

Relation between Nurses' Critical Thinking Disposition and Their Professional Patient Relationship

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Abstract

Background: Critical thinking is a fundamental concept in nursing education and training that helps nurses adapt to changing working environments and circumstances. Nurses require strong critical thinking and reasoning skills to effectively meet the caring needs of patients and their families and collaborate with other healthcare professionals. **Objective:** to determine the relation between nurses' critical thinking disposition and their professional patient relationship. **Setting:** The study was conducted at Alamria general hospital in Alexandria governorate which affiliated to Ministry of Health. **Subjects:** The subjects of this study comprised of 135 nurses who represent hospital nursing staff (N=208) who worked in Alamria hospital during year 2021-2022. **Tools:** Two tools were used for data collection. Tool I: California Critical Thinking Disposition Inventory (CCTDI) to assess Critical Thinking Disposition. Tool II: Professional Nurse-Patient Relationship Observation Checklist (PNPROC) to assess nurses actual practice of professional nurse-patient relationship. **Results:** there were statistical significant difference between all items of critical thinking dispositions and professional nurse patient relationship tool **Conclusion:** Critical thinking disposition is essential to nursing. Critical thinking disposition has a correlation with critical thinking skills. **Recommendations:** Nurses should attend workshops to enhance critical thinking skills. Modifying regulations and policies regarding nurses' job descriptions will improve nurses' critical thinking disposition.

Keywords: Critical thinking dispositions, professional patient relationship, nurses

Introduction

Nurses are essential members of the healthcare team who play a crucial role in delivering high-quality patient care. Nurses are responsible for assessing, planning, implementing, and evaluating patient care. They collaborate with other healthcare professionals, such as physicians, pharmacists, and therapists, to provide comprehensive care that meets the individual needs of each patient. (Cui et al., 2018)

In health care settings, nurses must improve their critical thinking, problem-solving, and decision-making abilities because they face complex challenges. (Elsayed et al., 2020 & Ludin, 2018). Critical thinking (CT) is an important part of nursing education and essential to the field. It is a

necessary component of professional nursing practice because it enables them to comprehend the significance of patient data in addition to identifying and diagnosing patient issues. This enables them to resolve issues in challenging circumstances, make clinical decisions, and communicate effectively and accurately in order to ensure positive outcomes for patients. As a result, critical thinking is a crucial part of professional nursing practice, and it has been argued that critical thinking teaching should be included in the nursing curriculum from the beginning. (Majumder et al., 2019 & Meherali et al., 2015)

Critical thinking (CT) has many definitions, the American Philosophical Association gave the definition of CT as follows: "Purposeful, self-regulatory judgement that uses cognitive tools such as

interpretation, analysis, evaluation, inference, and explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which judgement is based." Moreover, critical thinking in nursing was mentioned by Kataoka-Yahiro and Saylor (1994) as "reflective and rational thinking about nursing challenges without a single answer. thinking about choosing what to believe and do.. (Futami et.al, 2020; Lorencová et al., 2019)

Critical thinking has two dimensions: critical thinking skills and subskills and critical thinking dispositions. Regarding critical thinking skills, it is a cognitive skill that relates to nurses' capability to participate in activities. The American Philosophical Association's (APA) Delphi-derived framework of critical thinking consisted of six core skills and their subskills. These skills include interpretation, analysis, inference, evaluation, explanation, and self-regulation. (Khavanin et al., 2020; Mslm et al., 2020).

In addition to these skills, the Delphi panel identified an additional dimension to critical thinking in the form of dispositions. This understanding was key for panelists, as they noted that critical thinking skills needed to be paired with complementary dispositions to be 'exercised appropriately and achieve the goal of being a well-rounded critical thinker (Abrami et al., 2015). Critical thinking cannot exist without these attitudes; it would not be possible. A person's critical thinking dispositions (CTD) reveal how they feel about using that ability. Critical thinking abilities and dispositions have a strong positive link with each other.. (Chen et.al, 2020; Dehghanzadeh & Jafaraghaee, 2018).

