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Relationship between tutor support, caring self-efficacy and intention to leave of nursing students: the roles of self-compassion as mediator and moderator

<https://doi.org/10.1515/ijnes-2023-0101>

Received October 10, 2023; accepted September 19, 2024; published online October 28, 2024

Abstract

Objectives: Analyze the mediating e moderating roles of self-compassion in the relationship between tutor support and both students' caring efficacy and intention to leave.

Methods: A cross-sectional study using an online questionnaire was conducted.

Results: Self-compassion mediates the relationship between tutor support and students' caring efficacy. Tutor support play a role on all the facets of self-compassion, but only two dimensions of this variable (mindfulness vs. over-identification) are significantly associated with both the dimensions of caring self-efficacy, with inverse effects. Self-compassion moderates the relationship between tutor support and intention to leave.

Conclusions: Tutor support can improve students' caring efficacy by helping them to be mindful of their experiences in a nonjudgmental way. Supportive tutor can mitigate intention to leave by increasing self-compassion ability. Implications for International Audience Nursing education programs should implement workshops and briefings to develop students' self-compassion ability. This can foster perceived caring efficacy in students and reduce intention to leave.

Keywords: nursing students; self-compassion; caring self-efficacy; tutor support; intention to leave; mediating e moderating roles

Introduction

Caring is a core concept in nursing practice and caring self-efficacy is a skill that nurses must develop from their clinical education to provide compassionate and empathetic care to patients. An important component of caring self-efficacy among nursing students is self-compassion. Self-compassion allows nursing students to develop compassionate attitudes toward themselves and others, thus improving their ability to manage emotions and provide effective patient care [1]. However, during the clinical learning, nursing students often experience feelings of insecurity and doubt in their ability to provide effective care [2]. This may undermine professional

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identity development and lead to leaving the profession or bachelor program. In this sense, the role of nurse tutor is crucial in promoting supportive and non-judgmental learning environment allowing the students to express their own emotions and develop self-compassion. Results from a qualitative research show that students not feeling supported by the nurse tutor, especially when going through difficult experiences during the clinical placement [3]. However, although the literature highlights the importance of supportive nursing tutors, there is no research on the role of supportive tutors in fostering self-compassion and how this relates to important outcomes for students. The purpose of this study is to understand the role of nurse tutor in promoting self-compassion and how it may affect outcomes such as caring self-efficacy and intention to leave.

Theoretical framework

Caring self-efficacy is the ability to develop clinical competence and provide compassionate care to patients [4]. Coates [4] and Reid et al. [5] operationalized the concept of caring self-efficacy by primarily dividing the construct into two factors, one negative and one positive. The two sub-dimensions were named confidence to care, namely the confidence and ability to relate to and care for patients, and doubts and concerns, namely the uncertainty about the ability to relate to and care for patients. Nurses' perceived caring efficacy can be affected by individual and organizational factors. Among the organizational factors, evidence suggests that supervisor support can reduce nurses' negative feelings during patient interactions, thereby increasing caring self-efficacy [6]. Among the individual factors, an important concept related to caring self-efficacy is compassion. Compassion refers to the human and moral aspect of caring by combining empathy with clinical practice to meet patients' needs [7]. The development of caring and compassion skills is therefore critical and should be promoted early in nursing education to ensure that future nurses have effective caring and compassionate behaviors.

Nurse tutor support and self-compassion

A main element in cultivating compassion for others is self-compassion, which is primarily concerned with seeing failure and suffering as an intrinsic part of the human experience [8, 9]. Evidence from the literature suggests that practitioners at the beginning of their career tend to be rule-driven, looking for the "right" way to practice and seeking external guidance [10]. These challenges may deprive practitioners of their initial enthusiasm, lead to doubts about their clinical effectiveness and fit within the profession [11]. Research suggests that supervisor support can protect nurses from the detrimental effects of emotional job demands [12]. This protective effect may be due to the ability to confide in direct supervisors about the difficulties of the job without being judged, thereby addressing the emotional complexities inherent in patient care [13]. Given these findings, it is possible that a similar mechanism is established between nurse tutors and nursing students. Nurse tutors are clinical and academic teachers who work in the university setting and play an important role in supporting students to acquire the skills needed to achieve educational objectives and bridge the gap between theory and practice. Based on these premises, tutor's support can help students cope with emotional difficulties during the internship, thereby improving their sense of caring efficacy.

Self-compassion and caring self-efficacy

Research results suggest that self-compassion affects caring self-efficacy and compassionate competence is [14]. Self-compassion is defined as the ability to recognize personal suffering (e.g., perceived failures, inadequacy, or general suffering) and respond to alleviate the suffering [9]. It is an attitude of warmth, caring and empathy toward oneself and affects clinical performance toward patients [15]. Self-compassionate people recognize that it is inevitable to be imperfect, to fail, and to experience difficulties in various life situations. It plays a central role in developing a sense of caring self-efficacy. Self-compassion includes three

basic components: self-kindness vs. self-judgment (e.g., being kind to themselves when confronted with painful experiences rather than becoming angry or self-critical), mindfulness vs. over-identification (e.g., observing thoughts and feelings as they are without trying to suppress them, but also not to be “over-identified” with them to avoid being overwhelmed by negative reactivity), and common humanity vs. isolation (e.g., recognize that personal suffering and inadequacy are part of the common human experience, as something everyone faces) [9].

Some studies suggest that self-compassion promotes resilience and well-being in nursing students, enabling them to cope with the emotional demands of the profession [16]. The inability to be compassionate toward oneself leads to the absence of empathy and compassion for others [17], which is an important aspect in nursing. Studies on nurses and nursing students showed that individuals with high self-compassion are better able to control occupational and environmental stressors [18] and have higher levels of self-efficacy [1, 19].

The concept of self-compassion is well documented in the healthcare literature and its importance was highlighted in several areas of study (e.g., chronic diseases, eating disorders, palliative care). Most research has included nurses as the study population, but there has been minimal research on the role of self-compassion in nursing students and how it can be promoted in the academic setting. Caring theories suggest the importance of self-compassion in nursing students. Self-compassion allows students to manage emotions associated with care-related stress and to consider failures as inevitable in the student condition [20]. Having self-compassion ability is therefore crucial for nursing students, who are responsible for coping with both academic and clinical demands. In fact, nursing students often face several challenges during their educational process, due not only to academic and clinical stress [21], but also to the learning environment, including the relationship with nurse tutor. Research suggests that interaction with the tutor could affect the development of students' caring self-efficacy [22] as well as the ability to communicate and empathize with patients [23]. In addition, as nursing students are an important future workforce, it is crucial mitigate their desire to leave bachelor program and the future profession. The problem of student dropout has long been a relevant issue for Italian nursing faculties. Thirty-three percent of Italian nursing students leave their bachelor's program [24]. As clinical practice is a fundamental experience in the education of nursing students, supportive nurse tutors can be a resource to attenuate students' intention to leave [3].

