

Determination of the tendency of imprudent behavior and malpractice in nursing students of a state university

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Abstract

Aim: This study was conducted to determine the tendency of imprudent behavior and malpractice in nursing students of a state university.

Material and Methods: The sample of this descriptive cross-sectional study consisted of 103 students.

Results: The vast majority of the students indicated factors such as small number of nurses working, high workload, fatigue, stress and loading nurses with off-duty jobs as causes of medical malpractice.

Conclusion: The majority of medical malpractices occur due to preventable imprudent behavior. Although the tendency of nurses to perform medical malpractice appears to be low, providing trainings on reducing medical malpractices may contribute to raising awareness on patient safety.

Keywords: Imprudence; malpractice; nursing

INTRODUCTION

The improper practices of people who perform a job professionally are defined as damage to the service area as a result of their lack of knowledge, skills and care or their negligence (1). Nowadays, medical malpractices are continuously brought to the agenda through social media and press organs and attract public attention. Malpractice is an issue which has been discussed with its ethical, legal, medical, educational and managerial aspects in recent years across the world. In recent years in Turkey, this issue has been discussed in several dimensions and entered into a process of seeking solutions.

In one of the most comprehensive studies on medical side effects and malpractices, malpractice was explained as undesired events that occur under the responsibility of physicians and other healthcare professionals who take care of the patient individually in the periods of diagnosis, treatment, care and after the care and directly affect the patient's life and health status (2). Every year, the health of millions of people is negatively affected by malpractice (3). It is stated that malpractice ranks the eighth among the causes of death in Turkey, and more than 95% of these cases are actually preventable (4). This situation is more

serious in the United States of America. Approximately 400,000 medical malpractice cases occurring during a year result in death (5).

Personal factors such as lack of communication, lack of effective education, carelessness, fatigue, burnout and stress and problems related to the system such as organizational structure, technical infrastructure and lack of manpower were determined to be the causes of malpractice. When we look at the practices of nursing services, it was stated that carelessness, lack of experience in the profession, insufficient knowledge, negligence, in compliance with orders and regulations and imprudent behaviors may lead to malpractice (6-10).

Imprudent behavior is behavior that exposes individuals to dangerous consequences without taking necessary precautions to protect the individuals who exhibit the behavior and are exposed to the effects of the behavior or to prevent damages (11). Various ways are sought by healthcare professionals to prevent malpractice or minimize the damage that may occur. To pay the necessary importance to this issue in nursing education is the most important solution. It was observed that comprehensive education is provided on care and drug applications in

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the nursing education in Turkey, while enough information is not given about imprudent behaviors and medical malpractice (9,12). However, unfortunately, very few studies are available on this topic in terms of improving the nursing curriculum (13,14). It is of great importance to improve the curriculum and increase the levels of knowledge and awareness on malpractice of students who will perform the profession of nursing in the future.

Nurses have a high risk of malpractice and imprudent behaviors since they have a closer relationship and spend longer time with patients in comparison to other healthcare professionals (10). The fact that nurses are aware of such negative events, learn lessons from their mistakes and try to prevent mistakes may positively improve patient safety. Their levels of awareness will increase as studies on this and similar topics increase in numbers. Along with such an increase in awareness, negative behaviors, prejudices and feelings of insecurity caused by lack of knowledge and lack of education in these areas will disappear. This will also allow the quality of service provided to the patient to increase, the patient will be able to receive a diagnosis, treatment and care in a shorter period of time, and patient satisfaction and morale, as well as motivation of employees, will increase.

MATERIAL and METHODS

Design and sample

This study was carried out as a descriptive study. All 2nd, 3rd and 4th year students studying at the nursing department of a state university constituted the population of the study (n:110 students), and students from among these who volunteered to participate in the study constituted the sample. The study was completed with 103 students, thus reaching 94% of the entire population. The data of the study were collected from the students studying in the 2nd, 3rd and 4th years at the Nursing Department of Munzur University School of Health Services between January 1, 2018 and January 30, 2018. The data were collected at the end of the 1st semester after the clinical practices were completed. 1st year students were not included in the study as they did not take part in practice in the period when the data were collected.