Critical thinking disposition (CTD) has many definitions. According to Facione (2000), CTD is the ongoing internal motivation to solve problems and is the persistent internal urge to approach issues and make judgements. (Ansori et al., 2018). Ricketts (2003) defined it as "the predisposed attitude one naturally exhibits concerning critical thinking " (Carlos, 2014)

Additionally, Profetto (2003) described a critical thinking disposition as a quality or mental habit that is ingrained in one's ideas or behaviours in order to successfully solve issues and arrive at judgements. (Fitriani et al., 2018); moreover, Facione (2007) defined it as a persistent attitude, motivation, tendency, and purpose to participate in critical thinking while considering important topics, coming to conclusions, and solving difficulties. (Mahmoud & Mohamed, 2017)

Critical thinking dispositions (CTD) have seven specific indicators: analyticity, systematicity self-confidence, inquisitiveness, open-mindedness, truth-seeking, and maturity. These components enable individuals to analyze and evaluate information effectively. By developing these indicators, individuals can become more effective critical thinkers. The disposition of systematicity and analyticity are the cognitive elements of critical thinking dispositions that are culturally sensitive. On the other hand inquisitiveness, open-mindedness, and "truth-seeking," regarded as the motivation elements of critical thinking dispositions. Critical thinking ability is assumed to be influenced by learning motivation. Maturity and critical thinking self-confidence are the personality traits of a critical thinking disposition. (Ghadi et al., 2015).

The nursing staff is the backbone of the caring profession, and establishing meaningful relationships with their patient is crucial element of their role. The nurse-patient relationship is widely regarded as the fundamental basis of nursing care, and it provides the framework within which nurses carry out their practice. (Hartley et al., 2020). The nursing relationship has been defined by Peplau (1990) as an important therapeutic interaction that works collaboratively with other human processes to promote health and well-being for individuals and communities. (Hartley et al., 2020a; Sharifi et al., 2016). Gordon (2006) envisions the nurse-patient relationship (NPR) as a professional, therapeutic relationship that is developed to

satisfy the patient's needs and health outcomes, to protect their safety, and to support them as they work towards recovery or a peaceful death (Strands & Bondas, 2018).

The professional nurse-patient relationship is a relational process where the nurse is aware of and supports the uniqueness of the patient. The nurse builds and sustains this professional relationship by utilising her nursing expertise, caring attitudes, and applying nursing knowledge and skills. (Molin et al., 2016). The College of Nurses of Ontario (2019) defined it as a professional, therapeutic relationship developed to assist nurses in organizing, implementing, and evaluating nursing care intervention that meets patients' health needs (Feo et al., 2021)

Many studies argue that professional nurse-patient relationships are a cornerstone of quality health care and have positive correlations with the health of patients, increased recovery rates, a sense of safety and protection, improved levels of patient satisfaction, and greater adherence to treatment options. A good nurse-patient relationship reduces the days of hospital stay and improves the quality and satisfaction of both (Feo et al., 2020; Vujani et al., 2020).

The Fundamentals of Care Framework (Kitson et al. 2013) provides a useful approach for building professional relationships with patients, based on three critical dimensions that are essential for delivering high-quality fundamental care: the nurse-patient relationship; addressing diverse fundamental needs; and creating a supportive context to achieve these aims. A positive and trusting nurse-patient relationship is the basis for the delivery of fundamental care and forms the core of the framework.

Regardless of the context, length of interaction, or whether a nurse is the primary or secondary care provider, all care in nursing practice recognises two basic principles. Human communication is the first fundamental concept, while professional rules of ethics are the second fundamental

principle. Regarding human communication, it is a basic pillar of any type of relationship and must include trust, respect, focus, anticipation, discovery of the patient, professional intimacy, empathy, power, and evaluation (Kitson et al., 2013).

After a literature review, it can be emphasized that nurses are required to provide effective and safe care in a complex relationship of critical thinking. Therefore, the purpose of this study is to determine the relationship between nurses' critical thinking disposition and their professional patient relationship.

Aims of the Study

The aim of the study is to determine the relation between nurses' critical thinking disposition and their professional patient relationship.

Research question

What are the levels of nurses' critical thinking disposition?

What are the levels of professional nurse-patient relationship?

Is there a relation between nurses' critical thinking disposition and their professional patient relationship?

Materials and Method

Materials

Design: A Descriptive correlation research design was used to conduct this study.

Setting:

The study was conducted at Alamria general hospital in Alexandria governorate which affiliated to Ministry of Health. It comprised of 9 departments, which included; an general Intensive Care Unit, Surgical Intensive Care unit, Neonate Intensive Care Unit, Emergency room, Hemodialysis Unit, Operation room, Internal Medicine Department, Orthopedic Department, and Gynecology Department. (These were the working area of the researcher)

Subjects:

The required nurses' sample size was estimated using the EPI Info 7.0 statistical program by applying the following parameters (CDC, EPI Info 7.0)

Population size =208 nurses

Population Proportion=50%

Margin of error= 5%

Confidence coefficient (CC) = 95%

Minimum sample size= 135

The subjects of this study comprised of 135 nurses who were selected randomly systematic randomly and proportional allocation methodology to represent hospital nursing staff (N=208) who worked in Alamria hospital during year 2021-2022.

