



## Research article

# Is there a relationship between nursing students' perceptions of dishonesty and attitudes towards medical errors?

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## ABSTRACT

**Background:** Understanding nursing students' perceptions of dishonesty and their attitudes towards medical errors is crucial for nurse educators.

**Objectives:** This study aimed to examine the relationship between nursing students' perceptions of dishonesty and their attitudes towards medical errors.

**Design:** This study is descriptive and correlational research. The sample size consisted of 230 nursing students in a Department of Nursing at Kırşehir Ahi Evran University Faculty of Health Sciences in Turkey during the 2022–2023 academic year. The data was collected between May 15–31, 2023.

**Results:** A statistically significant correlation was observed between the total score of the Nursing Student Perceptions of Dishonesty Scale, and the Medical Errors Attitude Scale ( $p < 0.05$ ). There was a positive and weak correlation between the MEAS scale score and the cheating ( $r = 0.284$ ,  $p < 0.05$ ), sabotage ( $r = 0.275$ ,  $p < 0.05$ ), perjury ( $r = 0.308$ ,  $p < 0.05$ ), non-compliance ( $r = 0.309$ ,  $p < 0.05$ ), and stealing ( $r = 0.359$ ,  $p < 0.05$ ) sub dimension score, and a positive and very weak correlation between the MEAS score and the sub dimension of not my problem score ( $r = 0.182$ ,  $p < 0.05$ ). The perceptions of dishonesty explain 15 % of the attitude towards medical errors ( $F = 4.563$ ,  $p < 0.001$ ).

**Conclusions:** In this study, a significant relationship was observed between nursing students' perceptions of dishonesty and their attitudes towards medical errors. Specifically, as the perception of dishonesty increased, there was a positive change in attitudes towards medical errors. These results offer nurse educators valuable insights into the impact of academic dishonesty on the development of medical error attitudes among student nurses throughout their nursing education and beyond.

## 1. Introduction

Dishonesty in academic or clinical settings, which can undermine the learning environment, lead to poor academic performance and potentially result in acts of violence, represents a significant concern within the field of nursing education. Dishonesty can be defined as rude behaviors without respect, listening to each other, seeking common ground and appreciation. Dishonesty in nursing education is listed as cheating, plagiarism, group work in individual studies and falsification in clinical practices (Gallo, 2012). The examples of dishonesty in the classroom environment include looking at the answers of friends during an exam, taking similar homework, sabotaging a friend's homework. The examples of dishonesty in the clinical setting include recording

patient care (such as bathing, rum exercises, positioning, etc.) as if it was done, and perjury in the clinical setting (McClung and Schneider, 2018a; Lovrić and Žvanut, 2022). Various studies indicate that the prevalence of dishonesty among nursing students in academic and/or clinical settings ranges from 32.5 % to 91.3 %, and there exists a statistically significant and positive correlation between its occurrence in these two domains (Abusafia et al., 2018; Khalaila, 2015; Lovrić and Žvanut, 2022; Rafati et al., 2020). Almost all (91.3 %) of the nursing students surveyed in a study reported engaging in dishonest behaviors multiple times within the classroom, while approximately one-third (32.5 %) engaged in such behaviors during clinical practice, and the frequency of dishonesty increased with each subsequent year of undergraduate education (Lovrić and Žvanut, 2022). Furthermore, nursing students who display

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dishonest behaviors in the classroom are more likely to demonstrate similar dishonesty in clinical practice settings (Krueger, 2014; Lovrić and Žvanut, 2022; Maoz et al., 2022; McClung and Schneider, 2018a).

Given the nature of healthcare professions, medical errors are recognized as a prevalent issue (Rodziewicz et al., 2023). Although limited studies have examined medical errors and near-miss incidents specifically among nursing students, existing evidence indicates a high incidence of medical errors (Asensi-Vicente et al., 2018). In a systematic review, Vaziri et al. (2019) found that nurses and nursing students constitute the occupational group most frequently associated with medical errors, with medication errors being the most commonly reported type of error (Vaziri et al., 2019). Medical errors include such as administering the wrong medication, miscalculating the dose of medication, incorrect application of intravenous catheter, patient falls due to inadequate monitoring of patients, blood transfusion complications, sharp or piercing instrument injuries, errors due to lack of communication, errors due to the use of incorrect or inappropriate materials (Asensi-Vicente et al., 2018; Çevik et al., 2015; Solak et al., 2022).

## 2. Background

The prevalence of academic dishonesty among university students, driven by factors such as the widespread use of smartphones and the internet due to technological advancements, has witnessed an alarming increase. While any form of dishonesty among university students is concerning, it holds greater significance and implications within the nursing profession. This is particularly concerning because nursing students are entrusted with learning to provide care to actual patients in clinical settings, further heightening the urgency of addressing this issue (Krueger, 2014; Lovrić and Žvanut, 2022; Maoz et al., 2022; McClung and Schneider, 2018a).

From this perspective, the issue of dishonesty in academic settings has emerged as a significant concern that demands attention within nursing education, and its impact on the professionalism of graduates and its association with clinical dishonesty underscore the need for addressing this problem (Krueger, 2014; Lovrić and Zvanut, 2022; Maoz et al., 2022; McClung and Schneider, 2018a). In the literature, there are various studies related to the academic dishonesty and medical errors in the clinical setting. In a study, it was stated that the slightest dishonest behavior in the clinical environment in nursing students could lead to fatal events and it was reported that dishonesty behaviors in the classroom were associated with dishonesty behaviors in the clinic (Lovrić and Žvanut, 2022). In another study, it was reported that academic dishonesty would harm the professional attitude of student nurses and that unethical attitudes towards dishonesty in nursing students could have devastating consequences for the health and safety of society. The prevalence of such dishonesty poses a substantial challenge in terms of patient care and treatment, as it is linked to deficiencies in professional knowledge, professionalism, and expertise among prospective nurses, ultimately compromising the quality of patient care and public health (Maoz et al., 2022).

