

Nursing Students' Opinions on Patient Safety

Hemşirelik Öğrencilerinin Hasta Güvenliğine İlişkin Görüşleri

Sultan Türkmen Keskin^{1*} 
Kamuran Cerit² 
Tuğba Mert Emiroğlu³ 

^{1*} Ankara Üniversitesi, Hemşirelik Fakültesi, Hemşirelik Bölümü, Ankara, Türkiye.

² Süleyman Demirel Üniversitesi, Sağlık Bilimleri Fakültesi, Hemşirelik Bölümü, Isparta, Türkiye.

³ Ardahan Üniversitesi, Sağlık Bilimleri Fakültesi, Hemşirelik Bölümü, Ardahan, Türkiye.

*Sorumlu Yazar:
sturkmen@ankara.edu.tr

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Abstract

Improving nursing students' knowledge and skills regarding patient safety is crucial to providing safe care. This descriptive research was conducted between October 2021 and March 2022 to determine nursing students' opinions on patient safety and the factors influencing these opinions. The study population consisted of third- and fourth-year nursing students in Türkiye. Data were collected from 422 participants through an online questionnaire using convenience and snowball sampling methods. According to the findings, 23.5% of the students reported encountering medical errors/adverse events during clinical practice. While 89.8% of the students believed that medical errors/adverse events should be reported, only 12.1% reported that an incident report was filed in such cases. In addition, 40% of the students believed that healthcare professionals should be punished or warned for medical errors/adverse events. A statistically significant difference was found between gender and the view that healthcare professionals should be punished or warned ($p = 0.036$). This view also varied according to academic year ($p = 0.011$). The study findings emphasize the importance of fostering positive patient safety attitudes and creating a non-punitive culture in educational and clinical learning environments.

Keywords: Medical error, nursing students, patient safety, patient safety culture.

Öz

Hemşirelik öğrencilerinin hasta güvenliği konusundaki bilgi ve becerilerinin geliştirilmesi, güvenli bakımın sağlanması açısından çok önemlidir. Bu tanımlayıcı çalışma, hemşirelik öğrencilerinin hasta güvenliğine ilişkin görüşlerini ve bu görüşleri etkileyen faktörleri belirlemek amacıyla Ekim 2021–Mart 2022 tarihleri arasında yürütülmüştür. Araştırmanın evrenini Türkiye’de öğrenim gören 3. ve 4. sınıf hemşirelik öğrencileri oluşturmuştur. Veriler, çevrim içi anket aracılığıyla kolayda ve kartopu örnekleme yöntemleri kullanılarak 422 katılımcıdan toplanmıştır. Bulgulara göre öğrencilerin %23,5’i klinik uygulamaları sırasında tıbbi hata ya da olumsuz bir olayla karşılaştığını belirtmiştir. Öğrencilerin %89,8’i tıbbi hataların/istenmeyen olayların bildirilmesi gerektiğini düşünürken, yalnızca %12,1’i bu tür olaylarda bildirim formunun doldurulduğunu belirtmiştir. Ayrıca öğrencilerin %40’ı sağlık çalışanlarının tıbbi hata/istenmeyen olay durumunda cezalandırılması veya uyarılması gerektiğini belirtmiştir. Cinsiyet ile sağlık çalışanlarının cezalandırılması veya uyarılması gerektiği görüşü arasında istatistiksel olarak anlamlı bir fark bulunmuştur ($p = 0,036$). Bu görüş, akademik yıla göre de farklılık göstermiştir ($p = 0,011$). Çalışma bulguları, eğitim ve klinik öğrenme ortamlarında hasta güvenliğine yönelik olumlu tutumlar geliştirmenin ve cezalandırıcı olmayan bir kültür oluşturmaının önemini vurgulamaktadır.

Anahtar Kelimeler: Hasta güvenliği, hasta güvenliği kültürü, hemşirelik öğrencileri, tıbbi hata.

1. Introduction

One of the primary focuses of today's healthcare services is ensuring patient safety (Van Slambrouck et al., 2021). In this context, the aim is to prevent and eliminate medical, physical, and psychosocial risks by identifying them in advance. Safety problems in healthcare services can lead to negative outcomes such as increased morbidity, permanent disability, increased costs, and even death (World Health Organization [WHO], 2011). Therefore, patient safety has become a global health policy priority (Asensi-Vicente et al., 2018; Lee et al., 2020).

