by their instructors when making clinical decisions. This interpretation is supported by **Simmons** (2010) who states that evaluating clinical information for significance is part of a cognitive process for weighing relevant alternative action.

Concerning search for information and unbiased assimilation of new information, the result could be due to that the students in the PBL group had to spend a large amount of time focusing on their topic or better communication and information flow, cooperation between nurse educator and students and clear assessment of the clinical situation of the patient can increase effectiveness of information. This interpretation is supported by **Edelen** (2009) who state that student relationships with patients and interactions with faculty, staff, and peers as positive influences on nursing student CDM ability. It observed that the highest score in this dimension was related to use books or professional literature to look up things I don't understand and Consensus among my peer group is important to me in making a decision, that is similar to, **Gerrish and Clayton** (2004) who found that the majority of students always uses books or professional literature to look up things they do not understand. Also, **Li-Ling** (2006) who mentioned that, nurses should be able to discuss clinical decisions with their peers and work as a team.

Globally, the nursing students have high ability in clinical decision making and the dimension canvass for objectives and values was highest mean scored, this result may be attributed to nurse educators who are role models to encourage students to express their opinions. In addition to, use different learning strategies to energize CDM abilities development, also, it could be related to the PBL approach that adopted by nursing faculty of Port Said University this finding is supported by **Krumwiede** (2010) and **Johnson** (2011) were matched with the present study findings.

Related to truth seeking dimension, the study results revealed that more than half percentage of the nursing students had ambivalent disposition level. This is in agreement with **Abd - Elhady** (2010) in Port Said University; **Ojewole** (2013) in Southwestern Nigeria were matched with the present study findings. On the contrary a study results conducted by **EL- Sayed** (2012) in Mansoura University, clarified that the highest percentage of the senior nursing students had a positive disposition level toward truth seeking.

However, **Ali** (2009) in Minia University reported a negative disposition level toward truth seeking. This result might be indicating that most students today are not be interested to ask questions, nursing teachers not encouraging students to ask questions due to the lack of time, or may be due to poor relationships between students and their

instructors. This finding is supported by *Rimiene (2002)* declared that truth seeking is the most difficult disposition to develop.

As regards the open-mindedness dimension, it was found that most of the nursing students had ambivalence disposition. This is in agreement with *Ali (2009)*. These findings are in contrary to *Boyadjian- Samawi (2006)* who reported that the senior nursing students had a positive disposition level toward open-mindedness. While, *Abd- El hady (2010)* reported that the senior nursing students had a negative disposition level toward open-mindedness. This result might be due to students do not have the desire to have an open mind, which leads to lack of asking questions or know the truth. This results supported by *Leppa (2004)* found that in a virtual environment, asking questions with increasing sophistication helped students develop their critical thinking. In the same context, *El-Hessewi (2003)* in Alexandria University indicates that difference personal teachers may affect the open-mindedness of the students.

Regarding the analyticity dimension, it was found that most of the nursing students had a strong positive disposition level. The foregoing result is congruent with *Ali (2009); and Yeazel (2008)* in Capella University. This results supported by *Abd-Elhady (2010)* who indicate that may be all the students were in a state of readiness for exposure to any problem. This may mean that applying teaching strategies as a problem solving approach, case study and assignments promote the development of analytical thinking. In the same context, *Cruz et al. (2009)* indicated that this case study is successful in enhancing knowledge, skills, and attitudes relevant to learning, case studies help students to learn how to understand the given information, acquire relevant information, and accomplish stated goals or tasks via a critical thinking process.

Regarding the systematicity dimension, the nursing students had an ambivalent disposition level. This finding was in the same line with *Abd-El hady (2010); Ali (2009)*. Compared to other studies were done by *Boyadjian- Samawi (2006)*, which was shown that the nursing students had a positive disposition level toward systematicity. This result might be due to appropriate teaching strategies used by teaching staff that help student to organize their thoughts in a clear and accurate manner.