When medication errors are considered in terms of their prevalence and consequences, they are seen as a serious concern in health services. Medication errors, which are known to be related to many factors, are also an important problem area for nurses and nursing students, who are the largest workforce in health services. It was found that medication errors committed by nursing students during their education ranged between 6 and 11 % (Stolic et al., 2022). Examining the relationship between the perception of academic dishonesty and attitudes towards medical errors in order to take precautions before dishonesty behaviors develop in the clinical environment instead of waiting for them to develop can make a significant contribution to developing a learning environment that encourages honesty (McClung and Gaberson, 2021).

Nurse educators should not overlook the presence of dishonest behaviors exhibited by nursing students. It is crucial for them to have a comprehensive understanding of what constitutes dishonest behaviors,

their underlying causes, and effective strategies for prevention. Studies emphasize the importance of implementing interventions aimed at reducing the likelihood of dishonesty before such behaviors manifest, as well as fostering a learning environment that promotes honesty and integrity (McClung and Gaberson, 2021). Similarly, it is stated that the most useful strategies should be determined to detect and prevent medical errors made by nursing students before they develop by identifying dishonesty that are likely to lead to unethical behaviors in clinical practice (Asensi-Vicente et al., 2018). In the literature, it has been found that medical errors are common among nursing students and that they do not report errors due to their fear of the reactions they will receive if their mistakes are disclosed (Ben Natan et al., 2017). Although students' attitudinal tendencies towards medical errors are positive in the studies conducted, the findings related to reporting are thought-provoking. Medical errors should be evaluated in a broad perspective from prevention to reporting. In this respect, it is important to focus on causal factors. This study draws attention to dishonesty as a factor affecting students' attitudes towards medical errors.

## 3. Aim

The aim of the study was to examine the relationship between nursing students' perceptions of dishonesty and their attitudes towards medical errors during clinical practice.

## 4. Hypothesis

**H1.** There is a relationship between nursing students' perceptions of dishonesty and their attitudes towards medical errors.

## 5. Methods

### 5.1. Design

This study is descriptive and correlational research.

### 5.2. Participants

The study population comprised 564 students enrolled in the 2nd, 3rd, and 4th years of the Department of Nursing at Kırşehir Ahi Evran University Faculty of Health Sciences during the 2022–2023 academic year. The inclusion criteria were having taken at least one of the applied courses, participating in clinical practices, and voluntary participation. First-year students who had not yet completed clinical practices according to the nursing department's curriculum and those who were absent for more than the legally allowed period in practice or theoretical courses were excluded. The sample of the study was calculated as 230 at 50 % prevalence and 95 % confidence level. Announcements (with banner and social media messages) were made about the study and potential participants were invited to the study. Those who volunteered to participate were included in the study by contacting the principal investigator.

### 5.3. Data collection

Data was collected by the principal investigator outside of class hours between May 15–31, 2023. The data were collected face-to-face with the questionnaire method after the necessary explanations were made to the potential participants who met the inclusion criteria, and their verbal and written consents were obtained. Within the scope of the research, data collection continued until  $n = 230$  students were reached. The entire targeted sample size was reached. It took 15–20 min to complete the questionnaires.

### 5.3.1. Instruments

The data were collected face-to-face using the Descriptive Information Form, the Nursing Students Perceptions of Dishonesty Scale (NSPDS), and the Medical Errors Attitude Scale (MEAS) in the classroom environment between May 15th and May 31st, 2023, outside of class hours. It took approximately 15–20 min for participants to complete the questionnaires.

### 5.3.2. The descriptive information form

The form was developed by the researchers based on relevant literature (Güleç and Seren-İntepeler, 2013; Nüzket and Özkütük, 2018). It consists of questions about students' age, gender, marital status, year of study, type of education, the status of their voluntary choice to enter the nursing department, their overall academic average, previous training on medical errors, and previous experience with medical errors.

### 5.3.3. The Nursing Student Perceptions of Dishonesty Scale (NSPDS)

The scale was developed by McClung and Schneider in 2018 (McClung and Schneider, 2018b). The original form of the scale consists of 67 items and nine subdimensions. Each item in the scale is scored on a four-point Likert-type scale (strongly disagree: 1 point, disagree: 2 points, agree: 3 points, and strongly agree: 4 points). There is no reverse-scored item on the scale. Scale evaluation is done by dividing the total score obtained for each subdimension by the number of questions in that subdimension. The scale does not have a total score, and a score can be obtained for each subdimension. The scale consists of two dimensions: classroom and clinical. The classroom dimension includes a total of 7 subdimensions and 40 items; cheating (questions 8, 31, 23, 61, 66, 10, 25, 12, 65, 59, 20, 26, and 18), assistance (questions 50, 40, 42, 63, 29, 56, 39, 27, and 3), cutting corners (questions 37, 33, 58, 38, 44, 41, 6), not my problem (questions 2, 22, 4, 16), sabotage (questions 34, 49, 46, 51), and test file (questions 54, 47, and 13). The clinical dimension consists of 3 subdimensions and a total of 27 items, including perjury (questions 67, 64, 15, 43, 24, 60, 9, 17, 14, 62, 5, 19, 7), non-compliance (questions 67, 64, 15, 43, 24, 60, 9, 17, 14, 62, 5, 19, 7), and stealing (questions 28, 53, 57). The validity and reliability study of the Turkish version was conducted by Nüzket and Özkütük in 2018. The Cronbach's  $\alpha$  coefficients of the subdimensions of the scale were between 0.70 and 0.97 (Nüzket and Özkütük, 2018). In this study, Cronbach's  $\alpha$  coefficients of the scale subdimensions were found to be between 0.56 and 0.92. In this study, the Cronbach  $\alpha$  coefficient of the stealing subdimension was found to be below acceptable values (Polit and Beck, 2012). This may be due to the fact that there are only three items in the stealing sub-dimension. In the original form of the scale, similar to this study, the Cronbach alpha coefficient of the stealing sub-dimension was calculated as 0.62 (McClung and Schneider, 2018b).