Patient safety is a fundamental component of nursing education and a critical process that begins during healthcare professional training (Sümen et al., 2022; WHO, 2011). The literature suggests that patient safety culture and supportive clinical learning environments play a key role in shaping students' attitudes and behaviors toward patient safety (Farokhzadian et al., 2024; Kong et al., 2019; Woo & Cui, 2025). In particular, non-punitive, open learning environments have been shown to increase nursing students' willingness to discuss safety concerns, build confidence in error reporting, and foster a stronger safety culture (Bartoníčková et al., 2025; Gore & Schrems, 2025). However, despite this awareness, fear-related barriers remain prevalent. Alrasheeday et al. (2025) reported that although most nursing students support reporting medication errors, fear of disciplinary action, accountability, and loss of peer respect hinder reporting behavior. Similarly, this finding aligns with Vahidi et al. (2025), who highlighted that fear of retaliation and disciplinary consequences contributes to silence in reporting patient safety concerns. According to Woo and Cui (2025), institutional safety culture and the clinical learning environment are critical in shaping students' perceived competence. In fact, accusatory and punitive settings directly contribute to lower error reporting rates and a weaker safety culture (Gore & Schrems, 2025; Jamshidi et al., 2021; Kong et al., 2019; Woo & Cui, 2025).

Studies have demonstrated that systematically integrating patient safety into undergraduate healthcare education positively influences students' knowledge, skills, and behaviors (Andrew & Mansour, 2014; Çerçer et al., 2023; Jamshidi et al., 2021; Khider et al., 2024; Kong et al., 2019). These competencies are associated with improved clinical practice, more favorable attitudes toward patient safety, and increased likelihood of error reporting (Alrasheeday et al., 2025; Çerçer et al., 2023; Sümen et al., 2022). Therefore, assessing nursing students' opinions on patient safety is essential for identifying factors that may influence the provision of safe care.

Although patient safety education is an essential component of undergraduate nursing programs, understanding remains limited about how students translate theoretical knowledge into clinical practice. In particular, less is known about how experiential learning and responses to medical errors influence nursing students' views on patient safety and their incident reporting experiences. Existing studies have largely focused on theoretical knowledge acquisition, while experiential factors during clinical training remain underexplored. Addressing this gap, the present study aimed to examine nursing students' opinions on patient safety and identify the factors influencing these opinions. The research questions of the study are:

- What are nursing students' opinions regarding patient safety and incident reporting?
- What are the factors influencing nursing students' opinions on patient safety?

2. Methods

2.1. Study design

This descriptive study was conducted between October 2021 and March 2022.

2.2. Population and sample of the research

The study population consisted of third- and fourth-year nursing students in Türkiye during the 2021–2022 academic year. Convenience and snowball sampling methods were utilized. The final sample included 422 nursing students from seven state universities across different regions of Türkiye. However, most participants were enrolled at Süleyman Demirel University (42.2%) and Ankara University (21.3%). Other participants

included students from Necmettin Erbakan University (12.4%), Harran University (9.2%), Çankırı Karatekin University (6.6%), Hacettepe University (5.9%), and other universities (2.4%). Students in the first and second years of nursing education, as well as those who did not consent to participate, were excluded. A post-hoc power analysis was conducted using G*Power 3.1, indicating that the sample size was sufficient for chi-square tests (effect size $w = 0.3$, $\alpha = 0.05$, power = 0.99, $df = 5$).

2.3. Data collection process of the study

Data were collected online via Google Forms. An announcement that included the informed consent form and the survey link was shared with students through social media and messaging applications (e.g., WhatsApp, Instagram). To facilitate the snowball sampling method, participants were also encouraged to share the survey link with their peers. The average completion time for the questionnaire was 4–5 minutes.

2.4. Data collection tools

The researchers prepared a 17-question questionnaire based on current literature on patient safety, medical errors, and nursing students' opinions and experiences (Kong et al., 2019; Lee et al., 2020; Sloane et al., 2018; Stevanin et al., 2015; WHO, 2011). The questionnaire consisted of two main sections: (1) demographic characteristics (e.g., age, gender, academic year); and (2) patient safety knowledge and practices, including items addressing knowledge of patient safety concepts, nursing roles in patient safety, and procedures followed in the event of medical errors and adverse events. The questions used categorical response options (e.g., yes/no and multiple-choice) to assess students' knowledge and self-reported practices regarding patient safety. As the questionnaire was designed as a descriptive data-collection tool comprising independent questions rather than a psychometric scale measuring a single latent construct, internal consistency reliability measures such as Cronbach's alpha were not considered appropriate. The questionnaire was developed based on the literature and reviewed independently by the three researchers, all of whom hold doctoral degrees in nursing management, before data collection. Based on their feedback, minor revisions were made to improve the clarity and comprehensibility of the questionnaire items.

