

Research Article

The Outcomes of Human Caring Theory (Watson) In Education and Practice

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ABSTRACT

Background: Caring as a multidimensional concept can be occurring according to teaching main values. Most patients investigate the provided caring quality according to their perception of caring. Then, this study was performed to assess the effect of caring behavior educational program on Patient's perception of caring.

Materials and Methods: This study was a semi experimental trial. The study sample consisted of 58 of nursing students that randomly assigned to either an experimental (n = 29) or a control group (n = 29). Human care theory-based on care behavior training program was conducted for the experimental group during training and control group received educational programs as previous years, respectively. Perception level of students was studied by CDI-35 tools and perception level of patients was studied by CBM. Data were analyzed using SPSS-16 software.

Results: The study findings favor the effect of the educational program because there was increased knowledge and understanding of caring theory and related concepts in the study group

Compared with the control group during different periods of assessment. There was a significant difference between two groups in terms of improper care (p= 0.0001). There was seen a significant increase in each five domains of care behavior in experimental group after education (p=0.0001). While this increase was seen in professional technique dimension only in the control group (p=0.001). There was a significant increase in the field of patients' perception of care in the experimental group (p = 0/0001) and there was seen statistically significant deterioration in the control group (p = 0/83).

Conclusion: These results support the idea of researchers based on the fact that learning care behavior through educational interventions can increase the patients' perception of receiving care by students in clinical environments and plays an important role in the development of their academic and practical training.

Keywords: Human care theory, care behavior, educational program, nursing students, patients' perception of care

INTRODUCTION

Nursing humans through care is formed from the unique relationship between nurse and patient

^[1]Care is a multidimensional concept in nursing and main values can be used with goal-oriented education and student-based methods during undergraduate course ^[2]The American National

League for nursing stated that care is the main criteria of health policies and suggested that modification and review of nursing education programs to be developed with a focus on care ^[3]. Now, there are reliable theories on professional nursing care that Watson's human caring theory is

one of them. Watson has expanded the concept of care through consider aspects of scientific, experimental and human dimensions. Studies that performed based on Watson's human caring theory used common principles of patient care in the means of familiarizing nursing students with concept of care [4-6]. Despite the fact that care concept is provided in philosophy, vision and mission of many health organizations and institutions, nursing care remains a more complicate concept in a health system that has no precise definition [7].

So the purpose of clinical nursing education programs is to train nurses who expand Nursing art and science. It is necessary for planners to ensure that graduates will use operational models where caring behaviors are incorporated [8] that need to recognition of students' perspectives about care behavior. Nursing students can shape their professional capabilities during training and internship periods by development of critical thinking and analysis skills, competence and expertise, communication and increased confidence [9]. Promoting this concepts can be effective and leads to advancement of nursing care quality [10]. On the other hand, assessment the students' perception of caring behaviors during patient care process in clinical setting, can discover the strengths and weaknesses of students and develop their clinical skills through supporting strengths and overcoming weaknesses [11]. In this way, raising the capability and self-esteem of students leads to sense of responsibility and satisfaction of nursing [12]. Positive experience in clinical setting creates positive emotions in students for patient care and ultimately their efforts will be increased [13].

The majority of patients evaluate the quality of services provided by health provider based on their perception of nursing care. Therefore, today's patient-centered care is the basis of the treatment process. Unfortunately, the quality of nursing care is criticized. Thus, since nurses take critical and vital responsibilities after graduation, then nurses performance and their clinical

competency and their role in preserving human lives must be considered and their care behavior must be reviewed during the academic period in order to make positive changes and improve care process [14]. Assessment of patients' perception of care received by nursing students in the clinical learning environment can be helpful in scientific and practical training nursing development of nursing students [15]. Also, we can discover the strengths and weaknesses of students during the patient care process through reviewing nursing students' performance and patients' perception of students care delivery methods to offer suggestions for nursing students' educational program improvement [16].