Relationship between tutor support and both caring self-efficacy and intention to leave: the roles of self-compassion as mediator and moderator

Students face many critical experiences during their clinical education [25, 26]. In fact, the clinical environment can expose students to unpredictable and unexpected complexities that can generate stress and compromise usual coping strategies [27]. Findings from recent research showed that nurse tutor plays a positive role in determining students learning outcomes [28, 29]. However, a qualitative study showed that students feared showing vulnerability and weakness to their nurse tutor after a critical experience because of the risk of receiving poor learning evaluations and failing the clinical experience [26]. These experiences could affect students' sense of self-compassion and perception of self-efficacy. In this sense, supportive tutors could be a crucial resource to provide strength and support in times of difficulty, thereby enhancing the sense of students' self-compassion and confidence in their ability to care for patients [30].

The importance of tutor support was emphasized by organizational support theory [31]. Recent studies showed that supervisor support had a role in affecting perceived caring self-efficacy [6], and has been shown to increase students' confidence by providing feedback and encouragement during challenging clinical experiences, thus alleviating anxiety associated with patient care [32]. In this sense, support theory would suggest that the nurse tutor for nursing students is an important resource during the educational process and can have a role in encouraging self-compassion ability among students, which in turn can affect caring self-efficacy.

Finally, tutor nurses have an educational role in facilitating nursing students' development both academically and professionally through role modelling [33]. A previous qualitative study revealed that failure

to supporting and guiding nursing students professionally may lead to high turnover and absenteeism [34]. Turnover is defined as the conscious and deliberate willingness to leave an organization [35]. Turnover intention is a process of thinking, planning, and decision-making that precedes the actual leaving. Therefore, it is important to know the intention to leave in order to intervene immediately and mitigate the actual leaving behavior. Research in the nursing field has well documented that the direct supervisor is a key resource in reducing turnover intentions [36–38], also among students [3]. In this sense, tutor support for nursing students can have a role in affecting intention to leave both the academic course and future profession, and this relationship can be buffered by self-compassion.

Aims of the study and hypotheses

The first aim of the study was to examine potential differences in the studied variables among students of the different years of the course. This is important to understand whether students perceive themselves to be more effective and more compassionate as the experience progresses; whether the level of tutor support differs among the groups; and whether particular critical issues emerge in any of the groups.

A second aim of the study was to understand the role of nurse tutor in promoting self-compassion and how it may affect outcomes such as caring self-efficacy and intention to leave. This is important to raise awareness among nurse educators and to better plan internship programs centered on tutor support and self-compassion. Based on this aim, we postulate the following hypotheses:

- 1) Tutor support positively affects student's self-compassion, which in turn mediates the relationship between tutor support and caring self-efficacy. Specifically:
 - (1a) Tutor support is positively related to self-kindness, common humanity, and mindfulness, which in turn are positively related to confidence to care and negatively related to doubts and concerns dimensions of caring efficacy.
 - (1b) Tutor support is negatively related to self-judgment, isolation, and over-identification, which in turn are negatively related to confidence to care and positively related to doubts and concerns dimensions of caring efficacy.
- 2) Self-compassion moderates the relationship between tutor support and intention to leave University and the profession. Specifically, students with higher self-compassion are less likely to leave if they perceive high levels of tutor support.

Methods

Study design and research setting

A multicenter, cross-sectional study was conducted at three Italian Universities and their branches: University of Sassari, University of Cagliari and University of Piemonte Orientale.

Currently, the study plan for the Nursing Degree in Italy lasts 3 years and requires completion of 180 European Credit Transfer System (ECTS) credits, of which 60 to be acquired in training activities aimed at developing specific professional skills (internship). At the national level, in the context of the internship, the reference figure of the nursing student is called the clinical tutor/traineeship guide. At the international level, conversely, the preceptor would appear to be the figure that mostly reflects that of a clinical tutor/internship guide [39]. The clinical tutor, in fact, is a nurse who, through the acquisition of educational strategies, critical thinking skills and communication skills, becomes responsible for the supervision of learning and accompanies the student in the practical experience.

Study participants and sampling

In Italy, the bachelor's degree in nursing is a 3-year program. However, students who are late with their exams may finish their studies beyond the prescribed time (3 years) and are called "out-of-course students". For this study, undergraduate nursing students from second and third year of program, graduating students (students who have completed all exams and are close to graduation), and out-of-course students (students taking longer than expected to graduate) from three Italian Universities and their branches were involved in an online survey.

First-year students were excluded from the recruitment process because they had not yet started their first clinical internship at the time of the study.

Instrument

The questionnaire includes validated scales from literature. A first part comprises socio-demographic data such as age, gender, nationality, marital status, course venue and year of study. The scales included in the questionnaire are described below.

Caring Efficacy Scale (CES)

The validated Italian version by Aviles Gonzalez et al. [40] of the original Caring Efficacy Scale by Coates [4] was used to analyze students' perceived ability to develop caring relationships with patients. The Italian version includes 17 items distributed in two sub-dimensions: doubts and concerns to care (DC) for patients (10 items) and confidence to care (CC) (7 items). The participants indicated their level of agree/disagree to the items using a 6-point Likert scale ranging from strongly disagree (1) to strongly agree (6). For this study, McDonald's omega (ω) coefficients (recommended by Viladrich et al. [41]) in the DC and CC domains were 0.873 and 0.868, respectively.

Tutor support

The tool included 8 items adapted from Eisenberger et al. [31] to evaluate students' perception of being supported from Tutor during the internship. Students indicated their level of agree/disagree to the items using a 5-point Likert scale ranging from 1 (never) to 5 (very often). McDonald's ω for this study was 0.946.

Intention to leave

Two items from Hom et al. [42] were adapted to investigate students' intentions to leave the course and change the profession. Students indicated their level of agree/disagree to the items using a 5-point liker scale ranging from 1 (never) to 5 (very often). The correlation coefficient for the two items was $r=0.741$.

Self-Compassion Scale-short form (SCS-SF)

The validated Italian version by Veneziani et al. [43] of the original Self-Compassion Scale by Raes et al. [44] was used to measure students' self-compassion. The short version of Self-Compassion Scale includes 12 items distributed in six-factor of two items each one: self-kindness, self-Judgment, common humanity, isolation, mindfulness, and over-identification. The items were rated on a five-point Likert scale ranging from 1 (almost never) to 5 (almost always). McDonald's ω for this study was 0.813.

Data collection procedure

Data were collected between October and December 2022 from a convenience sample via online survey. Data collection occurred after obtaining permission from the deans of the individual faculties and departments.

To ensure the accuracy and reliability of the data collection, training sessions were conducted in each faculty for a duration of 20 min. These were aimed at guiding students on the correct completion of the questionnaire and emphasizing the importance of honest and accurate answers. The participating students were informed about the objectives, methods, and procedures of the study, with a strong emphasis on voluntary participation and anonymity. Furthermore, it was emphasized that refusal to participate would have no negative consequences on their academic standing or any other aspect.

The link to the online questionnaire was provided to students at the end of the lesson, and its completion took approximately 10–15 min. The online survey was administered through the free-access Google Forms application, adjusting the settings to prevent participants from completing the online questionnaire more than once. Furthermore, in the first page of the survey, participants were asked to tick the box to confirm their informed consent and to access the survey. To deal with the problem of power imbalance that can occur in studies with students [45], the researchers tried to manage this imbalance by avoiding direct contact with students as much as possible. The questionnaire was completed by students at the end of classes taught by other faculty members. In addition, none of the researchers held a position as a nurse tutor. Finally, students were assured that they could leave the study at any time without penalty.

