



Research article

Caring behaviours demonstrated to nursing students in the interpersonal relation with the faculty: A cross sectional study.



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ABSTRACT

Background: Nursing students need to experience caring in their educational environment in order to learn how to care for the patients.

Objective: The present study describes the caring model demonstrated by the faculty to the nursing students through their behaviours, from the perspective of both students and faculty members.

Design: A cross-sectional, descriptive, observational study was conducted.

Participants: The sample included 286 students and faculty members.

Methods: The Nursing Students' Perceptions of Instructor Caring assessing tool was used to gather the data.

Results: After analysing 676 questionnaires, it was revealed a moderately high level of caring perceived by the students. The most appreciated dimension was *control versus flexibility*, reporting a mean value of 82.29 and a confidence interval from 81.14 to 83.44, and the least valued was *appreciation of life's meanings*, reporting a mean value of 63.90 and a confidence interval from 62.20 to 65.60. The students' perception of the care demonstrated by the faculty was significantly lower than the care that the latter believed to transmit in all dimensions ($p < 0.001$).

Conclusions: The caring perceived by the student was expressed through behaviours that inspired confidence in them, promoted a climate of learning and support, helped them to recognise the meaning of life, showed them flexibility and fostered their professional autonomy. The findings of this study can help to improve nursing education by providing a view of the interpersonal relations that the students established during their training with the faculty.

1. Introduction

1.1. Learning caring

Caring is a fundamental value of nursing and, thus, caring competence must be an aspiration for nursing students (Kitson et al., 2019). Moreover, professional values of care should be reinforced among nurses to improve the quality of patient care (Sibandze and Scafile, 2018). The nursing curricula should focus on caring and offer the students a general appreciation of caring, for them to develop their

professional role as caregivers (Zamanzadeh et al., 2014). However, teaching caring is a difficult challenge. Caring is a complex and subjective concept that belongs to the cultural and intimate scope of the person, which hinders its analysis (Martínez Rodríguez et al., 2016). Each individual consolidates the meaning of caring throughout his/her maturation process, according to his/her own caring experiences and incorporating the caring expressions of his/her cultural community of reference (Sharifi et al., 2019). Each student has his/her own schemes about caring, which they have built up previously with their personal experiences. To facilitate learning, the faculty should promote caring

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experiences to allow the students to assimilate and adjust them, in order to build and expand their concept of caring (Heimann et al., 2013). Favouring caring experiences is a way of incorporating new meanings to the construct of caring, by significant and effective learning for the future professional performance. Nursing education is an ideal scenario to promote and develop caring in the students, as it involves interacting with other people (McEnroe-Petitte, 2015).

1.2. Role modeling

A common strategy for teaching and learning caring is the role model, which consists in the observation of a behaviour or attitude in a person who is admired, and the consequent imitation of such behaviour or attitude by oneself (Baldwin et al., 2014). A role model is a professional who influences the behaviours of the student by exemplifying the personal and professional traits that are expected of a nurse, which are thereby imitated (Felstead and Springett, 2016). These traits have a strong impact on and are learned by the students, regardless of whether they are planned or unintentional (Vinales, 2015). The models are from both the clinical settings, where the students observe their professional performance, and the academic environment, since the faculty in the classroom also contribute to the development of behaviours and attitudes in the students (Bussard and Lawrence, 2019).