Although many studies have been published about care on the nursing profession, few studies emphasize on education method and care theory of undergraduate nursing students [17]. Lee Min Woo claimed in educational intervention through education 10 core factors of Watson theory through a few educational strategies in 2009 that educational strategies and programs focused on care are acceptable and effective for nursing students [18]. The only research in Iran is Rafii et al (2007) study that examines only care behaviors of nursing principles and techniques education through role-playing based on Watson care theory and comparing it with traditional method; its findings showed that students take care of altruistic values at the beginning of professional care but no study has been done on higher students and other educational methods [14]. This study examines the relationship between human care theory and patients' perception of care behaviors in order to develop nursing students' ability to a care professional;

METHOD:

This study is a quasi-experimental study and is based on Watson care theory. This faculty does not have February admission and students of October 2010 and 2011 were studied. Research population included semesters 6 and 8 nursing students who were passing internship units in internal medicine and surgical wards. Nursing

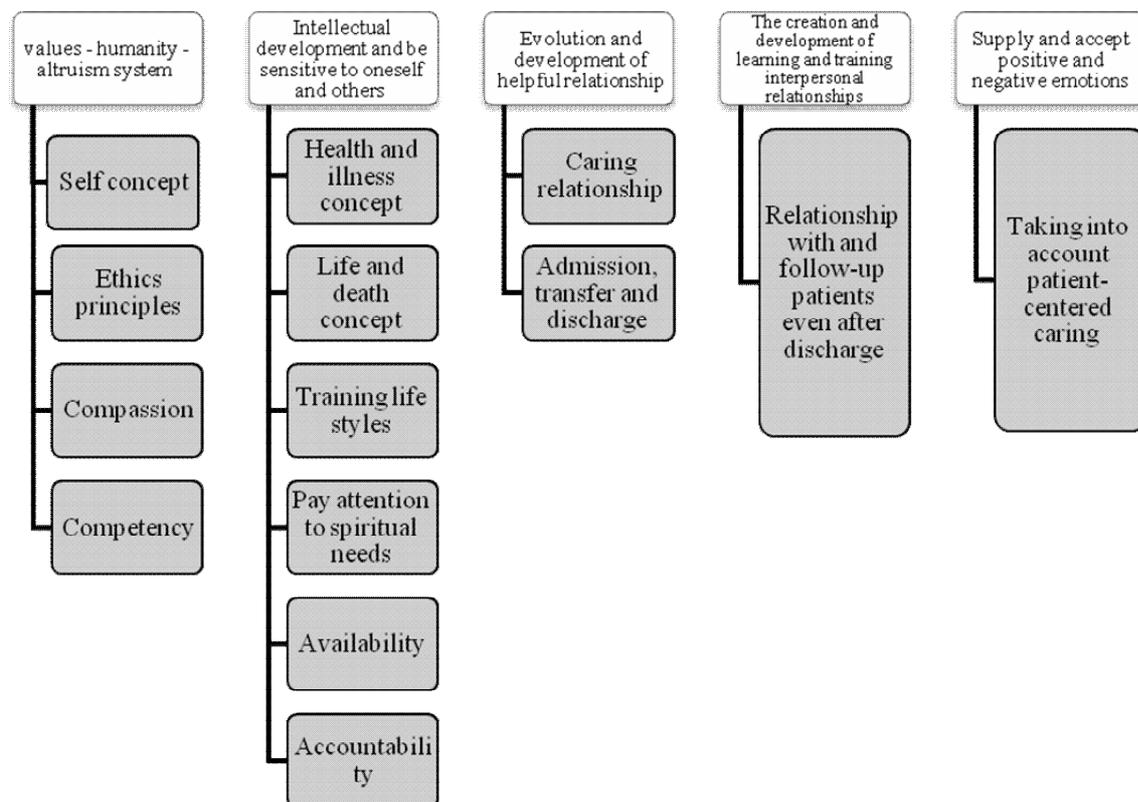
students of semesters 6 and 8 entered into this study that showed their personal interest and written satisfaction in order to participate in this study. Transferred and guest students did not meet the inclusion criteria. Exclusion criteria included the reluctance of students for continuing their participation in research.

Inclusion criteria of patients included hospitalization of patients in the ward (minimum length of stay more than 24 hours), having stable mental, socio- psychological status (with the clinical diagnosis) and the patient or his family satisfaction in order to participate in the study. Patients with unstable hemodynamic (blood pressure, pulse, respiration, temperature and pain) were excluded with the approval of their physician.

Each student was assigned a number based on their entrance order and using a random number table. Students were divided into two groups based on odd or even number. Then one of groups was

determined as experimental and another group was determined as control group using a toss. Students of the control group received surgical care training programs based on the nursing process, domestic books on surgical nursing as previous years. Students of the experimental group received theoretical and practical education based on Watson's human care theory. An educational experiment was presented using five care factors (carative factors) of Watson theory so that each care factor of care process described clients' success (preserve health or easy death). Theoretical components included: Introduction of care, respect and empathy, acceptance and humanitarian honesty, self-acceptance. Educational program based on Watson theory for clinical nursing educators was designed by a researcher team, with the help of experts and documentation of books and articles ^[17-23]. Chart 1 shows the educational program domains of care behavior.