Ethical considerations

Faculty Directors of the participating Universities authorized the study. Currently, in Italy, no ethical approval is required by the Italian law 211/2003 for cross-sectional or observational studies, as they are not defined as medical/clinical research. This study includes perceptual data and, in this sense, an approval by a Medical Ethical Review Committee is not needed. All procedures in the study were in accordance with the ethical standards of the 1964 Helsinki Declaration and its later amendments, and with the General Data Protection Regulation (EU) 2016/679 (GDPR). Informed consent was obtained from students before to complete the questionnaire. Students were informed that their participation was voluntary and anonymous, according to Italian Data protection law (e.g., Decree n. 196/2003). In addition, students were informed that they could leave the study at any time without any adverse consequences for their university program.

Statistical analyses

Confirmatory factor analysis (CFA) was performed to test the validity of the measures. The CFA method tests the factor structure of a set of observed variables and the relationship with their latent construct. In this sense, CFA was carried out for the measures with more than two items. The factor structure was estimated using the Comparative Fit Index (CFI) [46], the Tucker Lewis Index (TLI) [47], the Standardized Root Mean Square Residual (SRMR) [48]. A good fit is reached when the critical value for CFI and TLI is 0.90 or higher, and SRMR 0.08 or lower [49]. Descriptive analysis such as frequencies, means, and standard deviations of the study variables were carried out. ANOVA test was performed to analyze potential differences among students from different years of course. Mediation and moderation analyses were carried out to investigate associations among variables and the role of predictors on the outcomes. A mediator transmits the effect of an independent variable to a dependent variable. The mediator causes variation in the dependent variable, which in turn is caused by the predictor variable. In this study, the authors assume that self-compassion mediates the relationship between tutor support and perceived caring self-efficacy.

A moderator is a variable that alters the strength of the relationship between an independent variable and a dependent variable. In this study, we assume that self-compassion moderates the relationship between tutor support and intention to leave. These effects were analyzed through PROCESS macro.

All the analyses were performed by using Jamovi statistical package version 2.4 [50].

Results

A total of 878 students completed the questionnaire (71.62 %). Specifically, 28.1 % (n=247) were enrolled in the University of Sassari, 34.4 % (n=302) in the University of Cagliari, and 37.5 % (n=329) in the University of Piemonte Orientale. A sensitivity power analysis indicated that for the study sample (n=878, $\alpha=0.05$) it is possible to detect a statistically significant main effect among the seven predictors for a very small effect size ($f=0.02$), with a statistical power of 95 % ($1 - \beta$) and 5 % type-I error rate. Power analysis was performed using G*power 3.1 software [51].

Demographic information

Most of the students (n=709, 80.8 %) were female; the average age was 24.34 (± 5.65) years. The sample included 367 (41.8 %) second year students, 292 (33.3 %) third year students, 202 (23 %) graduating students and 16 (1.8 %) out-of-course (Table 1).

Validity of the measures

The CFA results showed a good internal validity of the measures. Specifically, the results from the tutor support scale showed a good fit to the data: χ^2 (df=15)=389, CFI=0.94, TLI=0.90, and SRMR=0.05. Regarding CES scale, the results from the two-factor structure showed a good fit to the data: χ^2 (df=118)=606, CFI=0.92, TLI=0.90, and SRMR=0.04. Finally, also for self-compassion scale, the model fit was good. Specifically, for self-kindness, common humanity, and mindfulness the factor structure fitted well to the data: χ^2 (df=6)=57.6, CFI=0.96, TLI=0.89, and SRMR=0.03. For self-judgment, isolation, and over-identification, the model fit was very good: χ^2 (df=6)=25, CFI=0.99, TLI=0.98, and SRMR=0.01. All the items for each measure loaded significantly on the reference latent factors ($p<0.001$).

Descriptive characteristics of the sample: comparisons among groups

According to the ANOVA results, there was a significant difference in the perception of tutor support among students in different years of the courses. Specifically, outside prescribed time students reported lower support scores than graduating students and both second and third-year students ($F=4.32$, $df=3, 73$, $p<0.01$). Similar results were found for Isolation sense; outside prescribed time students felt more alone in the face of failure than younger students ($F=2.90$, $df=3, 72$, $p<0.05$). Finally, outside prescribed time students referred to have higher intention to leave both the course ($F=4.46$, $df=3, 71$, $p<0.01$), and profession ($F=4.54$, $df=3, 71$, $p<0.01$). It was found that students tend to think about their intention to leave the university from the third year onwards (Table 2). In particular, out-of-course students scored lower than undergraduates and second- and third-year students. Specifically, out-of-course students reported lower support scores than undergraduate students and second and third year students.

Table 1: Demographics of the sample.

Gender	
Male, n (%)	169 (19.2)
Female, n (%)	709 (80.8)
Age years, means \pm SD	
	24.34 [\pm 5.65]
Nationality	
Italian n, %	848 (96.6)
Other n, %	30 (3.4)
Marital status	
Single n, %	814 (92.7)
Married n, %	54 (6.2)
Divorced n, %	1 (0.1)
Separated n, %	8 (0.9)
Widow/er n, %	1 (0.1)
University	
University of Sassari	
Sassari n, %	247 (28.1)
University of Cagliari	
Cagliari n, %	224 (25.5)
Nuoro n, %	78 (8.9)
University of Eastern Piedmont	
Alessandria n, %	60 (6.8)
Biella n, %	56 (6.4)
Novara n, %	89 (10.1)
Verbania n, %	60 (6.8)
Vercelli n, %	64 (7.3)
Student	
Second year n, %	368 (41.9)
Third year n, %	292 (33.3)
Graduating n, %	202 (23.0)
Outside prescribed time n, %	18 (1.8)

The mediating role of self-compassion

Mediation analysis showed that the role of tutor was important to foster students' self-compassion. Specifically, tutor support during internship negatively affected over-identification ($\beta=-0.12$) which in turn was negatively associated with confidence to care ($\beta=-0.16$) (indirect effect: $\beta=0.02$, $z=2.42$, $p>0.05$). Tutor support was positively related to mindfulness capacity, which in turn positively affected confidence to care (indirect effect: $\beta=0.03$, $z=3.41$, $p>0.001$). There were no mediating effects of the other self-compassion sub-dimensions, although tutor support had a significant relationship with all the sub-dimensions, except for perceived common humanity which was marginally significant ($\beta=0.07$, $p=0.05$). There was evidence of a direct and positive relationship between tutor support and confidence to care ($\beta=0.12$) (Table 3 and Figure 1).

Similar results were found for doubts and concerns of caring self-efficacy sub-dimension. Precisely, we found indirect effects of both over-identified self-compassion and mindfulness on the relationship between tutor support and doubts and concerns. Specifically, tutor support negatively affected over-identification ($\beta=-0.12$) which in turn positively affected doubts and concerns ($\beta=0.21$) (indirect effect: $\beta=-0.03$, $z=-2.75$, $p>0.01$). Tutor

Table 2: Anova results: differences among students from different years of course for the study variables.

