The relationship between compassion competence, caring behaviours, and professional commitment among nursing students: a cross-sectional study

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Abstract

Background and objective compassion plays a crucial role in providing high-quality healthcare. In recent years, there has been a growing emphasis on compassion and compassion competence within the nursing and healthcare professions. Training and developing compassion competence in nursing students is an essential aspect of the educational process to ensure these skills are effectively applied in clinical interactions. This study aims to assess the level of compassion competence among nursing students and explore its relationship with caring behaviours and professional commitment.

Methodology This cross-sectional study was conducted on nursing students at Tabriz Faculty of Nursing and Midwifery from Sep to Dec 2023. A total of 200 nursing students were selected by random sampling method using Random Number Generator software. Data were collected by Compassion Competence Scale, Caring behaviours Scale, and Professional Commitment Scale. Data analysis was done by SPSS ver. 26 software.

Findings The results indicated that the mean total score of compassion competence was 4.02 ± 0.50 out of 5. The higher mean score (4.16 ± 0.63) belonged to the sensitivity domain and the lower score (3.84 ± 0.66) belonged to the insight domain. Furthermore, the mean score for caring behaviours was 121.03 ± 14.88 from a maximum possible score of 144, and the average score for professional commitment was 71.12 ± 13.13 out of 104. The results showed a significant positive relationship between students' compassion competence and caring behaviours ($r = 0.70$, $p < 0.001$), compassion competence and professional commitment ($r = 0.41$, $p < 0.001$) and between caring behaviours and professional commitment ($r = 0.48$, $p < 0.001$).

Conclusion The findings highlight the essential role of developing compassion within nursing education. By strengthening students' compassion skills, educational institutions can enhance patient care quality and promote professional commitment among future nurses. Employing compassion focused strategies to nurture this competence in nursing students will result in a more empathetic and committed nursing workforce, benefiting both healthcare providers and patients.

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Introduction

Nurses, as the largest group of healthcare professionals, play a crucial role in healthcare. They spend the most time in direct patient care, which allows them to develop strong, trusting relationships with their patients [1]. In their daily caregiving activities, nurses witness not only the physical pain and suffering of patients but also the emotional and psychological distress [2]. One of the key concepts that has gained significant attention in healthcare, especially within nursing, is compassionate care, which is now a central focus of healthcare policies [3, 4].

Compassion is a multidimensional concept that refers to the capacity to recognize the suffering of others and to empathize with their suffering, along with a genuine desire to alleviate that suffering [5]. It includes actively responding to individual needs based on understanding their physiological, psychological and emotional concerns [6]. Therefore, the concept of compassion implies actions for alleviation of suffering, setting it apart from empathy and sympathy, which are considered passive emotions [7].

Compassion is an essential competence for nurses, enabling them to understand patients' sufferings, accurately recognize their emotions, and provide actions for alleviating their sufferings [8]. Considering the positive effect of compassion on the quality of nursing care, there is a focus within the nursing profession not only on clinical and technical skills but also on the importance of compassion competence and the need for nursing students to develop this skill throughout their education [9]. According to Lee and Seomun [10], competence is the capacity of individuals to successfully perform the responsibilities expected of them within the framework of social norms. Lee and Seomun [10] define compassion competence as "an individual's skill or ability to understand and alleviate the suffering of others and to emotionally connect with patients through insight and sensitivity." This involves the skillful application of empathy to provide care that addresses not only the physical needs, but also the emotional and psychological well-being of the individual [11]. Although it is claimed that personal characteristics for compassion are innate in humans [12], the literature review shows that compassion is a skill that can be cultivated through education. Theoretical frameworks suggest that compassion can be cultivated through mindfulness practices, empathy and compassion training, and exposure to role models of compassionate behaviour [13, 14]. Compassion competence is essential for nurses and plays a significant role in helping nursing students understand the suffering of patients in clinical care and shaping their approach to patient care [15]. Nursing education should actively improve students' compassion competence with various curricula, because compassionate care by nurses may cause fatigue and difficulty in implementing this competence (8).

Compassion, as a foundation for establishing and maintaining human relationships, helps nurses respond appropriately to patients' needs, approach patients' experiences, provide personalized care and improve the ability to predict patient behaviour [1, 16]. Also, compassion from the nurse helps patients express their concerns and, as a result, identify and improve their problems and improve the patients safety [17]. Moreover, this kind of care increases the patient's adaptation and ultimately shortens the treatment period [18]. Compassionate care also increases trust in the patient-nurse relationship and nurses' career acheivment [19], and is considered a major factor in increasing patient satisfaction with nursing care and increasing nurses' job satisfaction [9]. In addition, it improves working relationships and cooperation between health care providers [17].