1.3. Faculty role models

Caring can be learned at university through modeling, in open caring relationships, of authentic communication and genuine interaction between students and educators (Duffy, 2013). Faculty members can emphasise the caring demonstrated in their work, especially when they interact with the students or brief them on caring (Labrague et al., 2017). Students can distinguish between the behaviours that they wish to imitate from those they do not, identifying the characteristics of a good role model and those of an example that should not be followed (Felstead and Springett, 2016). In the academic scope, a good role model has been described as a faculty member who shows enthusiasm and positive attitudes toward nursing, uses different teaching methodologies and timely provides constructive corrections (Baldwin et al., 2014). A positive academic role model has a powerful effect on nursing students' personal and professional development, as they inspire enthusiasm and passion for the nursing profession, facilitate reasoning about the nursing practice and links between the theory and practice (Jack et al., 2017). According to Nouri, the duties of an academic role model include promoting the emotional, spiritual, and intellectual development of students. This development is facilitated through effective connectedness, inspiring a sense of positive identity, showing love toward students, maintaining faith in God, adherence to ethical principles, learning facilitation and thought management (Nouri et al., 2013). A credible and compassionate role model can inspire humanised care in the students by engaging positively with them, being student centered and viewing students as individual and unique (White et al., 2018). Values demonstrated by role models also promote emotional intelligence, empathy and compassion (Kaiafas, 2021). Learning through the role model is not limited to the behaviours demonstrated by teachers. In simulation, the use of faculty-led role models offers an inductive and reflective learning experience that allows the observation of recreated behaviours and the incorporation of new knowledge. As a result of the role modeling teaching strategy, students increased critical thinking, appropriate nurse-patient therapeutic communication techniques, and the rationale for the proper behaviour reaffirmed by clinical reasoning (Key et al., 2021).

1.4. Clinical role models

The potential for clinical instructors as role models for nursing students has been widely studied (Suliman and Warshawski, 2022;

Rodríguez-García et al., 2021; Cant et al., 2021; Felstead and Springett, 2016). According to Suliman and Warshawski (2022) the nursing students' satisfaction with clinical placements depends on the clinical instructors' personal trait, clinical and teaching skills. When considered as role models, they strongly impact on students learning (Cant et al., 2021). They are in the position to influence their development, future aspirations, behaviour, understanding of different ways of working with others, as well as having direct influence on their practice competencies (Felstead and Springett, 2016). In addition to their teaching role, clinical instructors, as role models, can enhance students' resilience, interpersonal skills, and professional identity (Suliman and Warshawski, 2022).

However, the role model of the faculty members is less well studied. Nurse educators have also powerful opportunities to model students' caring behaviours (Baldwin et al., 2014). Although clinical instructors are considered by students to be more significant professional role models than educators in the academic settings, they still have a relevant impact on nursing values education (Jack et al., 2017). Previous studies have suggested further research on the role model of faculty members (Baldwin et al., 2014; Jack et al., 2017; Felstead and Springett, 2016). The present study aims to fill this gap, exploring the model of care demonstrated by faculty members that could serve as a role model for nursing students.

1.5. Objective

The aim of the study was to describe the caring demonstrated by faculty members of the University of Seville, Spain to the nursing students through their behaviours, from the perspective of both the students and the faculty.

2. Methods

2.1. Design

A cross-sectional, descriptive, observational study was conducted.

2.2. Study population and sample

The study was carried out in the Red Cross nursing faculty, University of Seville. The total study population was constituted by nursing students and educators who worked in the mentioned center ($n = 310$). According to the records of the nursing faculty, there were 280 students registered and 30 faculty members. The students who had halted their studies and those faculty members who were on sick leave, maternity leave, unpaid leave or another situation that made them stop their teaching activity, were excluded. It was intended to measure the model of care perceived by the students. To assess this perception, it is necessary to establish an interpersonal relationship between the students and the faculty. Therefore, members of the faculty who did not participate in this relationship during data collection were excluded.

We also intended to assess the perception of faculty members about the model of care they believe they demonstrate. Since the population included two differentiated profiles (students and faculty members), a cluster sampling design was followed, in order to increase their representativeness. We calculated the minimum sample size for each cluster required for a representative sample of the population, with a 3 % accuracy and 95 % confidence level, obtaining a total of 213 participants: 192 students and 21 faculty members.

2.3. Study variables and measurement instruments

Sociodemographic variables of the students (age, gender, marital status, year of the nursing degree and employment situation) and of the faculty (age, gender, marital status, years since they obtained their nursing degree and years of teaching experience) were collected. An *ad-hoc* questionnaire developed for this purpose was used to collect the

data.

