

The Relationship between Student's Self Esteem and Problem Solving at Benha and Ain Shams Technical Institute of Nursing

Asmaa Helmy*, Samah Faisal**, and Howida Hassan***

*Technical Institute of Nursing at Ain Shams University. **Nursing Administration, Faculty of Nursing, Ain Shams University.*** Nursing Administration, Faculty of Nursing, Benha University.

Abstract

Nursing students should be prepared in their areas of education to practice their abilities in problem solving which increase their self esteem. **Aim of the study:** The aim of the study was assessing self-esteem among nursing students at Technical Institute of Nursing at Benha and Ain Shams University through: identifying nursing student's knowledge about problem solving at Technical Institute of Nursing at Benha and Ain Shams University, measuring nursing student's problem solving abilities at Technical Institute of Nursing at Benha and Ain Shams University, also investigating the relation between student's problem solving abilities and their self-esteem at Technical Institute of Nursing at Benha and Ain Shams University. **Design:** Cross-sectional analytical study was utilized to conduct the study. **Setting:** The study was conducted at Benha and Ain Shams Technical Institute of Nursing. **The study sample:** composed of 285 nursing students as: 210 students from Benha University and 75 students from Ain Shams University were recruited for the study. **Tools of data collection:** Three tools were utilized for data collection of this study; problem solving knowledge questionnaire sheet composed of 21 multiple choice questions, problem solving abilities questionnaire sheet composed of six groups of questions and self –esteem scale composed of 20 items divided into three sub-scales. **Results:** The study findings revealed that the majority of students (74.4%) were having unsatisfactory total knowledge of problem solving, less than two thirds (61.4 %) having total adequate problem solving ability and slightly less than half of the nursing students (48.1%) were having high self esteem. **Conclusion:** There was statistically significant positive correlation between problem solving knowledge and abilities, also there was statistically significant positive correlation between nursing student's self esteem and their problem solving abilities. **The study recommended:** Technical Institutes of Nursing should adopt problem solving educational approach with training teachers in its application and students need more support and practice to increase their abilities, skills and increasing their self esteem which needs some consideration. Further research is suggested to assess the effectiveness of improving problem solving abilities of nursing students on their self esteem.

Key words: Nurse student, Problem solving knowledge of abilities, Self-esteem.

Introduction

The nursing profession has evolved in the past 100 years, today nurse is an

important partner to all health care professionals (Azizi *et al.*, 2015). A good and professional nurse must have self esteem, critical thinking skills, in-depth knowledge, problem solving abilities,

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ability to focus on clinical conditions, while also making clinical decision and implementing nursing interventions; hence the health industry should be prepared to meet the needs of patients and the requirements of changing health care systems (*Rubin et al., 2012*).

Nursing is challenging profession because it requires expertise in a broad range of skills and abilities; so nursing training is a planned process aimed to achieve changes of behavior of nursing students regarding their profession as a result of experience. Nursing students should be learned how to enter into interaction using their own thoughts, feelings and become aware of their own real feelings, events and problems around them (*Alghamdi and Urden, 2015*).

Problem solving is essential for providing quality nursing care; therefore it is necessary to enhance the development of student's problem solving ability during nursing education; because graduates are expected to be prepared for the increasingly challenging roles which are required in clinical practice. Nursing education should prepare students to make decisions independently using critical, analytical thinking and to demonstrate problem solving to address actual and potential health needs of their clients (*Castledine, 2013*).

Problem solving is a part of decision making or the ability to identify a problem or evaluate all of the relevant factors and develop a good solution, also it is a systematic process that focuses on analyzing a difficult situation and always includes decision making steps, part of this process is the development of personal characteristics such as courage, self control, good decision making and consideration of others (*Craven and Hirnle, 2015*).

