Original Article

Attitudes and Behaviors of Nursing Students towards Nurse-Patient Interaction

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Abstract

Introduction: This research was carried out in order to evaluate nursing students' attitudes and behaviours towards caring nurse-patient interaction.
Materials and Method: This descriptive and cross-sectional study was carried out with 549 nursing students in 2nd, 3rd and 4th years of nursing programmes in Government Universities in Istanbul. Data were collected using an "Information Form" and "Caring Nurse-Patient Interaction Scale". Data analysis was performed with percentage, arithmetic mean, t-test, one-way ANOVA and Tukey HSD advanced analysis.
Results: It was found that %85.6 of the students were female, the average age of 21.63±1.56. The means of overall scale for the importance, competence and applicability aspects were 314.2±37.2, 280.4±40.3, 272.6±50.1, respectively. Gender, graduated school, reasons for choosing nursing, grade level, having communication difficulties, negative experiences with patients or their relatives affected nursing students attitudes and behaviours toward Caring Nurse-Patient Interaction Scale ($p<0.05$).
Conclusion: Nursing students considered that attitudes and behaviors towards Caring Nurse-Patient Interaction Scale are very important. However, they found these interventions lower applicable and felt lower competent. There are factors affecting the attitudes and behaviours of students. Students should be observed and supported in each clinical practice in this respect with appropriate role models.

Keywords: Nurse–patient interaction, nurse–patient relationships, caring, nursing students

Introduction

Care, fundamental and unique nursing function, is a relationship which starts and develops with at least two people. This relationship is mainly based on two major actions in the form of "taking and giving" from physical, mental, intellectual, social and spiritual aspects. It is a "Dual" relationship, in other words, interaction (Babadag, 2010). The nurse is involved in an interaction with the patient at any moment, while providing care, performing health education and managing the patient's daily care.

As the nurse-patient interaction is the vital component for humanistic, person-centred and ethical nursing care, various nurse theorists (Orlando, Travelbee, Peplau, Leninger, Roy, Watson, Roach, Swanson, Benner and Wrubel) defined the concepts of nursing and care as "an interaction process between people" (Yalcın and Aştı, 2011). In the Care Theory developed by Watson, based on nurse-patient interaction, she claims that human caring combines a humanistic, caring approach and the scientific knowledge of nurses. A nurse must not only display the knowledge of proper technical performance but also, in actions related to health care for a patient, be caring and have appropriate interpersonal skills (Maniago, 2017). Along with the nurses/nursing students and also the patients and their relatives usually perceive nursing care as a relational concept, communication, interaction (Altıok et al., 2011).

Effective interpersonal relations and communication skills are nurses' important means in increasing quality of care and patient satisfaction, compliance with the disease and

treatment, increasing motivation to improve, developing health behaviors, and reducing anxiety (Alemu et al., 2014; Azizi et al., 2012; Calong and Soriano, 2018; Evans, 2015; Fortuno et al., 2017; Haugan et al., 2013; Tutuk et al., 2002). Therefore, it is emphasized that these skills are important factors affecting the process and result of the disease (Acar and Buldukoglu, 2016). Matheney and Topalis expressed the effects of nurse-patient interaction as "it will be as important and useful as the use of morphine in the treatment of pain or on the contrary, it will act in a way similar to rubbing salt into the wound" (Shattell, 2004). Similarly, it is stated that patients thought supportive attitudes and behaviors as energizing and non-supportive attitudes and behaviors as energy consuming (Shattell, 2004).

The nurse-patient interaction is not a simple and haphazardly evolving relationship process, but it is an interpersonal process that is planned and developed in line with the objectives of nursing care. In this process, the nurse has the responsibility to create conditions for changing, maintaining, starting or supporting the patients' health processes. Thus, in the transition from being a nursing student to being a nurse, one of the main skills have to be developed is nurse-patient interaction.

Calong and Soriano (2018) noted that the concept of relational practice is related to nursing education. In 2007, Beckett, Gilbertson and Greenwood stated that teaching and learning in nursing education often focus on mechanical skills and technical interventions; educational curricula frequently emphasized scientific, measurable technical knowledge, ignoring interpersonal aspects of nursing care. However, the current system of education based on a holistic approach which draws attention to patient subjectivity, to develop an attitude of acceptance of individuality, create a relationship with the patient and respect their rights. Therefore, besides the international associations, National Nursing Core Training Program in Turkey emphasizes these skills as one of the nursing education targeted competencies (HUCEP, 2014). Evaluating nursing students and organizing education from this point is quite important for this aim (Chung et al., 2018; Felsmann, et al., 2015). This can be helpful for teachers in nursing education in identifying areas of interactional skills where nursing students need to develop and improve. Such evaluation would also bring valuable information on stages of progress in nursing programmes.