Chart1: Educational program domains of planned caring behavior



An educational log book was prepared in order to provide education, including clinical lesson plan and overall, specific objectives and expected student objectives; it was standardized in the Abadan Medical Sciences Faculty of nursing group using books and the latest evidence-based educational articles. Care expected objectives of students were included in clinical manuals and then, 7 nursing instructors were used. Volunteer trainers were educated theoretically and practically during the eight sessions of workshop using role-play and group discussions on the role of nurse educators' care and professional care behavior. In both groups, pre-test was conducted through a questionnaire that was completed by trained observers in order to evaluate the perception level of students from care behaviors at baseline and on the first day of internship or apprenticeship and in order to evaluate the perception level of patient from care behaviors before educational program and after the second day of internship or apprenticeship; 3 patients corporate per student.

Experimental group students were taught within 10 hours and 8 sessions of apprenticeship or internship in the classroom. Educational methods that were used in the workshop and instructional strategies included active lectures, small group discussions, role playing, scenario, patient analysis and dialogue. At this stage, students learned self-care, patient care and family care and assisted care in clinical settings using an educational strategy of clinical instructor within 41 hours of apprenticeship or internship in the field after education in the classroom and implementing care performance. It must be noted that students participated in clinical apprenticeship within seven or eight member sub-groups. The experimental and control groups entered into clinical education, each with four groups.

Clinical instructors programmed assignments for each student by the case method and peer, colleague in order to evaluate the patient's perception of care behavior received by students. According to the program, the patient's perception of care behavior received by students was studied by a questionnaire that was completed

by a trained observer after 2 days of apprenticeship or internship in the field and 3 patients per student (within 2 days of continuous care of patient). Another questionnaire was used in order to perform a self-test as a posttest within students of both experimental and control groups in fifth section and at the end of apprenticeship or internship in the field and after being ensured that there is no interference with theoretical and practical lessons; they were collected after 15 minutes.

Final edited version of CDI-35 (Caring Dimension Inventory 35) was used in order to evaluate students' perception of caring behaviors. This tool re-edited by Watson et al after generating primary tool of CDI-25 (2001 and 1999) [24-25]. The tool has 35 items which are classified in 5 domains. These domains include technical /Professional domain (14 items), intimacy domain (10 items), support, domain (2 items), nursing inappropriate domain (5 items) and nursing non-essential domain (4 items). Participants' responses in 5 point Likert scale were variable within strongly agree (score 5), somehow agree (score 4), neither agree nor disagree (score 3), somehow disagree (score 2), strongly disagree (score 1). The negative items (inappropriate items included 16, 22, 24, 25, 27) were encoded in statistical analysis. The tools scoring range was from 35 to 165. An overall score of questionnaire was analyzed. The content validity of tools has been validated previously by Watson et al. (1997) and Lee et al (1998). The reliability of tools, respondents was 0.67 and the internal correlation of tools was 0.91 [26-27]. The patient demographic information questionnaire included: age, gender, marital status, residence location, education level, and hospitalization duration and history. Caring behavior measurement (CBM) tool was used in order to evaluate the patient's perception of caring behaviors. This tool was completed by trained observers. The tool contains 28 items including professional behavior (10 items), communication (5 items), individual approach (7 items), empathy (4 items) and respect (2 items). The questionnaire was ranked in a 4-point Likert scale, including always (4), sometimes (3) rarely (2) never (1) and,

if it is not applicable (0). The time required in order to complete the questionnaire was 15 minutes. Scoring of both tools was as follows. Nursing students and patients' perception of caring behavior was examined on each item. Scoring of each item and domain was stated separately for each research unit. Scoring of each item was ranked as (1-1.5) low, (1.51-5.2) relatively low, (2.51-3) medium and (3.51-4) high. Received score and its mean were extracted and then a score was calculated for each questionnaire from total score for all domains. "The students' perception of caring behavior" and "patients' perception of caring behavior" were obtained in the final results of the study (low level or high level).

The questionnaire has not been used in similar researches in Iran. So, the questionnaire was translated into Farsi by two experts and then questioning was reviewed by an expert in English language and finally, the ultimate adjustments were done using opinions of two experts in the field of nursing.