The main study variable was the caring demonstrated by the faculty to the students through the interpersonal relationship established between them. The concept of caring was defined as the awareness of a mutual and reciprocal connection between oneself and the instructor or faculty member, which allows the student to find meaning and integrity, as well as to grow as caring professionals (Holland Wade and Kasper, 2006).

The perception of caring was measured using the *Nursing Students' Perceptions of Instructor Caring* (NSPIC) in its version culturally adapted to the Spanish context (S-NSPIC) (Romero-Martín et al., 2019). This tool was designed to assess the nursing students' perception about the behaviours that convey caring from their faculty members (Holland Wade and Kasper, 2006). It is a self-administered questionnaire with 29 items, which are grouped in 5 dimensions: *inspires confidence through caring* (13 items) the faculty member shows concern about the care of the patients, inspiring confidence and competence; *supportive learning climate* (5 items) the faculty member demonstrates support in stressful situations, allowing the student to express and accept his/her feelings; *appreciation of life's meaning* (3 items) the faculty member respects the point of view, spiritual aspects and experiences of the student; *control versus flexibility* (4 items) the faculty member is flexible in the face of setbacks without using his/her position of power to control them; *professional nurse autonomy* (4 items) the faculty member promotes the visualization of the student as a nurse and their awareness of their professional potential. Each item describes a caring behaviour performed by the educators and the participants expressed their degree of agreement with the statements in a Likert scale scored with 6 points (1 point = strongly disagree, 2 = moderately disagree, 3 = slightly disagree, 4 = slightly agree, 5 = moderately agree, 6 = strongly agree). The total score ranges from 29 to 174 points; *inspires confidence through caring* ranges from 13 to 78; *supportive learning climate* ranges from 5 to 30; *appreciation of life's meaning* ranges from 3 to 18; *control versus flexibility* ranges from 4 to 24; and *professional nurse autonomy* ranges from 4 to 24. Higher scores indicate higher perceptions of the behaviour assessed in the item. The scale showed validity, as all the items obtained a content validity index > 0.78, and a factor load > 0.3. Reliability was also demonstrated as the intraclass correlation coefficient varied between 0.5 and 0.89 and the item-total correlation coefficient values were all higher than 0.2 (Romero-Martín et al., 2019). Regarding the internal consistency, the Cronbach's alpha total was $\alpha = 0.951$, *inspires confidence through caring* $\alpha = 0.896$; *supportive learning climate* $\alpha = 0.903$; *appreciation of life's meaning* $\alpha = 0.888$; *control versus flexibility* $\alpha = 0.741$ *professional nurse autonomy* $\alpha = 0.852$.

2.4. Procedure

The data of the students' perception were collected during a compulsory attendance session in May 2019. The S-NSPIC and a questionnaire with the sociodemographic variables were simultaneously distributed at the end of the academic year. Since each student evaluated more than one faculty member, in order not to saturate the students and avoid information bias, the questionnaires were distributed on different days.

The faculty members' self-evaluation data were collected through an online questionnaire. An email was sent to all faculty members, informing them about the purpose of the study and inviting them to participate. Two reminder emails were sent to them one week after the first email, in order to increase the response rate.

Once gathered, the data were registered in an anonymous database using Microsoft Excel® 2010, and they were then analysed using SPSS® v24.0, 2016.

2.5. Statistical analysis

The descriptive analyses of sociodemographic variables were

calculated, providing means and frequency distributions, and estimating a 95 % confidence interval. For the estimation of the total score of the scale and its dimensions, the means of the scores of the items and standard deviation were calculated. To facilitate data interpretation as well as the comparison between dimensions, the scores of each item were weighted from 1 to 100, so that the minimum value corresponded to 1 and the maximum to 100.

According to the Kolmogorov-Smirnov test, the S-NSPIC scores did not follow a normal distribution, so non-parametric tests were required. The Mann-Whitney *U* test with Bonferroni's correction was performed when comparing two groups, and the Kruskal-Wallis test was applied in the comparison of more than two groups, in order to identify significant differences among the results (Argimon Pallás and Jiménez Villa, 2013).