Based on this information, with this study, it was aimed to determine nursing students' attitudes and behaviors towards caring nurse-patient interaction and the factors affecting these attitudes and behaviors.

In this study, we sought answers to the following questions:

1) How important do nursing students consider attitudes and behaviors towards caring nurse-patient interaction is?
2) How applicable do nursing students consider attitudes and behaviors towards caring nurse-patient interaction are?
3) How competent do nursing students feel in terms of the attitudes and behaviors towards caring nurse-patient interaction?
4) What are the factors affecting the attitudes and behaviors of nursing students towards caring nurse-patient interaction?

Method

Participants: This descriptive and cross-sectional research was conducted with students in the 2nd, 3rd and 4th grades at three nursing programs in Turkey. The entire population was included in the study without sample selection considering the availability of the population. The study group constituted 549 (66.8%) students who agreed to participate in the study after informing.

Tool: Student Information Form: It consists of questions including demographic characteristics of students and the features that may affect nurse-patient interaction. Caring Nurse-Patient Interaction Scale (CNPI): This scale, developed by Cossette et al. (2005) based on Watson's Care Theory, is a crucial tool can be used to determine the nursing students' attitudes and behaviors towards caring nurse-patient interaction. The scale involves 70 items and 10 sub-dimensions consisting of ten guiding items in Watson's Theory. For the purpose of the present study, three questions for each of the 70 items were asked of the students on the scale: the importance of each attitude (not at all =1 to extremely = 5), the degree to which they felt competent in adopting each attitude (not at all = 1 to extremely = 5) and the degree to which they consider applicability of each attitude in clinical practice (not at all = 1 to extremely = 5). The minimum

and maximum scores of the scale for each 3 parameters variable range from 70 to 350. As the scores increase, caring nurse-patient interaction attitudes and behaviors increase positively (Cossette et al. 2005).

The Turkish validity and reliability study of the CNPI was conducted by Atar and Astı (2012). The internal consistency of the scale in terms of importance, competence and applicability parameters (α = 0.89-0.94, 0.86-0.93, and 0.88-0.94) was found to be high for the whole scale (Atar and Astı 2012). This study received formal ethical approval from the involved educational institutions. The aim and benefits of the study and the roles in the study were explained to the students who constituted the sample, they were asked not to write their names on data collection forms, and their verbal consent/approvals were obtained by considering the principle of volunteering to participate in the study.

Data Analysis: Statistical analysis of the data included the parametric methods, since the data were distributed normally. The sociodemographic characteristics of nursing students were evaluated by number, percentage, mean, and standard deviation, and the effects of sociodemographic and interaction characteristics of nursing students on caring nurse-patient interaction were evaluated by student's t-test in independent groups, one-way analysis of variance in independent groups, and Tukey HSD advanced analysis. The level of statistical significance was accepted as $p \leq 0.05$.

Results

The average age of the students was 21.63 ±1.56 (19-34), 35.2 % of them were studying in the 4th grade. Of all the students, 85.6% were female, 97.4% were single, 90.5% were graduated from high schools/associate degree program/university other than Vocational School of Health (VSH).

Table 1. Demographic characteristics of students (n: 549)

Variable	Frequency (N)	Percentage
Grade Level		
2nd	170	31,0
3rd	186	33,9
4th	193	35,2
Gender		
Female	470	85,6
Male	79	14,4
Previously Graduated School		
Vocational School of Health	52	9,5
Other High Schools / Associate / University	497	90,5
Reasons for Choosing Nursing		
Like nursing and helping people	187	34,1
Other causes (family preference / job opportunity etc.)	362	65,9
Difficulty in Communication		
No difficulties	278	50,6
Difficulties with patient	140	25,5
Difficulties in daily life	58	10,6
Difficulties both in daily life and with patient	73	13,3
A negative experience with the patient or patient relative		
Yes	146	26,6
No	403	73,4

Table 2. Distribution of students' Caring Nurses-Patient Interaction Scale and sub-dimensions scores (N: 549)