Based on the literature review, compassion yields various outcomes for patients, nurses, and organizations. One potential outcome of a nurse's or student's compassion is the reinforcement of their caring behaviours, enhancing their ability to provide empathetic and effective care. This reinforcement can lead to improved patient satisfaction, stronger nurse-patient relationships, and a more positive work environment. Additionally, it fosters a culture of compassion within healthcare organizations, ultimately benefiting the entire healthcare system [8]. Caring behaviour, as a fundamental aspect of nursing practice, refers to actions related to the health and well-being of the patient and is viewed as an interactive process [20]. According to Watson [21], when nurses interact with a patient, their caring behaviour is reflected through encounters, verbal and non-verbal expression, body language, gestures, emotional tone, and insights. It is expected that nursing education will focus on reinforcing caring behaviours in nursing students, ultimately preparing them to become competent nurses [22].

Another concept that is emerging during the education of nursing students and may be related to the compassionate care is the professional commitment of nursing students [23]. The professional commitment of nursing students is a strong predictor of their professional commitment after graduation and during their practice as nurses [24]. It is a multidimensional concept that includes belief in goals and values, willingness to make an effort and intention to remain in the profession [25]. Factors influencing the professional commitment of nursing students include personality traits, family history, academic

progress, satisfaction with clinical education, and role modeling by educators. The educational program in the undergraduate level is an important stage for a nursing student to make a professional commitment to nursing [26, 27].

A review of the literature indicates that most research on compassionate care and compassion competence has been conducted from the perspective of nurses, and there are few studies on nursing students. The aim of this study was to assess the association of compassion competence, caring behaviours, and professional commitment among nursing students.

Methodology

Study design

This was a cross-sectional study designed to explore the association between compassion competence, caring behaviours, and professional commitment among nursing students. This study follows the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines for reporting observational studies.

Setting

This cross-sectional study was conducted on nursing students at the School of Nursing and Midwifery in Tabriz from September to December 2023.

Participants

In this study, a total of 200 undergraduate nursing students were selected by the random sampling method using Random Number Generator software. The inclusion criteria included nursing students in their second year and above studying at the School of Nursing and Midwifery and willingness to participate in the study. Since first-year nursing students do not enter the clinical setting, it is not possible to properly evaluate their caring behaviours and professional commitment; Therefore, the second-year and higher-level students who had a clinical courses were included in the study. When the students did not respond to more than 10% of the questions, that questionnaire was excluded from the analysis. In order to fill out the questionnaires, the research objectives and the methodology of study were explained to each participants and they entered the study after obtaining written consentfrom them.

Study size

Since there was not a similar previous study on the correlation of compassion competence, caring behaviours and professional commitment, we conducted a pilot study on 40 nursing students and used the data for final sample size.

The required sample size was determined using G*Power 3.1 for a correlation analysis (two-tailed test) with $r = 0.37$, $\alpha = 0.01$ (99% confidence level), and power = 0.90. The minimum required sample size was 190 participants. By considering a possible 10% attrition rate, the final sample size was considered as 200.

Data sources and measurement

Data were collected by three questionnaires:

Compassion Competence scale developed by Lee and Seomun (2016) was used to measure the compassion competence of students [28]. This scale consists of 17 items with three domains: Communication (8 items), Sensitivity (5 items), and Insight (4 items). Responses to each item were based on a 5 Likert scale ranging from "Strongly Disagree" (score 1) to "Strongly Agree" (score 5). A higher score in each domain, as well as a higher total score indicates a higher level of compassion competence in that domain or overall. The validity and reliability of this tool were assessed in a study by Lee and Seomun, where the content validity was used, and the reliability was reported with a Cronbach's alpha of 0.91 indicating greater reliability. The validity and reliability of the persian version of compassion competence instrument was assessed by Ahi et al. among nurses. The Cronbach's alpha of this instrument was reported to be 0.91 [29]. The Cronbach's alpha for the compassionate competence scale was obtained as 0.88, showing an acceptable reliability of the scale.