Regarding the self- confidence dimension, it was observed that most percentage of the nursing students had a positive disposition level. This is in agreement with *Ali (2009); Cohen (2010) in San Francisco and Ghoneimy (2012)* were matched with the present study findings. While, Kawashima (2008) founded that the nurses had a negative disposition level toward to self-confidence. This finding was supported by *Abd-El hady (2010)* who was indicated, the high mean score level of disposition self-confidence among nursing students due reload college means different student assessment or related teachers encourage students to make rational decisions, or maybe due to a good personal relationship with teachers and students. Moreover, the

learning environment may allow the development of self-confidence the students and encouraged to express their views and receive feedback.

Concerning the inquisitiveness dimension, the most of the nursing students had positive disposition level; this finding is congruent with, *Ali (2009) and Wangensteen et al. (2010)* This result might be related to, students activities that reality situation and uses techniques as role-playing and mannequins that help students to demonstrate critical thinking. In this regard, As well, *Rush, Dyches, Waldrop, & Davis (2008)* who stated that the simulation provoked inquisitiveness, application of standards, and thinking with intuitive processes supported by experience, interviews after simulations revealed that student confidence depended largely on experience with the type of scenario in the simulation.

Regarding to maturity dimension, more than half of the nursing students had an ambivalent disposition. This finding is congruent with *Ali (2009)* . While, *Mackenburg-Mohn (2006)* in Capella University reported that nursing students had positive dispositions maturity. Whereas, *El kasas (2012)* in Alexandria University founded that most nursing students had a negative disposition towards maturity. In this respect *Bakr (2004)* pointed that the significant improvement in critical thinking built gradually from the time a student entered a nursing program to the time they graduated. Also, described that the factors affecting the degree of cognitive maturity, might be the classroom overcrowding of nursing student, the bulkiness of knowledge, limited time of nurse educators, and insufficient use of teaching strategies.

Abd-El hady (2010) who indicated that the nursing students may be had an ambivalent disposition due to the students learning the contents of the theory in the management of the nursing subject of such decision-making and leadership that may enhance the ability of students to think and make decisions according to the cognitive maturity, also, maturity can come from direct contact with the external environment and the experience and the student did not acquire then completely with time may be to increase.

The present study revealed that, more than half of the nursing students were at the ambivalence level CTD. This is in agreement with *El Kasas (2012) and Pai & Eng (2013)*. The current study result may be interpreted in that the ambivalences identified in sub-scales will limit development in total disposition, because elements are interrelated and positive disposition requires positive scores in all elements (*Facione, Facione & Giancarlo, 1998*). This result may be related to the impact of the problem based learning and problem-solving and teaching methods that stimulate student learning, learning activity among students and teachers in a small group discussion may be effective and improved relations and communication with the student. Furthermore, it is noteworthy that the learning environment may act to impose the thinking of students by instilling a culture of thinking in the classroom. This interpretation is supported by *Kong, Qin, Zhou, Mou, & Gao (2014)* who mentions that PBL has been shown to improve critical thinking disposition in undergraduate nursing students, especially in the dimensions of truth seeking, analyticity, and self-

confidence. In this respect, **Ozturk et al. (2008)** indicated a group of participant's use of the PBL model recorded high mean scores on disposition of analyticity and inquisitiveness and lower mean scores on truth-seeking disposition.

Regarding to study students' CTD total scores and their age, these findings suggest that CTD of nursing student had statistical significant difference with age groups. This finding is in agreement *with Wangenstein et al. (2010)*. In this regard, *Abd- El hady (2010)* mentioned that, younger students may remain unsure of whether or not they really want to be a nurse and may not fully understand the depth of the role. Whereas, *Alfaro-LeFevre (2009)* identified age as one of the personal factors that influence critical thinking, with increased age associated with a higher level of critical thinking, individual's age, they have more opportunities to practice reasoning in different situations. While, *Cohen (2010)* dissertation revealed weak or no correlation between critical thinking disposition scores and age, *Lewis (2012)* conducted no statistical significant difference between nursing student critical thinking dispositions and age or years of nursing experience.