2.6. Ethical considerations

Authorization to carry out this research from the nursing faculty prior to data collection. Data collection was performed during a compulsory attendance lesson to maximize the dissemination of the study, however, participation in the study was not compulsory in any case. The students were verbally informed about the purpose and conditions of the study at the beginning of the lesson and received this information in writing. The students were free to participate and to decide to withdraw from the study at any time. The faculty members were informed by email and individual meetings were held when any question was raised.

In all cases, the participation of the individuals was voluntary, students and faculty members were fully informed about the purpose of the study and the treatment of the data. The present study did not involve any intervention on the participants, thus no harm or repercussion was expected to occur in the participants. The informed consent was required to participate. It was obtained at the beginning of the questionnaire when selecting the consent option. The confidentiality of the information was guaranteed at all times, since the questionnaires were self-completed directly by the participants and registered in a database in which no identity data were recorded, assigning a random number to them. The project was approved by the Ethics Committee of Red Cross Nursing School, University of Seville, Spain (reference PI 03/18).

3. Results

The study included 286 participants, of whom 92.9 % ($n = 263$) were students, and 8.1 % ($n = 23$) were faculty members. Therefore, the participation rate was 91.2 % of the total population. A total of 806 questionnaires were gathered, of which 783 referred to the caring behaviours of the faculty according to the students' perception, and 23 questionnaires referred to the faculty's own perception. The number of questionnaires analysed was higher than the number of participants, since the students filled more than one questionnaire each, evaluating a mean of 3 faculty members. A total of 107 questionnaires were discarded for not being considered valid, as they did not provide an answer in one or more of the items, so, a final amount of 699 questionnaires were analysed.

3.1. Sociodemographic results

Regarding the sociodemographic characteristics of the participants, the mean age of the students was 21.7 [CI = 21.3–22.1] years and were mainly female 79.8 % ($n = 210$), single 96.6 % ($n = 254$), and unemployed 61.2 % ($n = 161$). The participants were distributed in four years of the nursing degree. Table 1 summarizes the sociodemographic characteristics of the participating students distributed by degree year.

The group of participating faculty members presented a mean age of 43.5 [CI = 39.2–47.8] years and was constituted by slightly more men 56.5 % ($n = 13$) than women 43.5 % ($n = 10$). These participants were mainly married 65.3 % ($n = 15$), with a mean age of 20.5 [CI =

Table 1
Socio-demographic characteristics of the participating students by course.

	First year	Second year	Third year	Fourth year	Total
Participants (n)	74	48	68	73	263
Age					
Mean [CI]	20,1 [19,4-20,8]	22,3 [20,8-23,8]	21,8 [21,0-22,6]	22,7 [22,2-23,2]	21,7 [21,3-22,1]
Standard deviation	3,04	5,35	3,55	2,35	3,69
Minimum value	18	19	20	21	18
Maximum value	39	48	44	36	48
Gender % (n)					
Women	22,4 % (59)	12,2 % (32)	21,3 % (56)	23,6 % (63)	79,8 % (210)
Men	5,7 % (15)	6,1 % (16)	4,6 % (12)	3,8 % (10)	20,2 % (53)
Marital status % (n)					
Single	27,4 % (72)	17,5 % (46)	25,1 % (66)	26,6 % (70)	96,6 % (254)
Married	0,4 % (1)	0,8 % (2)	0,4 % (1)	0	1,5 % (4)
Divorced	0	0	0	0	0
Widow/er	0	0	0	0	0
Not answered	0,4 % (1)	0	0,4 % (1)	1,1 % (3)	1,9 % (5)
Employment % (n)					
Full time	1,5 % (4)	0,8 % (2)	0,4 % (1)	1,1 % (3)	3,8 % (10)
Part time	0	1,5 % (4)	1,9 % (5)	1,1 % (3)	4,6 % (12)
Only weekends	1,5 % (4)	1,5 % (4)	3,4 % (9)	3,4 % (9)	9,1 % (24)
Occasional job	3,4 % (9)	3,8 % (10)	6,5 % (17)	6,5 % (17)	20,9 % (55)
Unemployed	21,3 % (56)	10,6 % (28)	12,9 % (34)	15,2 % (40)	61,2 % (161)
Not answered	0,4 % (1)	0	0	0	0,4 % (1)

CI = 95 % confidence interval.