Scale and Sub-Dimensions		Importance		Competence		Applicability	
		Min-Max	$\bar{X}$±SD	Min-Max	$\bar{X}$±SD	Min-Max	$\bar{X}$±SD
Caring Nurses-Patient Interaction Scale		145.0-350.0	314.2±37.2	112.0-350.0	280.4±40.3	81.0-350.0	272.6±50.1
Sub-Dimensions	1. Humanism	12.0-30.0	26.8±3.7	7.0-30.0	23.9±4.0	8.0-30.0	22.9±4.8
	2. Hope	14.0-35.0	31.7±4.1	11.0-35.0	27.6±4.7	7.0-35.0	26.9±5.6
	3. Sensitivity	12.0-30.0	25.7±3.9	9.0-30.0	22.4±4.1	6.0-30.0	21.7±5.0
	4. Helping Relationship	16.0-35.0	31.8±4.1	10.0-35.0	29.4±4.8	7.0-35.0	28.4±5.6
	5. Expression of Emotions	10.0-30.0	26.8±3.7	6.0-30.0	23.5±4.2	6.0-30.0	22.4±5.2
	6. Problemsolving	12.0-30.0	26.6±3.9	7.0-30.0	22.7±4.4	6.0-30.0	22.0±5.3
	7. Teaching (	18.0-45.0	40.6±5.3	9.0-45.0	36.5±5.9	9.0-45.0	35.6±7.4
	8. Environment	12.0-35.0	31.6±4.2	7.0-35.0	29.0±4.9	7.0-35.0	28.3±5.8
	9. Needs	23.0-50.0	45.9±5.5	13.0-50.0	41.4±6.6	10.0-50.0	41.0±7.8
	10. Spirituality	6.0-30.0	26.7±3.9	7.0-30.0	24.0±4.6	6.0-30.0	23.4±5.5

A 65.9% chose nursing for family preference and employment opportunity, 50.6% had no communication difficulty in their daily life and 73.4% didn't have any negative experience with the patient/patient relative, 65.9% didn't have care experience as a patient and 35.9% provided care for their relatives at home or accompanied them (Table 1). The students' mean scores for CNPI-Importance was 314.2±37.2, CNPI-Competence was 280.4±40.3 and CNPI-Applicability was 272.6±50.1. The students' subscale scores, in terms of importance, competence and applicability, was the highest in the "requirements" (45.9±5.5, 41.4±6.6 and 41.0±7.8, respectively) and the lowest in the "sensitivity" (25.7±3.9, 22.4±4.1 and 21.7±5.0, respectively) sub-dimensions (Table 2). There was a positive, strong relationship between students' CNPI-Importance scores and CNPI-Competence scores (r=0.60, p=0.000): When students' importance levels increased, feeling competent levels were also increased. There was a positive, moderate and statistically significant relationship between students' CNPI-Importance and CNPI-Applicability scores (r=0.47, p=0.000): As students' CNPI-Importance levels increased, applicability levels were also increased. There was a positive, strong relationship between students' CNPI-Competence and CNPI-Applicability scores. (r=0.65, p=0.000): As students' feeling competent levels increased, the levels of finding applicable this interaction were also increased.

Factors affecting students' caring nurse-patient interaction: The students' grade levels affected ($p<0.05$) the CNPI-Importance ($p<0.01$) and other subscale scores ($p<0.05$) than environment-spirituality ($p>0.05$); CNPI-Applicability ($p<0.001$) and all subscale scores ($p<0.05$); humanism, hope, sensitivity and assistive relationship subscales of CNPI-Competence ($p<0.05$). The 2nd and 4th graders found caring nurse-patient interaction "hope, assistive relationship, problem solving, teaching and requirements" subscales more important compared to 3rd grade students Also, the 2nd graders considered more important "humanism, sensitivity, expression of feelings" subscales compared to others ($p<0.05$). The competent levels of the 2nd, 3rd, and 4th graders' were similar ($p>.05$). However, the 2nd graders were more competent in "humanism, hope, assistive relationship" compared to 3rd graders and in "sensitivity" compared to 3rd and 4th graders ($p<0.05$). The 2nd graders considered more applicable of "humanism, hope, sensitivity, assistive relationship, expression of feelings, problem solving, teaching and requirements" compared to 3rd- 4th graders and "environment and spirituality" compared to 4th graders ($p<0.05$, Tables 3 and 4).

The students' gender statistically significantly affected the CNPI-Importance ($p=0.000$) and all subscale scores ($p<0.01$); CNPI-Competence ($p<0.001$) and all subscale scores ($p<0.05$); CNPI-Applicability ($p<0.05$) and "hope, teaching, environment, requirements subscales" scores ($p<0.05$). Furthermore, the female students considered caring nurse-patient interaction more important and applicable and felt more competent than males (Table 3).

