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Research

Coping and social support in clinical nursing practice used by nursing students: A mixed-methods study

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ABSTRACT

Aim: To explore the coping strategies employed by nursing students during clinical practice and to examine their satisfaction with the social support received, as well as to identify the key dimensions of that support.
Background: Nursing students have high levels of anxiety and stress in clinical practice due to clinical setting, patient complexity and lack of practical and theoretical knowledge among others. Students have been found to use coping strategies and social support to mitigate stress.
Methods: We used a mixed methods approach with an explanatory sequential design. Coping behavior inventory and the satisfaction with social support scale were applied to students from all years followed by interviews to family members and close contacts of 4th year nursing students.
Results: "Problem-solving" was the most common coping strategy, and students reported satisfaction with social support. Pshycological support was highlighted in interviews performed mostly to female family members and close contacts.
Conclusions: Our findings emphasize the need for academic institutions to enhance student support networks and implement mental health initiatives to foster well-being and resilience during clinical practice.

Background

The nursing curriculum includes periods of clinical practice in settings such as hospitals (e.g., inpatient units) and community-based centers, providing students with early exposure to professional demands and opportunities to develop essential skills. Nursing students have higher levels of anxiety than other students in higher education (Yan et al., 2025), which is exacerbated in clinical practice as opposed to theoretical classes (Lei et al., 2015). Causes of anxiety include theoretical burden, clinical setting, patient complexity, lack of practice skills (Ghattas & El-Ashry, 2024), fear of the unknown, lack of practical and theoretical knowledge, and communication challenges with nurses, colleagues, and patients and their families (Rafati et al., 2017). Academic performance can be adversely affected by the experience of anxiety and stress (Dogham et al., 2024) as well as physical and mental health (Lei et al., 2015; Seshabela & Shakwane, 2024) which in turn can interfere with students' ability to interact in a safe and compassionate manner (Cornine, 2020).

The concept of coping can be defined as a "dynamic, behavioral and cognitive effort in controlling internal and external stress" (Rafati et al., 2017, p. 3). To deal with stress induced by clinical practice nursing students use coping strategies and social support as resources (Loureiro et al., 2024). Coping strategies are commonly evaluated using instruments that classify the types of strategies employed (Edú–valsania et al., 2022). Among the coping strategies, problem-solving strategies type seem to be the most used by nursing students in the clinical practice context (Loureiro et al., 2024). Sarason et al. (1983, p. 127) defined social support as the "existence or the availability of people on whom we can rely, people who let us know that they care, value, and love you". Among nursing students, the presence of social support predicts resilience (Hamaideh et al., 2024) and acts a protective factor (Selak et al., 2024).

Nursing students should be supported by both the educational institutions in which they study and the clinical institutions in which clinical practice takes place in order to meet these challenges in an effective manner (Aryuwat et al., 2023). The literature also identifies

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family and other close people as sources of support (Labrague et al., 2018). Nevertheless, the nature of the support and who is providing remains unclear. There are very few studies on this topic and the need for a better understanding of this issue is highlighted in literature (Rafati et al., 2017).

Methods

The aim of this study is to explore the coping strategies employed by nursing students during clinical practice and to examine their satisfaction with the social support received, as well as to identify the key dimensions of that support.

The following research questions were formulated:

1) What are the coping strategies used by nursing students during clinical practice?
2) Are students satisfied with the social support provided during clinical practice?
3) What are the dimensions of social support provided to nursing students?

Study design

For this study we used a mixed methods approach with an explanatory sequential design (Creswell & Creswell, 2022). The study was conducted in two phases. In phase 1, quantitative methods were used to allow us to respond to the first and second research questions. For phase 2, which responded to our third research question, we felt that qualitative methods would be more appropriate as they would provide further explanation to the quantitative data, namely on the dimensions of social support provided to nursing students. To enhance clarity and coherence throughout this manuscript, the Good Reporting of a Mixed Methods Study (GRAMMS) checklist (O'Cathain et al., 2008) was employed (Supplemental File 1).