A. The Caring Behaviour Inventory (CBI) was used to measure the caring behaviours of nursing students. The original version of this tool that developed by Wolf et al. in 1994 consists of 42 items [30]. A short form of this scale (CBI-24) was developed by Wu et al. in 2006. It includes 24 items with four domains: Assurance (8 items), Knowledge and Skills (5 items), Respectfulness (6 items), and Connectedness (5 items). We used CBI-24 for data collection. The frequency of each caring behaviour is scored based on a 6-point Likert scale (1 = Never, 2 = Almost Never, 3 = Rarely, 4 = Usually, 5 = Often, 6 = Always). Higher scores indicate a high level of caring behaviours. The total score of CBI-24 ranged from 24 to 114. The validity and reliability of this tool were assessed by Ying Wu et al., who reported a Cronbach's alpha of 0.96, indicating greater reliability [31]. In a study by Rafiei et al., the validity and reliability of the Persian version of the caring behaviours tool were examined. They reported a Cronbach's alpha of 0.92 for this scale [32]. The Cronbach's alpha for the caring behaviours inventory was calculated as 0.89, showing an acceptable level of reliability.

B. The Nursing Professional Commitment Scale, developed by Lu et al. was used to measure the nursing students' professional commitment. The scale consists of 26 items with three domains: Willingness to make an effort (13 items), maintaining membership (8 items), and Belief in goals and values (5 items). Responses to each item were based on a four-point Likert scale (1 = Completely sure, 4 = Completely unsure). In this scale, 9 items are scored in reverse. Higher scores indicate higher levels of professional commitment. The total score on the scale ranges from 26 to 104. The validity and reliability of this scale were assessed by Çetinkaya et al. The content validity was used for assessing the validity and a Cronbach's alpha of 0.90 was reported for indicating the greater reliability [33].

In this study, the validity of the Persian versions of nursing professional commitment scale was assessed through content validity. The forward-backward translation method was used for the translation of the questionnaires. Then, the questionnaire was given to ten professors from the Faculty of Nursing and Midwifery to provide their comments on the content of the tools. The necessary revisions were done based on their feedback and comments. The Cronbach's alpha for the professional commitment scale was obtained as 0.90, showing an acceptable level of reliability.

Statistical methods

Data analysis was done by SPSS version 26 software. The significance level in all analyses was considered 0.05. The normality of the data distribution was examined using the Kolmogorov-Smirnov test. The results of the Kolmogorov-Smirnov test indicated that the collected data followed a normal distribution. Descriptive statistics including mean, standard deviation, frequency, and percentages were used for descriptions of variables.

Table 1 Characteristics of the participants ($n = 200$)

Variables		*N*(%)
Age(year)	**< 23**	111(55.5)
	> 23	89(44.5)
Sex	**Female**	126(63)
	Male	74(37)
Work Experience	**Yes**	84(42)
	No	116(58)
Grade point average (GPA)	**< 15**	45(22.5)
(0–20)	**15–17**	74(37)
	> 17	81(40.5)
Semester	**3**	23(11.5)
	4	30(15)
	5	42(21)
	6	38(19)
	7	35(17.5)
	8	22(11)

Independent t-test was used to compare the mean score of variables between two independent groups. One-way ANOVA was conducted to compare the mean scores among three or more independent groups. Pearson correlation coefficient was used to examine the relationships between variables.

Ethical considerations

The present study has been approved by the Ethics Committee of Tabriz University of Medical Sciences with the number IR.TBZMED.REC.1402.534. All ethical considerations were observed in this research. The researcher invited nursing students who met the eligibility criteria to participate in the study. In this regard, the research objectives were explained to each participant. Those who were willing to participate were asked to read and sign the informed consent form. The questionnaires were distributed to the participants and they were asked to carefully read and complete them. The questionnaires were completed anonymously, and the information of the participants was kept strictly confidential.

Findings

A total of 200 nursing students participated in the study. The mean age of the students participating in the study was 22.66 ± 2.30 years and their average GPA of the last semester was 16.82 ± 1.19 out of 20. The majority of them (63%) were female (Table 1). Table 2 shows the comparison of compassion competence, caring behaviours, and professional commitment based on the sociodemographic characteristics of participants ($n = 200$).

Based on the results, the mean total score of compassion competence was 4.02 ± 0.50 out of 5. The higher mean score (4.16 ± 0.63) belonged to the sensitivity domain and the lower score (3.84 ± 0.66) belonged to the insight domain (Table 3).