The students' graduated school statistically significantly affected the CNPI-Importance "requirements" subscales ($p<0.05$); CNPI-Competence ($p<0.05$) and "environment, requirements" subscales ($p<0.01$, $p<0.001$). The VSH graduated students considered the "requirements" more important and felt more competent for all subscales. Nevertheless, regarding applicablity of the CNPI students who graduated and did not graduate from VSH were similar ($p>0.05$, Table 3).

The students' reasons for choosing their profession, statistically significantly affected the CNPI-Importance ($p<0.01$) and other subscale scores ($p<0.05$) than environment, spirituality ($p>0.05$); CNPI-Competence ($p<0.001$) and all subscales scores ($p<0.01$); CNPI-Applicability ($p<0.001$) and all subscales scores ($p<0.01$). The students who chose the profession as they liked, considered CNPI more important and applicable, felt more competent in this respect (Table 3).

Having communication difficulty statistically significantly affected the CNPI-Importance ($p<0.05$) and other subscales scores than humanism, assistive relationship, and problem solving subscales ($p>0.05$); CNPI-Competence ($p<0.001$) and all sub-dimensions ($p<0.001$); CNPI-Applicability ($p<0.01$) and other subscales scores than "requirements" ($p>0.05$). The "students without communication difficulties" considered CNPI applications ($p<0.05$) more important, more applicable and felt more competent ($p<0.05$) than others. It was also

determined that the students "who had difficulty in communication" felt more inadequate in "assistive relationship" applications compared to all other groups ($p<0.05$, Tables 3 and 5).

Having a negative experience with the patient or patient relative did not statistically significantly affect the CNPI-Importance and subscales; CNPI-Applicability and sub-dimensions, and CNPI-Competence ($p>0.05$). However, it was effective in the CNPI-Competence "humanism and environment" subscales ($p<0.05$). Accordingly, it was determined that having a negative experience with the patient or patient relative did not change students' levels of importance and applicability of CNPI. However, the students with such an experience felt more inadequate in the applications related to "environment" and "spirituality".

It was determined that students' employment status and care receiving experience did not statistically significantly affect the total and 10 subscales score of the CNPI importance, competence and applicability ($p>0.05$).

Discussion

The interaction between nurse-patient, that the essence of the professional values, philosophical and ethical dimensions, theories and practices of nursing, plays an important role in improving the quality and effectiveness of the care for the individual/family/society. Therefore, developing attitudes and behaviors towards nurse-patient interaction is one of the primary objectives of nursing education. Evaluating nursing students and organizing education from this point is also quite important (Cossette et al., 2005; Felsmann et al., 2015).

The students in this study stated quite importance, but lower applicability and lower competence for CNPI. As the students' CNPI-Importance scores increased, applicability and competence scores also increased; and as competence scores increased, applicability scores also increased ($p:0.000$). In the light of the literature possible explanation is that the theoretical education based on humanistic philosophy can be effective on the importance levels; failure to transfer theoretical knowledge to practice can be effective on the competence level, and the differences in clinical practice because of the nursing shortage and workloads can be effective on the applicability level (Cosette et al., 2005; Felsmann et al., 2015). It is an expected result that there is an increase in other levels along with an increase in CNPI-Importance level as the perception of importance is a key factor in terms of interest, orientation and motivation for an issue. Furthermore, it is natural that the level of feeling competent also affects the applicability of these attitudes and behaviors.

Factors Affecting Students' Caring Nurse-Patient Interaction:

In this study, it was determined that 2nd and 4th graders, especially 2nd graders considered CNPI and its many sub-dimensions more important and applicable compared to 3rd graders. Also, 2nd graders felt more competent in many sub-dimensions compared to others ($p<0.05$, Tables 3 and 4). In the literature, nursing education is defined as having three significant stages including traditional perspective at the beginning, effect of nursing theory and science, and the effect of clinical experience. After clinical experience, the perception of nursing shifted to psychomotor skills. Nursing students' skills such as communication, empathy and problem solving did not show an increase parallel to the grade level. At the same time, 3rd graders were at lower levels with respect to emotional intelligence score averages and care behaviors compared to other graders. However, it was also stated that nursing students perceived nursing with a broader holistic perspective in the second year of their education (Safadi et al., 2011; Ward et al., 2012).

The female students found the applications for CNPI more important and applicable and felt more competent than males. Similarly, in the literature, the female students had better communication skills, were more empathetic and gave more emotional responses. However, the male students had difficulties to use their theoretical knowledge, clinical skills, communication techniques and problem-solving methods in clinical practice (Bingol and Demir, 2011; Cınar et al., 2011).