16.3–24.7] years since they obtained their degree, 17.8 [CI = 13.5–22.1] years of caring experience and 11.2 [CI = 7.1–15.3] years of teaching experience. The sociodemographic characteristics of the participating faculty members are detailed in [Table 2](#).

3.2. Descriptive results of the caring demonstrated by the faculty

The descriptive results of the dimensions of the S-NSPIC related to the caring demonstrated by the faculty to the students are shown in [Table 3](#). The dimension that was most appreciated by the students was *control versus flexibility*, with a mean score of 82.29 [CI = 81.14–83.44], and the least appreciated was *appreciation of life's meaning*, with a mean score of 63.90 [CI = 62.20–65.60]. The dimension that was most valued by the faculty, according to their own perception, was *professional nurse autonomy*, with a mean score of 89.86 [CI = 86.62–93.10], and the least appreciated was *control versus flexibility*, with a mean score of 71.38 [CI = 67.2–75.56].

3.3. Comparison of the students' assessment of the faculty by degree year

The scores of the S-NSPIC were compared between the first and fourth year, with the aim of identifying a possible evolution in the students' perception from the beginning to the end of their training. The results showed that the perception of the students was similar, finding no statistically significant differences between the first and the fourth year ([Table 4](#)). However, significant differences were identified when comparing the first year with the third and the third year with the fourth, except in the *appreciation of life's meaning* dimension ([Table 5](#)).

Table 2
Socio-demographic characteristics of the participating faculty members.

	Total
Participants (n)	23
Age	
Mean [CI]	43,5 [39,2-47,8]
Standard deviation	10,6
Minimum value	28
Maximum value	58
Marital status % (n)	
Single	30,4 % (7)
Married	65,2 % (15)
Divorced	4,3 % (1)
Widow/er	
Years since end of studies	
Mean [CI]	20,5 [16,3-24,7]
Standard deviation	10,35
Minimum value	5
Maximum value	37
Years of clinical experience	
Mean [CI]	17,8 [13,5-22,1]
Standard deviation	10,54
Minimum value	2
Maximum value	35
Years of teaching experience	
Mean [CI]	11,2 [7,1-15,3]
Standard deviation	10,17
Minimum value	1
Maximum value	33

CI = 95 % confidence interval.

3.4. Comparison between the students' assessment of the faculty and the faculty's self-perception

The opinion of the students about the faculty was significantly different from the self-opinion of the latter in all dimensions, with the self-opinion of the faculty being greater in all cases, except in dimension *control versus flexibility* as the results were non-significant ([Table 3](#)).

4. Discussion

This study aimed to describe the model of caring demonstrated by faculty members. The novelty of this study lies in the assessment of the academic environment. The obtained results showed that the level of caring expressed by the faculty was moderately high, scoring 131,37 out of 174. However, the faculty members believed they demonstrated more care than the students reported perceiving.

The students' perception showed the dimension *appreciation of life's meaning* as the least valued. These results are consistent with the findings of [Meyer et al. \(2016\)](#) and [Fifer \(2019\)](#) as they also found this dimension as the less appreciated. The students valued the dimension *control versus flexibility* as the most relevant in the behaviours of the faculty members. However, this finding differs from the results obtained in previous studies conducted with the NSPIC ([Labrague et al., 2015](#); [Meyer et al., 2016](#); [Zamanzadeh et al., 2015](#)).