Variable	Student	n	Mean	SD	SE	F	DF	p-Value
Caring self-efficacy: confidence to care	Second year	368	5.07	0.745	0.0388	1.049	3, 83.3	0.375
	Third year	292	5.15	0.672	0.0393			
	Graduating	202	5.12	0.812	0.0571			
	Outside prescribed time	16	5.03	0.301	0.0752			
Caring self-efficacy: doubts and concerns	Second year	368	2.18	0.869	0.0453	1.033	3, 73.2	0.383
	Third year	292	2.27	0.905	0.0530			
	Graduating	202	2.31	0.970	0.0683			
	Outside prescribed time	16	2.21	0.698	0.1746			
Tutor support	Second year	368	3.82	0.956	0.0498	4.318	3, 72.8	0.007
	Third year	292	3.79	1.034	0.0605			
	Graduating	202	4.01	0.893	0.0628			
	Outside prescribed time	16	3.39	0.820	0.2050			
Self-kindness	Second year	368	3.29	0.911	0.0475	1.722	3, 72.0	0.170
	Third year	292	3.22	0.935	0.0547			
	Graduating	202	3.42	0.917	0.0645			
	Outside prescribed time	16	3.31	0.873	0.2183			
Self-judgment	Second year	368	2.93	1.166	0.0608	0.973	3, 71.2	0.410
	Third year	292	2.90	1.161	0.0679			
	Graduating	202	2.98	1.112	0.0783			
	Outside prescribed time	16	3.47	1.360	0.3399			
Common humanity	Second year	368	2.93	0.981	0.0512	0.795	3, 71.8	0.500
	Third year	292	2.98	0.935	0.0547			
	Graduating	202	3.05	0.907	0.0638			
	Outside prescribed time	16	2.91	0.970	0.2425			
Isolation	Second year	368	2.71	1.075	0.0561	2.902	3, 71.7	0.041
	Third year	292	2.87	1.135	0.0664			
	Graduating	202	2.84	1.090	0.0767			
	Outside prescribed time	16	3.41	1.114	0.2785			
Mindfulness	Second year	368	3.72	0.847	0.0442	0.875	3, 73.0	0.458
	Third year	292	3.83	0.834	0.0488			
	Graduating	202	3.79	0.777	0.0547			
	Outside prescribed time	16	3.84	0.676	0.1691			
Over-identified	Second year	368	2.91	1.086	0.0566	2.456	3, 71.6	0.070
	Third year	292	3.00	1.133	0.0663			
	Graduating	202	2.98	1.073	0.0755			
	Outside prescribed time	16	3.69	1.153	0.2882			
Total self-compassion	Second year	368	3.23	0.644	0.0336	1.305	3, 71.8	0.280
	Third year	292	3.21	0.667	0.0391			
	Graduating	202	3.24	0.663	0.0467			
	Outside prescribed time	16	2.92	0.644	0.1610			
Intention to leave university course	Second year	368	1.70	0.981	0.0511	4.456	3, 70.7	0.006
	Third year	292	1.93	1.127	0.0660			
	Graduating	202	1.73	1.079	0.0759			
	Outside prescribed time	16	2.56	1.365	0.3412			
Intention to leave profession	Second year	368	1.79	1.010	0.0526	4.541	3, 70.8	0.006
	Third year	292	1.99	1.158	0.0677			
	Graduating	202	1.93	1.167	0.0821			
	Outside prescribed time	16	2.81	1.328	0.3319			

support was positively related to mindfulness ($\beta=0.18$), which in turn was negatively associated with doubts and concerns ($\beta=-0.15$) (indirect effect: $\beta=-0.03$, $z=-3.26$, $p>0.001$). There was no indirect effect for the other sub-dimension of caring self-efficacy. Tutor support was not significantly related to doubts and concerns ($\beta=-0.06$, $p=0.06$) (Table 4 and Figure 2).

Table 3: Mediation analysis of self-compassion variables on the relationship between tutor support and caring self-efficacy (confidence to care): indirect and total effects.

Type	Effect	Estimate	SE	95 % C.I. (a)		β	z	p-Value	
				Lower	Upper				
Indirect	TutorSup \Rightarrow self-kindness \Rightarrow CoCare	-0.00675	0.00409	-0.01477	0.00127	-0.00895	-1.650	0.099	
	TutorSup \Rightarrow self-judgment \Rightarrow CoCare	-0.00348	0.00430	-0.01191	0.00495	-0.00462	-0.809	0.418	
	TutorSup \Rightarrow CommonHumanity \Rightarrow CoCare	0.00119	0.00193	-0.00260	0.00497	0.00158	0.615	0.538	
	TutorSup \Rightarrow isolation \Rightarrow CoCare	0.01077	0.00627	-0.00152	0.02305	0.01428	1.717	0.086	
	TutorSup \Rightarrow mindfulness \Rightarrow CoCare	0.02284	0.00670	0.00971	0.03597	0.03029	3.409	<0.001	
	TutorSup \Rightarrow over-identified \Rightarrow CoCare	0.01502	0.00624	0.00279	0.02725	0.01992	2.407	0.016	
Component	TutorSup \Rightarrow self-kindness	0.10692	0.03181	0.04456	0.16927	0.11270	3.361	<0.001	
	Self-kindness \Rightarrow CoCare	-0.06314	0.03334	-0.12848	0.00220	-0.07944	-1.894	0.058	
	TutorSup \Rightarrow self-judgment	-0.14530	0.03989	-0.22348	-0.06712	-0.12202	-3.643	<0.001	
	Self-judgment \Rightarrow CoCare	0.02396	0.02887	-0.03262	0.08055	0.03784	0.830	0.407	
	TutorSup \Rightarrow CommonHumanity	0.06422	0.03290	-2.62e-4	0.12870	0.06573	1.952	0.051	
	CommonHumanity \Rightarrow CoCare	0.01850	0.02853	-0.03743	0.07442	0.02396	0.648	0.517	
	TutorSup \Rightarrow isolation	-0.18093	0.03786	-0.25514	-0.10673	-0.15924	-4.779	<0.001	
	Isolation \Rightarrow CoCare	-0.05950	0.03233	-0.12287	0.00387	-0.08966	-1.840	0.066	
	TutorSup \Rightarrow mindfulness	0.15411	0.02817	0.09890	0.20932	0.18157	5.471	<0.001	
	Mindfulness \Rightarrow CoCare	0.14820	0.03401	0.08155	0.21486	0.16682	4.358	<0.001	
	TutorSup \Rightarrow over-identified	-0.13763	0.03806	-0.21224	-0.06303	-0.12113	-3.616	<0.001	
	Over-identified \Rightarrow CoCare	-0.10914	0.03383	-0.17545	-0.04282	-0.16446	-3.226	0.001	
	Direct	TutorSup \Rightarrow CoCare	0.08844	0.02480	0.03985	0.13704	0.11729	3.567	<0.001
	Total	TutorSup \Rightarrow CoCare	0.12802	0.02509	0.07884	0.17721	0.16978	5.102	<0.001

Confidence intervals computed with method: standard (delta method). Betas are completely standardized effect sizes. TutorSup, tutor support; CoCare, confidence to care.