Phase 1

In Phase 1 we performed a cross-sectional study that employed a quantitative approach, in which we used instruments to assess both the coping strategies employed by students and their satisfaction with social support. For reporting this phase, we adhered to the STROBE Statement guidelines for cross-sectional studies (von Elm et al., 2008) to ensure the study's methodology and results were transparently presented.

Setting

The study was conducted at a private nursing school in Portugal during the 2022/2023 academic year. In the national context, the nursing program lasts for four years, during which students participate in clinical practice. At our institution, students begin their clinical practice in the first year.

The project was presented to students by a research team member. Students were then contacted via email at the end of their clinical practice. In phase one we used self-report instruments for data collection. A link was provided to all students (4 years) in June 2023 and was open for completion for one month. Participation was voluntary and no personal information that could directly identify the student was requested.

Participants

The population comprised all nursing students enrolled in clinical practice during the 2022/2023 academic year (n = 268). Students from all academic years who had completed the clinical nursing curricular unit and agreed to participate were included. Those enrolled in classes but not attending the clinical practice unit were excluded.

Data measurements and variables

Data on socio-demographic characteristics (sex, age and academic year) were collected. Regarding coping, the literature review (Loureiro et al., 2024) allowed the identification of the Coping Behavior Inventory (CBI) as one of the most used instruments in the assessment of coping strategies in nursing students. Since it was not available in the language in which the study was to be conducted, we carried out the translation, cross-cultural adaptation and validation of the chosen instrument in European Portuguese (Loureiro et al., 2024). CBI comprises 19 items that are scored on a 5-point Likert scale (0-never; 1-almost never; 2-sometimes; 3-frequently; 4-always). A higher score on a factor indicates more frequent use of that coping strategy. Average completion time is 5 minutes. The psychometric properties of the CBI were evaluated using principal component analysis, alongside an assessment of internal consistency, determined by Cronbach's alpha coefficient (α = 0.668 for the total scale) (Loureiro et al., 2024).

Regarding social support, we used a 15-item instrument with a five-point Likert scale (1-completely disagree; 2-mostrly disagree; 3-nor agree nor disagree; 4-agree most times; 5-completely agree) entitled Satisfaction with Social Support Scale, which has already been adapted and validated for this population and context (Pais-Ribeiro, 1999). On average, the completion time is about 5 minutes. The internal consistency of the Satisfaction Scale dimensions, measured by Cronbach's alpha, was generally strong (α = 0.855 for the total scale).

Bias

To address bias in phase 1, we carefully selected instruments specifically designed to measure the concepts under investigation. A comprehensive literature review not only helped us identify the most appropriate instruments but also provided an updated understanding of the current state of knowledge on the topic. To further minimize bias, the research team consisted of members with diverse backgrounds, allowing for the analysis of data from multiple perspectives. Additionally, all data was anonymized to ensure participants' identities were protected, reducing potential bias in the analysis. Also, the instruments used were assessed through statistical tests to ensure its validity.

Study size

The sample was a convenience sample given that all nursing students were approached, and those who chose to participate were included.

Quantitative variables

Sociodemographic variables included sex, age and academic year. Regarding instruments, CBI comprised 19 items grouped into four factors (avoidance behaviors; problem-solving behaviors; optimistic coping behaviors; and transference behaviors). For the Satisfaction with Social Support Scale, it included four dimensions (friends, intimacy, family, social activities).

Statistical methods

Data resulting from the application of instruments were analyzed with International Business Machines Corporation Statistical Package

for the Social Sciences (IBM SPSS Statistics®) for Windows, version 29.0 (IBM Corp, 2022). Descriptive statistics were used to analyze categorical variables, which were presented as frequencies and percentages, and continuous variables, presented as mean and standard deviation. ANOVA tests were employed to assess associations between variables. Statistical significance was set at *p*-values below 0.05. A combined reading of the normality test using the Kolmogorov-Smirnov (K-S) test, and the analysis of the symmetry and kurtosis of the dependent variables across different groups, led to the conclusion that the assumptions of normality were not violated. Furthermore, Levene's test confirmed the homogeneity of variances as the p-values were higher than 0.05 across the groups under analysis.

Phase 2

Phase 2 involved a qualitative approach that addressed the third research question. To report on this phase, we used the Consolidated Criteria for Reporting Qualitative Research (COREQ) (Tong et al., 2007).