Data collection

A personal information form developed by the researchers, the Medical Malpractice Tendency Scale and the List of Imprudent Behaviors were used in the data collection process. The data were collected by the researchers, and the questionnaire lasted for 15 minutes on average.

Personal Information Form: The Personal Information Form consisted of two parts. The first part included a total of 7 questions (age, gender, year of study, etc.), and the second part included 24 questions (questions on the opinions of the students participating in the study about the causes of medical malpractices at the units they practice. The participants responded to each item by marking one out of the options of never, rarely, sometimes, usually and frequently.

Medical Malpractice Tendency in Nursing Scale (MMTNS)

The scale, which was developed by Özata and Altunkan in 2010, was prepared to assess nurses' tendencies towards medical malpractice. The scale has 49 items and 5 dimensions. The 5-point Likert-type scale is scored as 1: never, 2: rarely, 3: sometimes, 4: usually, 5: always. The minimum and maximum scores to be obtained from the scale are 49 and 245, respectively. The scale consists of five dimensions: drug and transfusion applications, falls, prevention of infections, communication, patient monitoring and material safety. The point average is used in the evaluation of the scale. A high point average indicates that nurses' tendency to perform medical malpractice is low, while a low point average indicates that nurses' tendency to perform medical malpractice is high. The internal consistency coefficient (Cronbach's Alpha) of the scale was found to be 0.95 (15). The Cronbach's Alpha coefficient of the scale in this study was calculated as 0.95.

List of Imprudent Behaviors (LIB)

LIB involves 50 imprudent behaviors that are supposed to be unique to adults. The respondents are asked to indicate whether they exhibit the behaviors expressed in the list in their daily lives by selecting one of the options "yes" or "no" for each behavior. 1 point is given to the answer "Yes, I do" for each behavior in the list. No point is given to the answer "No, I do not". Therefore, the points to be obtained from LIB vary between 0 and 50. Higher scores obtained from LIB indicate more frequent imprudent behaviors (16).

Data analysis

The SPSS 22.0 software was used for the analysis of the data collected in the study. Frequency, percentage, mean and standard deviation, Kruskal Wallis test, t-test, one-way analysis of variance and Pearson's correlation test were used in the analysis.

Ethical Considerations

Ethical approval was obtained from Munzur University Non-interventional Studies Ethics Committee (2018/E.120) before starting the study, and written permission was obtained from the Rectorate of Munzur University and the school management to carry out the study. Written consents were obtained from the students who participated in the study.

RESULTS

It was determined that the mean age of the students participating in the study was 22±1.80, 50.5% of them were female, 49.5% of them were studying in their 3rd year, 50.5% of them voluntarily chose their profession, 49.5% of them were moderately satisfied with their profession, and 69.9% of them were thinking of performing their profession (Table 1).

It was determined that the great majority of the participants in the study stated factors such as small number of nurses working, high workload, fatigue and loading nurses with off-duty (secretary duty) jobs as causes of medical malpractice (Table 2).

Table 1. Distribution of demographic characteristics of students (n:103)

Characteristics	N	%	
Gender	Female	52	50.5
	Male	51	49.5
Grade	2	22	21.4
	3	51	49.5
	4	30	29.1
Voluntary choice of profession	Yes	52	50.5
	No	51	49.5
Level of satisfaction in profession	Low	20	19.4
	Moderate	51	49.5
	High	32	31.1
Thinking of performing the profession	Yes	72	69.9
	No	31	30.1
Age (year)	X±SD 22±1.80		

It was determined that the mean total score in the Medical Malpractice Tendency Scale was 199.59 ± 26.35 , and the mean scores of the dimensions were as 77.37 ± 9.87 for drug applications and transfusion, 19.15 ± 3.86 for falling, 52.35 ± 6.33 for hospital infections, 32.35 ± 6.39 for hospital monitoring/material safety and 18.33 ± 4.80 for communication (Table 3).