The VSH graduated students found the "requirements" more important and felt more competent in CNPI, especially in its "environment and requirements" subscales. It was also determined that CNPI applicability levels of the students who graduated and did not graduate from VSH were similar. No differences between groups were observed in more specific to the therapeutic relationship domain sub-scales.

This result of the study is consistent with the literature (Cosette et al., 2005; Tutuk et al., 2002). These results may be a consequence of more emphasis on the therapeutic relationship, philosophical and professional values of nursing during undergraduate nursing education.

The students who chose the profession because they liked, considered caring nurse-patient interaction more important and applicable, and felt more competent. They found especially the "humanism, hope, sensitivity, assistive relationship, expression of feelings, teaching, environment and requirements" more important compared to those who chose the profession for other reasons (family preference, job opportunities, etc.). Choosing the profession consciously and willingly is an important factor in the development of attitudes and behaviors towards the profession (Felsmann et al., 2015; Ozveren et al., 2017). The factors such as interest, desire and ability are prerequisites for maintaining the nursing profession. Similarly, In the other studies, the students choosing nursing willingly had higher perceptions of care behaviors, were more successful in clinical applications and more satisfied with their profession, and the average total score of emotional intelligence was higher (Birimoglu and Ayaz, 2015; Safadi et al., 2011).

The students having no communication difficulties found the CNPI more important and applicable and felt more competent compared to those with communication difficulties. It was also determined that students having no communication difficulties found many subscales (hope, sensitivity, expression of feelings, teaching, environment, requirements and spirituality) more important ($p<0.05$), felt more competent in many subscales (humanism, sensitivity and problem solving, environment, requirements, spirituality, hope) ($p<0.05$), and found many subscales (humanism, hope, assistive relationship, teaching, spirituality, sensitivity, expression of feelings, problem solving) more applicable ($p<0.05$, Table 5). When students do not have communication difficulties, they can apply CNPI, consider them important and feel competent. Fortuno et al. (2017) emphasized through their study findings, CNPI should be characterized by effective communication. Communication knowledge and skills enable nurses to reach and interact with the patient. Studies in literature report that, with the higher communication skills, students have no difficulty in interpersonal relationships in daily life and clinical practice (Tutuk and Dogan, 2002; Akgun and Cetin, 2018). In this study, students "had difficulty in communicating with the patients" felt more inadequate in "hope and expression of feeling" subscales compared to those "having communication difficulty in daily life". Providing hope and expression of feeling are quite important nursing skills for the patients who have some different characteristics due to health problems. Having inadequacy in these skills can lead to communication difficulties, and it can be a barrier for CNPI.

The students' levels of importance, applicability and feeling competent of CNPI according to having a negative experience with the patient or patient relative were similar to those without such an experience. Unlike the results of this study, other studies stated that interpersonal difficulties experienced with the patient, affected the student's feelings and thoughts about their caring process (Abdolrahimi et al., 2018; Suikkala and Leino, 2001). However, it is interesting to note that in this study, the students with such experience felt more inadequate in the applications related to "environment and spirituality". Students' inadequacy in environment and spirituality, which are important domains in holistic nursing approach, can lead to a negative experience with the patient or his relative.

In this study, it was determined that working students' levels of CNPI importance, applicability and competency did not change compared to those who were not working. In the study by Cossette et al. (2005), those working as a nurse found attitudes and behaviors related to "sensitivity, assistive relationship, expression of feelings, problem solving, environment and spirituality" less applicable compared to those who did not work as nurses. Cossette et al. (2005) stated that the difficulties faced by nurses in the applications for certain attitudes and behaviors could be effective on it. The findings of the present study can be differed due to the small proportion of working students and the characteristics of clinical practices.

Conclusion and recommendations

As the core of the nursing practice, it is important to evaluate nursing students' attitudes and behaviors towards caring nurse-patient

interaction and affecting factors on them. The results of the current study revealed that nursing students found the attitudes and behaviors towards caring nurse-patient interaction quite important, however, lower applicable and felt lower competent in this regard. However, as the students' importance levels increased, applicability and competency levels of CNPI also increased. Students' CNPI attitude and behavior did not show an increase parallel to the grade levels and female students, who chose the nursing because they liked, not having communication difficulties more cognized the importance of CNPI, found more realistic and felt more competent in applying it.

In line with these results, it recommended that; the courses on nursing-patient interaction in the nursing curriculum should be provided in a theoretical and practical way during four years of nursing education by using student-centred and innovative strategies such as simulation. The students also should be observed and supported in this respect in each clinical practice, that especially male students should be further supported. Consciously and willingly selection of nursing profession should be ensured by providing adequate guidance. The students' communication in social life should be supported as well as in their communication with the patients.