Research team and reflexivity

The interviews were conducted by a female psychologist who is a senior faculty member within the teaching department, currently pursuing a Ph.D., and an active member of the research team. She has extensive experience in conducting qualitative interviews and works with the nursing program in the academic classroom, though not in the clinical practice setting. As such, she is familiar with the students and the overall structure of the program while maintaining an appropriate level of separation from their clinical practice. She had no involvement in clinical practice or any related activities, ensuring a fresh and impartial perspective on the findings. The participants knew that she was part of the research team and also a teacher who was involved in the nursing course, although she was not a nurse.

Study design

For this phase, regarding theoretical framework, we used a descriptive method approach which according to Creswell and Creswell, (2022, p. 62) "is an approach to analysis were the researcher stays close to the data." This phase is integrated in the explanatory sequential mixed methods design as explained earlier.

With regard to participant selection, a convenience sampling method was used. Participant selection involved direct, personal contact between the researcher and 4th year nursing students. Only fourth-year students were approached, as they had accumulated more experience and, by the time of data collection, had completed all required clinical practice for the course. The study was presented to all 4th year students, and participation was open to everyone, with no selection of specific individuals. Students were invited to voluntarily nominate a family member or close contact whom they perceived as having provided significant support during their clinical practice. They were asked to provide contact details (phone and/or e-mail) for this individual. This information was used by the researcher to schedule and conduct semi-structured interviews with the selected contacts. Eligible participants included family members or close contacts of 4th-year students (n = 66) who had accompanied and supported them throughout their clinical practice and provided informed consent to participate. Within one week, 15 students responded and submitted contact information. All nominated individuals were included in the study.

Regarding setting, the interviews were all conducted online via a secure virtual platform, with only the participant and the researcher present.

As to data collection, an interview guide was specifically developed for this study (see Supplemental File 2), informed by a comprehensive literature review (Loureiro et al., 2024), the study objectives, and preliminary quantitative findings. These initial findings were instrumental in refining the interview questions, with the aim of achieving a deeper understanding of the data. The research team collaboratively reviewed and discussed the initial results, leading to the final version of the guide.

The guide comprised open-ended questions designed to promote in-depth responses and allow participants to express their perspectives freely, while minimizing the risk of leading or biased prompts. Data were collected through audio-recorded online interviews, with no field notes taken due to the virtual format. A total of 15 interviews were conducted, each lasting an average of 24 minutes and 17 seconds.

Following the interviews, the recordings were transcribed by the interviewer. To ensure accuracy, a second researcher verified the transcriptions against the original audio files. The research team discussed data saturation and agreed that the 15 interviews yielded sufficiently rich and comprehensive data for the purposes of the study.

Analysis and findings

Initially, two researchers undertook the coding of the data. Subsequently, all members of the research team became actively involved in the analysis process, each contributing to the categorization of the data. The analysis was conducted manually using printed transcripts, without the aid of qualitative data analysis software. This collaborative approach allowed for the integration of multiple perspectives and facilitated consensus on the interpretation and categorization of the findings, thereby enhancing the rigor, credibility, and reliability of the analysis.

The data were analyzed through thematic analysis, we used content analysis technique according to Bardin (2022). It includes three steps: pre-analysis of the interviews, exploration of the material for analysis, and processing and interpretation of the results. By reading the transcripts several times, the researchers were able to gain a thorough insight into the responses in the first step. The answers were read out loud for comprehension and organization purposes. The second step consisted of categorizing the data and allocating code labels (Bardin, 2022). This involved an ongoing process of identifying relevant patterns and assigning meaning to them. This was achieved by categorizing words, phrases or segments of phrases and organizing the data into different themes. We considered the aim of the study and the attributes of the concept of social support for nursing students, as defined by Choi et al. (2024). These authors performed recently a concept analysis of social support specifically for this population and were able to identify attributes (structural; educational; psychosocial; instrumental) as well as antecedents (stress and crisis; personal need; social network; and social climate) and consequences (improved mental health; and quality of life). In the third phase, which involved treatment, inference and interpretation of results, the data were quantified.