2.5. Data analysis

Data were analyzed using IBM SPSS Statistics for Windows, version 22. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated. The chi-square test was applied to examine differences between categorical variables. A p-value of < 0.05 was considered statistically significant.

3. Results

Most nursing students were female (77.3%), aged 21–24 years (74.4%), and third-year undergraduates (56.6%) (Table 1). Regarding patient safety-related characteristics, 89.3% of the students reported knowledge of patient safety, whereas only 16.8% had taken a separate patient safety course during their undergraduate education. Additionally, 23.5% stated that they had encountered medical errors or adverse events during clinical practice. Most students (89.8%) expressed the opinion that medical errors or adverse events should be reported to relevant departments (e.g., the Nursing Services Directorate and Quality Office), while 40.0% thought that healthcare workers involved in such errors should be punished or warned (Table 1).

Table 1. Nursing Students' Characteristics and General Opinions on Patient Safety

Variables		n	%
Gender	Female	326	77.3
	Male	96	22.7
Age	17-20	95	22.5
	21-24	314	74.4
	25-29	13	3.1
Grade	3rd Grade	239	56.6
	4th Grade	183	43.4
Marital status	Single	410	97.2
	Married	12	2.8
Knowledge of patient safety	Yes	377	89.3
	No	45	10.7
Taking an undergraduate course on patient safety	Yes	71	16.8
	No	351	83.2
Opinions on including a patient safety course in undergraduate education	Yes	404	95.7
	No idea	18	4.3
Opinions on the importance of nursing roles in patient safety	Yes	421	99.8
	No	1	0.2
Experience with medical errors/adverse events during clinical practice	Yes	99	23.5
	No	323	76.5
Opinions on reporting medical errors/adverse events to relevant departments (e.g., Nursing Services Directorate and Quality Office)	Yes	379	89.8
	No	43	10.2
Opinions on whether healthcare workers who make medical errors/adverse events should be punished or warned	Yes	169	40.0
	No	127	30.1
	No idea	126	29.9

Nursing students most commonly identified nursing roles that ensure patient safety, such as identifying risks to patient safety (90.5%) and providing patient care in accordance with the institution's patient safety goals (87.7%). Among the types of medical errors or adverse events encountered in hospital or clinical practice, the most frequently reported were care practice errors (8.3%) and medication administration errors (6.2%). The most common approaches taken in cases of medical errors or adverse events were attempts to understand the problem (22.5%) and the failure to report the incident (15.9%). Regarding actions to be taken in cases of medical errors or adverse events, nursing students most frequently reported that errors should be reported (79.4%) and that a quality circle should be established, the situation analyzed, and solutions developed (77.5%). The most frequently identified causes of medical errors or adverse events were excessive workload (90.0%) and nurse shortage (73.0%). To prevent medical errors or adverse events, the most commonly suggested measures were improving working conditions (88.2%) and ensuring effective communication and cooperation among healthcare professionals (83.2%) (Table 2).

Table 2. Nursing Students' Opinions on Patient Safety Practices and Medical Error Experiences