### 5.3.4. The Medical Errors Attitude Scale (MEAS)

The Medical Errors Attitude Scale (MEAS) was developed by Güleç and Seren-İntepeler (2013) to assess the attitudes of healthcare professionals towards medical errors in Turkish. The scale was reported to be a valid and reliable instrument for the Turkish population. The scale comprises three subdimensions and a total of 16 items: perception of medical errors, approach to the medical errors, and causes of the medical errors. Subdimension scores are calculated by dividing the sum of scores for each subdimension by the number of questions within that subdimension. The total scale score is calculated by dividing the sum of all item scores by the total number of questions. It includes three subdimensions: perception of medical errors (questions 1, 2), approach to medical errors (questions 3, 8, 10, 11, 12, 13, 14), and causes of medical errors (questions 4, 5, 6, 7, 9, 15, 16). Scale scores range from 1 to 5, with a cutoff point of 3. Scores below 3 indicate negative attitudes towards medical errors, while scores of 3 and above indicate positive attitudes. In Güleç and İntepeler's study, Cronbach's alpha reliability coefficient for the scale was reported as 0.75 (Güleç and Seren-İntepeler, 2013). In the current study, Cronbach's alpha reliability coefficient for

the scale was calculated as 0.84.

### 5.4. Data analysis

Descriptive statistics, including numbers, percentages, means, and medians, were used to analyze the data. The suitability of the distributions for normality was assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests. It was found that the total score and subdimensions of the Nursing Students Perceptions of Dishonesty Scale, as well as the total score of the Medical Errors Attitude Scale, did not have a normal distribution ( $p < 0.05$ ). The Mann-Whitney  $U$  test was employed to evaluate statistical differences between two independent variables, and the Kruskal-Wallis test was used to assess differences between three independent variables. Spearman correlation analysis was conducted to examine the correlations between subdimensions of the scales. Multivariate linear regression analysis was used to analyze the predictive effect of students' perception of dishonesty on their attitudes towards medical errors. The significance level was considered  $p < 0.05$ .

### 5.5. Ethical consideration

Ethics committee permission (Decision No: 2022–17/161, Date: September 27, 2022) was obtained from the non-interventional clinical research ethics committee of Kırşehir Ahi Evran University prior to the study. Additionally, institutional permission (Number: 456278, Date: 14.09.2022) was obtained from the Dean of the Faculty of Health Sciences at Kırşehir Ahi Evran University. For the NSPDS, the necessary permission for use was obtained via e-mail from Nüzket, who adapted it to Turkish by performing its validity and reliability. For the MEAS, permission for use was obtained via e-mail from İntepeler, who developed the scale and proved that it is a valid and reliable tool. The purpose of the study was explained to the participants, and their written and verbal consent was obtained.

## 6. Results

The study was completed with a total of 230 students who had taken at least one of the applied courses and participated in clinical practices and volunteered to participate in the study. Of the students involved in the study, 93.5 % ( $n = 235$ ) were aged between 19 and 24, and 72.6 % ( $n = 167$ ) were female. 97 % ( $n = 223$ ) were single, 26 % ( $n = 60$ ) were in their second year, and 64.8 % ( $n = 149$ ) were enrolled in the daytime program, with 69.1 % ( $n = 159$ ) willingly choosing the nursing department. Regarding the students' academic performance, 52.6 % ( $n = 121$ ) had a general point average (GPA) ranging from 3.00 to 3.75. 59.6 % ( $n = 137$ ) of the students reported receiving education on medical errors, while 13 % ( $n = 30$ ) admitted to having made medical errors in the past. It was determined that 70 % ( $n = 21$ ) reported their errors to the authorities (Table 1).

The sub-dimension means of the Nursing Students' Perceptions of Dishonesty Scale in the classroom dimension were sabotage  $3.40 \pm 0.68$ ; cheating  $3.32 \pm 0.59$ , not my problem  $3.0 \pm 0.71$ , cutting corners  $2.59 \pm 0.63$ , test file  $2.21 \pm 0.76$ , assistance  $2.18 \pm 0.70$ , and in the clinical dimension non-compliance  $3.64 \pm 0.56$ , stealing  $3.63 \pm 0.34$ , and perjury  $3.46 \pm 0.58$ . The mean score on the Medical Errors Attitude Scale was found to be  $3.77 \pm 0.58$ , and 90 % of the students had a scale score above the cutoff point of 3. The mean score for the approach to medical errors subdimensions was found to be  $3.90 \pm 0.68$  (Table 2).