The quality of the interpersonal relationships established with the faculty members has been identified as the most significant element when determining the efficacy of the academic experience of the students ([Bryan et al., 2015](#)). Constructive relations between the faculty and the students lead to successful learning results and help the students to face the academic challenges and demands ([Chan et al., 2017](#)). A constructive learning environment is based on close, empathetic and flexible faculty-student relationships ([Zamanzadeh et al., 2015](#)). According to [Mikkonen et al. \(2015\)](#) the relationships that show caring and empathy from the faculty promote constructive learning and have a positive effect on the personal development of the student. This is the type of relationship perceived by the students in the present study, as the faculty members demonstrated the dimension *control versus flexibility* with greater intensity, which refers to the flexibility shown by the

Table 3
Descriptive results of the S-NSPIC according to students' and faculty members' perception.

Dimensions	Students' perception		Faculty members' perception		Mann-Whitney U	p-Value
	N	676	23			
Confidence through caring Range 1–100	Mean [CI]	80,20 [79,13-81,9]	87,01 [85,17–88,85]	4302,00	<0,001*	
	Standard deviation	14,20	4,51			
	Median	83,33	87,18			
	Minimum value	20,51	79,49			
	Maximum value	100,00	94,87			
Supportive learning climate Range 1–100	Mean [CI]	65,34 [63,74-66,94]	83,19 [77,10-89,28]	3889,00	<0,001*	
	Standard deviation	21,27	14,89			
	Median	66,67	90,00			
	Minimum value	16,67	53,33			
	Maximum value	100,00	100,00			
Appreciation of life's meaning Range 1–100	Mean [CI]	63,90 [62,20-65,60]	79,71 [73,56-85,86]	4500,50	0,001*	
	Standard deviation	22,59	15,04			
	Median	66,67	83,33			
	Minimum value	16,67	50,00			
	Maximum value	100,00	100,00			
Control versus flexibility Range 1–100	Mean [CI]	82,29 [81,14-83,44]	71,38 [67,2-75,56]	7033,00	0,434	
	Standard deviation	15,20	10,23			
	Median	83,33	75,00			
	Minimum value	20,83	45,83			
	Maximum value	100,00	83,33			
Professional nurse autonomy Range 1–100	Mean [CI]	74,34 [72,75-75,93]	89,86 [86,62-93,10]	4146,50	<0,001*	
	Standard deviation	21,12	62,86			
	Median	79,17	91,67			
	Minimum value	16,67	75,00			
	Maximum value	100,00	100,00			
S-NSPIC total Range 29–174	Mean [CI]	131,37 [129,22-133,52]	152,71 [147,45-157,97]	3240,5	<0,001*	
	Standard deviation	26,87	11,56			
	Median	136,00	155,00			
	Minimum value	49,00	131,00			
	Maximum value	174,00	174,00			

CI = 95 % confidence interval.

* Statistical significance.

Table 4
Comparison of the S-NSPIC dimensions according to the students' perception by year.

Dimensions	First year	Fourth year	Mann-Whitney U	p	
Confidence through caring	Mean [CI]	82,71 [81,48-83,94]	84,43 [82,42-86,44]	9703,00	0,568
	SD	11,37	8,09		
Supportive learning climate	Mean [CI]	70,18 [68,18-72,18]	68,06 [64,52-71,60]	9234,50	0,251
	SD	18,50	14,23		
Appreciation of life's meaning	Mean [CI]	68,11 [65,93-70,29]	64,78 [60,14-69,42]	9033,00	0,161
	SD	20,16	18,66		
Control versus flexibility	Mean [CI]	85,06 [83,68-86,44]	84,34 [81,21-87,47]	9741,50	0,597
	SD	12,72	12,59		
Professional nurse autonomy	Mean [CI]	78,63 [76,73-80,53]	84,21 [81,63-86,79]	8691,00	0,068
	SD	17,58	10,35		

CI = 95 % confidence interval, SD = standard deviation.

faculty member in the face of setbacks without using his/her position of power to control the students or impose his/her own ideas.