The questionnaire was provided to 10 nursing experts in order to determine the content validity of tools and comment on them so that they are used after final approval. The scientific reliability of questionnaire was estimated 0.91 using Cronbach's alpha internal consistency test. Validity and reliability of CBM were measured by Lee-Hsieh (2002) [28], and were approved. Internal correlation of tool was 0.97 and Cronbach's alpha

was calculated as 0.93. Version 21 SPSS software was used in order to conduct statistical analysis. This study was conducted using the necessary permission from the Abadan Deputy of Medical Sciences University.

According to ethical considerations in research, caring behavior programs were planned for control group nursing students after completing an apprenticeship or internship in the field. The experimental group was emphasized that the study will not affect their final evaluation.

RESULTS:

Initially, 58 students had inclusion criteria. Two groups of 29 subjects were formed after randomization. The three subjects of the control group were removed from the study due to absence of timely presence in apprenticeship. The mean and standard deviation of experimental group age was 22.68 ± 3.06 and of the control group was 22.46 ± 1.10 . The independent t-test showed no significant difference between two groups ($T=0.359$, $P=0.721$). Two groups were examined in terms of other demographic variables and results were shown in Table 1. This table shows that most participants of both groups were female, sixth semester of undergraduate nursing, single and Urbanite. There was no significant difference between none of demographic characteristics of both groups.

Table 1: Frequency percentage of demographic variables with chi-square test

| Demographic variables | Subgroup | Experimental group | Control group | P value |
|-----------------------|------------|--------------------|------------------|---------|
| | | Number (percent) | Number (percent) | |
| Gender | Men | 12(%41/4) | 6(%23/1) | .16 |
| | Female | 17(%58/6) | 20(%76/9) | |
| Semester | Semester 6 | 15(%51/7) | 14(%53/8) | 0/10 |
| | Semester 8 | 14(%48/3) | 12(%46/2) | |
| Married | Single | 23(%79/3) | 25(%96/2) | .10 |
| | Married | 6(%20/7) | 1(%3/8) | |
| Residence location | Urban | 22(%75/9) | 24(%92/3) | .14 |
| | Village | 7(%24/1) | 2(%7/7) | |

Two groups were studied in terms of demographic variables and the results are shown in Table 2. This table shows that most patients of the control group were 55.1% male and the status was same in the experimental group as well as they were married, Urbanite, the secondary level of education, degree 2

pain with a history of hospitalization. There was no significant difference between two groups in demographic characteristics.

Table 2: Frequency and frequency percent of demographic variables related to participant patients in two groups

| Demographic variables | Sub-group | Experimental group | | Control group | | Test type | P value |
|-------------------------|--------------------------|--------------------|-------------------|---------------|-------------------|------------|---------|
| | | Number | Frequency percent | Number | Frequency percent | | |
| Age | 14-32 | 10 | 5/7% | 12 | 7/7% | Chi-square | 0/36 |
| | 33-50 | 45 | 25/9% | 31 | 19/9% | | |
| | 51-68 | 84 | 48/3% | 83 | 53/2% | | |
| | 69 | 35 | 20/1% | 30 | 19/2% | | |
| Gender | Male | 87 | %50 | 86 | 55/1% | | 0/35 |
| | Female | 87 | %50 | 70 | 44/9% | | |
| Marital status | Single | 10 | 5/7% | 9 | 5/8% | | 0/26 |
| | Married | 137 | 78/7% | 131 | 84% | | |
| | Widowed / divorced | 27 | 15/5% | 16 | 10/3% | | |
| Residence location | Urban | 166 | 95/4% | 145 | 92/9% | | 0/34 |
| | Village | 8 | 4/6% | 11 | 7/1% | | |
| Education level | Illiterate | 46 | 26/4% | 22 | 14/1% | 0/06 | |
| | High school | 61 | 35/1% | 67 | 42/9% | | |
| | Diploma | 45 | 25/9% | 42 | 26/9% | | |
| | Associated degree | 15 | 8/6% | 16 | 10/3% | | |
| | Bachelor degree and over | 7 | %4 | 9 | 5/8% | | |
| Ache level | 0 | 59 | 33/9% | 55 | 35/3% | 0/6 | |
| | 2 | 92 | 52/9% | 84 | 53/8% | | |
| | 4 | 23 | 13/2% | 17 | 10/9% | | |
| Hospitalization history | + | 135 | 77/6% | 119 | 76/3% | 0/7 | |
| | - | 39 | 22/4% | 37 | 23/7% | | |

In this study, the mean difference of pre-test between two groups was analyzed. Independent t-test results of pretest differences between two groups are provided in Table 3. This table shows that the only significant difference between two groups was in terms of improper care and there was statistically no significant difference between two groups in total score.