Problem solving can be viewed as an important conformity mechanism that

serves to increase behavioral competence and it leads to a decrease in psychological distress. Self esteem may play an important role in the relationship between self appraisal, problem solving ability and psychological adjustment; hence there is evidence to link the relationship between self esteem and problem solving skills because, it was found that students who have effective problem solving skills they also have high self esteem and more confidence in their initial approaches to the problem (*Ghosh and Sobek, 2015*).

Researchers nowadays choose to make researches on self esteem as it seems to affect the performance of individuals in various fields, according to *Rosenberg (1965)*, who stated that self-esteem is the individual's overall level of self-acceptance or self rejection and it is a part of the psychological portrait (*Smith and Mackie, 2013*), also self esteem refers to an individual's subjective evaluation of his or her worth as an important person, self esteem does not necessarily reflect a person's objective talents and abilities or even how a person is evaluated by others, moreover it is expressed as a sense of competency, assertiveness and feeling of being loved as well as it is the measure of one's sense of self worth based on perceived success and achievements (*Sturm and Dellert, 2015*).

Self-esteem is considered as a basic human need and an important factor of human behavior so it is defined as a measure of one's sense of self worth based on success and anticipation of evaluation by others. The importance of self-esteem can be viewed as it is important to psychological development as Maslow stated and when people experience it they feel good and look good, they are effective and productive and they respond to other people and themselves in healthy positive growing ways. People who have self-esteem know that they are lovable, care about themselves and other people, they don't have to build themselves up by

tearing other people down, also coping adequately with the challenges of growing and developing persons needs to believe that they have the capacity to achieve what they need and knowing that they are deserving happiness in life (*Lang and Neyer, 2014*).

The effects of self-esteem may also be seen in career planning and decision making, there are also rejections, disappointments and failure are a part of daily life, but high esteem can assist a person in weathering the storm and facing disappointments, also self-esteem assumes an economic importance because persons with high self-esteem are confident of their abilities and gain pleasure from acting on them and more effective and productive employees (*Patric and Smith, 2012*).

Individuals who have effective and positive social problem solving approach almost have high self esteem; so they have generally more confidence in their initial approaches to the problems and seek less information before offering solutions and making decisions, but low self esteem creates dysfunction and negative problem solving abilities; so there is big relation between problem solving abilities and self esteem or they affect each other positively (*Hamarta, 2014*).

Significance of the study

Education is a continuous process which provides student's stimulation to improve life as it is full of problems which need to be solved; hence today society requires the students to be creative, highly self esteem and able to produce effective solutions to the problems; so there is an urgent need for research testing the effectiveness of these skills and self-esteem on the development of student's problem solving abilities during the nursing education (*Wold and Helson, 2013*).

Good problem solving skills and self-esteem are important as when people experience it, they feel that they are accepted, satisfied, effective, productive and their life is positive, also empowering students in their educational, professional and personal lives; therefore it is important to assess the current situation in the Nursing Institutes and to what extent nursing students are acquiring the problem solving skills and how this affects their self-esteem (*Patric and Smith, 2012*); so that this study will be concerned with assessing the relationship between students self esteem and problem solving abilities at Benha and Ain Shams Technical Institute of Nursing.

Aim of the study

This study aim was to assess relationship between student's self-esteem and problem solving abilities at Benha & Ain Shams Technical Institute of Nursing through:

- Assessing self-esteem among nursing students at Technical Institute of Nursing at Benha & Ain Shams University.
- Identifying nursing student's knowledge about problem solving at Technical Institute of Nursing at Benha & Ain Shams University.
- Measuring nursing student's problem solving abilities at Technical Institute of Nursing at Benha & Ain Shams University.
- Investigating the relation between student's problem solving abilities and their self-esteem at Technical Institute of Nursing at Benha & Ain Shams University.

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Research Questions

- 1- What is the level of self-esteem among nursing students?
- 2- Is the nursing students having knowledge about the concept of problem solving?
- 3- Do nursing students have problem solving abilities?
- 4- Is there is an association between nursing student's self-esteem and their problem solving abilities?

Subjects & methods

Design: Cross sectional analytical method was utilized to conduct this study.