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Table 3. Factors affecting students' caring nurse-patient interaction (N: 549)

Students' characteristics	Frequency (N)	Percentage	CNPI-Importance score	CNPI- Competence score	CNPI- Applicability score
			$\bar{x}$ ±SD	$\bar{x}$ ±SD	$\bar{x}$ ±SD
Grade Level					
2nd	170	31.0	319.1±37.3	286.1±41.9	287.5±48.5
3rd	186	33.9	307.0±40.6	276.2±37.5	267.4±45.3
4th	193	35.2	316.9±32.5	279.4±41.1	264.5±53.1
F* / p			5.562/ p: **0.004** **(3<2,4)**	2.812 /p:0.061	11.435/p:**0.000** **(2>3,4)**
Cinsiyet					
Female	470	85.6	317.3±34.9	283.1±39.9	274.6±49.8
Male	79	14.4	295.5±44.4	264.2±38.7	260.9±50.6
t*/p			4.153 p: **0.000**	3.911 p:**0 .000**	2.247 p: **0.025**
Previously Graduated School	52	9.5	321.4±32.7	291.3±35.9	275.7±49.7
Vocational School of Health	497	90.5	313.5±37.6	279.2±40.6	272.3±50.1
Other High Schools / Associate / University			1.464/ p:0.144	2.065/ p: 0.039	0.475/ p:0.635
Reasons for Choosing Nursing					
Like nursing and helping people	187	34.1	320.1±32.2	290.5±37.3	284.9±47.3
Other causes	362	65.9	311.2±39.2	275.1±40.8	266.2±50.3
t* / p			2.834/ p: **0.005**	4.311/ p: **0.000**	4.218/ p: **0.000**
Difficulty in Communication					
No difficulties [a]	278	50.6	318.1±37.1	289.3±37.0	280.3±48.7
Difficulties with patient [b]	140	25.5	312.6±36.4	272.0±38.5	268.1±48.3
Difficulties in daily life [c]	58	10.6	314.7±30.7	284.6±36.5	265.8±56.0
Difficulties both in daily life and with patient[d]	73	13.3	302.1±41.3	259.0±47.4	265.8±56.0
F/ p**			3.752/ **p: 0.011** **(a>d)**	F*: 14.655/ **p: 0.000** **(a>b,d), (c>d)**	F*: 5.353/ **p: 0.001** **(a>d)**

F*: One-way analysis of variance in independent groups, Intergroup / intra / Total Degress of Freedom: 2/546/548
t* Independent t-test, sd: 547
F** One-way analysis of variance in independent groups, sd:3/545/548

Table 4. Comparison of sub-dimensions of CNPI scores with grade level (N: 549)