The mean total score of caring behaviours among nursing students was 121.03 ± 14.88 out of the possible score of 144. The mean score of each domain is shown in detail in Table 4. The results showed that the mean total score of professional commitment among nursing students was 71.12 ± 13.13 out of a possible score of 104 (Table 5).

The results showed that there was not a significant difference in the mean score of compassion competence based on students' gender and age ($p > 0.05$). However, there was a significant difference in the mean score of compassion competence based on student's work experience, grade point, and academic semester ($p < 0.05$) (Table 2). According to the results, students in the 3rd semester showed a higher mean score of compassion competence, while students in the 8th semester showed a lower score of compassion competence ($p < 0.05$) (Table 2).

Table 2 Comparison of compassion competence, caring behaviours, and professional commitment based on sociodemographic characteristics of participants ($n = 200$)

Variables		Compassion competence	Caring behaviours	Professional commitment
		Mean ± SD	Mean ± SD	Mean ± SD
Sex	Male	3.96 ± 0.47	118.39 ± 15.94	71.08 ± 11.64
	Female	4.05 ± 0.51	122.58 ± 14.06	71.14 ± 13.98
	p-value	*0.247[a]*	*0.054[a]*	*0.972[a]*
Age(y)	< 23	4.03 ± 0.54	121.87 ± 15.25	73.02 ± 13.45
	> 23	4.00 ± 0.44	119.98 ± 14.44	68.74 ± 12.40
	p-value	*0.088[a]*	*0.559[a]*	*0.061[a]*
Work Experience	Yes	4.04 ± 0.53	120.13 ± 14.08	74.16 ± 11.92
	No	3.05 ± 0.23	118.49 ± 14.19	71.93 ± 15.11
	p-value	*0.000[a]*	*0.798[a]*	*0.235[a]*
Grade point average (GPA) (0–20)	< 15	3.97 ± 0.42	122.47 ± 14.15	70.08 ± 12.09
	15–17	3.98 ± 0.53	120.76 ± 17.05	72.29 ± 12.93
	> 17	4.08 ± 0.48	121.13 ± 12.57	70.40 ± 13.78
	p-value	*0.001[b]*	*0.527[b]*	*0.433[b]*
Academic semester	3	4.50 ± 0.55	136.75 ± 16.02	81.92 ± 14.52
	4	3.99 ± 0.47	125.42 ± 13.57	75.89 ± 14.69
	5	4.08 ± 0.53	118.38 ± 16.98	72.52 ± 14.85
	6	3.93 ± 0.46	119.91 ± 14.64	69.30 ± 12.29
	7	4.09 ± 0.42	121.27 ± 11.62	68.15 ± 11.06
	8	3.80 ± 0.45	114.73 ± 11.26	69.21 ± 10.47
	p-value	*0.000[b]*	*0.000[b]*	*0.005[b]*

[a] Analyzed by t-test

[b] analyzed by ANOVA

Table 3 Nursing students perception on compassion competence ($n = 200$)

Domain	Mean ± SD	Minimum score	Maximum score	Possible score
Communication	4.01 ± 0.56	1	5	1–5
Sensitivity	4.16 ± 0.53	2	5	1–5
Insight	3.84 ± 0.66	2	5	1–5
Total score	4.02 ± 0.50	2.82	5	1–5

Table 4 Nursing students perception on caring behaviours ($n = 200$)

Domain	Mean ± SD	Minimum score	Maximum score	Possible score
Respectfulness	30.18 ± 5.16	18	36	6–36
Connectedness	25.50 ± 3.16	15	30	5–30
Knowledge and skill	25.73 ± 3.34	13	30	5–30
Assurance	39.61 ± 5.62	24	48	8–48
Total score	121.03 ± 14.88	70	144	24–144

The results showed that there were no significant differences between the average score of caring behaviours and students' gender, age, work experience, and average GPA ($p > 0.05$) (Table 2). However, the results of the One-way ANOVA test showed that the mean score of caring behaviours was significantly different according to their academic semester ($p < 0.05$) (Table 2).

According to the results, there was no significant relationship between the average score of professional commitment and students' gender, age, work experience, and GPA ($p > 0.05$) (Table 2). However, the mean score of professional commitment showed significant differences based on the student's academic semester ($p < 0.05$) (Table 2).