A statistically significant difference was found between the sub-dimension of cheating and the type of education program ( $U = -2.112$ ,  $p < 0.05$ ), indicating that students in the evening program had higher perceptions of cheating. A significant difference was also observed between the subdimension of assistance and age ( $U = -2.003$ ,  $p < 0.05$ ), gender ( $U = -2.018$ ,  $p < 0.05$ ), year of study ( $\chi^2(2)$ ,  $n = 230$ ) = 15.234,  $p < 0.05$ ), and to inform about medical error ( $U = -2.998$ ,  $p < 0.05$ ). Those who were aged between 25 and 29, males, second-year

**Table 1**  
Characteristics of the participants (n = 230).

Characteristics	n (%)
Age	
19–24	215 (93.5)
25–29	15 (6.5)
Gender	
Male	63 (27.4)
Female	167 (72.6)
Marital status	
Married	7 (3.0)
Single	223 (97.0)
Year of study	
2nd grade	60 (26.0)
3rd grade	85 (37.0)
4th grade	85 (37.0)
Type of the program	
Daytime	149 (64.8)
Evening	81 (35.2)
Willing to be a nurse	
Yes	159 (69.1)
No	71 (30.9)
GPA	
2.30–2.99	109 (47.4)
3.00–3.75	121 (52.6)
To inform about medical error	
Yes	137 (59.6)
No	93 (40.4)
Having made a medical error before	
Yes	30 (13.0)
No	200 (87.0)
Having reported the medical error (n = 30)	
Yes	21 (70.0)
No	9 (30.0)

students, and those who had not been informed about medical errors had higher perceptions of dishonesty in terms of assistance. Additionally, statistically significant differences were found between the sub-dimensions of cutting corners ( $(X^2(2), n = 230) = 6.157, p < 0.05$ ) and test file ( $(X^2(2), n = 230) = 9.500, p < 0.05$ ) and the year of study, indicating that second-year students had higher perceptions of dishonesty in these areas. A significant difference was also observed between the sub-dimensions of sabotage ( $U = -3.127, p < 0.05$ ) and perjury ( $U = -3.401, p < 0.05$ ) and gender and females exhibit higher perceptions of dishonesty in these areas. The dimension of non-compliance showed statistically significant differences with respect to gender ( $U = -3.410, p < 0.05$ ), type of the program ( $U = -2.527, p < 0.05$ ), and number of medical errors ( $U = -2.043, p < 0.05$ ). Those who were female, evening program students, and those who had committed medical errors once displayed higher perceptions of dishonesty in terms of non-compliance. Furthermore, a statistically significant difference was found between the sub dimension of stealing and the type of the program ( $U = -2.013, p < 0.05$ ), indicating that evening program students had higher perceptions of stealing. A statistically significant difference was found between the MEAS score and marital status ( $U = -2.134, p < 0.05$ ), to inform about medical error ( $U = -2.032, p < 0.05$ ), having made a medical error before ( $U = -2.359, p < 0.05$ ), number of medical errors ( $U = -2.833, p < 0.05$ ). Those who were single and those who had been informed

**Table 2**  
Distribution of the Nursing Students Perceptions of Dishonesty Scale Scores and Medical Errors Attitude Scale Score.

Dimensions and subdimensions	Mean $\pm$ SD	Median (min-max)	25th percentile	75th percentile
Classroom dimension				
Sabotage	3.40 $\pm$ 0.68	3.5 (1–4)	3.00	4.00
Cheating	3.32 $\pm$ 0.59	3.46 (1.08–4)	2.92	3.84
Not my problem	3.0 $\pm$ 0.71	3 (1–4)	2.5	3.5
Cutting corners	2.59 $\pm$ 0.63	2.57 (1.14–4)	2.14	3.00
Test file	2.21 $\pm$ 0.76	2.16 (1–4)	1.66	2.66
Assistance	2.18 $\pm$ 0.70	2.11 (1–4)	1.66	2.66
Clinical dimension				
Non-compliance	3.64 $\pm$ 0.56	3.63 (1.18–4)	3.09	3.90
Stealing	3.63 $\pm$ 0.34	3.66 (3–4)	3.33	4.00
Perjury	3.46 $\pm$ 0.58	3.69 (1–4)	3.07	4.00
Medical Errors Attitude Scale				
Total Score	3.77 $\pm$ 0.58	3.87 (1–4.81)	3.5	4.12
Distribution of the score				
Below 3	23	10.0		
3 and above	207	90.0		
Subdimensions of the scale				
Approach to medical errors	3.90 $\pm$ 0.68	4 (1–5)	3.42	4.42
Causes of the medical errors	3.87 $\pm$ 0.72	4 (1–5)	3.57	4.42
Perception of the medical errors	2.95 $\pm$ 0.75	3 (1–5)	2.5	3.5

about medical errors and had been made a medical error before displayed positive attitudes about medical errors (Table 3).

A significant correlation was found between the total score of the MEAS and the subdimensions of the NSPDS and between the sub-dimensions of the NSPDS ( $p < 0.05$ ). There was a positive and weak correlation between the MEAS scale score and the cheating ( $r = 0.284, p < 0.05$ ), sabotage ( $r = 0.275, p < 0.05$ ), perjury ( $r = 0.308, p < 0.05$ ), non-compliance ( $r = 0.309, p < 0.05$ ), and stealing ( $r = 0.359, p < 0.05$ ) sub dimension score, and a positive and very weak correlation between the MEAS score and the sub dimension of not my problem score ( $r = 0.182, p < 0.05$ ) (Table 4). In line with these results, the relationship between the attitude scale score in medical errors and the clinical dimension of the dishonesty scale was found to be stronger than the relationship between the classroom dimension.

The multivariate regression analysis of the variables explaining students' attitude towards medical errors is presented in Table 4. The model is significant ( $F = 4.563, p < 0.001$ ) and the variables explain 15 % of the attitude towards medical errors. According to the model, the sub dimension of test file ( $B = -2.302, p < 0.05$ ) and the sub dimension of stealing ( $B = 7.287, p < 0.001$ ) explain the attitude towards medical errors. Accordingly, as the test file subscale score increased by one unit, the attitude towards medical errors scale score decreased by 2.3 units, and as the stealing subscale score increased by one unit, the attitude towards medical errors scale score increased by 7.2 units (Table 5).