Opinions*		n	%
Nursing roles in ensuring patient safety (more than one option was selected)	Identifying risks to patient safety	382	90.5
	Planning and implementing measures to prevent patient safety errors	360	85.3
	Determining or participating in the determination of patient safety standards	358	84.8
	Providing patient care in accordance with the institution's patient safety goals	370	87.7
	Reporting errors that occur	356	84.4
	Other patient safety responsibilities (e.g., taking precautions against risks such as falls and infections,	4	0.9
Types of medical errors/adverse events encountered in hospital or clinical practice	Care practice errors	35	8.3
	Medication administration errors	26	6.2
	Patient falls	23	5.5
	Patient identification errors	11	2.6
	Blood transfusion errors	6	1.4
	Communication errors among healthcare professionals	3	0.7
	Treatment-related errors	1	0.2
Procedures followed in cases of medical errors/adverse events encountered during hospital or clinical practice	Attempts were made to understand the problem	95	22.5
	The error/adverse event was not reported	67	15.9
	An incident reporting form was completed	51	12.1
	The incident was attempted to be concealed	48	11.4
	Attempts were made to identify a scapegoat or assign blame	25	5.9
	I could not observe the incident because I was a student.	6	1.4
	The incident was resolved with a minor intervention.	2	0.5
Opinions on the procedures to be followed in cases of medical errors/adverse events	Errors/adverse events should be reported.	335	79.4
	A quality circle should be established, the situation analyzed, and solutions developed	327	77.5
	An incident reporting form should be completed	317	75.1
	A non-punitive (no-blame) approach should be adopted	304	72.0
	The problem should be understood	304	72.0
	The event should be disclosed to the patient	269	63.7
	The event should not be disclosed to the patient	33	7.8
	The person responsible for the mistake should be punished	20	4.7
	No opinion	19	4.5
Causes of medical errors/adverse events	Excessive workload	380	90.0
	Nurse shortage	308	73.0
	Insufficient communication and cooperation among employees	304	72.0
	Individual mistakes made by physicians/nurses	271	64.2
	Lack of education/training	264	62.6
	Insufficient time allocated to patients by physicians and nurses	255	60.4
	Complexity of medical care	174	41.2
	Lack of care standards and insufficient supervision of practices	251	59.5
	Lack of awareness among employees regarding their duties, authority, and responsibilities	241	57.1
	Belief that reporting errors will not lead to change	221	52.4
	Lack of medications and equipment	189	44.8
	Physician shortage	133	31.5
Suggestions for preventing medical errors/adverse events	Working conditions should be improved.	372	88.2
	Ensure effective communication and cooperation among healthcare professionals.	351	83.2
	Education should be given	350	82.9
	The number of doctors and nurses should be increased	329	78.0
	Deterrent punishments should be imposed	317	75.1
	A patient safety course should be added to the education curriculum	307	72.7
	Patient care standards should be improved	283	67.1
	Regular inspections should be conducted	78	8.5

* Multiple answers

Providing patient safety training to nurses was the most frequently selected preventive measure ($n = 154$). Among respondents who selected this measure, 48.7% rated it as very important and 29.9% as important. Similarly, among those who selected conducting regular inspections ($n = 108$), 21.3% considered it very important and 38.0% considered it important. For increasing the number of doctors and nurses ($n = 107$), 55.1% rated it as very important and 34.6% as important. In contrast, among respondents who selected imposing deterrent punishments ($n = 86$), most rated this measure as not important (64.0%), whereas only 3.5% and 11.6% rated it as very important and important, respectively (Table 3).

Table 3. Nursing Students' Opinions on the Importance of Patient Safety Preventive Measures

Importance of preventive measures		n	%
Providing patient safety training to nurses	Very important	75	48.7
	Important	46	29.9
	Less important	28	18.2
	Not important	5	3.2
Conducting regular inspections	Very important	23	21.3
	Important	41	38.0
	Less important	39	36.1
	Not important	5	4.6
Increasing the number of doctors and nurses	Very important	59	55.1
	Important	37	34.6
	Less important	8	7.5
	Not important	3	2.8
Imposing deterrent punishments	Very important	3	3.5
	Important	10	11.6
	Less important	18	20.9
	Not important	55	64.0
Ensuring effective communication and cooperation between healthcare professionals	Very important	20	24.4
	Important	38	46.3
	Less important	22	26.8
	Not important	2	2.4
Improvement of care standards	Very important	29	45.3
	Important	18	28.1
	Less important	13	20.3
	Not important	4	6.3
Reducing employee workloads	Very important	26	41.9
	Important	34	54.8
	Less important	2	3.2
	Not important	0	0

Note. Percentages were calculated based on the number of respondents who rated each preventive measure; therefore, denominators differ across rows.

No significant gender differences were found in students' experiences with medical errors/adverse events or their opinions on patient safety education, nursing roles, and incident reporting ($p > 0.05$). A statistically significant gender difference was found in students' opinions on whether healthcare professionals who commit medical errors or cause adverse events should be punished or warned ($p = 0.036$). The effect size of this difference was small (Cramer's $V = 0.125$). Post hoc Z-test results indicated a significant difference between the "yes" and "no" response groups by gender, whereas no significant difference was observed in the "no idea" group. In addition, statistically significant differences were found by grade level in students' experiences of medical errors or adverse events during clinical practice ($p = 0.020$) and in their opinions regarding punishment or warning of healthcare professionals who make such errors ($p = 0.011$). No statistically significant differences were observed according to whether students had taken a separate undergraduate course on patient safety ($p > 0.05$) (Table 4).