Pearson correlation was used to assess the relationship between the main variables of the study. The results showed a positive significant correlation between the mean total score of compassion competence and the mean total score of caring behaviours ($r = 0.70$, $p < 0.001$) and also a positive significant correlation between the mean total score of compassion competence and mean total score of professional commitment ($r = 0.41$, $p = 0 < 001$). Moreover, the results showed a positive

Table 5 Nursing students perception on professional commitment ($n = 200$)

Domain	Mean ± SD	Minimum score	Maximum score	Possible score
Willingness to make an effort	34.03 ± 8.38	13	52	13–52
Maintaining as professional membership	21.98 ± 5.80	9	32	4–32
Believing in goals and values	15.10 ± 2.33	7	20	5–20
Total score	71.12 ± 13.13	34	103	26–104

significant correlation between the mean total score of caring behaviours and the mean total score of professional commitment ($r = 0.48$, $p < 0.001$)(Table 6). The correlation of subscales of the Compassion competence scale, Caring behaviours tool, and Professional commitment scale are shown in Table 6.

Discussion

The present study was conducted with the aim of assessing the relationship between compassion competence, caring behaviours, and professional commitment among nursing students. The findings indicated that the level of compassion competence among participating students was high (4.02 ± 0.50). In a study in South Korea, Lee and Seomun [28] found that the mean score of compassion competence among nursing students was 3.61 ± 0.43. In another study by Lee and Jun in South Korea, The mean score of compassion competence of nursing students was 3.99 ± 0.52 [15]. Additionally, in a study in Saudi Arabia, the mean score of compassion competence was reported as 3.73 ± 0.64 [34]. In our study, the highest score among the subscales of compassion competence was related to the sensitivity subscale, while the lowest score was attributed to the insight subscale. In a study conducted in Nigeria by Akpan et al., the highest score of nursing students belonged to the sensitivity subscale and the lowest score belonged to the insight subscale [35]. The results is consistent with our findings. However, in a study done in Saudi Arabia by Balay-odao et al., the highest score belonged to the communication subscale and the lowest score belonged to the insight subscale [36]. Findings of the present study indicating high scores in the sensitivity dimension suggest that students have an accurate awareness of patients' needs and suffering. Insight refers to the nurse's ability to deeply understand the unexpressed needs and feelings of patients. Improving this skill using professional training, clinical experience and empathy could enable nurses to provide more compassionate and effective care to the patients [28].

The differences in the study results may also be related to the variations in perspectives, worldviews and the cultural context in which individuals live. Steffen and Masters, In their study on psychology students in the United States, found a positive correlation between compassionate attitudes and compassionate behaviours with religiosity and social mental health outcomes [37]. Kaşıkçı et al. [38] conducted a study in Turkey to compare compassion competence among nursing students from different cultural backgrounds. They found that cultural values play an important role in shaping the ethical experiences of nursing students and cultural background significantly affects the levels of compassion competence. In this regard, many our behaviours as Iranians are formed based on religious and traditional customs that emphasize shared humanity and compassion [39]. Considering that Islam is the predominant religion in Iran and strongly encourages people to be compassionate and sensitive to the needs of others, it has significantly contributed to nurturing compassion in nursing in Iran [40], which aligns with the higher level of compassion competence observed among students in our study.

The results of the study conducted in Iran by Ghafourifard et al., [1] supports the claim that nurses' ability to provide compassionate care is influenced by individual and organizational factors that may facilitate or hinder this type of care. This means that nurses have an individual capacity for compassion, derived from their personal and religious beliefs, values, education and personal attitudes toward others. Religious factors have been identified as significant facilitators in providing compassionate care.

In our study, scores of compassion competence varied across academic semesters. For example, third-semester students scored higher on compassion competence than higher-semester students, possibly due to initial enthusiasm, lower clinical stress, or greater enthusiasm and fewer challenges associated with exposure. This pattern is in line with studies suggesting that increased clinical exposure and academic pressure in higher semesters may lead to "compassion fatigue and decline" or reduced sensitivity [41].

Compassion is an important concept in nursing that enhances the quality of nursing care and provides a proper understanding of the physical, psychological, and emotional suffering of patients [42]. In order to improve the quality of nursing services, it is necessary to implement effctive methods such as role modeling by clinical educatores and professional nurses, simulation-based methods, role-playing, and mindfulness techniques for developing the nursing students and nurses compassion competency. Moreover, compassion should be included as one of the essential concepts in the nursing curriculum. Also, organizational leaders should be involved to eliminate the factors that inhibit nurses ability to compassionate care [43, 44]. In the curriculum of baccalaureate nursing in our university, there are no specific courses for compassion or mindfulness practices. However, most of the students learn compassion from the faculty members or clinical educators as their role models. In this regard, previous studies indicate that compassion education is mostly provided in the early years of education, in the form of courses such as "human relations and communication skills"; However, these trainings are usually conducted in a theoretical and lecture-based manner, which may not be sufficiently effective. To enhance students' compassion competence, a systematic and continuous educational program should be developed. In addition, a variety of programs for compassion education