## 7. Discussion

In this study, nursing students' perception of dishonesty and their attitudes towards medical errors were determined and the relationship

**Table 3**  
Distribution of the participants according to sociodemographic characteristics and the Medical Errors Attitude Scale Score and Nursing Students Perceptions of Dishonesty Scale Scores (n = 230).

Characteristics	Medical Errors Attitude Scale		Subdimensions of Nursing Students Perceptions of Dishonesty Scale																	
			Cheating		Assistance		Cutting corners		Not my problem		Sabotage		Test file		Perjury		Non-compliance		Stealing	
	U/X <sup>2</sup>	p	U/X <sup>2</sup>	p	U/X <sup>2</sup>	p	U/X <sup>2</sup>	p	U/X <sup>2</sup>	p	U/X <sup>2</sup>	p	U/X <sup>2</sup>	p	U/X <sup>2</sup>	p	U/X <sup>2</sup>	p	U/X <sup>2</sup>	p
Age																				
19–24	–0.239	0.811	–1.198	0.231	–2.003	0.045*	–0.392	0.695	–0.313	0.754	–1.067		–1.152	0.249	–1.894	0.058	–1.527	0.127	–0.006	0.995
25–29 <sup>a</sup>											0.286									
Gender																				
Male <sup>b</sup>	–0.356	0.722	–1.853	0.064	–2.018	0.044*	–0.514	0.608	–1.164	0.244	–3.127		–0.007	0.995	–3.401	0.001*	–3.410	0.001*	–1.610	0.107
Female <sup>a</sup>											0.002*									
Marital status																				
Married	–2.134	0.033*	–0.208	0.835	–1.320	0.187	–0.824	0.410	–0.041	0.968	–1.056		–1.519	0.129	–1.195	0.232	–1.093	0.274	–0.306	0.760
Single <sup>a</sup>											0.291									
Year of study																				
2nd grade <sup>a</sup>	2.842	0.241	5.823	0.054	15.234	<0.001	6.157	0.046*	5.957	0.051	2.571		9.500	0.009*	1.228	0.541	1.578	0.454	1.032	0.597
3rd grade											0.276									
4th grade																				
Type of the program																				
Daytime	–0.585	0.559	–2.112	0.035*	–0.200	0.841	–1.217	0.224	–1.624	0.104	–1.558		–1.156	0.876	–1.453	0.146	–2.527	0.012*	–2.013	0.044*
Evening <sup>a</sup>											0.119									
Willing to be a nurse																				
Yes	–0.878	0.380	–1.335	0.182	–0.199	0.843	–0.038	0.970	–1.570	0.116	–0.286		–0.140	0.889	–0.427	0.669	–0.277	0.782	–0.217	0.828
No											0.775									
GPA																				
2.30–2.99	–1.205	0.228	–0.287	0.774	–1.602	0.109	–0.966	0.334	–0.953	0.341	–0.821		–1.092	0.275	–1.074	0.283	–0.082	0.935	–0.572	0.567
3.00–3.75											0.411									
To inform about medical error																				
Yes <sup>c</sup>	–2.032	0.042*	–0.179	0.858	–2.998	0.003*	–0.392	0.695	–0.223	0.824	–1.553		–1.880	0.060	–0.380	0.704	–0.100	0.920	–0.996	0.319
No <sup>b</sup>											0.120									
Having made a medical error before																				
Yes <sup>a</sup>	–2.359	0.018*	–1.452	0.146	–1.598	0.110	–1.457	0.145	–1.539	0.124	–1.694		–1.048	0.295	–0.852	0.394	–1.763	0.078	–0.498	0.619
No											0.090									
Having reported the medical error (n = 30)																				
Yes	–1.066	0.287	–1.205	0.244	–1.885	0.059	–0.182	0.855	–0.483	0.657	–0.121	0.903	–1.539	0.124	–1.413	0.158	–1.238	0.216	–0.435	0.664
No																				
Number of medical errors (n = 30)																				
One <sup>a</sup>	–2.833	0.005*	–1.253	0.224	–0.125	0.900	–0.482	0.630	–0.591	0.554	–1.583	0.113	–1.245	0.213	–1.106	0.269	–2.043	0.041*	0.000	1.000
More than one																				

U: Mann Whitney U test, X<sup>2</sup> = Kruskal Wallis test.

\* p < 0.001.

<sup>a</sup> The group from which the significance originates (with the higher score).

<sup>b</sup> Only the group from which significance originates (with higher scores) in the assistance sub-dimension.

<sup>c</sup> Only the group from which the significance in the attitude scale score in medical errors originates (with a higher score).

**Table 4**

The Spearman Correlation Analysis of Nursing Students Perceptions of Dishonesty Scale and Medical Errors Attitude Scale.

The Scores of the Scale	1	2	3	4	5	6	7	8	9	10
1. Medical Errors Attitude Scale	1									
2. Cheating	0.284*	1								
3. Assistance	-0.110	0.084	1							
4. Cutting corner	0.094	0.471*	0.570*	1						
5. Not my problem	0.182*	0.590*	0.166**	0.404*	1					
6. Sabotage	0.275*	0.645*	-0.124	0.290*	0.287*	1				
7. Test file	-0.105	0.164**	0.677*	0.554*	0.201**	0.002	1			
8. Perjury	0.308*	0.725*	-0.245*	0.233*	0.438*	0.666*	-0.077	1		
9. Non-compliance	0.309*	0.723*	-0.126	0.302*	0.387*	0.760*	0.044	0.777*	1	
10. Stealing	0.359*	0.437*	-0.089	0.152**	0.166**	0.438*	0.015	0.472*	0.492*	1

\* p &lt; 0.001.