Table 4. Comparison of Nursing Students' Opinions and Experiences Regarding Patient Safety by Gender, Grade Level, and Patient Safety Course Status

Variables	Group	Gender		Grade						Status of taking an undergraduate course on patient safety							
				Total		3rd grade		4th grade		Total		Yes		No		Total	
		Female n %	Male n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
Opinions on including a course on patient safety in undergraduate education	Yes	315	96.6	89	92.7	404	95.7	227	95.0	177	96.7	404	95.7	67	94.4	337	96.0
	No idea	11	3.4	7	7.3	18	4.3	12	5.0	6	3.3	18	4.3	4	5.6	14	4.0
	Total	326	100.0	96	100.0	422	100.0	239	100.0	183	100.0	422	100.0	71	100.0	351	100.0
		$\chi^2 = 2.787$ p=0.095				$\chi^2 = 0.770$ p=0.380				$\chi^2 = 0.391$ p=0.532							
Opinions on the importance of nursing roles in patient safety	Yes	325	99.7	96	100	421	99.8	239	100	182	99.5	421	99.8	71	100.0	350	99.7
	No	1	0.3	0	0.0	1	0.2	0.0	0.0	1	0.5	1	0.2	0	0.0	1	0.3
	Total	326	100.0	96	100.0	422	100.0	239	100.0	183	100.0	422	100.0	71	100.0	351	100.0
		$\chi^2 = 0.295$ p=0.587				$\chi^2 = 1.309$ p=0.253				$\chi^2 = 0.203$ p=0.653							
Experience of medical errors/adverse events during clinical practice	Yes	79	24.2	20	20.8	99	23.5	46	19.2	53	29.0	99	23.5	17	23.9	82	23.4
	No	247	75.8	76	79.2	323	76.5	193	80.8	130	71.0	323	76.5	54	76.1	269	76.6
	Total	326	100.0	96	100.0	422	100.0	239	100.0	183	100.0	422	100.0	71	100.0	351	100.0
		$\chi^2 = 0.477$ p=0.490				$\chi^2 = 5.448$ p= 0.020				Phi=-0.114				$\chi^2 = 0.011$ p=0.916			
Opinions on reporting medical errors/adverse events to the relevant departments	Yes	291	89.3	88	91.7	379	89.8	217	90.8	162	88.5	379	89.8	67	94.4	312	88.9
	No	35	10.7	8	8.3	43	10.2	22	9.2	21	11.5	43	10.2	4	5.6	39	11.1
	Total	326	100.0	96	100.0	422	100.0	239	100.0	183	100.0	422	100.0	71	100.0	351	100.0
		$\chi^2 = 0.468$ p=0.494				$\chi^2 = 0.584$ p= 0.445				$\chi^2 = 1.936$ p=0.164							
Opinions on punishing or warning healthcare professionals who commit medical errors/adverse events*	Yes	121	37.1 ^a	48	50.0 ^b	169	40.0	102	42.7 ^a	67	36.6 ^a	169	40.0	27	38.0	142	40.5
	No	107	32.8 ^a	20	20.8 ^b	127	30.1	58	24.3 ^a	69	37.7 ^b	127	30.1	27	38.0	100	28.5
	No idea	98	30.1 ^a	28	29.2 ^a	126	29.9	79	33.1 ^a	47	25.7 ^a	126	29.9	17	23.9	109	31.1
	Total	326	100.0	96	100.0	422	100.0	239	100.0	183	100.0	422	100.0	71	100.0	351	100.0
		$\chi^2 = 6.635$ p=0.036				$\chi^2 = 9.056$ p=0.011				$\chi^2 = 2.872$ p=0.238							
		Cramer's V = 0.125				Cramer's V=0.146											

*Bonferroni correction was made for those with ^a difference of p<0.05. According to the Z test results, columns (groups) coded with the same letters do not differ from each other.