Table 6 The correlation between the mean score of the compassion competence, caring behaviour, and professional commitment among nursing students ($n = 200$)

	Professional Commitment (10–13)			Caring Behaviour (5–9)						Compassion Competence (1–4)			
	1	2	3	4	5	6	7	8	9	10	11	12	13
1.communication	1												
2.sensivity	r=0.54 P<0.001*	1											
3.insight	r=0.66 P<0.001*	r=0.95 P<0.001*	1										
4.total Compassion competence	r=0.91 P<0.001*	r=0.79 P<0.001*	r=0.85 P<0.001*	1									
5.respectfullness	r=0.36 P<0.001*	r=0.50 P<0.001*	r=0.44 P<0.001*	r=0.49 P<0.001*	1								
6.connectedness	r=0.51 P<0.001*	r=0.60 P<0.001*	r=0.59 P<0.001*	r=0.64 P<0.001*	r=0.66 P<0.001*	1							
7.knowledge.skill	r=0.51 P<0.001*	r=0.54 P<0.001*	r=0.59 P<0.001*	r=0.61 P<0.001*	r=0.55 P<0.001*	r=0.74 P<0.001*	1						
8.assurance	r=0.56 P<0.001*	r=0.57 P<0.001*	r=0.63 P<0.001*	r=0.57 P<0.001*	r=0.67 P<0.001*	r=0.73 P<0.001*	r=0.70 P<0.001*	1					
9.total Caring behaviour	r=0.42 P<0.001*	r=0.64 P<0.001*	r=0.64 P<0.001*	r=0.70 P<0.001*	r=0.82 P<0.001*	r=0.46 P<0.001*	r=0.84 P<0.001*	r=0.89 P<0.001*	1				
10.willingness	r=0.42 P<0.001*	r=0.32 P<0.001*	r=0.42 P<0.001*	r=0.46 P<0.001*	r=0.39 P<0.001*	r=0.40 P<0.001*	r=0.36 P<0.001*	r=0.42 P<0.001*	r=0.46 P<0.001*	1			
11.maintaining	r=0.11 P=0.106	r=0.21 P<0.001*	r=0.06 P=0.364	r=0.15 P=0.041*	**r=0.26 P<0.001***	r=0.25 P<0.001*	r=0.16 P=0.022*	r=0.21 P<0.001*	r=0.26 P<0.001*	r=0.34 P<0.001*	1		
12.belief	r=0.25 P<0.001*	r=0.34 P<0.001*	r=0.25 P=0.076*	r=0.32 P<0.001*	r=0.28 P<0.001*	r=0.37 P<0.001*	r=0.25 P<0.001*	r=0.39 P<0.001*	r=0.38 P<0.001*	r=0.54 P<0.001*	r=0.34 P<0.001*	1	
13.total Professional commitment	r=0.36 P<0.001*	r=0.36 P<0.001*	r=0.34 P<0.001*	r=0.41 P<0.001*	r=0.41 P<0.001*	r=0.43 P<0.001*	r=0.34 P<0.001*	r=0.43 P<0.001*	r=0.48 P<0.001*	r=0.88 P<0.001*	r=0.72 P<0.001*	r=0.68 P<0.001*	1

* Correlation is significant ($P < 0.001$) using the Pearson correlation coefficient

should be provided for nursing students [45]. Sinclair et al.'s argue that while compassion education programs are increasingly necessary, many programs lack comprehensive approaches and often focus on routin aspects of care. They recommend a multifaceted and competency-based compassion education for developing of compassionate care in clinical settings [43]. The role of interprofessional education (IPE) in enhancing compassion competence has also been highlighted by Balay-odao et al. [36] in a study on nursing students. They found that working in the collaborative learning environments significantly increased compassion and the emergence of caring behaviours among nursing students. Interprofessional education (IPE) allows students to work alongside peers in other healthcare disciplines and gain a broader understanding of patient care, empathy, and collaboration in different clinical scenarios, ultimately presenting these perceptions as a team and holistic phenomenon [36].