Scale and Sub-Dimensions		Importance				Competence				Applicability			
		2nd (n: 170)	3rd (n: 186)	4th (n: 193)	F* / p	2nd (n: 170)	3rd (n: 186)	4th (n: 193)	F*/ p	2nd (n: 170)	3rd (n: 186)	4th (n: 193)	F*/ p
		$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD		$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD		$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD	
Sub-Dimensions	1. Humanism	27.2±3.7	26.2±4.0	26.9±3.3	3.369/ p:0.**035** (2>3)	24.6±4.1	23.3±3.7	23.8±4.0	4.677/p:0.**010** (2>3)	24.4±4.6	22.5±4.4	22.0±5.2	11.988/p:0.**000** (2>3,4)
	2. Hope	32.4±3.9	30.9±4.7	32.0±3.5	6.662/ p:0.**001** (3< 2,4)	28.5±4.8	27.1±4.4	27.4±4.8	4.523/p **0.011** (2>3)	28.6±5.3	26.2±5.2	26.1±6.1	11.819/p:0.**000** (2>3,4)
	3. Sensitivity	26.4±3.8	25.0±4.1	25.8±3.9	5.099/ p: **0.006** (2>3)	23.3±4.0	21.8±3.8	22.1±4.3	6.656/p:0.**001** (2>3,4)	23.4±4.9	20.9±4.4	20.9±5.2	15.417/p:0.**000** (2>3,4)
	4. Helping Relationship	32.4±3.9	31.0±4.6	32.2±3.6	6.192/ p: **0.002** (3<2,4)	30.2±5.0	28.8±4.6	29.3±4.8	3.659/p:0.**026** (2>3)	30.0±5.3	27.9±5.1	27.4±6.1	10.562/p:0.**000** (2>3,4)
	5. Expression of Emotions	27.2±3.4	26.2±4.1	27.0±3.5	3.509 /p: **0.031** (2>3)	23.9±4.2	23.1±3.8	23.4±4.4	1.719 p: 0.180	23.7±5.0	21.8±4.7	21.9±5.6	7.477/ p:0.**001** (2>3,4)
	6. Problem solving	26.9±3.8	25.9±4.1	26.8±3.5	4.141/ p: 0.**016** (3<2,4)	23.0±4.5	22.4±4.1	22.7±4.5	1.070 p: 0.344	23.4±5.2	21.5±4.7	21.3±5.7	8.689/ p: **0.000** (2>3,4)
	7. Teaching	41.2±5.4	39.6±5.7	41.0±4.6	5.200/ p:0.**006** (3<2,4)	37.1±6.1	36.1±5.6	36.3±5.9	1.437 p: 0.239	37.3±7.3	35.1±6.9	34.6±7.7	6.965/ p:0.**001** (2>3,4)
	8. Environment	32.0±4.2	31.0±4.6	31.8±3.7	2.647/ p: 0.072	29.4±5.0	28.7±5.1	29.0±4.7	0.984 p: 0.374	29.2±5.6	28.0±5.9	27.7±5.9	3.432/ p:0.**033** (2>4)
	9. Needs	46.5±5.2	44.9±6.2	46.4±4.9	5.023/ p: **0.007** (3<2,4)	41.8±6.7	41.0±6.5	41.5±6.7	0.638 p: 0.529	43.0±7.2	40.3±7.7	40.0±8.1	8.393/ p: **0.000** (2>3.4)
	10. Spirituality	26.9±4.0	26.2±4.2	27.1±3.4	2.510/ p: 0.082	24.2±4.7	23.8±4.4	23.9±4.7	0.428 p:0.652	24.5±5.1	23.4±5.2	22.5±6.0	5.927/ p:0.**003** (2>4)

F*: One-way analysis of variance in independent groups, Intergroup / intra / Total Degress of Freedom: 2/546/548

Table 5. Comparison of sub-dimensions of CNPI scores with difficulty in communication (N: 549)

Sub-Dimensions / Difficulty in Communication (D.C.)		Importance		Competence		Applicability	
		$\bar{x}$ ±SD	Test / p	$\bar{x}$ ±SD	Test / p	$\bar{x}$ ±SD	Test / p
1. Humanism							
D.C.	No difficulties [a]	27.0±3.7	F*: 2.011	24.6±3.7	F*: 9.544	23.5±4.7	F*: 4.703
	Difficulties with patient [b]	26.8±3.6	p: 0.111	23.1±3.8	p: 0**.000**	22.6±4.8	p: 0**.003**
	Difficulties in daily life [c]	26.8±3.3		24.6±3.6	**(a,c>d)**	22.6±5.6	**(a>d)**
	Difficulties both in daily life and with patient[d]	25.8±4.2		22.3±4.7	**(a>b)**	21.3±4.5	
2. Hope							
D.C.	No difficulties [a]	32.2±4.0	F*: 3.911	28.6±4.4	F*: 14.189	27.7±5.5	F*: 5.252
	Difficulties with patient [b]	31.5±4.1	p: 0**.009**	26.4±4.5	p:0**.000**	26.3±5.6	p: 0**.001**
	Difficulties in daily life [c]	31.9±3.5	**(a>d)**	28.4±4.7	**(a>b,d)**	26.4±6.0	**(a>d)**
	Difficulties both in daily life and with patient[d]	30.4±4.4		25.5±5.1	**(b<c)**	25.1±5.5	
3. Sensitivity							
D.C.	No difficulties [a]	26.1±4.0	F*: 3.268	23.1±3.9	F*: 9.055	22.5±4.7	F*: 6.750
	Difficulties with patient [b]	25.5±3.6	p: 0**.021**	21.8±3.7	p: 0**.000**	21.0±5.0	p: 0**.000**
	Difficulties in daily life [c]	25.9±3.9	**(a>d)**	22.9±4.3	**(a,c>d)**	21.5±5.4	**(a>b,d)**
	Difficulties both in daily life and with patient[d]	24.5±4.2		20.5±4.7	**(a>b)**	19.9±5.1	
4. Helping Relationship							
D.C.	No difficulties [a]	32.1±4.2	F*: 2.577	30.3±4.4	F*: 9.448	29.1±5.4	F*: 3.865
	Difficulties with patient [b]	31.9±3.7	p: 0.053	29.0±5.0	p: 0**.000**	28.2±5.8	p: 0**.009**
	Difficulties in daily life [c]	32.0±3.5		29.3±4.5	**(a,b,c>d)**	27.3±6.4	**(a>d)**
	Difficulties both in daily life and with patient[d]	30.6±4.7		27.0±5.5		27.0±5.3	
5. Expression of Emotions							
D.C.	No difficulties [a]	27.3±3.6	F*: 3.697	24.2±3.9	F*: 12.676	23.2±5.0	F*: 6.122
	Difficulties with patient [b]	26.4±3.8	p: 0**.012**	22.6±4.2	p:0**.000**	21.7±5.0	p: 0**.000**
	Difficulties in daily life [c]	26.6±3.7	**(a>d)**	24.4±3.6	**(a,c>b.d)**	22.6±5.8	**(a>b,d)**
	Difficulties both in daily life and with patient[d]	25.8±3.7		21.5±4.5		20.7±5.3	