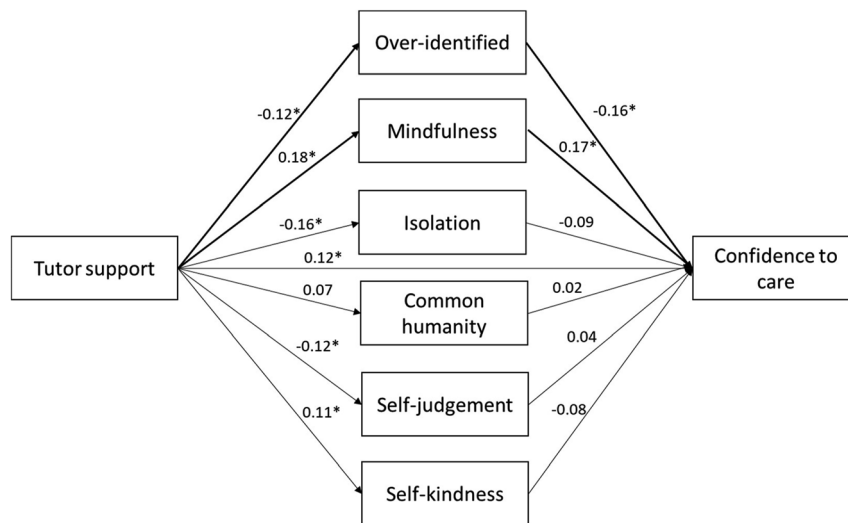


Figure 1: Path model of mediation analysis. Dependent variable is confidence to care. Arrows in bold denote significant mediation effects. * $p < 0.001$.

The moderating role of self-compassion

An interaction effect between students' tutor support and self-compassion was found in the association with intent to leave the nurse profession (interaction effect=0.12, $p < 0.05$). Specifically, at high levels of tutor support corresponded low levels of intention to leave the profession and this relationship was strongest when levels of self-compassion were high (Simple slope estimate=-0.11, $p < 0.05$). Vice versa, when perceived tutor support was low students' intention to leave increased and this relationship was even strongest at low levels of

Table 4: Mediation analysis of self-compassion variables on the relationship between tutor support and caring self-efficacy (doubts and concerns): indirect and total effects.

Type	Effect	Estimate	SE	95 % C.I. (a)		β	z	p-Value	
				Lower	Upper				
Indirect	TutorSup \Rightarrow self-kindness \Rightarrow DoConc	-4.84e-4	0.00431	-0.00892	0.00795	-5.21e-4	-0.113	0.910	
	TutorSup \Rightarrow self-judgment \Rightarrow DoConc	-0.00536	0.00527	-0.01570	0.00497	-0.00577	-1.017	0.309	
	TutorSup \Rightarrow CommonHumanity \Rightarrow DoConc	0.00225	0.00249	-0.00264	0.00713	0.00242	0.901	0.368	
	TutorSup \Rightarrow isolation \Rightarrow DoConc	-0.00809	0.00726	-0.02233	0.00614	-0.00871	-1.115	0.265	
	TutorSup \Rightarrow mindfulness \Rightarrow DoConc	-0.02565	0.00787	-0.04108	-0.01021	-0.02759	-3.257	0.001	
	TutorSup \Rightarrow over-identified \Rightarrow DoConc	-0.02376	0.00865	-0.04071	-0.00681	-0.02556	-2.748	0.006	
Component	TutorSup \Rightarrow self-kindness	0.10692	0.03181	0.04456	0.16927	0.11270	3.361	<0.001	
	Self-kindness \Rightarrow DoConc	-0.00453	0.04025	-0.08341	0.07435	-0.00462	-0.113	0.910	
	TutorSup \Rightarrow self-judgment	-0.14530	0.03989	-0.22348	-0.06712	-0.12202	-3.643	<0.001	
	Self-judgment \Rightarrow DoConc	0.03692	0.03485	-0.03139	0.10523	0.04729	1.059	0.289	
	TutorSup \Rightarrow CommonHumanity	0.06422	0.03290	-2.62e-4	0.12870	0.06573	1.952	0.051	
	CommonHumanity \Rightarrow DoConc	0.03498	0.03445	-0.03253	0.10249	0.03676	1.016	0.310	
	TutorSup \Rightarrow isolation	-0.18093	0.03786	-0.25514	-0.10673	-0.15924	-4.779	<0.001	
	Isolation \Rightarrow DoConc	0.04474	0.03903	-0.03176	0.12124	0.05468	1.146	0.252	
	TutorSup \Rightarrow mindfulness	0.15411	0.02817	0.09890	0.20932	0.18157	5.471	<0.001	
	Mindfulness \Rightarrow DoConc	-0.16642	0.04105	-0.24689	-0.08596	-0.15194	-4.054	<0.001	
	TutorSup \Rightarrow over-identified	-0.13763	0.03806	-0.21224	-0.06303	-0.12113	-3.616	<0.001	
	Over-identified \Rightarrow DoConc	0.17263	0.04084	0.09257	0.25268	0.21099	4.227	<0.001	
	Direct	TutorSup \Rightarrow DoConc	-0.05551	0.02993	-0.11418	0.00316	-0.05971	-1.855	0.064
	Total	TutorSup \Rightarrow DoConc	-0.11661	0.03115	-0.17766	-0.05557	-0.12543	-3.744	<0.001

Confidence intervals computed with method: standard (delta method). Betas are completely standardized effect sizes. TutorSup, tutor support; DoConc, doubts and concerns.

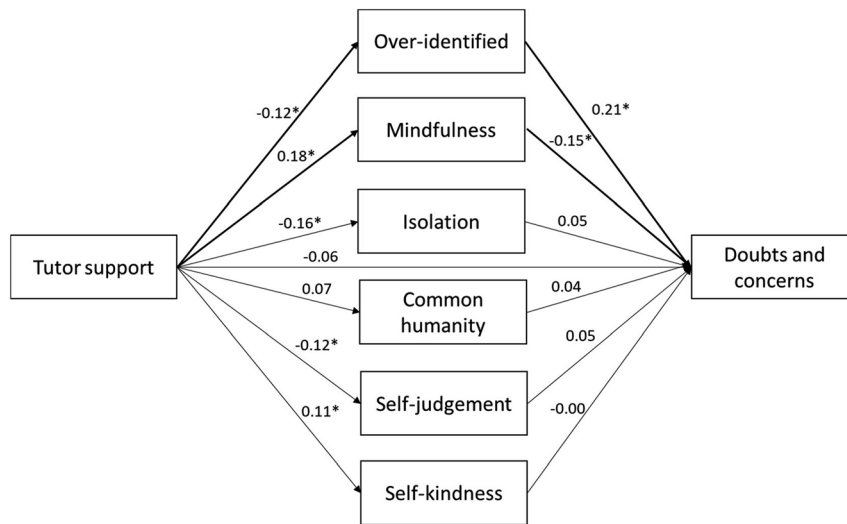


Figure 2: Path model of mediation analysis. Dependent variable is doubts and concerns. Arrows in bold denote significant mediation effects. *p<0.001.

self-compassion (Simple slope estimate=-0.27, p<0.001) (Table 5 and Figure 3). There is no interaction between tutor support and self-compassion in affecting intention to leave the university course (interaction effect=0.10, CI -0.01-0.20, p=0.067).