Tools: Two tools were used for data collection

Tool I: California Critical Thinking Disposition Inventory (CCTDI)

This tool consisted of two parts; nurses' sociodemographic data sheet and California Critical Thinking Disposition Inventory (CCTDI)

Part 1: Nurses' sociodemographic and occupational data.

This part developed by researcher. It was compromised of; name, age, gender, years of experience, marital status, educational qualification, and work department of all the nurses.

Part 2: California Critical Thinking Disposition Inventory.

This tool was developed by Facione & Facione (1992). It was adopted by the researcher to assess the nurses' dispositions toward critical thinking. It consisted of 75 items divided 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), and maturity (10 items). It was translated into Arabic

Scoring system:

It is a Likert scale of 5 points ranging from strongly agree =5, agree =4, neutrally =3, disagree =2, strongly disagree =1. For the negative items the score reversed . The tool had eight scores: the seven subscale score and the overall score. The overall score of the tool ranged from 70 to 420 which interpreted as following; 420 to 280 had positive disposition. 279 to 210 had ambivalence toward disposition, below 210 had a negative disposition regarding critical thinking.

Tool II: Professional Nurse-Patient Relationship Observation Checklist (PNPROC).

It was developed by researcher after literature review (Feo et al 2016; Weis & Schank 2017; Lin & Tsai 2019) to assess nurses actual practice of professional nurse-patient relationship. It consisted of nine dimensions with 69 items; included Trust (11 items), Focus (4 items), Anticipate (4 items), Discover the patient (7 items), Emotional support (10 items), Ethical and legal caring (10 items), Nursing clinical care (9 items), Safe environment (7 items) and Evaluation (7 items).

Scoring system

It included 3 responses: done correct/complete =2 , done incorrect/incomplete =1, not done =0.

The total score was 138 which interpreted as following; 80% to 100% had very good professional nurse patient relationship 60% to 79% had good professional nurse patient relation. less than 60% had poor nurse patient relationship.

Method

A written permission to conduct the study was obtained from the Research Ethics Committee at the Faculty of Nursing, Alexandria University

An official permission was obtained from Dean of faculty of nursing and the manager of Alamria hospital to collect the data .

Tool I was translated into Arabic by the researcher.

Tools' content validity were tested by a jury of 5 experts in the related field, for relevance, clarity, accuracy and translation language issues. The recommendation made by the jury members implemented. According to jury opinion,

A pilot study carried out on 10% of sample size (13), to ensure the clarity and feasibility of the tools, they excluded from the study sample.

The tools' reliability were tested using Cronbach's Alpha test, and all study tools were reliable

The tool's I reliability was tested using the Cronbach alpha test, and it was reliable (0.926).

The tool's II reliability was tested using the Cronbach alpha test, and it was reliable (0.936).

Nurses were selected randomly and proportionally from each department according to their educational level.

Data collection were carried out at Alamria general hospital in Alexandria affiliated to Ministry of Health

Data collected over period of one month from 30-5-2022 until 30-6-2022

Tool I was distributed to every nurse participated in research in their break for (20 -30) minutes and they asked to complete it by self-reporting and return it back to the researcher.

Tool II was applied by the researcher through concealed observation for the selected nurses. Written consent was obtained from sample nurses to be observed for their professional relationship with patient.

Ethical considerations

- Written informed consent for observational check list was obtained from nurses for their participation after explanation of the study purpose.
- Written witness consent was obtained from the hospital head nurse.
- Anonymity and confidentiality of data was assured.
- The subject's voluntary participation and the right to withdraw at any time from the study was assured.

Statistical Analysis

Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp.). The **Kolmogorov-Smirnov** test was used to verify the normality of the distribution. Quantitative data were described using range (minimum and maximum), mean, standard deviation, and median. The significance of the obtained results was judged at the 5% level.

Results

Table (1): The table shows the distribution of nurses according to their socio demographic data. It was found that, less than half of nurses 40.7 %, in the study had from 30 to < 40 years old, while more than three quarters of them 85.2% were females. Also about three quarters of them 74.1% were married and about two thirds of nurses 62.2% were technical nursing. Furthermore, 23.7% of nurses were working in ICU and more than one third 31.9% had from 5 to 10 years of experience.