Table 5. (Continued) Comparison of sub-dimensions of CNPI scores with difficulty in communication (N: 549)

Sub-Dimensions / Difficulty in Communication (D.C.)		Importance		Competence		Applicability	
		$\bar{x}$ ±SD	Test / p	$\bar{x}$ ±SD	Test / p	$\bar{x}$ ±SD	Test / p
6. Problem solving							
D.C.	No difficulties [a]	26.9±3.8	F*: 2.539	23.5±4.2	F*: 10.962	22.9±5.1	F*: 6.415
	Difficulties with patient [b]	26.2±3.8	p: 0.056	21.8±4.0	p:0**.000**	21.0±4.8	p: 0**.000**
	Difficulties in daily life [c]	26.6±3.6		23.1±4.8	**(a, c>d)**	21.5±6.2	**(a>b, d)**
	Difficulties both in daily life and with patient[d]	25.7±4.3		20.8±4.6	**(a>b)**	20.6±5.6	
7. Teaching							
D.C.	No difficulties [a]	41.1±5.1	F*: 2.764	37.7±5.5	F*: 9.953	36.5±7.5	F*: 3.702
	Difficulties with patient [b]	40.5±5.3	p:0**.041**	35.6±5.6	p: 0**.000**	35.3±6.9	p: 0**.012**
	Difficulties in daily life [c]	40.1±4.5	**(a>d)**	36.3±5.7	**(a>b, d)**	34.2±7.9	**(a>d)**
	Difficulties both in daily life and with patient[d]	39.2±6.1		33.9±6.8		33.8±7.3	
8. Environment							
D.C.	No difficulties [a]	32.0±4.3	F*: 3.457	29.9±4.5	F*: 8.788	28.9±5.7	F*: 2.664
	Difficulties with patient [b]	31.5±4.1	p: 0**.016**	28.2±4.7	p:0**.000**	28.0±5.6	p: **.047**
	Difficulties in daily life [c]	31.7±3.6	**(a>d)**	29.3±3.9	**(a, c>d)**	27.3±6.4	**a>c,d**
	Difficulties both in daily life and with patient[d]	30.2±4.4		27.1±6.3	**(a>b)**	27.2±6.1	**(p<.10)**
9. Needs							
D.C.	No difficulties [a]	46.4±5.5	F*: 3.202	42.7±6.0	F*: 10.389	41.8±7.8	F*: 2.443
	Difficulties with patient [b]	45.8±5.6	p: **.023**	40.2±6.7	p:0**.000**	40.9±7.7	p: 0.063
	Difficulties in daily life [c]	46.1±4.4	**(a>d)**	42.2±5.6	**(a, c>d)**	39.7±8.2	
	Difficulties both in daily life and with patient[d]	44.2±5.9		38.5±7.9	**(a>b)**	39.5±7.3	
10. Spirituality							
D.C.	No difficulties [a]	27.1±3.7	F*: 3.008	24.8±4.2	F*: 8.771	24.0±5.2	F*: 2.793
	Difficulties with patient [b]	26.5±4.0	p: 0**.030**	23.3±4.8	p: 0**.000**	23.2±5.4	p:0**.040**
	Difficulties in daily life [c]	27.0±2.9	**(a>d)**	24.2±4.3	**(a,c>d)**	22.7±5.9	**(a>d)**
	Difficulties both in daily life and with patient[d]	25.6±4.9		22.0±5.2	**(a>b)**	22.2±6.3	

*F: One-way analysis of variance in independent groups. sd: 3/545/548