We applied Lincoln and Guba (1985) trustworthiness criteria, as updated by Ahmed (2024), to assess credibility, transferability, dependability, and confirmability. To enhance credibility, interviews were conducted online, offering participants comfort, privacy, and flexibility, thus encouraging open and unrestricted dialogue. Reflexivity was ensured through discussions of potential biases, and the interviewer was purposefully chosen for their familiarity with course structure but lack of direct involvement with students during clinical practice, promoting objectivity. Triangulation was achieved by combining data from instruments and interviews, allowing for a broader perspective. To support transferability, we provided detailed descriptions of the research context, participants, and methods. Participants

were purposefully selected based on their relevance to the research aim. Dependability was addressed by documenting all procedures transparently. For confirmability, data analysis was repeatedly reviewed among researchers, and transcripts were carefully rechecked to ensure accurate categorization. Illustrative citations were included to demonstrate the link between findings and participants' experiences. The study adhered to GRAMMS checklist (O'Cathain et al., 2008) to ensure rigorous reporting.

Results

Phase 1

A total of 113 nursing students completed the online survey (42% response rate), of which 91.2% were female (Table 1).

Table 1
Sociodemographic characteristics of the sample (n = 113).

		n	%
Sex	Female	103	91.2
	Male	10	8.8
Age group	18-19	20	17.7
	20-21	40	35.4
	22-23	28	24.8
	≥ 24	25	22.1
Academic year	1st year	23	20.4
	2nd year	26	23.0
	3rd year	37	32.7
	4th year	27	23.9
Total		113	100.0

Table 2
Means and standard deviations of the dimensions of the CBI.

Dimensions	Mean (0-4)	SD
Problem-solving	2.80	0.570
Maintaining optimism	2.45	0.575
Transference	2.02	0.724
Avoidance	0.71	0.594

Coping behavior inventory (CBI)

Table 2 presents the mean scores and standard deviations from the CBI scale, divided into its four dimensions, as well as the total aggregated results from the CBI scale.

The scores of the four subscales were then analyzed in relation to the characteristics of the sample of nursing students (Table 3).

When analyzing the coping differences between genders (Table 3), women had a slightly higher mean in the "problem-solving" dimension (M = 2.79; SD = 0.586) compared to men (M = 2.65; SD = 0.530), although this difference was not statistically significant (p = 0.398). When comparing different age groups, the differences in coping dimensions were also not statistically significant. Regarding the academic year, 3rd year students reported the highest mean in the "Maintaining optimism" dimension (M = 2.91; SD = 0.518), followed by 2nd year students (M = 2.83; SD = 0.489), with no significant differences ($p > 0.05$). Post-hoc tests on the variables of age group and academic year confirm that there were no statistically significant results.

Social support satisfaction scale

For the same sample, the satisfaction scale was applied, and the results of its four constituent dimensions, as well as the total score, are presented in Table 4. The results range from 1 to 5, with higher scores reflecting higher levels of satisfaction.

The results show (Table 4) that the "intimacy" dimension had the highest level of satisfaction (M = 3.69; SD = 0.912). Internal consistency for the dimensions of the satisfaction scale, assessed by Cronbach's alpha, was generally good (α = 0.855 for the total scale).

Regarding the comparison of the means with the sample characteristics of the students, Table 5 explores the mean scores and standard deviations for the four dimensions (friends, intimacy, family, social activities) of the satisfaction scale, as well as total satisfaction, in relation to the demographic characteristics of the sample.

Table 4
Means and standard deviations of the 4 dimensions of the satisfaction scale.

Dimensions	Mean (1-5)	SD	Cronbach's alpha	Items
Friends	3.67	0.856	0.816	5
Intimacy	3.69	0.912	0.653	4
Family	3.67	0.966	0.775	3
Social activities	2.72	1.007	0.672	3
Total scale	3.49	0.698	0.855	15

Table 3
CBI scale analysis of the four dimensions by sociodemographic variables.