Regarding to gender and total students CTD, statistically significant differences were found between gender and total CTD students' scores; this is in agreement with *Abd- El hady (2010)*. This finding disagreed with *Miller, Carr, Brendemuhl, Ricketts, Myers & Roberts (2011)* who found no statistical significant difference was reported that related gender to critical thinking disposition scores. The foregoing result indicated that gender may be a determinant factor in critical thinking. In this regard, *Facione et al. (1998)* clarified that gender is target of societal prejudices about differences in thinking.

Regarding to the correlation between CDM and critical thinking disposition for nursing students, the findings of the present study showed that a positive, statistically significant correlation between total CDM and subscale scores with analyticity, self confidence in addition to inquisitiveness for nursing student. While, being a negative statistical significant correlation with truth seeking, this is consistent with Gorton (2010) who stated nurse practitioner students who demonstrate higher scores on the CT will demonstrate higher scores on the evaluation and reevaluation of consequences subscale of the CDM. In addition, *Hoffman et al. (2004)* noted that students who scored higher on CDM have more self confidence. This finding may be due to process problem solving allows the nursing student to begin developing critical thinking by collecting data about the problem, analyzing the data, formatting a plan of action, putting the plan into action and then evaluating the results. At each step of problem solving, the student is required to take action and make a decision. Taking action and making decisions help to improve the student's ability to think and to make inquiries.

The funding for mentioned was supported by *McLaughlin, Moutray & Muldoon (2008)* mentioned that nurses with a Bachelor's degree are believed to use higher levels of cognitive skills, as learn how to analyze situations, reflect on their

performance, evaluate interventions and make clinical judgments. Additionally, **Ghoneimy (2012)** pointed out that higher mean scores of self-confidence among nursing students may be that the student is thinking carefully and looking for creative alternatives, has the intellectual curiosity and are able to take advantage of the views of others. Also, nursing students have acknowledged the importance of feeling confident in their ability to apply knowledge and skills in a clinical setting (**Nash, Lemcke, & Sacre, 2009**).

Regarding a positive statistical significant correlation between total CDM and the inquisitiveness sub scale of CTD for nursing student, this may mean that the student is like to read, to gather information and try to be prepared for situations and being curious enough to go back and find the information led to make a decision in the clinical area. In the same line, **Brookfield (2005)** mentioned, critical thinking exists outside the classroom and is present in the decisions made in our lives. The findings also revealed that a negative statistical significant correlation between total CDM and truth seeking sub scale of CTD for nursing student, this finding could be due to uses of some protocols in clinical setting which failed to encourage independence, critical thinking in that practice situation and maybe the society and culture is heretical in nature and values seniority and conflict avoidance. This finding is supported by **Wangensteen et al. (2010)** stated that, lower scores of truth seeking in nurses because they didn't have a capability to reevaluate new information and base practice on how procedures have always been done.

Regarding a positive, statistically significant correlation between total CDM of nursing student and subscale scores search for alternatives and options and canvass for objectives and values with perceptions of student abilities these findings are paralleled with **Johnson (2011)** who concluded that there were significant correlations between subscale (search for alternative or options) and the statements related to the perception of interested and supportive faculty, and the ability of students to be creative in their work , and sub scale (canvassing objectives and values) and the perception of mutual trust between faculty and students, and the ability of students to be creative in their work. In the same line the students' perception of self may affect their decision-making activities (**Marquis & Huston, 2012**).

Cognitive abilities are seen to have an effect on decision making. Cognitive processes refer to ways of knowing critical thinking and problem solving. It is the ability to identify and collect relevant information (task and contextual) and process these data used in order to make decisions in the focal areas of problem, intervention, interaction and evaluation. (**Smith, Higgs, & Ellis, (2006)**).