Setting: The study was conducted in Technical Institute of Nursing at Benha and Ain Shams Universities.

Benha Technical Institute of Nursing: Is located in Benha University Hospital, it consists of one floor which has four small classrooms, administration office, one lab, library and two rooms for teachers.

Ain Shams Technical Institute of Nursing: Is located in Ain Shams University, it consists of three floor buildings, the first floor has three classrooms, the second floor has three class rooms, three rooms for teachers and the library, finally the third floor has two class room, three labs and administration office.

Subjects: The subject of this study included 50% of nursing students who were enrolled in the second year of Technical Institute of Nursing at Benha and Ain Shams Universities during the academic year 2016/2017.

The total number of students who were included in the study sample = 285 students as follows:

- The number of students in Technical Institute of Nursing at Benha University = 420 in the second year. According to their clinical area, half of them at Medical Department and another half at Surgical Department, half of students from Medical and Surgical Departments were chosen randomly to get 210 students from all students.

- The number of students in Technical Institute of Nursing at Ain Shams University =150 in the second year. According to their clinical area, half of them at Pediatric Hospital and another half at Obstetric hospital, half of students from Pediatric and Obstetric hospitals were chosen randomly to get 75 students from all students.

Tool of data collection: Three tools were used for data collection to achieve the aim of this study:

First tool: Problem solving knowledge questionnaire sheet: It was structured questionnaire prepared by the researcher through review of literature (*Hanifi, 2008; Chiew, 2015; and Kumar, 2015*). It was consisted of two parts:

- **Part 1:** Socio-demographic data:- This was for collection of the student's socio demographic data such as (age, gender, marital status, place of residence, previous failure, father education, father's job, mother education, mother's job, income, etc....).
- **Part 2:** Problem solving knowledge:- This part was consisted of different questions to assess student knowledge about problem solving and it include 21 multiple choose questions, each question had four answers: 15 of them

is from (0 to 3) and 6 of them from (1 to 4), the other item is arranging steps of problem solving process from (1 to 7) in correct order. The student was considered to have a correct knowledge of the order of steps if he/she was able to arrange all the steps in correct order.

Scoring system

The scores of all questions were converted into percent scores and mean and standard deviations were computed for each question and for the total ability was considered satisfactory if the percent score was \geq (60%) and unsatisfactory if $<$ (60%).

Second tool: Problem Solving Abilities Questionnaire Sheet: It was structured questionnaire prepared by the researcher through review of literature (*Osman, 2010; Smith; 2012 and Funke, 2014*) it included items of yes or no questions to assess problem solving abilities of nursing student through the use of case study composed of six groups of questions as: **(A)** select the most important problems in the department (8 items) **(B)** what is the information that you need to get to solve problems (4 items) **(C)** the most important goals to solve the problem (7 items) **(D)** build on the goals and develop a plan to resolve the problem (10 items) **(E)** put the vision to implement these plans to achieve the goals (7 items) and **(F)** what are the indicators assessing the success of the plan (6 items). All these six groups of questions represented the steps of problem solving.

Scoring system

For each of the six groups of questions, correct response was scored (1) and the in correct was scored (0). The scores of the items were summed up for each question and the total divided by the number of the items giving a mean score.

These scores were converted into percent scores and mean and standard deviations were computed for each question and for the total ability was considered adequate if the percent score was \geq (70%) and inadequate if $<$ 70%.

Third tool: Self –Esteem Scale: It was based on (*Rosenberg, 1965; Sorenson, 2006*) and Developed by (*Wold, 2013*) to assess self-esteem. The scale assessed student self-evaluation and self-acceptance, and it was included 20 items divided into three sub-scales ranging from strongly agree to strongly disagree:

- First subscale (Positive Personal Self): consisted of (7 items).
- Second subscale (Negative Personal Self): consisted of (6 items).
- Third subscale (Social Self): consisted of (7 items).