	Avoidance			Problem-solving			Maintaining optimism			Transference		
	Mean	SD	p	Mean	SD	p	Mean	SD	p	Mean	SD	p
Sex												
Female	0.72	0.596	0.596	2.79	0.586	0.398	2.43	0.578	0.244	2.01	0.732	0.718
Male	0.62	0.599		2.95	0.352		2.65	0.530		2.10	0.668	
Age group												
18-19	0.68	0.585	0.841	2.68	0.783	0.526	2.49	0.723	0.426	2.17	0.697	0.333
20-21	0.72	0.634		2.90	0.460		2.53	0.521		2.10	0.733	
22-23	0.79	0.546		2.82	0.564		2.29	0.472		1.82	0.734	
≥24	0.64	0.614		2.74	0.547		2.46	0.632		2.00	0.714	
Academic year												
1st year	0.57	0.687	0.240	2.75	0.767	0.480	2.48	0.746	0.914	2.23	0.735	0.161
2nd year	0.59	0.462		2.83	0.489		2.50	0.442		2.10	0.595	
3rd year	0.80	0.613		2.91	0.518		2.43	0.493		1.82	0.788	
4th year	0.83	0.582		2.69	0.520		2.40	0.651		2.04	0.706	

Table 5
Analysis of satisfaction in the 4 constituent dimensions with sociodemographic characteristics.

	Friends (1-5)			Intimacy (1-5)			Family (1-5)			Social activities (1-5)			Total satisfaction (1-5)		
	M	SD	*p*	M	SD	*p*	M	SD	*p*	M	SD	*p*	M	SD	*p*
Sex															
Female	3.62	0.86	0.023*	3.64	0.91	0.048*	3.68	0.99	0.726	2.69	0.99	0.181	3.45	0.69	0.048*
Male	4.26	0.59		4.23	0.73		3.57	0.77		3.13	1.1		3.89	0.64	
Age group															
18-19	3.6	0.93	0.766	3.39	1.12	0.392	3.87	1.03	0.577	2.52	1.06	0.792	3.38	0.77	0.732
20-21	3.72	0.92		3.81	0.76		3.71	0.89		2.77	0.88		3.55	0.61	
22-23	3.78	0.83		3.74	0.88		3.65	0.96		2.79	1.16		3.55	0.77	
≥ 24	3.55	0.74		3.67	0.99		3.47	1.05		2.76	1.01		3.41	0.73	
Academic year															
1st year	3.75	0.91	0.886	3.54	1.11	0.477	3.3	1	0.131	2.72	0.97	0.937	3.4	0.72	0.678
2nd year	3.7	0.82		3.87	0.78		3.95	0.79		2.65	0.95		3.58	0.58	
3rd year	3.58	0.96		3.57	0.95		3.65	1.01		2.7	1.08		3.42	0.8	
4th year	3.71	0.71		3.8	0.79		3.74	0.98		2.83	1.04		3.56	0.65	

* $p<0.05$

When looking at the "friends" dimension, men had a significantly higher mean (M = 4.26; SD = 0.590) compared to women (M = 3.62; SD = 0.860), (p = 0.023). For the "intimacy" dimension, men also reported greater satisfaction (M = 4.23; SD = 0.730) compared to women (M = 3.64; SD = 0.910), also with a statistically significant difference (p = 0.048). Regarding age groups, older students (≥ 24 years) reported the lowest mean in the "friends" dimension (M = 3.55; SD = 0.740) compared to students aged 22-23 years (M = 3.78; SD = 0.830). However, differences between age groups were not statistically significant for any of the dimensions. Finally, the data did not indicate statistically significant differences across academic years for any of the dimensions of the Social Support Satisfaction Scale, as shown by high p-values (e.g., p = 0.886 for "friends" in the first year). Post-hoc tests on the age group and academic year variables also confirmed that no statistically significant results were found in the multiple comparisons.

Phase 2

Interviews

Regarding the interviews we conducted a total of 15 interviews that lasted an average 24 minutes and 17 seconds (range betwen 16:02 and 40:35). Most close contacts identified by students were female and mothers. Table 6 provides a summary of the interview's characteristics.

Table 6
General interview characteristics.