Table (2): Distribution of the studied nurses according to level of California Critical Thinking Disposition Inventory (CCTDI)

The table shows that more than half of nurses (51.1%) were ambivalent toward disposition. Also more than two thirds of nurses (65.9%, 63.7%, 66.7%) respectively, had positive disposition toward analyticity, self-confidence, and inquisitiveness

Table (3) Distribution of the nurses according to professional nurse-patient levels

The table shows that; more than half of nurses were good in professional nurse-patient relationship, and the majority of studied nurses 80% were poor in evaluation of nurse patient relationship.

Table (4) Correlation between Critical Thinking Disposition and Professional Nurse -Patient Relationship.

The table shows a statistically significant positive correlations between nurses critical thinking disposition and professional nurse-patient relationship as $p < (0.001)$ related to all items of both tools.

Table (5) Relation between Critical Thinking Disposition and socio-demographic data

The table shows that there were a statistically significant relations between critical thinking dispositions and nurses' educational qualification, work department were $p < (0.001 * 0.001)$

Table (6) Relation between a professional nurse-patient relationship and socio-demographic data. The table shows there were a statistically significant relations between professional nurse-patient relationship and nurses' age, gender, educational qualification, work department

and years of experience (0.003* 0.018*0.001* 0.001* 0.009*) comparatively.

Discussion

Critical thinking is generally linked with the professional nurse patient relationship, which is crucial for patients, contributing to positive care experiences and outcomes. Establishing a professional relationship with patients was identified as an important facet of the nurse's role and as a basis for continued care and treatment. So it was important to study levels of professional nurse-patient relationship (Kwame & Petrucka2021)

Regarding critical thinking disposition

The findings of the current study revealed that the overall critical thinking disposition was ambivalent among the study subjects. Inquisitiveness, analyticality, and self-confidence were the highest dimensions of the nurses' critical thinking disposition inventory. On the other hand, maturity, truth-seeking, open-mindedness, and systematicity level were the lowest dimensions of the nurses' critical thinking disposition inventory.

This result came in congruence with the study of Elsayed et al. (2020), who found that nursing management was ambivalent regarding the total critical thinking dispositions and problem solving abilities in Port-Said hospitals. On the same line, Boso et al. (2021) and Karami and Shakurnia. (2021) reported that; the critical thinking disposition of the nurses was above average and relatively desirable. Also, Falcó-Pegueroles et al. (2021) and Tong et al. (2023) stated that there was a satisfactory level of critical thinking disposition among nurses, and the nurses who demonstrated critical thinking in the clinical setting were more self evaluative and comprehensive in their practice.

In contrary, Rababa & Al-Rawashdeh, (2021) showed that critical thinking skills among the nurses were poor in relation to pain management.

Regarding professional nurse- patient relationship:

The study subjects had good levels in their professional relationship with patients, The result of these study indicates statistically significant differences related to all items of professional nurse patient relationship. Dimension of focusing on patient was the highest score of subscale followed by provision of safe environment. On the other hand, the dimension of 'evaluation of nurse patient relationship' and 'discover the patient' are considered as the lowest score.

These results came in congruence with Gholami et al. (2016) and Tondo and Guirardello (2017) who found that; therapeutic nurse-patient communication score was average and participants were acquainted with communication skills and used these skills in caring for the patients.

Also these results are in line with those of; AL Lawati et al.(2019) who found that, the nurses in the primary health care setting provide a safe environment at a very high level and that the perception of patient safety is moderately positive.

Related to correlations between Critical thinking disposition and professional nurse patient relationship:

There were statistical significant positive correlations between nurse's critical thinking disposition and professional nurse-patient relationship related to all items of both tools. ($p < 0.001$).

The result came incongruence with Arli et al. (2017) and Kim et al. (2018) found that nursing students who reported more positive critical thinking dispositions had greater professional caring behaviours with patients. Moreover, Lee and Chang (2022) and Tong et al. (2023) stated that; there was a positive relationship between critical care practice and critical thinking skills among ICU nurses.

Regarding to relations between critical thinking disposition and sociodemographic data.

There was a significant relationship between critical thinking disposition and the nurses' educational qualification and work department. These are consistent with, López et al. (2020), Van Nguyen and Liu (2021) and Dewi et al. (2021) indicated that participants with a bachelor's degree level of education had higher scores in critical thinking disposition than participants with a diploma or associate degree level of education.