Table 5: Moderating effect of self-compassion on tutor support-intention to leave relationship.

	Estimate	SE	95 % confidence interval		Z	p-Value
			Lower	Upper		
Tutor support	-0.192	0.036	-0.263	-0.122	-5.33	<0.001
Self-compassion	-0.484	0.053	-0.589	-0.380	-9.12	<0.001
Tutor support * self-compassion	0.121	0.055	0.014	0.228	2.21	0.027
Simple slope estimates ^a						
Average	-0.192	0.036	-0.263	-0.121	-5.32	<0.001
Low (-1 SD)	-0.272	0.049	-0.368	-0.176	-5.55	<0.001
High (+1 SD)	-0.113	0.053	-0.217	-0.009	-2.13	0.034

^aShows the effect of the predictor (tutor support) on the dependent variable (intention to leave the future nurse profession) at different levels of the moderator (self-compassion).

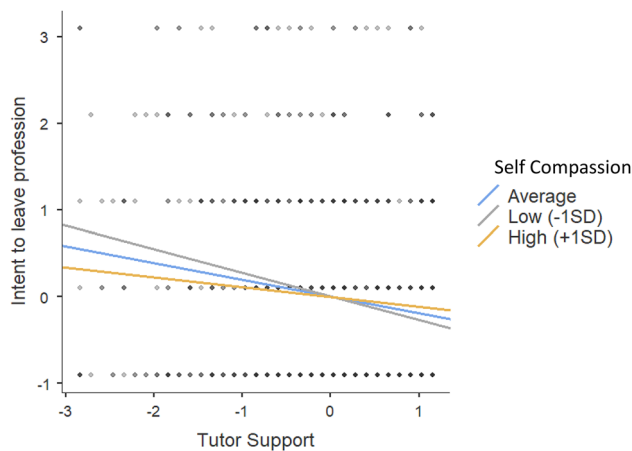


Figure 3: Simple slope plot: moderating effect of students' self-compassion in the relationship between tutor support and intention to leave the nurse profession.

Discussion

In this study we examined potential differences in the studied variables among students of the different years of the course. Moreover, we examined the roles of both students' self-compassion and internship tutor support in the relationship with caring self-efficacy and intention to leave both the course and the future profession.

The findings revealed that there was no difference among students enrolled in the different course years for most of the studied variables. However, there were differences in the perceptions of tutor support and feelings of isolation vs. common humanity, where outside prescribed time students reported lower levels of support and higher levels of loneliness in coping with failure than graduating students and both second and third year students.

These findings are in line with recent studies showing that isolation and lack of support can have a negative impact on students' caring self-efficacy and their overall university experience [2, 29, 52]. Moreover, outside prescribed time students reported higher intentions to leave both the course and the future profession. This finding supports previous studies that associated low tutor support and high sense of isolation to high student dropout rates [53–55]. These results highlight the need for targeted interventions to support this group of students, as their intention to drop out may be influenced by their negative experiences and perceptions [56–58]. In this study, high levels of intention to leave were found for the students attending the third year of the university program. This can be due to an augmented academic workload, impending transition to professional life, or

disillusionment with the chosen career that may increase perceived stress and desire to leave the course or change the profession [59–62].

Our results highlight the important mediating role of self-compassion in the relationship between tutor support and students' caring self-efficacy. Specifically, tutor support had a direct and positive relationship with mindfulness, self-kindness, and common humanity, and an inverse association with the negative dimensions of self-compassion (over-identification, self-judgement, and isolation). However, although tutor support appears to play a role on all the facets of self-compassion, only two dimensions of this variable (mindfulness vs. over-identification) are significantly associated with both the dimensions of caring self-efficacy, with inverse effects. Specifically, the results show that tutor support is associated with an increased mindfulness that in turn increases confidence to care and decreases doubts and concerns. This suggests that tutors can improve students' caring self-efficacy by helping them to be mindful of their experiences in a nonjudgmental way.

Thus, the finding lends support to the available literature by emphasizing the beneficial effects of mindfulness on caring self-efficacy [63–65]. Conversely, tutor support is associated with a decreased over-identification that in turn increases doubts and concerns and decreases confidence to care. This result is consistent with previous research suggesting that a key mechanism through which tutor support promotes caring self-efficacy is reducing over-identification [66, 67], namely feeling inadequate and becoming obsessed with the idea that nothing is going well. Overall, these findings are in line with recent studies that emphasize the importance of tutor support in promoting self-compassion and increasing caring self-efficacy among students [8, 30].

In addition, we found a direct and positive relationship between tutor support and confidence to care, thus suggesting that tutor support, in addition to promoting self-compassion also has additional and independent effects on students' caring self-efficacy [57].

Furthermore, our findings suggest that both tutor support and self-compassion have important implications for nursing students' intentions to leave. Specifically, high tutor support contributes to reduced intention to leave the future profession when the levels of self-compassion are high. This is in line with previous studies indicating the protective role of self-compassion and the beneficial role of supportive educational environments [8] in reducing dropout rates in nursing programs [68]. Conversely, low levels of tutor support correspond high levels of intention to leave, and this relationship is stronger when self-compassion is low. This highlights the importance of promoting self-compassion ability in nursing students and providing supportive educational environments [69].

Limitations

This research has some limitations. First, the sample included students from only three Italian universities. This limits the generalizability of the results to other contexts, thus reducing the external validity of the study. Second, the use of a self-reported questionnaire could introduce a social desirability bias [70], which could affect the validity of the results. Also, the use of an online survey may have excluded students who do not have constant access to Internet or those who have compatibility problems with their electronic device. Finally, as this was a cross-sectional research study, it was not possible to determine causal effects among the variables. Longitudinal studies can be conducted in the future to analyze the influence of tutor support on self-compassion and how these predictors impact perceived caring self-efficacy and turnover intention.

Implications for international audience

Our findings make an additional value to the literature by emphasizing the roles of self-compassion and supportive educational contexts in reducing intention to leave the university course and future profession and strengthening the perception of caring self-efficacy.

Nursing education programs should implement workshops and briefings during the internship to develop self-compassion ability to improve emotion management and make students aware that failures are part of their training. This can foster perceived caring self-efficacy in students [1]. Also, training interventions for nurse tutors sensitizing them to the importance to offering continuing support can enhance students' positive experience and reduce turnover intentions [57]. Further studies are needed to verify whether these findings are generalizable to different university contexts and to further explore the role of the other dimensions of self-compassion.

Conclusions

In conclusion, supportive tutors are desirable in university settings to promote self-compassion in students and improve perceptions of caring self-efficacy. In addition, self-compassion interacts with tutor support in decreasing the desire to leave the future profession, thus highlighting a protective role. The direct relationship between tutor support and students' confidence to care underscores the important role that tutors play on students' academic and career aspirations.

Acknowledgments: The authors gratefully thank nursing students who by their participation made this study possible.

Research ethics: Not applicable.

Informed consent: Informed consent was obtained from all individuals included in this study, or their legal guardians or wards.