It was determined that the mean scores of drug applications and transfusion were higher in the female participants in comparison to the male participants, while the mean scores of the male participants were higher in the patient monitoring/material safety communication dimensions in comparison to the female participants. However, the difference between the groups was not statistically significant (Table 4).

In the study, it was determined that the mean scores of the 3rd year students in the drug applications and transfusion dimension of the Medical Malpractice Tendency Scale were higher compared to those in other years of study. However, the difference between the groups was not significant. Additionally, the mean scores of the 2nd year students in the patient monitoring/material safety and communication dimensions were higher in comparison to the others, while the difference between the groups was not statistically significant (Table 4).

In the study, it was determined that the mean total score of those who voluntarily chose their profession in the Medical Malpractice Tendency Scale and all dimension scores were higher compared to those who did not voluntarily choose their profession. However, the difference between the groups was not statistically significant (Table 4).

Table 2. Distribution of the causes of medical malpractice according to students (n:103)

Causes of medical malpractice	X±SD	Causes of medical malpractice	X±SD
Lack of experience	3.33 ± 0.913	Duties, authorities and responsibilities are not fully determined	3.37 ± 0.96
Insufficient professional knowledge	3.54 ± 0.94	Loading nurses with off-duty (secretaryship) jobs	3.79 ± 0.96
Long working hours	3.74 ± 0.99	High number of monthly guard	3.68 ± 1.11
Fatigue	3.79 ± 1.03	Small number of nurses working	3.93 ± 1.01
Sense of burnout	3.66 ± 1.08	Changeability of the unit where nurses work	3.60 ± 1.12
Stress	3.66 ± 0.86	Failure to pay attention to changes of guard	3.31 ± 1.05
Negative physical (heat, light, noise) environment	2.90 ± 0.93	Lack of information about the patient's treatment and care or forgetting of them	3.42 ± 1.05
Absence of mistake-proofing system	3.32 ± 0.86	Failure to keep records regularly	3.26 ± 1.11
Lack or incomprehensibility of protocol and procedures	3.05 ± 0.92	Dissatisfaction with the administrators	3.22 ± 1.01
Lack of communication	3.40 ± 0.95	Dislike of the profession	3.59 ± 1.13
Incomprehensibility of doctor's demands (bad writing or language)	3.45 ± 0.95	Lack of in-service trainings for the profession	3.29 ± 0.92
High workload	3.90 ± 1.00	Other	4.61 ± 0.75

Table 3. Distribution of total point averages of the medical malpractice tendency scale and its sub-dimensions

Scale and sub-dimensions	Min	Max	X±SD
Drug applications and transfusion	53	90	77.37±9.87
Falling	6	25	19.15±3.86
Hospital Infections	33	60	52.35±6.33
Patient Monitoring/Material Safety	14	45	32.35±6.39
Communication	5	25	18.33±4.80
Total	117	240	199.59±26.35

Table 4. Comparison of students' demographic characteristics and medical malpractice tendency scale point averages