Regarding the work department, the result came in congruence with Jafari et al. (2019) and Ludin (2018), who found that the critical thinking ability of the nurses in critical care wards was significantly higher compared to those employed in general wards

Related to relations between professional nurse patient relationship and sociodemographic data.

There were statistically significant relations between professional nurse-patient relationship and nurses' age, gender, educational qualification, work department and years of experience. Simmillary; Sibandze and Scafide (2018) and Yau et al. (2019) suggested that educational level had a positive influence on the professional values of nurses. In addition, Molina-mula and Galloestrada (2020) reported that nurses with a younger age and less experience value and respect the patient so they can promote trust with the patient.

Conclusion

According to the study's findings, there were statistically significant differences related to all items of the critical thinking dispositions tool and the professional nurse-patient relationship tool. In addition, there was a significant relationship between critical thinking disposition and the nurses' educational qualifications and work department. Also, there were statistically significant relationships between the professional nurse-patient relationship and nurses' age, educational qualification, work department, and years of experience

Recommendations

According to the findings of the study, the following recommendations are made:

- **Nurses** attend workshops, in-service training about critical thinking dispositions and professional nurse-patient relationship, and practice self-reflection on their thinking process.
- **Hospital administration**, modify regulations and policies regarding nurse' job descriptions to improve nurses' critical thinking disposition, and conduct compulsory courses and workshops to improve nurses' critical thinking dispositions.
- **Recommendation for further studies:**
- Relation between Critical thinking disposition and nurses clinical performance, Factors affect professional nurse-patient relationship.

Table 1: Distribution of the nursing staff according to socio demographic and occupational data. (n=123)

Socio-demographic data	No.	%
Age		
<30	52	38.5
30-40	55	40.7
40-50	17	12.6
50-60	11	8.1
Gender		
Male	20	14.8
Female	115	85.2
Marital status		
Married	100	74.1
Single	27	20.0
Divorced	8	5.9
Educational qualification		
BSC	31	23.0
Technical	84	62.2
Diploma	20	14.8
Work department		
ICU	32	23.7
NICU	16	11.9
ER	18	13.3
OR	19	14.1
Hemodialysis	18	13.3
Orthopedic	7	5.2
Internal medicine	12	8.9
Gynecology	13	9.6
Years of experience		
0-5	41	30.4
5-10	43	31.9
10-15	16	11.9
<15	34	25.2

Table (2): Distribution of the nurses according to Critical Thinking Disposition Level

California Critical Thinking Disposition Inventory (CCTDI)	Negative disposition (<50%)		Toward disposition (50-66.6%)		Positive disposition (≥66.67%)	
	No.	%	No.	%	No.	%
Truth Seeking	44	32.6	39	28.9	52	38.5
Open-mindedness	33	24.4	49	36.3	53	39.3
Analyticity	4	3.0	42	31.1	89	65.9
Systematicity	16	11.9	65	48.1	54	40.0
Self-Confidence	9	6.7	40	29.6	86	63.7
Inquisitiveness	2	1.5	43	31.9	90	66.7
Maturity	40	29.6	45	33.3	50	37.0
Overall	9	6.7	69	51.1	57	42.2

Table (3): Distribution of the nurses according to professional nurse-patient relationship levels

Professional nurse-patient	Poor (<60%)		Good (60-79%)		Very good (80-100%)	
	No.	%	No.	%	No.	%
Trust	39	28.9	58	43.0	38	28.1
Focusing	34	25.2	49	36.3	52	38.5
Anticipation	50	37.0	58	43.0	27	20.0
Discover the patient	65	48.1	58	43.0	12	8.9
Emotional support	46	34.1	52	38.5	37	27.4
Ethical and legal aspect in nursing care	38	28.1	58	43.0	39	28.9
Nursing clinical care	31	23.0	55	40.7	49	36.3
Provision of a safe environment	59	43.7	66	48.9	10	7.4
Evaluation of nurse patient relationship	108	80.0	27	20.0	0	0.0
Overall	53	39.3	70	51.9	12	8.9