Author contributions: Cesar Iván Avilés González: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Roles/Writing - original draft, Writing - review & editing. Felice Curcio: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Roles/Writing - original draft, Writing - review & editing. Alberto Dal Molin: Roles/Writing - original draft, Writing - review & editing. Monica Casalino: Investigation, Data curation. Gabriele Finco: Roles/Writing - original draft, Writing - review & editing. Maura Galletta: Conceptualization, Data curation, Formal analysis, Methodology, Supervision, Validation, Visualization, Roles/Writing - original draft, Writing - review & editing. All authors have accepted responsibility for the entire content of this manuscript and approved its submission.

Use of Large Language Models, AI and Machine Learning Tools: None declared.

Conflict of interest: The authors state no conflict of interest.

Research funding: None declared.

Data availability: The datasets generated during and/or analyses during the current study are available from the corresponding author on reasonable request.

References

1. Moeini M, Sarikhani-Khorrami E, Ghamarani A. The effects of self-compassion education on the self-efficacy of the clinical performance of nursing students. *Iran J Nurs Midwifery Res* 2019;24:469–71.
2. George TP, DeCristofaro C, Murphy PF. Self-efficacy and concerns of nursing students regarding clinical experiences. *Nurse Educ Today* 2020;90:104401.
3. Canzan F, Saiani L, Mezzalana E, Allegrini E, Caliaro A, Ambrosi E. Why do nursing students leave bachelor program? Findings from a qualitative descriptive study. *BMC Nurs* 2022;21:71.
4. Coates CJ. The Caring Efficacy Scale: nurses' self-reports of caring in practice settings. *Adv Pract Nurs Q* 1997;3:53–9.
5. Reid C, Courtney M, Anderson D, Hurst C. The 'caring experience': testing the psychometric properties of the Caring Efficacy Scale. *Int J Nurs Pract* 2015;21:904–12.
6. Aviles Gonzalez CI, Galletta M, Chessa E, Melis P, Contu P, Jimenez Herrera MF. Caring efficacy: nurses' perceptions and relationships with work-related factors. *Acta Biomed Atenei Parmensis* 2019;90:74–82.
7. Su JJ, Masika GM, Paguio JT, Redding SR. Defining compassionate nursing care. *Nurs Ethics* 2020;27:480–93.

8. Kotera Y, Cockerill V, Chircop J, Kaluzeviciute G, Dyson S. Predicting self-compassion in UK nursing students: relationships with resilience, engagement, motivation, and mental wellbeing. *Nurse Educ Pract* 2021;51:102989.
9. Neff K. Self-compassion: an alternative conceptualization of a healthy attitude toward oneself. *Self Identity* 2003;2:85–101.
10. Gibson DM, Dollarhide CT, Moss JM. Professional identity development: a grounded theory of transformational tasks of new counselors. *Couns Educ Superv* 2010;50:21–38.
11. Thériault A, Gazzola N. Therapist feelings of incompetence and suboptimal processes in psychotherapy. *J Contemp Psychother* 2010;40:233–43.
12. Chou HY, Hecker R, Martin A. Predicting nurses' well-being from job demands and resources: a cross-sectional study of emotional labour. *J Nurs Manag* 2012;20:502–11.
13. Kinman G, Leggetter S. Emotional labour and wellbeing: what protects nurses? *Healthcare* 2016;4:89.
14. Duarte J, Pinto-Gouveia J, Cruz B. Relationships between nurses' empathy, self-compassion and dimensions of professional quality of life: a cross-sectional study. *Int J Nurs Stud* 2016;60:1–11.
15. Wiklund Gustin L, Wagner L. The butterfly effect of caring – clinical nursing teachers' understanding of self-compassion as a source to compassionate care. *Scand J Caring Sci* 2013;27:175–83.
16. Tran MAQ, Khoury B, Chau NNT, Van Pham M, Dang ATN, Ngo TV, et al. The role of self-compassion on psychological well-being and life satisfaction of Vietnamese undergraduate students during the COVID-19 pandemic: hope as a mediator. *J Ration Emot Cogn Behav Ther* 2024;42:35–53.
17. Birnie K, Speca M, Carlson LE. Exploring self-compassion and empathy in the context of mindfulness-based stress reduction (MBSR). *Stress Health* 2010;26:359–71.
18. Hevezi JA. Evaluation of a meditation intervention to reduce the effects of stressors associated with compassion fatigue among nurses. *J Holist Nurs* 2016;34:343–50.
19. Soysa CK, Wilcomb CJ. Mindfulness, self-compassion, self-efficacy, and gender as predictors of depression, anxiety, stress, and well-being. *Mindfulness* 2015;6:217–26.
20. Lee Y, Seomun G. Role of compassion competence among clinical nurses in professional quality of life. *Int Nurs Rev* 2016;63:381–7.
21. Felicilda-Reynaldo RFD, Cruz JP, Bigley L, Adams K. Baccalaureate student nurses' study habits prior to admission to nursing program: a descriptive qualitative study. *Nurse Educ Today* 2017;53:61–6.
22. Labrague LJ, McEnroe-Petitte DM, Papatathanasiou IV, Edet OB, Arulappan J. Impact of instructors' caring on students' perceptions of their own caring behaviors. *J Nurs Scholarsh* 2015;47:338–46.
23. Ebrahimi H, Hassankhani H, Negarandeh R, Gillespie M, Azizi A. Emotional support for new graduated nurses in clinical setting: a qualitative study. *J Caring Sci* 2016;5:11–21.
24. European Commission: Directorate-General for Education, Youth, Sport and Culture, Boudard E, Zelvys R, Kanep H, Rosa M, Bitusikova A, et al. Dropout and completion in higher education in Europe : annex 2: short country reports. Publications Office; 2015. <https://doi.org/10.2766/263798>.
25. Harvey G, Carter-Snell C, Aalen D. Clinical related critical incidents in undergraduate nursing students: a scoping review. *Nurs Forum* 2022;57:461–8.
26. Harvey G, Carter-Snell C. Exploring the meaning of critical incident stress experienced by undergraduate nursing students: a hermeneutic study. *Nurse Educ Pract* 2022;65:103465.
27. Everly GS, Jr., Flannery RB Jr., Mitchell JT. Critical incident stress management (CISM): a review of the literature. *Aggress Violent Behav* 2000;5:23–40.
28. Irwin P, Magee D, Weiley S, Teakel S, Linden K. Improving student success and retention in first-year nursing through embedded tutor support. *Nurse Educ Today* 2024;136:106134.
29. Zulu BM, du Plessis E, Koen MP. Experiences of nursing students regarding clinical placement and support in primary healthcare clinics: strengthening resilience. *Health SA* 2021;26:1615.
30. Alquwez N, Cruz JP, Al Thobaity A, Almazan J, Alabdulaziz H, Alshammari F, et al. Self-compassion influences the caring behaviour and compassion competence among Saudi nursing students: a multi-university study. *Nurs Open* 2021;8:2732–42.
31. Eisenberger R, Huntington R, Hutchison S, Sowa D. Perceived organizational support. *J Appl Psychol* 1986;71:500–7.
32. Rowbotham M, Owen RM. The effect of clinical nursing instructors on student self-efficacy. *Nurse Educ Pract* 2015;15:561–6.
33. Bond M, Holland S. Skills of clinical supervision for nurses: a practical guide for supervisees, clinical supervisors and managers. Maidenhead, Berkshire, United Kingdom: Open University Press; 1998.
34. Rikhotso SR, Williams MJS, de Wet G. Student nurses' perceptions of guidance and support in rural hospitals. *Curationis* 2014;37:e1–6.
35. Hom PW, Lee TW, Shaw JD, Hausknecht JP. One hundred years of employee turnover theory and research. *J Appl Psychol* 2017;102:530–45.
36. Alshutwi S. The influence of supervisor support on nurses' turnover intention. *Health Syst Policy Res* 2017;4:1–6.
37. Hognestad Haaland G, Olsen E, Mikkelsen A. The association between supervisor support and ethical dilemmas on Nurses' intention to leave: the mediating role of the meaning of work. *J Nurs Manag* 2021;29:286–93.
38. Xiaolong T, Gull N, Asghar M, Sarfraz M, Jianmin Z. Does perceived supervisor support reduce turnover intention? The mediating effects of work engagement among healthcare professionals. *Work* 2023;74:1001–13.
39. La Sala R, Coppola D, Ruozi C, Martelli M, Lo Coco A, Marchini R, et al. Competence assessment of the clinical tutor: a multicentric observational study. *Acta Biomed Atenei Parmensis* 2021;92:e2021016.