Table 3: Review mean and standard deviation of Experimental and control group in Pre test

| Questionnaire sub-domains | Experimental group | Control group | Test type | Statistics | Pvalue |
|-------------------------------|-------------------------|-------------------------|---------------|------------|--------|
| | Mean±Standard deviation | Mean±Standard deviation | | | |
| Technical / Professional Care | 49/6±8/5 | 47±4/2 | Independent T | 1/42 | 0/16 |
| Intimacy care | 36/8±6/9 | 36±4 | | 0/509 | 0/61 |
| Supportive care | 6±1/6 | 5±0/97 | | 2/77 | 0/008 |
| Unnecessary care | 11/5±3 | 11/3±2/03 | | 0/292 | 0/772 |
| Improper care | 15/4±2/3 | 13±1/8 | | 4/01 | 0/0001 |
| Total score | 119/5±18/1 | 112/5±8/5 | | 1/8 | 0/078 |

T test results are presented in Table 4 in order to show the differences between pre-test and post-test mean

scores of the experimental group. Results showed that there was a significant difference in sub- domains of the experimental group and students showed a better performance on the posttest.

Table 4: Compare mean and standard deviation of pretest and posttest of Experimental group

| Questionnaire sub-domains | Pre test | Post test | Test type | Test value | Pvalue |
|-------------------------------|-------------------------|-------------------------|-----------|------------|--------|
| | Mean±Standard deviation | Mean±Standard deviation | | | |
| Technical / professional care | 49/6±8/5 | 58/3±8/7 | Paired T | 7/742 | 0/0001 |
| Intimacy care | 36/8±6/9 | 42/2±6/2 | | 5/807 | 0/0001 |
| Supportive care | 6±1/6 | 6/8±1/7 | | 2/541 | 0/017 |
| Unnecessary care | 11/5±3 | 14±2/7 | | 7/174 | 0/0001 |
| Improper care | 15/4±2/3 | 17/8±2/4 | | 4/737 | 0/0001 |
| Total score | 119/5±18/1 | 139/2±18/8 | | 8/666 | 0/0001 |

Results of mean changes of the control group are shown in Table 5. The results showed that there was a significant difference between pre and posttest of control group in the technical- professional domain.

Table 5: Compare mean and standard deviation of pretest and posttest of control group

| Questionnaire sub-domains | Pre test | Post test | Test type | Test value | P-value |
|-------------------------------|-------------------------|-------------------------|-----------|------------|---------|
| | Mean±Standard deviation | Mean±Standard deviation | | | |
| Technical / Professional Care | 47±4/2 | 48/3±4/4 | Paired T | 3/83 | 0/001 |
| Intimacy care | 36±4 | 36±3/5 | | 0/13 | 0/89 |
| Supportive care | 5±0/97 | 4/8±1/03 | | 1/3 | 0/18 |
| Unnecessary care | 11/3±2/03 | 11/1±2/1 | | 0/9 | 0/35 |
| Improper care | 13±1/8 | 13/1±1/8 | | 0/0001 | 1 |
| Total score | 112/5±8/5 | 113/5±8/8 | | 1/9 | 0/069 |

T test results are presented in Table 6 in order to study the differences between mean scores of experimental group pre-test and post-test. Results showed that there was a significant difference in all sub- domains of the experimental group. The results show that patients' perception of care behavior received by nursing students before and after the educational intervention were professional behavior, professional approach, communication, empathy and respect, respectively. The results showed that respect had the least importance and professionalism had the utmost importance of patients' point of view.

Table6. Comparing mean scores of patient's perception of care behavior received by educated students before and after Experimental

| variable name | Mean | | Standard deviation | | Test type | p-value |
|-----------------------|---------------------|--------------------|---------------------|--------------------|-----------|---------|
| | Before Experimental | After Experimental | Before Experimental | After Experimental | | |
| Professional behavior | 25/6 | 31/9 | 3 | 5/1 | Paired T | 0/0001 |
| Communication | 13 | 16/2 | 1/6 | 2/5 | | 0/0001 |
| Individual approach | 17 | 21/6 | 2/4 | 3/2 | | 0/0001 |
| Sympathy | 10 | 12/05 | 1/3 | 2 | | 0/0001 |
| Respect | 5/7 | 6/6 | 0/7 | 1 | | 0/0001 |

| | | | | | | |
|-------------|------|------|---|------|--|--------|
| Total score | 71/4 | 88/5 | 8 | 12/9 | | 0/0001 |
|-------------|------|------|---|------|--|--------|