Table (4): Correlation between Critical Thinking Disposition and the Professional Nurse-Patient Relationship

professional nurse-patient relationship		California Critical Thinking Disposition Inventory (CCTDI)							
		Truth Seeking	Open-mindedness	Analyticity	Systematicity	CT Self-Confidence	inquisitiveness	Maturity	Overall
A. Trust	r	0.532*	0.472*	0.414*	0.523*	0.467*	0.485*	0.484*	0.595*
	p	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
B. Focusing	r	0.406*	0.355*	0.245*	0.475*	0.305*	0.378*	0.365*	0.448*
	p	<0.001*	<0.001*	0.004*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
C. Anticipation	r	0.382*	0.456*	0.311*	0.409*	0.451*	0.404*	0.395*	0.492*
	p	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
D. Discover the patient	r	0.402*	0.400*	0.321*	0.544*	0.451*	0.548*	0.350*	0.521*
	p	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
E. Emotional support	r	0.446*	0.444*	0.358*	0.428*	0.345*	0.409*	0.366*	0.494*
	p	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
F. Ethical and legal aspect in nursing care	r	0.534*	0.502*	0.189*	0.380*	0.356*	0.393*	0.364*	0.492*
	p	<0.001*	<0.001*	0.028*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
G. Nursing clinical care	r	0.500*	0.546*	0.286*	0.369*	0.363*	0.404*	0.408*	0.516*
	p	<0.001*	<0.001*	0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
H. Provision of a safe environment	r	0.187*	0.217*	0.134	0.238*	0.192*	0.233*	0.192*	0.244*
	p	0.030*	0.011*	0.121	0.005*	0.026*	0.006*	0.026*	0.004*
I. Evaluation of nurse patient relationship	r	0.375*	0.429*	0.361*	0.446*	0.355*	0.443*	0.342*	0.479*
	p	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
Overall	r	0.558*	0.559*	0.381*	0.548*	0.474*	0.535*	0.475*	0.624*
	p	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*

Table (5): relation between Critical Thinking Disposition and socio-demographic data

Socio-demographic data	Critical Thinking Disposition (Total Score)	Test of Sig.	p
	Mean ± SD		
Age			
<30	264.25 ± 30.39	F=2.309	0.079
30-40	271.36 ± 27.36		
40-50	275.88 ± 37.81		
50-60	249.09 ± 29.34		
Gender			
Male	280.0 ± 26.80	t=2.023	0.045
Female	265.18 ± 30.76		
Marital status			
Married	266.51 ± 31.33	F=0.198	0.820
Single	270.70 ± 28.11		
Divorced	267.0 ± 32.07		
Educational qualification			
BSC	279.93 ± 27.15	F=8.971*	<0.001*
Technical	268.08 ± 30.01		
Diploma	244.95 ± 26.56		
Work department			
ICU	267.81 ± 27.50	F=4.326*	<0.001*
NICU	262.75 ± 34.11		
ER	291.50 ± 33.61		
OR	254.73 ± 28.59		
Hemodialysis	282.89 ± 23.44		
Orthopedic	262.43 ± 28.02		
Internal medicine	253.33 ± 26.04		
Gynecology	251.23 ± 20.05		
Years of experience			
0-5	266.37 ± 29.50	F=1.087	0.357
5-10	270.27 ± 30.77		
10-15	275.94 ± 37.31		
<15	260.82 ± 27.98		

Socio-demographic data	Professional nurse-patient relationship (Total Score)	Test of Sig.	p
	Mean ± SD		
Age			
<30	90.37 ± 18.50	F=4.848*	0.003*
30-40	89.89 ± 16.78		
40-50	83.12 ± 19.31		
50-60	69.45 ± 18.02		
Gender			
Male	95.45 ± 14.68	t=2.486*	0.018*
Female	86.18 ± 18.96		
Marital status			
Married	86.77 ± 18.81	F=1.086	0.340
Single	91.89 ± 16.04		
Divorced	82.75 ± 24.0		
Educational qualification			
BSC	97.97 ± 16.28	F=15.065*	<0.001*
Technical	87.58 ± 17.04		
Diploma	71.30 ± 17.51		
Work department			
ICU	95.19 ± 15.40	F=3.921*	0.001*
NICU	84.62 ± 18.48		
ER	90.39 ± 15.36		
OR	80.53 ± 23.42		
Hemodialysis	97.0 ± 15.84		
Orthopedic	89.0 ± 6.68		
Internal medicine	77.67 ± 17.73		
gynecology	74.0 ± 18.06		
Years of experience			
0-5	92.0 ± 16.78	F=4.005*	0.009*
5-10	90.64 ± 18.02		
10-15	86.50 ± 17.87		
<15	78.70 ± 19.54		

Professional and socio-

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