40. Aviles Gonzalez CI, Galletta M, Melis P, Contu P, Watson J, Finco G, et al. Cultural adaptation and psychometric validation of the Caring Efficacy scale in a sample of Italian nurses. *PLoS One* 2019;23:e0217106.
41. Viladrich C, Angulo-Brunet A, Doval E. A journey around alpha and omega to estimate internal consistency reliability. *An Psicolog* 2017;33:755–82.
42. Hom PW, Griffeth RW, Sellaro CL. The validity of mobley's (1977) model of employee turnover. *Organ Behav Hum Perform* 1984;34:141–74.
43. Veneziani CA, Fuochi G, Voci A. Self-compassion as a healthy attitude toward the self: factorial and construct validity in an Italian sample. *Pers Individ Differ* 2017;119:60–8.
44. Raes F, Pommier E, Neff KD, Van Gucht D. Construction and factorial validation of a short form of the Self-Compassion Scale. *Clin Psychol Psychother* 2011;18:250–5.
45. Ferguson LM, Myrick F, Yonge O. Ethically involving students in faculty research. *Nurse Educ Today* 2006;26:705–11.
46. Bentler PM. Comparative fit indexes in structural models. *Psychol Bull* 1990;107:238–46.
47. Tucker LR, Lewis C. A reliability coefficient for maximum likelihood factor analysis. *Psychometrika* 1973;38:1–10.
48. Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Struct Equ Model Multidiscip J* 1999;6:1–55.
49. Kline RB. Principles and practice of structural equation modeling, 2nd ed. New York: Guilford; 2005.
50. The jamovi project. jamovi. (Version 2.4) [computer software]; 2023. Available from: <https://www.jamovi.org>.
51. Faul F, Erdfelder E, Buchner A, Lang AG. Statistical power analyses using G* Power 3.1: tests for correlation and regression analyses. *Behav Res Methods* 2009;41:1149–60.
52. Soerensen J, Nielsen DS, Pihl GT. It's a hard process—nursing students' lived experiences leading to dropping out of their education; a qualitative study. *Nurse Educ Today* 2023;122:105724.
53. Christie H, Munro M, Fisher T. Leaving university early: exploring the differences between continuing and non-continuing students. *Stud High Educ* 2004;29:617–36.
54. Johnson ZD, LaBelle S. College students' intent to persist with their education: the direct and indirect effects of classroom confirmation and academic self-efficacy. *West J Commun* 2023;87:451–70.
55. Tinto V. Leaving college: rethinking the causes and cures of student attrition, 2nd ed. 5801 South Ellis Avenue, Chicago, IL 60637 (\$24): University of Chicago Press; 1993.
56. Curcio F, González CIA, Zicchi M, Sole G, Finco G, Ez zinabi O, et al. COVID-19 pandemic impact on undergraduate nursing students: a cross-sectional study. *Int J Environ Res Publ Health* 2022;19:14.
57. Gregory LR, Ramjan LM, Villarosa AR, Rojo J, Raymond D, Salamanson Y. Does self-efficacy for medication administration predict clinical skill performance in first-year nursing students? An inception-cohort study. *Teach Learn Nurs* 2022;17:77–83.
58. Wilcox P, Winn S, Fyvie-Gauld M. 'It was nothing to do with the university, it was just the people': the role of social support in the first-year experience of higher education. *Stud High Educ* 2005;30:707–22.
59. Dries KJ. Variables impacting program completion of readmitted associate degree nursing students. *Nurse Educ* 2020;45:35–8.
60. Liu X-L, Wang T, Bressington D, Nic Giolla Easpig B, Wikander L, Tan J-YB. Factors influencing retention among regional, rural and remote undergraduate nursing students in Australia: a systematic review of current research evidence. *Int J Environ Res Publ Health* 2023;20:3983.
61. Shelton EN. A model of nursing student retention. *Int J Nurs Educ Scholarship* 2012;9:6.
62. Smith-Wacholz HC, Wetmore JP, Conway C, McCarley M. Retention of nursing students: an integrative review. *Nurs Educ Perspect* 2019;40:328–32.
63. Sundling V, Sundler AJ, Holmström IK, Kristensen DV, Eide H. Mindfulness predicts student nurses' communication self-efficacy: a cross-national comparative study. *Patient Educ Counsel* 2017;100:1558–63.
64. Xu T, Zhu P, Ji Q, Wang W, Qian M, Shi G. Psychological distress and academic self-efficacy of nursing undergraduates under the normalization of COVID-19: multiple mediating roles of social support and mindfulness. *BMC Med Educ* 2023;23:348.
65. Rayan A. Mindfulness, self-efficacy, and stress among final-year nursing students. *J Psychosoc Nurs Ment Health Serv* 2019;57:49–55.
66. Alabdulaziz H, Alquwez N, Almazan JU, Albougami A, Alshammari F, Cruz JP. The Self-Compassion Scale Arabic version for baccalaureate nursing students: a validation study. *Nurse Educ Today* 2020;89:104420.
67. Galiana L, Guillén M, Pades A, Flowers SL, Vidal-Blanco G, Sansó N. The Spanish version of the state self-compassion scale-long form (SSCS-L): a study of its validity and reliability in a sample of nursing students. *Int J Environ Res Publ Health* 2022;19:10174.
68. Edge D, Gladstone N. Exploring support strategies for improving nursing student retention. *Nurs Stand* 2022;37:28–33.
69. Kinchen E, Loerzel V, Portoghese T. Yoga and perceived stress, self-compassion, and quality of life in undergraduate nursing students. *J Educ Health Promot* 2020;9:292.
70. Holden RR, Passey J. Social desirability. In: *Handbook of individual differences in social behavior*. The Guilford Press; 2009:441–54 pp.