Scoring system

The responses from total agree to total disagree were scored from (0 to 3) or (3 to 0) according to each subscale. The scores of the items of each subscale were summed up and the total divided by the number of the items giving a mean score for the subscale. These scores were converted into percent scores and mean and standard deviations were computed. The self esteem was considered high if the percent score was \geq 60% or higher and low if $<$ 60%.

Tools validity: Face and content of study tools were validated by jury group consisted of five experts from nursing administration and psychiatric nursing from Cairo University and Menofia University. Minor modifications were done based on jury opinions such as (modification in the verbs).

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Reliability of instrument: It was measured through using cronbach's Alpha. The result showed reliability for questionnaires of problem solving knowledge, abilities and self esteem (0.89, 0.91 and 0.79) respectively.

Pilot study: Pilot study was conducted in the middle of march on 10% of total subjects 28 students (21 from Benha Technical Institute of Nursing and 7 from Ain Shams Technical Institute of Nursing) to assess tool clarity, applicability and un-required modification, it also served in estimating the time needed for filling the questionnaires. The time needed for filling problem solving knowledge, abilities and self-esteem questionnaire ranged from (20 - 30) minutes.

Field work

The data collection took about two weeks from the end of March till the beginning of April 2017 by using developed and modified questionnaires. After obtaining the official permission from Institutes' Administration, meeting with nursing students was done to explain the aim of the study and invite them to participate. Those students agreed to participate then data was gathered during break between lectures at the time ranged 11-11:45 (A.M). The filled forms were collected in time and revised to check their completeness to avoid any missing data.

Ethical consideration

Before conducting the study, explanation of the nature and aim of the study have been explained to students in

the study. All subjects were informed that participation in the study is voluntary. Confidentiality of each participant was protected by the allocation of code number to the questionnaire sheets. Subjects were informed that the content of the tools will be used for the research purpose only. Participant's right to withdraw from the study at any time was ascertained.

Administrative Design

Formal approval was obtained through official letters from Dean of Benha Faculty of Nursing. Letters were sending to directors of the two Technical Institutes of Nursing (Benha and Ain Shams universities) after explaining the aim of the study.

Statistical design

Data entry and analysis was done using statistical software package for the social sciences (SPSS) version (20). Data was presented using descriptive statistic in the form of frequencies, percentages for qualitative variables, means, standard deviation and medians for quantitative variables. Qualitative categorical variables were compared using chi-square test. Correlation coefficient (r) was used to investigate correlation between problem solving abilities and self esteem. Alfa coefficient test was used to test the reliability of the developed tools. Statistical significance was considered at P.value $P < 0.05$ and considered highly statistically significant at P.value $P < 0.001$.

Results:**Table (1): Personal Characteristics of Nursing Students in Technical Institute of Nursing at Benha and Ain Shams Universities (n=285)**

Items	N	%
Age:		
<20	123	43.2%
20+	162	56.8%
Range	18.0-24.0	
Mean±SD	19.7±0.8	
Median	20.0	
Gender:		
Male	91	31.9%
Female	194	68.1%
University:		
Banha	210	73.7%
Ain-shams	75	26.3%
Marital status:		
Single	263	92.3%
Married	22	7.7%
Residence:		
Urban	189	66.3%
Rural	96	33.7%
Previous fail:		
No	244	85.6%
Yes	41	14.4%
Pre-Institute education:		
Technical nursing	107	37.5%
General	178	62.5%

Table (1): Describes personal characteristics of nursing students in Technical Institute of Nursing at Benha and Ain Shams Universities. Regarding to age, it was ranged between 18 and 24 with mean 19.7 years. Concerning to gender, more than two thirds (68.1%) were females, while less than one third (31.9%) were males. Regarding to University, the highest percentage (73.7%) was from Benha University, while the lowest percentage (26.3%) was from Ain Shams University. Concerning to marital status, the majority (92.3%) were single, while the minority (7.7%) were married. Regarding to residence, about one third (33.7%) were rural, while about two thirds (66.3%) were urban. Regarding to previous fail, the majority (85.6%) have no previous fail, while the minority (14.4%) have previous fail. Concerning to Pre-Institute education, less than two thirds (62.5%) were general education, while more than one third (37.5%) were technical nursing.