Interview	Sex	Qualifications	Relationship with student	Interview duration
1	Male	UD	Boyfriend	00:28:40
2	Female	HS	Friend	00:25:53
3	Female	HS	Girlfriend	00:25:45
4	Female	HS	Girlfriend	00:16:02
5	Female	HS	Cousin	00:23:05
6	Female	HS	Mother	00:26:28
7	Female	HS	Mother	00:40:35
8	Female	HS	Mother	00:27:42
9	Female	UD	Mother	00:28:11
10	Female	HS	Mother	00:20:40
11	Female	UD	Cousin	00:20:33
12	Female	UD	Mother	00:23:30
13	Male	HS	Boyfriend	00:19:40
14	Female	HS	Mother	00:17:40
15	Male	HS	Boyfriend	00:19:50

UD – University Degree; HS – High school.

Psychosocial support

The most frequently mentioned form of support in the interviews was psychosocial support (f = 56), which refers to emotional support, positive appraisal and support for self-esteem. Interviewees (I) explained how they support students during clinical practice by listening to their concerns and being supportive, as explained by I3: *"This frustration that he's having... and I always try to comfort him and tell him that I know his abilities and that I know he can do it..."* The need to give some space and time for the student to work out their own difficulties and decide what to do was also expressed as shown in the following segment of the interview: *"I'll give you space... I'll just open up if you want to talk but if there's something wrong... if I can help you with something (...) look if you want... you'll know where I am and you'll know where to find me but in the meantime I'll be waiting..."* (I7).

Educational support

Educational support, which includes both academic assistance and role model support, emerged as the second most frequently identified category (f = 22). Participants described various ways in which they contributed to the students' academic journeys which often involved helping students review their written assignments, offering constructive feedback on grammar and content, and serving as a sounding board for ideas. Close contacts shared that they actively engaged in the academic process, not only by assisting with tasks but also by demonstrating interest and involvement in the students' progress. As illustrated by I8: "*she does the research... she shows me the research... she tells me what the aim is and what she wants to do... I try to read it and see what she has and I give her suggestions and then at the end she always sends me the work so I can give my opinion.*" This quote highlights the collaborative nature of the support provided, which often went beyond simple proofreading to include a genuine investment in the student's learning process. Such involvement reflects a deeper level of educational support in which the close contacts acts not only as an academic helper, but also as a motivator and informal mentor, strengthening the student's confidence and academic self-efficacy.

Instrumental support

The third most identified category is instrumental support (f = 17), which refers to both informational and material assistance that helps students manage the practical demands of their clinical training. This type of support was often described in relation to logistical help, such

as providing transportation to and from clinical placements—particularly when these were located at a significant distance from the student's home. As I1 mentions: "*sometimes I help... either by driving or...*" highlighting the active involvement of close contacts in ensuring that students could attend their placements reliably and without additional stress. In addition to transportation, participants also reported contributing financially by covering expenses related to clinical practice, such as fuel, meals or educational materials. This form of tangible support was viewed by interviewees as essential to easing the burden on students and enabling them to focus more fully on their academic responsibilities. It underscores the practical dimension of support that often operates behind the scenes but plays a crucial role in students' ability to successfully navigate their clinical practice.

Structural support

The final category is structural support ($f = 7$), which encompasses aspects of social integration and the presence of supportive social networks. This form of support reflects the importance of maintaining emotional balance and a sense of normalcy during periods of high stress, such as clinical practice. Interviewees described their efforts to create opportunities for relaxation and leisure, helping students momentarily disconnect from academic pressures. These interactions, though seemingly informal, were perceived as meaningful ways of offering social support. Participants emphasized the value of simply being available and engaging in everyday activities that promote well-being and connection. As I13 mentions: "*If she wants to watch a bit of television, she'll stay... if she wants to go out... I don't know... for a coffee, some juice, we'll go...*" a reflection of the small yet significant gestures for students. Structural support, in this context, functions as a buffer against the demands of clinical practice by reinforcing a sense of belonging and continuity in the students' social lives.