T test results in Table 7 show that patients' perception of care behavior received by nursing students before and after an educational intervention were professional behavior, professional

Table7. Comparing mean scores of patient's perception of care behavior received by control group students before and after Experimental

| variable name | Mean | | Standard deviation | | Test type | p-value |
|-----------------------|---------------------|--------------------|---------------------|--------------------|-----------|---------|
| | Before Experimental | After Experimental | Before Experimental | After Experimental | | |
| Professional behavior | 24/3 | 24/4 | 3/2 | 3/1 | Paired T | 0/61 |
| Communication | 12/4 | 12/3 | 1/4 | 1/8 | | 0/93 |
| Individual approach | 16/1 | 16/4 | 1/8 | 2/1 | | 0/12 |
| Sympathy | 9 | 8/8 | 1/1 | 1/3 | | 0/21 |
| Respect | 5/3 | 5/2 | 0/86 | 0/89 | | 0/18 |
| Total score | 67/3 | 67/4 | 7/3 | 8/3 | | 0/83 |

approach, communication, empathy and respect, respectively. The results showed that there were no significant differences between caring behavior of students before and after intervention; therefore, students caring behavior have not changed from the patients' point of view.

Table8. Frequency distribution of students received scores on caring behaviors before and after educational program

| | | Before Experimental | After Experimental |
|------------------------|-------|---------------------|--------------------|
| Caring behaviors level | Low | 74/5 | 54/5 |
| | High | 25/5 | 45/5 |
| | Total | 100 | 100 |

The above table shows that 74.5% of students had low care behavior level before intervention and only 25.5% of students had high care behavior level. 45.5% of students had higher care behavior level after intervention. Therefore, positive effects of caring behavior educational program were confirmed within educated students.

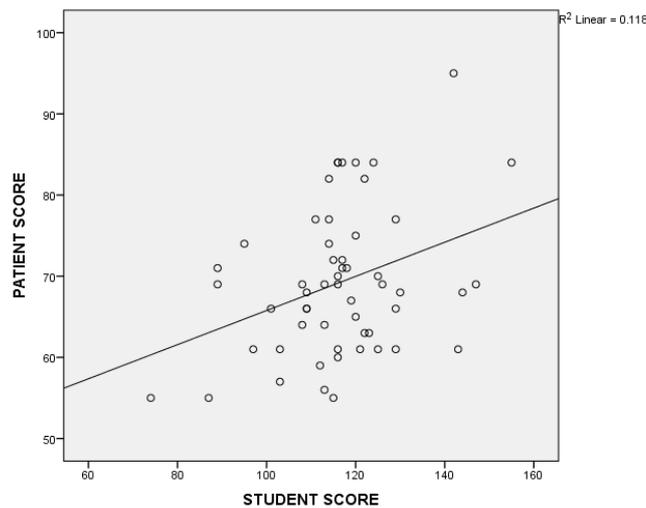
Table9. Frequency distribution of patients received scores on caring behaviors before and after educational program

| | | Before Experimental | After Experimental |
|------------------------|-------|---------------------|--------------------|
| Caring behaviors level | Low | 97 | 61/8 |
| | High | 3 | 38/2 |
| | Total | 100 | 100 |

The above table shows that 97% of students prior to study implementation had low level caring behaviors and only 3% had high-level caring behavior from the patients' point of view. While 38.2% of students reached a high level of care behavior after the educational program from the patients' point of view.

The results demonstrated the positive effect of educational program on patients' perception of care behavior of students.

Figure1. The correlation between scores of perceived caring behavior of nursing students and perceived caring behavior received by patients



The pearson correlation coefficient was used in order to study the relationship between student and patient's perception scores; there was a direct and significant relationship between two variables ($p=0.010$). In other words, this graph results have identified that increased caring behavior, perception of nursing students will lead to the increased caring behavior perception of patients.

DISCUSSION

Care has been an important research issue and part of nursing history during the past decades. National League for Nursing stated that care is the main criteria of health policy and suggested modification and review of nursing education towards care- center programs [29]. Articles in the field of daily care are rising, however, longitudinal and experimental studies in this domain are rare [14]. In this regard, the present study as an experimental and quasi-experimental study reviews the effect of the care behavior educational program on perception of nursing students from care and describes its relationship to hospitalized patients' perception in general wards (internal and surgery).