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**Table (2): Demographic Characteristics of Nursing Students in Technical
Institute of Nursing at Benha and Ain Shams Universities (n=285)**

Items	N	%
Father education:		
None formal	63	22.1%
Basic	44	15.4%
Secondary	109	38.2%
University	69	24.2%
Father job		
Employee	120	42.1%
Manual	150	52.6%
Unemployed	15	5.3%
Mother education:		
None formal	87	30.5%
Basic	50	17.5%
Secondary	100	35.1%
University	48	16.8%
Mother job		
Housewife	204	71.6%
Working	81	28.4%
Crowding index:		
<2	159	55.8%
2+	126	44.2%
Income:		
Insufficient	89	31.2%
Sufficient	196	68.8%

Table (2): Describes demographic characteristics of nursing students in Technical Institute of Nursing at Benha and Ain Shams Universities. Regarding to father and mother education, the highest percentage (38.2%, 35.1%) respectively for secondary education, while the lowest percentage (15.4%) for fathers basic education and (16.8%) for mothers university education. Regarding to fathers' job, more than half (52.6%) were manual, while the minority (5.3%) were unemployed. Regarding to mothers' job, less than three quarters (71.6%) were housewives, while more than one quarter (28.4%) were working. Concerning to Crowding index, more than half of the nursing student's families (55.8%) were living in the crowding index of 2 or less persons/room, while less than half (44.2%) were living in the crowding index more than 2 persons/room. Regarding to income, more than two thirds (68.8%) reported having sufficient income while, slightly less than one third (31.2%) reported having insufficient income.

Table(3): Problem Solving Knowledge of Nursing Students in Technical Institute of Nursing at Benha and Ain Shams Universities (n=285)

Correct knowledge of problem solving (PS)	N	%
A-PS definition, methods, failure and ability:		
1- Problem	132	46.3%
2- PS concept	78	27.4%
3- PS steps	165	57.9%
4- Setting solutions	176	61.8%
5- Causes PS failure	134	47.0%
6- Action in case of failure	183	64.2%
7-Types of PS	100	35.1%
8- Importance of PS	144	50.5%
9- PS ability	158	55.4%
10- Importance of PS ability	149	52.3%
11- Increasing PS ability	28	9.8%
Total PS definition, methods, failure and ability	140	49.1%
B-PS rules, types and size of problems		
12- Characteristics of problem solvers	164	57.5%
13- PS rules	66	23.2%
14- Dealing with complex problems	39	13.7%
15- Causes of increasing problems	202	70.9%
16- Denying problems	189	66.3%
17- Avoiding problem increases	150	52.6%
18- Elements of PS	109	38.2%
19-Types of problems	58	20.4%
20-Dealing with different types of problems	133	46.7%
21-Ranking problems	66	23.2%
Total PS rules, types and size of problems	55	19.3%
C-PS steps ordering		
1- Setting solutions/alternatives	41	14.4%
2- Setting a plan for PS	55	19.3%
3- Problem identification	247	86.7%
4- Setting indicators of success	146	51.2%
5- Collection of related information	215	75.4%
6- Develop a vision for implementation of the plan	92	32.3%
7- Setting objectives for solving problem	63	22.1%
Total PS steps ordering	5	1.8%

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Table (3): Describes problem solving knowledge of nursing students in Technical Institute of Nursing at Benha and Ain Shams Universities. Regarding to problem solving definition, methods, failure and ability, less than two thirds (64.2%) of knowledge were in action in case of failure, while the minority (9.8%) were in increasing problem solving ability. Regarding to problem solving rules, types and size of problems, more than two thirds (70.9%) of knowledge were in causes of increasing problems, while the minority (13.7%) were in dealing with complex problems. Regarding to problem solving steps ordering, the majority (86.7%) of knowledge were in Problem identification, while the minority (14.4%) were in setting solutions/alternatives. Regarding to total Problem Solving knowledge of Nursing Students, the highest percentage (49.1%) were in problem solving definition, methods, failure and ability, while the lowest percentage (1.8%) were in problem solving steps ordering.