Discussion

Students used appropriate coping strategies, with problem-solving and maintaining optimism strategies having the higher scores. This reveals the ability to adapt to the challenges faced during clinical practice, suggesting that students are prepared to deal with the typical stressors of this training phase, such as academic pressure and practical workload (Dasgupta et al., 2020; Onieva-Zafra et al., 2020). The low use of avoidance strategies is a positive sign, as avoidance is usually related to less adaptive coping and can be harmful in the long term by preventing individuals from addressing the root causes of stress, potentially leading to increased anxiety, emotional exhaustion, and decreased academic or professional performance (Balmores-Paulino, 2020). The greater dispersion observed in transference strategies indicate that, although this strategy is also used, it is not a uniform choice among students. The varying use of transference strategies indicates different personal coping styles among students.

In our study, no statistically significant differences were found between the use of the different coping strategies and the sociodemographic characterization variables. This means that the way students deal with the challenges of clinical practice (whether through problem solving, or other approaches) does not depend heavily on their age, academic experience, or other sociodemographic characteristics. It indicates that the most effective coping strategies (Loureiro et al., 2024) can be widely shared among students, regardless of their individual profile. Another interpretation is that the needs and types of challenges faced by students during clinical practice may be similar, regardless of their academic trajectory or age, which may result in a similar use of coping strategies. For academic institutions, it means that programs that aim to support students can be more generalized, without the need to differentiate by age or academic year. This can facilitate the implementation of interventions, as it would not be necessary to segment students into distinct groups based on these variables.

Students are satisfied with the social support they receive which reflects a positive perception of the support networks they have access to. However, global satisfaction does not necessarily reflect the same perception across all dimensions of social support. The average response for satisfaction with social support is greater than 3 in all dimensions except "social activities" suggesting that students miss support that focuses more on the social aspect. This result can be explained by the demands of shifts and clinical practice schedules, which restricts the time available for social interactions outside the academic or clinical practice environment. The greater dispersion in responses may indicate that, while some students have greater social support, others experience this gap more markedly, which may impact their general well-being, resilience (Aryuwat et al., 2023) and performance during clinical practice.

Tifferet (2020) studied gender differences in social support on social network sites and discovered that females give and receive greater social support than do males. In our study we found differences in satisfaction between males and female students, with the former more satisfied with social support, which may reflect cultural and gender factors that influence their perceptions. This may suggest that males, on average, have more ease or availability to access and value support networks, as Rodríguez-Madrid et al. (2018) also found, especially in the dimensions of "friends" and "intimacy," which are perceived as more satisfactory by them. On the other hand, female students may experience social support differently (Hamaideh et al., 2024). We can hypothesize that in many contexts, women may be more cautious or restrictive in seeking support, perhaps because of social expectations that encourage them to manage their emotions more independently. This is not a consensus finding, as other researchers have found the opposite, with women being more satisfied with social support (Anser et al., 2021; Hamaideh et al., 2024). Regardless of the impact of sociodemographic differences, social support acts as a protective factor against the negative effects of stress, thereby protecting students' psychological well-being (Alatawi et al., 2022; Hamaideh et al., 2024).

Looking at the two scales, it can be seen that males are not only more satisfied with social support but also use more frequently positive coping strategies (such as problem solving and optimism). This suggests that, in this sample, male students tend to have a more proactive and optimistic approach to dealing with challenges. It may be directly related to the greater level of satisfaction they demonstrate in relation to social support, since, when facing difficulties in a more resolute way, they feel that the support networks are more present and effective. On the other hand, female students may adopt different strategies to deal with stressors, possibly more limited or passive, which could reflect a perception of less effectiveness of the social support received. Other researchers have focused on social support, recognizing its importance in managing stress induced by clinical practice (Shnaider & Warshawski, 2024) and improving resilience (Hamaideh et al., 2024).

The analysis of the interviews revealed valuable information about the support networks that students have in this critical period of their academic training. The identification of key figures in supporting students, such as mothers (7 of the 15 interviewed), reflects the strong influence of family, especially maternal support, on emotional well-being and adaptation to the clinical practice environment. The fact that 12 of the 15 interviews were with women also brings to light a discussion of roles in supporting students, with a greater female presence, possibly related to caring and empathy, qualities traditionally attributed to the female sex (Pang et al., 2023).

In the interviews, psychosocial support stands out, followed by emotional, instrumental and structural support.