4. Discussion

This study aimed to examine nursing students' opinions on patient safety and medical errors/adverse events, as well as factors influencing these opinions. In the present study, most students reported knowing about patient safety. This finding may be attributed to the inclusion of patient safety content in undergraduate curricula and to students' increasing clinical practice experience. Consistent with previous studies, upper-grade students have demonstrated higher patient safety competencies (Kılıç & Cevheroğlu, 2023; Lee et al., 2020; Sümen et al., 2022; Svitlica et al., 2021).

Approximately one-quarter of the students reported experiencing or witnessing medical errors or adverse events during clinical practice. Although findings in the literature vary regarding students' exposure to medical errors (Gunes et al., 2020; Kılıç & Cevheroğlu, 2023; Mohanna et al., 2022; Stolic et al., 2022; Wondmienieh et al., 2020), previous studies indicate that nursing students experience or witness medical errors or adverse events during their clinical practice (Asensi-Vicente et al., 2018; Kılıç & Cevheroğlu, 2023; Stevanin et al., 2015; Sümen et al., 2022; Van Slambrouck et al., 2021). Despite major efforts to improve patient safety, serious preventable medical errors continue to occur (Aryankhesal et al., 2023). In particular, the complex structure of clinical environments, students' limited experience, and difficulties in recognizing associated risks may increase the likelihood of errors (Asensi-Vicente et al., 2018; Kong et al., 2019).

Most students expressed favorable views regarding incident reporting, indicating an awareness of its importance for patient safety. However, students also reported that medical errors and adverse events were not always formally reported in clinical practice. This finding suggests a discrepancy between students' positive attitudes toward incident reporting and the reporting practices they observed in clinical learning environments. This may reflect the theory–practice gap commonly reported in nursing education. Supporting this, Woo and Cui (2025) found that although nursing students generally demonstrate positive attitudes toward patient safety, these attitudes do not always translate into safety-oriented behaviors due to hierarchical structures, inadequate role modeling, and unsupportive clinical cultures. Similarly, Bartoníčková et al. (2025) reported cognitive and emotional dissonance when patient safety principles taught in academic settings conflict with clinical practice. Overall, these findings highlight how clinical and cultural context influences students' reporting behaviors.

Students' views on how medical errors/adverse events are managed in clinical practice also varied. Some of the clinical responses reported by students reflected a positive patient safety culture, such as attempts to understand the problem or to report the incident. In contrast, other reported practices, including failing to report or concealing the incident, point to the persistence of non-transparent or blame-oriented approaches in some clinical settings. Similar findings have been reported in previous studies (Asensi-Vicente et al., 2018; Hoffmann et al., 2022; Kılıç & Cevheroğlu, 2023). During professional socialization, students are influenced not only by formal education but also by the hidden curriculum, including observed behaviors, communication patterns, institutional routines, and responses to errors (Abbaspour et al., 2023). Therefore, the way errors and adverse events are handled in clinical learning environments may significantly shape students' opinions on patient safety.

Non-punitive, open clinical learning environments are important for enabling nursing students to express patient safety concerns. Vahidi et al. (2025) emphasized that fear of retaliation, being labeled, or facing disciplinary consequences may prevent nursing students from voicing patient safety concerns, thereby maintaining a culture of silence. Gore and Schrems (2025) also highlighted that supportive, collaborative, and non-punitive environments are necessary for students to discuss safety concerns openly and participate in patient safety practices. Accordingly, strengthening students' reporting behaviors requires more than theoretical instruction; it also depends on safe clinical environments where students can report, question, and reflect on errors.

The roles students are expected to develop in nursing education are fundamental to ensuring safe, high-quality care (Datpınar & Torun, 2023). Consistent with this perspective, the present study found that most students

identified “identifying risks to patient safety” and “providing patient care in accordance with institutional patient safety goals” as core nursing roles, indicating awareness of their importance in ensuring patient safety.

The most frequently reported types of medical errors/adverse events encountered in clinical practice were care practice errors and medication administration errors. Previous studies have similarly reported that medication errors are among the most common error types, followed by diagnostic errors, infections, falls, and equipment-related issues (Bam et al., 2021; Kong et al., 2019; Wondmienieh et al., 2020). These findings highlight the need for targeted preventive strategies focusing on fundamental nursing responsibilities, particularly safe care delivery and medication administration.