Table (4): Problem Solving Abilities of Nursing Students in Technical Institute of Nursing at Benha and Ain Shams Universities (n=285).

Adequate (70%+) PS abilities:	N	%
Selection of problems	43	15.1%
Information needed	187	65.6%
Most important goals for PS	200	70.2%
Building goals and developing a plan for PS	199	69.8%
Developing a vision to implement the plan	194	68.1%
Setting success indicators	220	77.2%

Table (4): Shows that the majority (77.2%) of problem solving abilities were in setting success indicators, while the minority (15.1%) of them were in selection of problems.

Table (5): Self-Esteem of Nursing Students in Technical Institute of Nursing at Benha and Ain Shams Universities (n=285).

Self-esteem (high: 60%+)	N	%
Positive personality	195	68.4%
Negative personality	82	28.8%
Social personality	106	37.2%

Table (5): Shows that more than two thirds (68.4%) of nursing students having positive personality, while less than one third (28.8%) having negative personality.

Table (6): Relations between Nursing Student's Ability in Problem Solving and Self-Esteem in Technical Institute of Nursing at Benha Ain Shams Universities.

Self-esteem	Ability				X ² test	p-value
	Adequate		Inadequate			
	No.	%	No.	%		
Positive personality:						
High	131	67.2	64	32.8		
Low	44	48.9	46	51.1	8.69	0.003*
Negative personality:						
High	37	45.1	45	54.9		
Low	138	68.0	65	32.0	12.88	<0.001*
Social personality:						
High	74	69.8	32	30.2		
Low	101	56.4	78	43.6	5.03	0.02*
Total self-esteem						
High	93	67.9	44	32.1		
Low	82	55.4	66	44.6	4.67	0.02*

(*) Statistically significant at $p < 0.05$

Table (6): Shows statistically significant association between (positive personality, negative personality, social personality and total self-esteem) and nursing student's ability in problem solving (0.003, <0.001, 0.02 and 0.02) respectively; so it is evident that nursing students with high positive personality, low negative personality, high social personality and high self esteem had higher percentage of adequate ability than nursing students with low positive personality, high negative personality, low social personality and low self esteem.

Table (7): Correlation Matrix of Student's Knowledge, Ability and Self-Esteem Scores in Technical Institute of Nursing at Benha and Ain Shams Universities (n=285)

Scores	Spearman's rank correlation coefficient		
	Knowledge	Ability	Self-esteem
Knowledge			
Ability	.139*		
Self-esteem	-0.07	.150*	

(*) Statistically significant at $p < 0.05$

Table (7): Shows statistically significant positive association (.139) between knowledge and ability, while (.150) between ability and self esteem.

Figure (1): Total Problem Solving Knowledge of Nursing Students in Technical Institute of Nursing at Benha and Ain Shams Universities (n=285)