The predominance of psychosocial support highlights the importance of students social and psychological wellbeing. The clinical practice environment often involves stressful, complex and emotionally exhausting situations, which require not only technical skills, but also solid emotional resilience (Aryuwat et al., 2023; Spurr et al., 2021).

Although psychosocial support was the most highlighted, other types of support, such as emotional, instrumental and structural support, also play crucial roles in the nursing student's journey. In fact, the support provided to nursing students during clinical practice requires a nurturing and diversified care (Joolaee et al., 2016). Emotional support involves the ability to provide comfort, encouragement and confidence, helping the student face the daily challenges of clinical practice (Choi et al., 2024). In our sample, significant others report how they provide comfort, particularly when students face challenges with their supervisors, time management constraints, and difficulties. Instrumental support concerns practical help, whether in the form of practical advice about the work environment or the availability of material resources to carry out the clinical practice tasks. In our sample, respondents indicated that they primarily provide transportation to clinical placements or financial support. Finally, structural support refers to the organization of support networks inside and outside the institution, such as study groups, colleagues and clinical practice supervisors (Choi et al., 2024). This was the least identified type of social support, as evidenced by the low frequency. It is not uncommon for students to be required to invest a considerable amount of time in clinical practice. In addition to the demands of the academic curriculum, nursing supervisors often expect students to engage in further study, and students frequently travel to distant clinical placements, which can be a significant time commitment in itself. Therefore, these are periods of high demand and stress as literature as already point (Hamaideh et al., 2024; Loureiro et al., 2024).

The combination of quantitative and qualitative data enables a more comprehensive understanding of satisfaction with social support, as well as the specific types of support provided and the individuals who offer them. The students expressed satisfaction with the support they received in various dimensions. The interviews revealed that mothers were perceived as the most supportive, which may be attributed to cultural traditions associated with Portuguese society. The findings of the quantitative and qualitative analyses were found to be consistent, indicating that students are satisfied with the social support they receive, particularly the psychological support, which was identified as a predominant dimension of their experience. This finding may assist institutions in the planning of programs designed to support students.

This study has limitations, including its sample size and the differences in nursing curricula between countries, which limit the comparability of the results. While social support is often examined through family members and close contacts, it is also provided by groups such as religious or sporting organizations. In addition, the role of clinical placements and nurse supervisors, which are important determinants of the clinical practice experience, were not considered, although they do influence the experience. A larger sample size and a broader approach might yield different results.

Conclusions

These findings highlight the importance of support beyond the academic environment, emphasizing the role of family and personal relationships. Academic institutions should focus not only on academic and technical development but also on strengthening students' support networks. Implementing reception programs, psychological support groups, and mental health initiatives could address students' emotional and psychosocial needs, promoting a more balanced clinical practice experience. These measures can help future nurses build resilience and better prepare for professional challenges. Further studies on the impact of institutional support on students' well-being and performance during clinical practice are recommended.

Ethics approval and consent to participate

This study was performed in accordance with the principles of the Helsinki Declaration. Approval was granted by both the Technical-Scientific Council and the Ethics Committee of the Institution in which it was applied (July 2, 2022, approval n.° 117/21.22; and July 28, 2022, approval n.° 1114.22, respectively). An explanation of the study, the intended type of participation, and a request for informed consent were included in the online questionnaire. It specified that participation was voluntary and that students could withdraw at any time with no repercussions. Additionally, it ensured anonymity, confidentiality, and data protection. In order to complete the form, students were required to give their consent to participate in the study. Informed consent was obtained for the interviews, which were scheduled to meet the availability of each participant and were conducted online through a platform. No professors involved in evaluating students during clinical practice participated in the recruitment process to avoid coercion.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

CRediT authorship contribution statement

Fernanda Loureiro: Writing – review & editing, Writing – original draft, Validation, Methodology, Conceptualization. **Dina Peças:** Writing – review & editing, Validation, Methodology, Conceptualization. **Ana Cristina Neves:** Writing – review & editing, Validation, Methodology, Conceptualization. **Ricardo Jorge Antunes:** Writing – review & editing, Validation, Methodology, Conceptualization. **Ana Vanessa Antunes:** Writing – review & editing, Validation, Methodology, Conceptualization.

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Supplementary materials

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