\*\* p &lt; 0.05.

**Table 5**Multivariate linear regression analysis between attitude scale score in medical errors and Academic Dishonesty Scale subscales<sup>a</sup>.

Variables	B	Std. error	Beta	t	p
Constant	30.821	6.847	-	4.501	<0.001
Cheating	1.603	1.917	0.102	0.836	0.404
Assistance	-1.293	1.327	-0.097	-0.974	0.331
Cutting corners	2.667	1.430	0.181	1.865	0.063
Not my problem	1.130	1.018	0.087	1.110	0.268
Sabotage	-0.114	1.487	-0.008	-0.076	0.939
Test file	-2.302	1.114	-0.188	-2.066	0.040
Perjury	-2.034	2.202	-0.126	-0.923	0.357
Non-compliance	0.805	2.482	0.049	0.324	0.746
Stealing	7.287	1.881	0.270	3.874	<0.001
R <sup>2</sup>	0.157				
F (p)	4.563 (<0.001)				

<sup>a</sup> Dependent variable: attitudes towards medical errors scale score.

between perception of dishonesty and attitudes towards medical errors was revealed.

Academic dishonesty is a concept that started to attract attention in the early 2000s and is a common and important problem among nursing students (McCabe, 2009). In studies conducted in various countries on academic dishonesty, it has been determined that academic dishonesty (Kiekkas et al., 2020) and clinical dishonesty are common in nursing students and academic dishonesty is associated with clinical dishonesty (Abusafia et al., 2018; Bultas et al., 2017; Macale et al., 2017; Maoz et al., 2022; Rafati et al., 2020). The perception of academic dishonesty is an important feature that determines the attitudes and behaviors of students in the classroom and school, in their relationships with each other and with the instructor. A weaker perception of academic dishonesty, the tendency not to perceive some behaviors as such even though they are irregular, may affect the attitude in medical errors due to maintaining the same attitude in the clinical environment. The perception of academic dishonesty in nursing students in the hospital environment during clinical practice is important in terms of affecting the attitude towards medical errors they encounter in real patient care experiences (McCabe, 2009; Abusafia et al., 2018; Bultas et al., 2017; Macale et al., 2017; Maoz et al., 2022; Rafati et al., 2020).

The academic dishonesty among nursing students during their education has direct implications for their potential engagement in unethical practices when they become professional nurses (LaDuke, 2013). Unethical practices in the clinical setting can lead to medical error. A medical error is defined as an unintentional act, negligence or misconduct that causes or has the potential to cause harm to a patient (American Medical Association, 2023). In the literature, nursing students' attitudes towards medical errors and related factors have been examined (Gülner et al., 2020; Korhan et al., 2017; Sümen et al., 2022). However, there is no study examining the relationship between academic dishonesty and attitudes towards medical errors in nursing students. Nevertheless, in many studies, it was determined that academic

dishonesty was common in pharmacy, medical faculty and physiotherapy students (Kukolja-Taradi et al., 2012; Montuno et al., 2012; Rabi et al., 2006). Attitude towards medical errors is an important characteristic of nursing students' professional practices, and dishonesty shown during nursing education may have an impact on nursing students' professional practices (Gaberson, 1997). In this context, this study contains important results for nurse educators as it shows the relationship between student nurses' perception of dishonesty and their attitudes towards medical errors.

When the literature on dishonesty in nursing students was examined, it was determined that students engaged in at least one academic dishonesty behavior in academic and clinical settings (Abusafia et al., 2018; Maoz et al., 2022; Rafati et al., 2020). It was found that cheating is common among academic dishonesty and students normalize this behavior (Bultas et al., 2017; Kiekkas et al., 2020; Macale et al., 2017). The dishonesty in the clinical setting includes reporting or recording vital signs even though they were not taken or remembered correctly, disrupting sterility and not reporting it, and talking about patients in public or with non-medical staff (Abusafia et al., 2018; Bultas et al., 2017; Rafati et al., 2020). In this study, it was observed that nursing students who were included in the study had a high tendency to dishonesty such as sabotage and cheating in the classroom and perjury, non-compliance and stealing in the clinic. As a result, in this study, it can be said that students' perception of dishonesty in both clinical and classroom settings is higher than in other studies. Also, in this study, it was determined that students' attitudes towards medical errors were positive. Similarly, in a study, students' attitudes towards medical errors were positive (Gülner et al., 2020). In the literature, it has been determined that age, gender, year of study, and receiving education on patient safety are important variables in terms of academic dishonesty (Bultas et al., 2017; Çınar et al., 2020; Jamal et al., 2023; Macale et al., 2017). Similarly, in this study, students' age, gender, grade, type of the program, and information about medical errors are associated with the perception of dishonesty.

According to the results of the study, it was determined that there was a significant relationship between the perception of academic dishonesty and the attitude towards medical errors in nursing students and hypothesis H1 was accepted. When the relationship between nursing students' perception of dishonesty and their attitudes towards medical errors was examined in the study, it was determined that as students' perception of dishonesty in the sub-dimensions of cheating, not my problem, sabotage, perjury, non-compliance, and stealing increased, their attitudes towards medical errors changed positively. In addition, it was observed that students' perception of dishonesty explained 15 % of the variance of attitudes towards medical errors. In a limited number of studies, it was determined that there was a positive relationship between dishonesty in the academic and clinical setting in nursing students (Abusafia et al., 2018; Maoz et al., 2022).