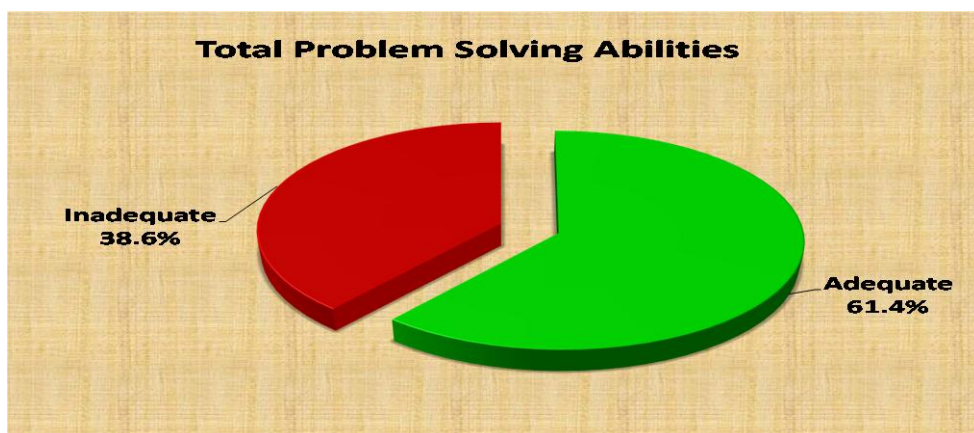


Figure (2): Shows that less than two thirds (61.4%) of nursing students had adequate problem solving abilities, while more than one third (38.6%) were inadequate abilities.

Figure (3): Total Self –Esteem of Nursing Students in Technical Institute of Nursing at Benha and Ain Shams Universities (n=285).



Figure (3): Shows that slightly more than half (51.9%) of nursing students had low self-esteem, while slightly less than half (48.1%) had high self-esteem.

Discussion

The present study sample included half of nursing students from two different Technical Institutes of Nursing at Benha and Ain Shams Universities and the age of nursing students in the current study ranged between 18 and 24 years, this represents the ages of middle, late adolescence and early adulthood and this

is critical age of emotional and intellectual development when students acquire psychomotor skills and social abilities closely related to the skill of problem solving which typically influencing and shaping their self esteem. The findings of this study was in respect with study in England on nursing students of (Morin *et al.*, 2013), they mentioned in their study that at this stage

of adolescence, the trajectories of self esteem are influenced by the interpersonal, organizational and instructional components of student's institute life.

The present study results showed small percentages (about eight percentage of total number) of the nursing students were married, the relatively low prevalence of early marriage among these girls may be due to the fact that the great majority of them were having urban residence, since early marriage is known to be more prevalent in rural areas, the marital status may have an impact on student's development and self esteem; therefore the married students might have feeling of being under-privileged compared to their unmarried fellows; thus lowering their perception of their own self esteem.

In congruence with this finding, a number of studies demonstrated the deleterious effects of early marriage on girls self esteem in Hungary (*Bodecs et al., 2011*), Ethiopia (*Wondie et al., 2011*) and Brazil (*Berquo et al., 2012*). On the contrary with the previous finding (*Hamaideh, 2013*), who conducted study about Jordanian student nurses who were early married and found that they have high self esteem and good problem solving abilities than other students who are not married.

Regarding to problem solving knowledge the present study results shows that the majority of the students (about three quarters) have unsatisfactory total knowledge of problem solving, while the minority having satisfactory total knowledge with awareness of problem solving and using it in personal life, this important finding points to the deficient educational system in nursing institutes regarding the inclusion of the problem solving approach in their curricula, also students didn't want to

find other sources to learn about problem-solving for realizing its' importance in dealing with personal life issues. This result matches with a study in Milan on nursing students of (*Garnett, 2010*), who found that the majority of nursing students having unsatisfactory total knowledge of problem solving. These findings were in disagreement with (*Deasy et al., 2014*), they found in their study that Irish nursing students resorted to problem solving to cope with their distress from institute and personal life.

The present study results also revealed that slightly less than half of the nursing students were having satisfactory knowledge with problem solving definition, methods, failure and ability, moreover more than quarter of nursing students having satisfactory knowledge with problem solving rules, types and size of problems. Finally nursing students demonstrated the lowest percentages of problem solving knowledge in problem solving steps ordering; this is may be due to not using of problem solving process on different problems and reflect theoretical rather than practical approach, or didn't study problem solving skills.

In consistent with this finding (*Currey et al., 2015*), they conduct study in Australia which revealed significant improvements in nursing students knowledge and skills pertaining to problem solving after an educational intervention. In addition (*Soliman, 2015*), who reported in her study in Egypt on nursing students of Al-Hussein and Al-zahraa Institute that few of nursing students were able to identify the correct ordering of the problem solving steps. On the contrary (*Osgood, 2013*), who demonstrated in his study on Iranian nursing students that more than half of the nursing students were having satisfactory knowledge with most of the elements of the problem solving process.