In the present study, the students showed a high level of caring behaviours (121.03 ± 14.88), which is higher than the findings of a study by Loke et al. [20]. In a similar study conducted by Zamanzadeh et al. [46], the nursing students showed a moderate level of caring behaviours. The findings of the present study showed that students' caring behaviours were most frequent in the assurance dimension and least frequent in the connectedness dimension.

The differences between the results of our study and previous studies could be due to different methodologies, participants' characteristics, study environments or questionnaires used. In addition, the ability to care is closely related to the values, knowledge, work experiences and quality of professional life of nurses. Moreover, the social and cultural contexts, individual beliefs, and social and emotional support may affect the caring behaviours of individuals [47, 48].

The higher levels of caring behaviours among students in the present study can be attributed to the religious beliefs of the students. As Levering states: "The essence of caring among Muslim nurses is built upon their relationship with God and based on Islamic teachings, and they believe that the caring actions of nurses toward patients are rewarded by God. This belief has been deeply rooted among Muslims from a young age" [49]. However, the development of caring behaviours among nursing students is also influenced by factors such as the students' gender, too. In this regard, Atta et al. found that females showed more empathy and perceived emotional sensitivity than males which could increase the caring behaviours of individuals [47].

The results of mean score of students' caring behaviours were significantly differed based on the academic semester. According to the findings, students in the lower semesters demonstrated higher scores in caring behaviours compared to the students in higher semesters. This finding is in line with findings from other studies, which have shown that nursing students in the early stages of their academic journey typically exhibit higher care scores due to their enthusiasm and the fewer challenges associated with exposure to the clinical environment. Several factors may explain the differences in caring behaviours across educational levels; one of the possible reason is that students, in general, are compassionate individuals whose perspectives change after encountering the realities of professional nursing and entering the clinical environment. As a result, they shift their focus from the expressive aspect of care to the instrumental and physical aspects [50, 51].

The goal of nursing education is to nurture students who develop caring behaviours and provide safe and high-quality patient care. Nursing educators could play an important role in the development of professional attitudes and caring behaviours in nursing students [22]. Watson believes that innovative approaches and fundamental changes in nursing curricula are necessary to integrate the concepts of human caring into nursing practice. Within traditional approaches, there is a rigid and non-caring relationship between instructors and students that may not foster the formation of professional caring perspectives among nursing students [52].

In this regard, the clinical supervision of nursing students through preceptorship or mentorship programs in practical environments is essential for facilitating the successful transition of nursing students into clinical settings and helping them become compassionate and competent nurses. Additionally, simulation-based training using standard or virtual patients is an effective educational approach for developing the caring behaviours of students in nursing schools. Furthermore, positive role modeling by nurses can be considered as a significant factor in the development of caring behaviours among nursing students. Positive role modeling demonstrates to students how to appropriately manage situations that may arise during patient care [53].

In our study, the findings showed a strong commitment to nursing values in students. However, students' scores in higher semesters showed a decrease in professional commitment. Several factors may contribute to this decline; including practicing in stressful clinical environments, unfavorable working conditions, adherence to strict professional instructions and the development of a negative attitude toward the profession during internships. Students often enter the profession with an idealistic perspective and high expectations, which it is changed upon exposure to the realities of the clinical environment. Moreover, theory-practice gaps may impact on nursing students perspectives [54, 55]. These findings are consistent with a study done by Balay-odao

and colleagues. They found that academic pressures can reduce the students professional commitment among as they experience the burden of clinical responsibilities [36].

Kasıkçı et al. believe that professional commitment can vary depending on the cultural background of students, as cultural perspectives influence how students perceive the ethical and social demands of the nursing role. They showed that students who lives in cultures where social responsibility is a value show a greater desire to pursue the nursing profession [38].

Professional commitment in nursing is a combination of dedication, ethical values, and flexibility that lead nurses to provide continuous and high-quality patient care [41, 56]. This characteristic is crucial in nursing due to the inherent needs of this profession. The literature review show that professional commitment increases nurses' job satisfaction and has a positive impact on patient recovery by maintaining nurses' focus on patient-centered care [57]. Therefore, in nursing education, cultivating professional commitment at the early stages is very important because it prepares students for the challenges they will encounter in their clinical practice. Theoretical frameworks, such as those proposed by the American Nurses Association, emphasize that professional commitment should be based on ethical principles, empathy, and ongoing planning for student learning [58]. In this regard, in a study by Alkaya et al. [59], it was found that after the nursing internship, students' professional commitment increased significantly. The increase in students' professional commitment scores can be explained by the fact that nursing intern education program, by developing students' knowledge and skills, make students consider themselves more competent and prepared to enter the profession and are willing to work as nurses [59].