The literature describes vertical relationships of power between nursing faculty and students, which reduce the autonomy and will of the students (Moretti-Pires and Villela-Bueno, 2009). The study conducted by Kantek and Gezer (2010) about the power relations in nursing education revealed that the power exerted by the faculty was most frequently coercive, that is, based on punishment as a response to

Table 5
Comparison of the S-NSPIC dimensions according to the students' perception by year.

Dimensions	First year vs. third year	First year vs. fourth year	Third year vs. fourth year	
Confidence through caring	Mann-Whitney U	38105,00	9703,00	6791,50
	p-Value	<0,001*	0,568	0,004*
Supportive learning climate	Mann-Whitney U	34703,00	9234,50	7052,50
	p-Value	<0,001*	0,251	0,011*
Appreciation of life's meaning	Mann-Whitney U	37200,00	9033,00	7794,50
	p-Value	<0,001*	0,161	0,135
Control versus flexibility	Mann-Whitney U	37682,50	9741,50	7428,00
	p-Value	<0,001*	0,597	0,044*
Professional nurse autonomy	Mann-Whitney U	34523,50	8691,00	5314,00
	p-Value	<0,001*	0,068	<0,001*

* Statistical signification.

negative behaviours. However, the students preferred an expert type of power from their faculty members, based on the recognition of the faculty as a competent professional. In this line, the results of the present study are consistent with those of Chan et al. (2018) who revealed that students perceive their faculty members from an egalitarian position and establish with them an interactive and enriching relationship that guides, supports and protects the students. The results of Bryan et al. pointed to a relationship characterised by authenticity, according to the participants' perceptions, indicating that the faculty showed their true self to the students, without pretending to know everything or to be perfect. This favoured communication and led to a warm and

understanding relationship to better satisfy the needs and expectations of both parties (Bryan et al., 2015). In the study of Da Silva et al. (2016) the students stated that the faculty-student relationship must be based on dialogue and shared actions, so that both parties are responsible for their learning.

However, our results of the faculty's self-evaluation revealed that *control versus flexibility* and *professional nurse autonomy* were the least and most valued dimensions, respectively. The latter refers to viewing the student as a nurse and raising awareness of his/her professional potential and independent role of decision making to protect the patient's care. Professional autonomy has been defined as the capacity to make decisions independently, based on a holistic view of the human being and on the professional knowledge provided by the evidence, as well as the capacity to act according to these decisions taking responsibility for them (Santos et al., 2017). Education contributes to the development of the students' professional autonomy by facilitating the acquisition of skills such as decision making, problem solving and reflective practice (Arceciado Marañón and Isla Pera, 2019). The results of Thompson et al. revealed that students have a very positive perception toward independence and the feeling of being nursing professionals, although they admit that they still need support and confirmation in some aspects (Thomson et al., 2017). According to Santos et al. (2017) the students associated professional autonomy with responsibility. At the beginning of the nursing degree, they addressed professional autonomy (know what to do) in a more practical manner, whereas at the end of the degree they granted more relevance to the knowledge on which they should base their decisions. Arceciado Marañón and Isla Pera (2019) found that the nursing students appreciated more autonomy and nursing responsibilities than they expected; they declared that having autonomy made them feel like professionals and allowed them to apply the professional knowledge independently.

Nursing students have described their learning process as a gradual transformation from *dependent* to *independent*, thanks to the acquisition of knowledge, skills, confidence and sureness (Sandvik et al., 2014). They have also expressed their need to feel their autonomy and to make their own decisions based on their own criteria and arguments. They wish to face clinical situations on their own, reflect on the benefits and risks, and perform actions, taking responsibility for them (Rivera Alvarez and Medina Moya, 2017). In this sense, McSharry and Lathlean (2017) proposed scaffolding learning, which exposes the student to situations that are in line with the acquired competences they show; thus, the guidance and support of the faculty decreases gradually, depending on the student's progress, and the student is exposed to his/her own professional role gradually.