Students’ views on how to respond to medical errors/adverse events suggest awareness of appropriate safety-oriented approaches. Many students emphasized reporting incidents and establishing a quality improvement cycle to analyze causes and develop solutions. These responses suggest that many students recognize the importance of learning from errors and improving healthcare systems rather than attributing adverse events solely to individual failure. Open reporting of adverse events is considered a critical component of a strong patient safety culture (Andrew & Mansour, 2014). However, a notable finding of this study was that 40% of students believed that healthcare professionals involved in medical errors or adverse events should be punished or warned. Chen et al. (2022) stated that professional values, educational experiences, and institutional safety culture shape students’ attitudes toward patient safety. In this context, students may be influenced by their clinical experiences and the prevailing institutional policies in both educational and healthcare settings. Therefore, fostering a non-punitive learning and working environment is essential to help students understand errors as opportunities for learning and improvement and to provide appropriate role modeling.

Students identified excessive workload and nursing staff shortages as primary causes of medical errors/adverse events, suggesting they understood the potential impact of working conditions on patient safety. Similar findings in the literature demonstrate that insufficient staffing levels and excessive workloads negatively affect the quality of care, nurse retention, and patient safety outcomes (Jin et al., 2023; Sloane et al., 2018). Such workforce-related challenges may also influence nursing students’ future professional expectations and career intentions. Considering the World Health Organization’s projection of a global health worker shortage by 2030 (WHO, 2021), improving staffing levels and working conditions is crucial for sustainable patient safety.

Regarding demographic variables, students’ opinions regarding whether healthcare professionals involved in medical errors should be punished or warned differed significantly by gender, although the effect size was small. Similarly, variations were also observed across grade levels. This difference may be related to the greater knowledge, awareness, and clinical exposure students gain throughout nursing education (Usher et al., 2017). Overall, increased clinical experience may enhance students’ sensitivity to patient safety issues and their views on error management in clinical settings.

Finally, many students identified patient safety training for nurses as a preventive strategy, highlighting the need for continuous professional education to improve patient safety in clinical practice. From this perspective, patient safety education should not be limited to undergraduate training but should also be integrated into ongoing in-service education for practicing nurses. Consistent with this, educating and training healthcare professionals has been identified as a key intervention strategy in developing a strong patient safety culture (Buljac-Samardzic et al., 2020; WHO, 2011).

4.1. Limitations

The cross-sectional design limits the ability to establish causal relationships among the variables. Furthermore, data were collected through self-report questionnaires, which may have introduced response bias and social desirability bias, as participants may have provided socially desirable responses rather than accurately reflecting their actual experiences or behaviors. Moreover, data were collected between October 2021 and March 2022 during the COVID-19 pandemic. During this period, clinical training was limited because of pandemic-related restrictions. These conditions may have influenced nursing students’ clinical experiences and opinions on patient safety.

The online data collection process and the use of convenience and snowball sampling may also have contributed to selection bias by attracting students who were more interested in patient safety issues, thereby limiting the generalizability of the findings. Additionally, although participants were recruited from seven universities across different regions of Türkiye, most students were enrolled in only two universities. Therefore, the findings may not represent all nursing students in Türkiye.

Another limitation is that the questionnaire consisted of literature-based categorical items rather than a standardized psychometric scale. Although the questionnaire was developed based on the literature and reviewed by the research team, the findings rely on descriptive, self-reported responses and may not fully capture the multidimensional nature of patient safety opinions. Furthermore, because the study included only third- and fourth-year nursing students, it cannot be expected to represent the opinions of first- and second-year students.

5. Conclusions

This study revealed that most nursing students are knowledgeable about patient safety and hold positive views on reporting medical errors/adverse events. However, in their clinical experiences, students indicated that incident reporting systems were not always fully utilized. Furthermore, some students' punitive approaches to medical errors suggest that patient safety education should place more emphasis on systems-oriented thinking and non-punitive approaches.

Strengthening collaboration between nursing education institutions and healthcare settings is essential to align educational content with clinical practice and support a consistent patient safety culture. Future research should examine in more detail how learning environments influence students' opinions on patient safety and error reporting.

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Ethical approval

Ethical approval for this research was received from the Ethics Committee of Suleyman Demirel University (dated 23/03/2021, numbered 8/157). Nursing students participating in the research were informed about the purpose of the research, confidentiality, etc., and stated that they participated in the survey voluntarily via a confirmation section.

Conflict of interest

The authors declare no conflict of interest.

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