Comparing mean scores of care behavior, perception between two groups of nursing students before and after the educational program showed that the mean scores of caring behavior,

perception in all sub- domains of the experimental group ($p < 0.001$) and in professional-technical domain of control group was statistically significant ($p = .001$) and has improved (Table 4 and 5). Beck study showed that educational program focusing on five aspects of nursing care, including availability, communication and interaction with patients, patient advocacy, clinical competence and joyful effects were effective in caring behaviors of students and time, interaction and communication were the most important variables for students' care learning experiences; he expressed care as a process where there is a mirror communication [29]. Also, Lee Min Woo study referred to a significant increase in students caring behaviors after attending a caring education program [30]. Khouri study findings showed that educational program was effective due to the increased knowledge level and care theory and concepts, perception, general viewpoint towards caring, strengthened clinical practices and improved self-perception of the experimental group compared to control group [14]. Also, suchita & Lakshmi and Moore et al emphasized the difference between experimental and control groups on caring behaviors [31-32]. The study of Moattari et al (2008) showed the effect of reflection- based educational method on caring approach of students [33].

The results of care, behavioral domains analysis showed that the effects of education on experimental group was in technical - professional and intimacy dimensions; Khouri, Suchitra & Lakshmi agreed with improvement of the technical - professional dimension of care behaviors education ^[14 and 31]. The Pashaei et al study indicated that the following sub- groups were prioritized by students: availability, monitoring and follow-up patient (professional - technical domain); also, they showed that explaining to the patient, the patient's physical and emotional comfort, relationship and trust with the patient, anticipating patient needs had lower priority in caring ^[9]. In Suchitra study, treatment and care relationship with the patient were important in caring ^[31]. It seems that since students are more concerned about the health problems of patients, than the availability and timely execution of treatment orders will be the most important care behavior for them. Selecting the item as the most important behavior from students' perspectives is due to professional nursing education. Giving too much importance on physical care by trainers or during school years affects students' performance on patient. Clinical skills as well as explain to the patient must be focused during nursing education that increases self-care of patients and improves treatment process. Students repeat materials to patients in order to encourage the, increase their knowledge and to enable active participation for self-care ^[34]. It is more likely that the main factor of changing students' perception of caring behavior changes their view on the true meaning of the nursing profession and nursing students' perception of caring behaviors based on culture and education and teaching methods of different communities ^[35]. So, it can be concluded that nursing students have perceived physical dimension of caring more than emotional dimension. This shows that students must pay more attention to other needs of caring patients. Study of Rafeiet la on freshmen's caring behaviors showed that inexperienced students focused more on emotional and interpersonal aspects of care while it was less common among experienced nurses ^[11]. Brunton and Beaman study stressed the

emotional aspects of care, such as considering the patient as a human being, respect for the patient, being sensitive to the patient's condition, being honest with patients, talking and listening to the patient and keep patient privacy ^[36]. Comparing mean scores of care behaviors received by patients of both groups before and after the educational program showed that there was a positive and consistent relationship at all domains of patients in the experimental group (Table 6 and 7) that was aligned with the Khouri et al study (2011) in Jordan ^[14]. While the instructors of students in both groups (experimental and control) were asked to emphasize the importance of care and caring behavior in clinical education. However, control group trainers did not educate caring behaviors directly to students and patients' care perception scores in the control group after intervention was significantly lower than experimental group scores ($p = .0001$). The greatest effect of education was on professional and then individual approach domains. These results were consistent with Khouri study in Jordan that clearly shows the effect of caring education for nursing students caring behavior. More caring behaviors in this area may be due to the high importance of caring behaviors from the students' perspective. A second factor affecting the caring behavior of patients is that the subscale behavior is more palpable and observable than other subscales. In other words, these behaviors are more objective than other behaviors and are rated by patients easier and patients are not able to evaluate technical competence rigorously due to lack of necessary knowledge ^[37]. Therefore, it is suggested that **for** patients have less information on health care and cannot measure caring quality, nursing students pay more attention to more objective behaviors and patients consider and pay them more attention. It is necessary to educate patients about care principles, ethical codes and principles and express patients' rights not only in health centers, but also in media and books and newspapers; also, it is necessary to educate life skills to students in educational centers. "Patients of experimental grouping students" observed respect domain less than other domains.