According to the results of the present study, the faculty members believed to perform more caring behaviours than the students perceived. The high opinion of the faculty about the caring they convey could be due to their commitment to a new nursing education approach toward the values of care, and the use of the role model that they may represent for the students as a learning strategy. Caring is the core concept that distinguishes and identifies nursing within the multidisciplinary team, so, nursing training should be organised around this concept (Bevis and Watson, 2000). To this end, it is necessary to change the focus of the nursing curricula from the current acquisition of knowledge and skills to the humanistic fundamental values of caring (Brown, 2011). Despite its subjective and ambiguous nature, values can be taught and learned. The longitudinal study of Kanteke and Gezer (2010) throughout 4 years of nursing training, revealed that nursing education promotes the development of the professional values in the students. A significant increase was obtained in values such as dignity, autonomy, responsibility and patient safety. According to Brown (2011), the approach of affective learning allows integrating the three dimensions of learning (*i.e.*, cognitive, psychomotor and emotional) to facilitate the acquisition of the competences required for a humanised care. Affective learning entails incorporating the values and emotions associated with formative knowledge. This author proposed incorporating strategies aimed at

internalising those caring behaviours that reflect the attitudes and values of nursing. A way of emphasising the values of care in the nursing curricula is to organise the gradual development of these values hierarchically. Thus, by establishing levels, these values can be included in the objectives and learning outcomes expected in each stage (Brown, 2011).

The present study has some limitations related to the sampling procedure. The study population consisted of two differentiated groups: students and faculty members. With the aim of balancing the representation of these groups and minimising the selection bias, a cluster sampling was carried out. By obtaining the minimum number of participants for each quota with a 3 % error margin, it was guaranteed that the sample setting would be similar to the population in this aspect. Another possible information bias was the fatigue of the participants during the completion of the questionnaires, since the students filled between 1 and 5 identical questionnaires, although these referred to different faculty members. To reduce the effect of fatigue in the students' responses, the questionnaires were distributed in several sessions, thus preventing the students from filling two or more questionnaires at the same time. Lastly, when interpreting the obtained data, it must be taken into account that the NSPIC was designed to measure the behaviours of the clinical instructors, and no study has used it in the academic environment. Therefore, the results of the present study must be considered from an exploratory perspective and interpreted with caution.

5. Conclusions

In the light of our results, care is latent in the student-faculty relationship, creating a suitable environment for learning, fostering caring experiences in the students, which allow them to identify new meanings and grow as caring providers professionals. The students perceived a moderately high level of care from their faculty, which was expressed through behaviours that inspire confidence in them, foster a climate of learning and support, help them to recognise the meaning of life, show them flexibility, and promote their professional autonomy. Therefore, the faculty represent a good role model for the students, guiding them for their future relations of care with the patients. There is a discordance between the caring that the faculty believe they show and the caring that the students perceive. The latter believe they transmit more caring than that received by the students.

The findings of this work can help to improve nursing education by providing a view of the interpersonal relationships that the students establish during their training with the faculty. This will help faculty to better understand the caring they are transmitting to the students, and the model of caring that the students are internalising. This view will allow them to harmonise their teaching intervention with the experience perceived by the students, for a more effective and meaningful learning. The first step to develop a nursing curriculum focused on caring is to identify the current model taught by the faculty. In this sense, the S-NSPIC would help to describe the model of care followed by the faculty as a starting point to transform the teaching programmes, applying a care-centered approach. In light of the results, a student-centered strategy is suggested. It would be necessary to consider the opinion of the students and involve them in decision-making, for a more complete model of caring in harmony with the expectations of the students.

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CRedit authorship contribution statement

Macarena Romero-Martín: Conceptualization, Methodology, Writing – review & editing, Visualization. **Juan Carlos Safont-Montes:**

Software, Formal analysis, Data curation. **José Miguel Robles-Romero:** Investigation, Writing – original draft. **Nerea Jiménez-Picón:** Investigation, Writing – original draft. **Emília Isabel Martins Teixeira da Costa:** Methodology, Validation, Resources, Writing – review & editing. **Juan Gómez-Salgado:** Conceptualization, Supervision.

Declaration of competing interest

The authors report there are no competing interests to declare.

Data availability

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

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