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Regarding to problem solving abilities, the present study revealed that more than half of the nursing students were having adequate abilities of problem solving, while more than one third having inadequate abilities of problem solving. The majority having total adequate ability in setting success indicators, while the minority of nursing students having adequate ability in Selection of problems; this may be due to lack of practical approach in students training and lack of their knowledge and skills about problem solving .

This finding was in similarity with (*Soliman, 2015*), who demonstrated in her study that more than half of nursing students showed satisfactory ability in the application of problem solving and the little percentage showed unsatisfactory ability. On the contrary (*Fantin, 2014*), who demonstrated in his study on Italian nurses that more than one third of nursing students having adequate problem solving abilities while more than half having inadequate abilities.

The present study results shows that slightly more than half of nursing students were having low self esteem, while slightly less than half of them had high self esteem with the highest percentage in positive personality and the lowest percentage in negative personality of nursing students; this may be due to the fact that the secondary nursing institutes and institutions are not at high rank among the choices of college level education and students are often forced to choose them because of their low academic achievements, added to this the negative society look to the role of nursing in our community especially those not having university degree.

In agreement with these study findings concerning low self esteem among nursing students, (*Ling et al., 2014*), they demonstrated in their study in

Taiwan similar low self esteem among nurses which was shown to lead to sabotage behavior, the reasons underlying these nurses feeling of low self esteem were their lack of maturity, experience and lower level of nursing qualification. Another agreeing study of (*Eom, 2015*), who demonstrated in his study on Chinese nursing students that only around one fifth of them were having high self esteem and the majority of them were having low self esteem. On the contrary (*Cha and Sok, 2014*), they demonstrated in their study in Korea that the nursing student's scores of self esteem were above the median level.

In the current study results, nursing students with high positive personality, low negative personality, high social personality and high self esteem had higher percentage of adequate ability than nursing students with low positive personality, high negative personality, low social personality and low self esteem; this result may be due to students with social personality and high self esteem were able to make good communications with other students and people around them and this affects their abilities and skills if they face problems.

These findings were matching with (*Holsen, 2012*), who showed in his study on nursing students in England which revealed the good effect of social personality and high self esteem on student's awareness and abilities. On contrary with these findings (*Gerard, 2016*), who reported in his study in England on medical students that although the majority of them had low self esteem, they had good abilities, knowledge and awareness.

The current study demonstrated positive significant correlation between knowledge and ability, also a significant correlation between student's ability, income and self esteem; this indicated

that students with adequate knowledge had adequate ability and students with adequate ability, sufficient income had high self esteem; this may be due to students adequate knowledge makes good abilities and this affect confidence and self esteem. The finding in agreement with (*Gamal, 2012*), whose study in Alexandria showed significant relationship between the educational environment, problem solving ability, income, parent's education and nursing student's self esteem.

Conclusion

In the light of the foregoing present study results, it can be concluded that the majority of students in the Technical Institute of Nursing at Benha and Ain Shams Universities having unsatisfactory total knowledge of problem solving and less than two thirds having total adequate problem solving abilities, also slightly less than half of the nursing students were having high self esteem. There was statistically significant positive correlation between problem solving knowledge and problem solving ability, also between problem solving abilities and self esteem. These findings answer all research questions.

Recommendations

In view of the study results, the proposed recommendations were as follows:

- Structured and extended continual education program of problem solving skills for teachers of the Institutes and the students, also they should attend training program in problem solving and its application in education.
- The students are in need to more fostering of their self esteem

through provision of training and counseling services.

- The Management of Technical Institutes of Nursing should adopt the problem-solving educational approach in all its different grades.
- There is need for help from psychologists and social workers to improve these students self esteem.
- There is an urgent need for further research to assess the effectiveness of various interventions on raising the self –esteem of the students of the Technical Institutes of Nursing.

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