The findings were like Hajinejad et al^[1] and Rafii et al^[11] studies. But Wolf et al (1994)^[37] and Brunton and Beaman (2000)^[38] studies contrast. Less observance of respect for others subscale behaviors can have several reasons, including shorter duration of students' care of patients. As mentioned in some studies, reduced duration of care can significantly affect patients' perception care^[1]. In addition, according to the relationship between all aspects of caring behaviors and patient satisfaction, it is suggested that nurse managers, supervisors and clinical trainers over-emphasize the importance of respect for patients and have adequate oversight on this matter. "Patients of experimental grouping students" observed behaviors related to communication domain more than "Patients of control group". These findings matched the study of Wolf et al^[37] but were contrary to Hajinejad et al study^[1]. Communication plays a key role in the nursing profession and is the basis of nursing work in patient care. Proper communication is an important need of patients as well as is a very important aspect of nursing care. It informs the patient about the disease and its treatment and leads to the patient's perception of concerns and better understanding and empathy, psychological support, physical, mental and behavioral improvement consequences and patient comfort. In contrast, lack of proper communication is the main reasons of psychological and social needs of patients' non-recognition. The less importance of students caring behaviors in relation to the patient before the implementation of educational program in both groups may be related to a variety of factors including education during pre-university and weakness of nursing education in the field of interpersonal communication and professional communication of medical teams especially in the nursing profession as well as social and cultural factors. Another reason for this problem is that providing care in public sectors of health centers is functional. In this way, the patient is not considered as a unit and there is the risk of ignoring some needs of patients, especially psychological, emotional and social needs.

Another feature of care system is that the nurse is not familiar with the patient's needs and communication between patient and nurse cannot take place effectively. Compatibility and patient behavior can be another factor that is associated with quality of care and communication with patients. The atmosphere of the ward and interpersonal relationships are the most important factors affecting patients' perception of care. On the other hand, factors such as short period of apprenticeship and hospitalization of patients in hospitals lead to the lack of proper communication between patient and student. Considering psychological- social aspects of caring, especially proper communication with patients compared to technical aspects of care will lead to patients' satisfaction. In this case, it is recommended that care be taken consciously and caregivers be smiling. Studies have shown that smiling and careful attention to patient creates self-confidence of a patient. Unfortunately, it seems that lack of appropriate communication with patients and treat patients as inanimate objects in our country nursing is growing and worrying. So, educating interpersonal communication skills to nurses is one of the most known ways of improving quality care because it changes their behavior and attitude towards the usefulness of these skills, job satisfaction as well as identify needs, creating positive changes in clinical status and a patient's consent. However, research indicates that these educations cannot alone create satisfying relationships and establishing treatment communication is something beyond applying the usual methods, principles and techniques of communication. That's why nurses avoid establishing close and emotional contact with patients due to avoid potentially destructive and oppressive stress.

According to results we can conclude that nursing students have perceived physical dimension more than the emotional dimension of care; this suggests that students must be aware of all care needs of patients. Essen et al (2003) has shown more emotional aspects of caring behaviors; according to Essen, the educational content of university emphasizes behavioral and social

sciences and does not emphasize on the biological sciences^[13]. Rafi et al study^[11] examined caring behaviors of freshmen and showed that inexperienced students pay more attention to emotional and interpersonal aspects of care while it is less common among experienced nurses. It seems that in lower-degree students, instructors somewhat emphasize more on issues that induce compassionate care. The relative stress of students in doing better work will be more important, especially in the early years of study and students focus more on the emotional aspects. In final year students, factors such as shortage of professional trainers, lack of critical thinking- based education and greater emphasis of nursing instructors on health and physical aspects of patient care play more role.

According to Figure 1, the results have shown that higher caring behavior, perception of nursing students will increase the patients' perception of care behavior ($p = 0/01$).

CONCLUSION

Although the results of this study were consistent with previous researches, but there are contradictions in some areas of care behaviors and some studies. These differences are not unexpected, since, although care is a global phenomenon, but cultural values and social structures can affect the character nature of care by professionals and non-professionals persons. In addition, each person's perception is affected by knowledge, attitudes and previous experiences that both of them are resulted from community culture. These results protect the researchers' idea that caring behaviors can be learned through educational interventions. The results of the study are consistent with Yang & Lus study who found that 3-day seminar increases caring knowledge not caring behavior^[39]. The Longitudinal design of the study, with repeated concepts reinforcement and positive behavior reinforcement has improved implementation of nursing care. Therefore, it supports development and implementation of care educational programs at all levels of nursing student. Carrying out further studies in this field, in different cultures as well as various educational

programs are offered. In this study, long-term effects of patient, caring education program were not examined. The study used various training strategies but the results of this research will not determine the most effective and appropriate training strategies. Sampling of patients was conducted in wards where some patients experienced chronic diastase and some experienced acute conditions. Cultural characteristics of study units were not considered in this study.

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