There was no statistical significant correlation among the variables, CDM of nursing students and CTD of nursing students this is consistent with **Gorton (2010) and Walsh (2010)** who's found no statistically significant correlation between critical thinking skills and clinical decision-making making. However, **Hoffman and Elwin (2004)** found a negative correlation between critical thinking and perceptions of clinical decision-making skills. In addition to, **Hicks et al. (2004)** demonstrates that

the ability to think critically may not necessarily improve one's clinical decision-making ability. May support the notion that CT and CDM are separate constructs and may be due to teacher demographics and educational practices during the clinical learning experience or may be related to the students who think more critically are more hesitant in clinical decision-making.

CONCLUSION:

Based on the finding of the study ,it can be concluded that :

The nursing students have high ability in clinical decision making while have moderate level of the critical thinking disposition. Globally, there is no statistical significant correlation among clinical decision making, critical thinking disposition of nursing student, although there is a statistical significant correlation among some dimensions of these variables.

RECOMMENDATIONS:

Based on the finding of this study, the following are recommended that:

Maintenance and improvement of student's clinical decision making and factors interfering with critical thinking dispositions among students of faculty of nursing in Port- Said University.

For the faculty of nursing in Port- Said University

- 1- Nursing programs need to be revised for the inclusion of resources needed to teach critical thinking to nursing students.
- 2- Nursing programs should assure about acquiring and practicing researcher competencies to energize both critical thinking and clinical decision making
- 3- Take measures needed to improve PBL skills and other instructional methods that engorge critical thinking and clinical decision-making of student by training program for both.

Suggestions for future research

1. The study of factors interfering *with* critical thinking disposition and clinical decision-making among both traditional and non-traditional faculties.
2. Study only explored students' perceptions of their decision making using a quantitative instrument; a future study could include an observational component or field interviews.

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إتخاذ القرار الإكلينيكي والإستعداد للتفكير النقدي لدى الطلاب بكلية التمريض جامعة بورسعيد

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الخلاصة

الخلفية: يتطلب نظام الرعاية الصحية تحديث ديناميكية التمريض لإمكانية جمع البيانات ذات الصلة، والوصول إلى الموارد، وتحديد الأولويات المعلومات، حل المشاكل، وبالتالي اتخاذ القرارات الإكلينيكية السليمة.

الهدف: تهدف هذه الدراسة إلى دراسة العلاقة بين اتخاذ القرار الإكلينيكي والعوامل المتداخلة في الاستعداد للتفكير النقدي بين الطلاب بكلية التمريض جامعة بورسعيد. واستخدمت دراسة وصفية ترابطية، التي نفذت في كلية التمريض في جامعة بورسعيد وأدرجت عينة الدراسة من جميع طلبة التمريض الذين كانوا منتظمين في الحضور من الفرقة الثالثة و الرابعة في كلية التمريض جامعة بورسعيد، وكانت عينة الدراسة 155 طالبا ، وقد تم جمع البيانات باستخدام 1- مقياس اتخاذ القرار الإكلينيكي في نطاق التمريض، 2 استمارة قياس الاستعداد للتفكير النقدي وقد أسفرت نتائج هذه الدراسة أن الأهداف والقيم سجل أعلى معدل من اتخاذ القرارات الإكلينيكي ، وقد أسفرت نتائج هذه الدراسة بشكل عام أن الطلاب لديهم القدرة على اتخاذ القرار ، في حين أن وحوالي نصف الطلاب لديهم استعدادا محايدا تجاه خصائص التفكير النقدي والخاصة: لا يوجد طلاب لديهم استعدادا سلبيا تجاه الاستعداد التفكير النقدي و ليست هناك علاقة ذات دلالة إحصائية بين اتخاذ القرار الإكلينيكي والاستعداد للتفكير النقدي للطلاب . على الرغم من أن هناك علاقة ذات دلالة إحصائية بين بعض خصائص هذه المتغيرات. أوصي بأن برامج التمريض بحاجة إلى مراجعة لإدراج الموارد اللازمة لتنفيذ وكيفية تقييم والتدريب المستمر للتفكير الناقد لطلاب التمريض.

الكلمات الإرشادية :- التفكير النقدي ،مقياس كاليفورنيا للتفكير النقدي ،مستويات التفكير النقدي ، القرار الإكلينيكي والاستعداد للتفكير النقدي