## 8. Limitations

The main identified limitation of the study is that, as it employed a descriptive and correlational design, the results are limited to the specific population of nursing students enrolled in the relevant faculty, and the causal relationship between the variables could not be fully determined. In addition, the use of students' self-reports in the study is another limitation of the study. The students' identity information was not included in the questionnaire forms. In order for the students to answer the scale items according to their own opinions and thoughts without feeling any pressure, it was explained before the questionnaires were distributed that they would not be judged by this research, that there was no right or wrong answer to the scale items and that they should answer the items according to their own opinions and thoughts. During the completion of the questionnaires, the students were left alone and were allowed to fill in the data collection forms freely and sincerely.

## 9. Conclusions

The findings of this study shed light on the relationship between academic dishonesty and the tendency to commit medical errors among nursing students. These findings emphasize the importance of addressing the issue of academic dishonesty within nursing education, considering its potential impact on both theoretical and practical aspects of nursing practice. The study also highlights the significance of nursing students' perceptions of dishonesty in forming their attitudes towards medical errors.

Based on the findings of this study, a significant relationship was observed between nursing students' perceptions of dishonesty and their attitudes towards medical errors. Specifically, as the perception of dishonesty increased, there was a positive change in attitudes towards medical errors. These findings highlight the importance of nurse educators being aware of both academic dishonesty and medical errors within the nursing education process. They should examine the underlying causes and consequences of these behaviors and establish proactive procedures to address them. Informing students about these issues and promoting ethical conduct can be valuable initiatives. To effectively prevent academic dishonesty, it is crucial to develop and disseminate deterrent strategies and institutional policies involving all stakeholders in nursing education.

Further research is needed to explore different types of academic dishonesty and attitudes towards medical errors among nursing students. It is recommended to conduct studies focusing on raising awareness and proposing solutions related to the frequency of dishonesty and medical errors among nursing students, factors contributing to these behaviors, and strategies to address them using both qualitative and quantitative designs.

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## CRedit authorship contribution statement

**Gizem Deniz Büyüksöy:** Writing – review & editing, Writing – original draft, Supervision, Software, Methodology, Investigation, Data curation, Conceptualization. **Kamuran Özdil:** Writing – review & editing, Writing – original draft, Visualization, Supervision, Methodology, Conceptualization. **Aslıhan Çatıker:** Writing – review & editing, Writing – original draft, Visualization, Supervision, Methodology, Investigation, Conceptualization.

## Declaration of competing interest

The author(s) declared no potential conflicts of interest with respect

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## References

- Abusafia, A.H., Roslan, N.S., Mohd Yusoff, D., Mat Nor, M.Z., 2018. Snapshot of academic dishonesty among Malaysian nursing students: a single university experience. *J. Taibah Univ. Med. Sci.* 13 (4), 370–376. <https://doi.org/10.1016/j.jtumed.2018.04.003>.
- American Medical Association, 2023. Code of medical ethics. URL <https://code-medical-ethics.ama-assn.org/sites/default/files/2022-08/8.6.pdf>. (Accessed 10 October 2023).
- Asensi-Vicente, J., Jiménez-Ruiz, I., Vizcaya-Moreno, M.F., 2018. Medication errors involving nursing students: a systematic review. *Nurse Educ.* 43 (5), 1–5. <https://doi.org/10.1097/NNE.0000000000000481>.
- Ben Natan, M., Sharon, I., Mahajna, M., Mahajna, S., 2017. Factors affecting nursing students' intention to report medication errors: an application of the theory of planned behavior. *Nurse Educ. Today* 58, 38–42. <https://doi.org/10.1016/j.nedt.2017.07.017> (Nov).
- Bultas, M.W., Schmuke, A.D., Davis, R.L., Palmer, J.L., 2017. Crossing the "line": college students and academic integrity in nursing. *Nurse Educ. Today* Sep (56), 57–62. <https://doi.org/10.1016/j.nedt.2017.06.012>.
- Çevik, A.B., Demirci, A., Güven, Z., 2015. Medication administration errors and medical error awareness of nursing students during clinical training. *Acibadem Univ. J. Health Sci.* 6 (3), 152–159 (In Turkish).
- Çınar, F., Pamuk, E., Ulusoy, E.F., Yılmaz, M., 2020. Determination of attitudes towards medical errors of faculty of health sciences students. *J. Health Soc. Welf. Res.* 2 (1), 40–51 (In Turkish).
- Gaberson, K.B., 1997. Academic dishonesty among nursing students. *Nurs. Forum* 32 (3), 14–20. <https://doi.org/10.1111/j.1744-6198.1997.tb00205.x>.
- Gallo, V.J., 2012. Incivility in nursing education: a review of the literature. *Teach. Learn. Nurs.* 7 (2), 62–66. <https://doi.org/10.1016/j.teln.2011.11.006>.
- Güleç, D., Seren-İntepeler, Ş., 2013. Developing a scale of attitudes towards medical errors. *J. Res. Dev. Nurs.* 15 (3), 26–41 (In Turkish).
- Gülınar, E., Özveren, H., Özden, D., 2020. The relationship between moral sensitivity and medical errors attitude in nursing students. *J. Forensic Leg. Med.* Jul (73), 101981 <https://doi.org/10.1016/j.jflm.2020.101981>.
- Jamal, H., Shabana, S., Khan, S., Sultan, A., 2023. Ethical awareness among undergraduate nursing students of Khyber Pukhtankhwa. *Pak. J. Med. Health Sci.* 17 (3), 22–24. <https://doi.org/10.53350/pjmhs202317322>.
- Khalaila, R., 2015. Academic dishonesty among nursing college students: attitudes, perceptions and dishonest activities. *Med. Law* 34 (1), 91–108.
- Kiekkas, P., Michalopoulos, E., Stefanopoulos, N., Samartzis, K., Krania, P., Giannikopoulou, M., Igoumenidis, M., 2020. Reasons for academic dishonesty during examinations among nursing students: cross-sectional survey. *Nurse Educ. Today* Mar (86), 1–7. <https://doi.org/10.1016/j.nedt.2019.104314>.
- Korhan, E.A., Dilemek, H., Mercan, S., Yılmaz, D.U., 2017. Determination of attitudes of nurses in medical errors and related factors. *Int. J. Caring Sci.* 10 (2), 794–801.
- Krueger, L., 2014. Academic dishonesty among nursing students. *J. Nurs. Educ.* 53 (2), 77–87. <https://doi.org/10.3928/01484834-20140122-06>.
- Kukulja-Taradi, S., Taradi, M., Dogas, Z., 2012. Croatian medical students see academic dishonesty as an acceptable behaviour: a cross-sectional multicampus study. *J. Med. Ethics* 38 (6), 376–379. <https://doi.org/10.1136/medethics-2011-100015>.
- LaDuke, R.D., 2013. Academic dishonesty today, unethical practices tomorrow? *J. Prof. Nurs.* 29 (6), 402–406. <https://doi.org/10.1016/j.profnurs.2012.10.009>.
- Lovrić, R., Žvanut, B., 2022. Profiling nursing students' dishonest behaviour: classroom versus clinical settings. *Nurs. Ethics* 29 (6), 1353–1371. <https://doi.org/10.1177/09697330221075779>.
- Macale, L., Ghezzi, V., Rocco, G., Fida, R., Vellone, E., Alvaro, R., 2017. Academic dishonesty among Italian nursing students: a longitudinal study. *Nurse Educ. Today* Mar (50), 57–61. <https://doi.org/10.1016/j.nedt.2016.12.013>.
- Maoz, E., Gorbunov, I., Danino, E., Zerahia, M., 2022. An honest cheater: perception of self-concept, academic and clinical dishonesty among nursing students. *Nurse Educ. Today* Jul (114), 1–6. <https://doi.org/10.1016/j.nedt.2022.105406>.
- McCabe, D.L., 2009. Academic dishonesty in nursing schools: an empirical investigation. *J. Nurs. Educ.* 48 (11), 614–623. <https://doi.org/10.3928/01484834-20090716-07>.
- McClung, E.L., Gaberson, K.B., 2021. Academic dishonesty among nursing students: a contemporary view. *Nurse Educ.* 46 (2), 111–115. <https://doi.org/10.1097/NNE.0000000000000863>.
- McClung, E.L., Schneider, J.K., 2018a. Dishonest behavior in the classroom and clinical setting: perceptions and engagement. *J. Nurs. Educ.* 57 (2), 79–87. <https://doi.org/10.3928/01484834-20180123-04>.
- McClung, E.L., Schneider, J.K., 2018b. The development and testing of the Nursing Student Perceptions of Dishonesty Scale. *Nurse Educ. Today* Feb (61), 28–35. <https://doi.org/10.1016/j.nedt.2017.11.002>.
- Montuno, E., Davidson, A., Iwasaki, K., Jones, S., Martin, J., Brooks, D., Gibson, E.B., Mori, B., 2012. Academic dishonesty among physical therapy students: a descriptive study. *Physiother. Can.* 64 (3), 245–254. <https://doi.org/10.3138/ptc.2011-13>.