The results of our study showed a significant positive correlation between the total compassion competence score of nursing students and their caring behaviours. In this regard, a study by Lee et al. [8] showed that nurses' compassion is significantly correlated with caring behaviours and the quality of nursing care, indicating that compassion competence is essential for improving the quality of nursing care through the development of caring behaviours. In fact, nurses' compassion can serve as a resource for providing personalized care to patients. By understanding patients' physical, emotional, and psychological challenges, nurses can express their compassion and gradually enhance their caring behaviours through empathy. In this regard, the results of a study by Atta et al. [47], showed that with increasing empathy, students' caring behaviours increase too. In fact, increasing empathy as one of the dimensions of caring behaviours leads to increased responsibility, solving ethical issues and overall growth in providing services [60].

The present study revealed a significant positive correlation between compassion competence and professional commitment. In this context, a study done by Mersin et al. [61] found a positive correlation of compassionate love with increased professional commitment, along with the willingness to make effort and belief in the goals, values and other dimensions of commitment among nurses. As argued by Duru et al. [62], compassion is a key predictor of job performance and the quality of professional life for nurses. Furthermore, nurses who demonstrate compassionate attitudes and behaviours tend to establish positive and high-quality relationships and professional practices, which enhance their professional commitments through increased job satisfaction. As nurses develop greater compassion, their levels of anxiety and burnout diminish, and their professional commitments become more robust [62].

Regarding the relationship between caring behaviours and professional commitment, Smith et al.'s study showed that students with a stronger professional identity were more likely to display higher levels of caring behaviours. They showed that nursing students who experienced compassion from their mentors or educators were more likely to display stronger caring behaviours [58]. This result is consistent with our findings. Moreover, Aktaş et al. showed that nursing students who had stronger orientations toward professional values and higher moral sensitivity displayed a higher frequency of caring behaviours [63]. In this regard, Afrasiabifar et al. showed a positive correlation between moral sensitivity and caring behaviours; So that nursing students with high moral sensitivity exhibit more caring behaviours [48].

Limitations

There are some limitations in this study that could be considered. This study as a cross-sectional study, does not allow for the assessment of changes in these variables over time and it is not possible to determine the causal relationship between them. Additionally, the participants were limited to nursing students at Tabriz Nursing and Midwifery Faculty; which may reduce the generalizability of the findings to students in other nursing schools or settings. Therefore, it is suggested to conduct similar studies in another context to examine and compare compassion competence, caring behaviours, and professional commitment. Moreover, the comparison of these variables among students of other disciplines such as medical students, midwifery students, etc. could provide more information. As explained in the result section, the majority of participants (63%) were female. Therefore, the scarcity of male students could be as a study limitation. However, it is important to note that in our country, as well as in many other countries, the number of female nurses significantly exceeds that of male nurses. This demographic

reality underscores the importance of addressing gender dynamics in nursing and healthcare discussions, which we have aimed to reflect in our writing. Finally, this study was conducted using a cross-sectional design within a specific period of time and the results may differ as educational and environmental conditions change. It is recommended to use longitudinal designs or qualitative approaches to gain deeper insights. Finally, since all the students were Muslim and the tradition could influence the compassion level of individuals, it is suggested to compare the compassion competence in different cultures, especially in the context of different religions.

Conclusion

In conclusion, the positive and significant relationship between compassion competence, caring behaviours, and professional commitment among nursing students underscores the critical importance of fostering compassion in nursing education. By enhancing students' compassion competence, educational institutions can not only improve the quality of patient care but also promote professional fulfillment among future nurses. Implementing targeted strategies to foster these competencies will ultimately lead to a more empathetic and dedicated nursing workforce, benefitting both healthcare providers and the patients they care for. In this regard, the results of the present study can be used as a basis for more extensive research in the field of improving nursing students' compassion competence in order to increase the provision of compassionate and high quality care. Longitudinal studies, by examining changes in nursing students' compassion competence over different time intervals, provide the opportunity to analyze long-term trends and the impact of educational factors. These measures could include assessing the impact of different educational methods, following students from early years of education through graduation and even entering the workforce, identifying factors that contribute to the development of compassion, developing experiential learning programs, and incorporating courses related to ethics and compassion.

Declarations

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