- Nüzket, G., Özkütük, N., 2018. The Investigation of the Validity and Reliability of Nursing Students Perceptions of Dishonesty Scale [Dissertation]. Ege University, İzmir (In Turkish).
- Polit, D.F., Beck, C.T., 2012. *Nursing Research: Generating and Assessing Evidence for Nursing Practice*, 9th ed. Lippincott Williams & Wilkins.
- Rabi, S.M., Patton, L.R., Fjortoft, N., Zgarrick, D.P., 2006. Characteristics, prevalence, attitudes, and perceptions of academic dishonesty among pharmacy students. *Am. J. Pharm. Educ.* 70 (4), 73. <https://doi.org/10.5688/aj700473>.
- Rafati, F., Bagherian, B., Shahrabaki-Mangolian, P., Imani Goghari, Z., 2020. The relationship between clinical dishonesty and perceived clinical stress among nursing students in southeast of Iran. *BMC Nurs.* 19 (39), 1–8. <https://doi.org/10.1186/s12912-020-00434-w>.
- Rodziewicz, T.L., Houseman, B., Hipskind, J.E., 2023. Medical error reduction and prevention. URL: <https://www.ncbi.nlm.nih.gov/books/NBK499956/>. (Accessed 2 May 2023).
- Solak, M., Uygur, R., Cihan, G., Evcı, G., 2022. Determining defective medical practice trends of nursing intern students. *J. Contin. Med. Educ.* 30 (6), 427–435. <https://doi.org/10.17942/sted.876685> (In Turkish).
- Stolic, S., Ng, L., Southern, J., Sheridan, G., 2022. Medication errors by nursing students on clinical practice: an integrative review. *Nurse Educ. Today* May (112), 105325. <https://doi.org/10.1016/j.nedt.2022.105325>.
- Sümen, A., Ünal, A., Aksoy, S., 2022. Nursing students' self-reported experiences and attitudes regarding patient safety: a cross-sectional study comparing the classroom and clinical settings. *Collegian* 29 (3), 320–327. <https://doi.org/10.1016/j.colegn.2021.08.010>.
- Vaziri, S., Fakouri, F., Mirzaei, M., Afsharian, M., Azizi, M., Arab-Zozani, M., 2019. Prevalence of medical errors in Iran: a systematic review and meta-analysis. *BMC Health Serv. Res.* 19 (622), 1–11. <https://doi.org/10.1186/s12913-019-4464-8>.