	Medical Malpractice Tendency Scale					
	Drug Applications and Transfusion X±SD	Fall X±SD	Hospital Infections X±SD	Patient monitoring/ material safety X±SD	Communication X±SD	Total X±SD
Gender						
Female	78.50±9.90	19.25±4.05	52.48±6.49	31.50±6.36	17.82±5.10	199.55±26.78
Male	76.23±9.81	19.05±3.70	52.23±6.22	33.23±6.37	18.86±4.447	199.62±26.18
t	1.166	.250	.196	-1.383	-1.095	-.013
p	.24	.80	.845	.170	.276	.989
Grade						
2	75.95±11.74	19.40±3.69	52.50±5.01	34.59±6.43	19.00±5.20	201.45±28.53
3	79.15±9.04	19.78±3.47	52.66±6.14	32.29±6.04	18.68±4.15	202.58±23.52
4	75.40±9.53	17.90±4.41	51.73±7.55	30.83±6.68	17.26±5.47	193.13±28.94
KW	3.68	3.74	.265	4.80	1.68	2.18
p	.158	.154	.876	.091	.432	.335
Voluntary choice of profession						
Yes	79.07±9.89	19.51±3.92	53.36±5.62	33.48±7.47	19.00±5.46	204.44±28.69
No	75.64±9.64	18.78±3.80	51.33±6.88	31.21±4.88	17.66±3.96	194.64±22.97
t	1.781	.964	1.642	1.817	1.415	.179
p	.078	.337	.104	.072	.160	.059
Level of satisfaction in profession						
Low	74.60±12.06	18.85±5.35	49.50±7.76	32.00±6.88	17.65±4.84	192.60±30.53
Moderate	79.17±9.12	19.03±3.20	53.68±5.40	32.66±5.72	18.66±4.10	203.23±22.45
High	76.25±9.25	19.53±3.85	52.03±6.29	32.09±7.23	18.25±5.82	198.15±29.07
KW	3.58	1.014	4.75	.204	.904	1.89
p	.167	.602	.093	.903	.636	.388
Thinking of performing the profession						
Yes	77.36±9.38	19.44±3.24	52.77±5.56	32.70±5.93	18.76±4.83	201.05±24.24
No	77.41±11.09	18.48±5.03	51.38±7.85	31.54±7.39	17.35±4.66	196.19±30.87
t	-.027	1.158	1.023	.843	1.371	.858
p	.987	.250	.309	.401	.173	.393

Table 5. Distribution of the list of imprudent behaviors according to students (n:103)

	Yes	%		Yes	%
1. I don't lock my door at night when I sleep or leave home.	51	49.5	26. In cases where I have to go high such as inserting lamp or putting up the curtains or picking up items from a high shelf, I stepped on the items without paying attention to whether I am sound.	44	42.7
2. I neglected to unplug electrical appliances such as mixer, food processor and drill or I plugged them without checking to see if the operating buttons are in the open position.	57	55.3	27. I got off the collective taxi, bus, car or train without waiting them to stop completely.	19	18.4
3. I touch the cleaning agents such as bleach, laundry or dishwashing detergent with bare hands while doing cleaning.	68	66.0	28. If I'm in a hurry, I'm drive too fast, or I let the driver drive very fast.	47	45.6
4. I leave sharp objects and tools such as scissors, knives, nails and needles around.	48	46.6	29. I went away for a short time when my house, work place or car door was open.	44	42.7
5. Occasionally, I left home for a short time when there was food, tea, and tea on the stove.	27	26.2	30. I across the street without checking the right and left sides.	20	19.4
6. I bought packaged foodstuffs without paying attention to their expire dates.	55	53.4	31. I invited someone I just met to my house or I went to the house of someone I just met.	43	41.7
7. I do shopping with credit card without thinking I can pay or not	30	29.1	32. I picked up or pulled very heavy items on my own.	68	66.0
8. I stepped on slippery, wet or cold floors in bare feet.	69	67.0	33. I left drugs, detergents or substances such as sink opener, marine acid and insecticider around.	40	38.8
9. I left home while television, washing machine, dishwasher or computer was in working condition.	44	42.7	34. I take medicine with the advice of someone without consulting a doctor.	36	35.0
10. I neglect to keep flammable materials such as matches and lighters keep out of reach of children.	26	25.2	35. I don't count the change while shopping.	64	62.1
11. Sometimes I eat fruits and vegetables without washing.	37	35.9	36. I buy items from door-to-door marketers.	17	16.5
12. I had dinner with my dirty hands.	13	12.6	37. I open the door without asking who's at the door	40	38.8
13. In cold weather, I go out with thin clothes that are cold enough to wear.	65	63.1	38. On snowy or icy roads, I use cars without snow tire or chain, or I travel in the cars without snow tire or chain.	59	57.2
14. I don't wear a seat belt while driving or sitting on the passenger seat.	76	73.8	39. I go out without drying my hair after having a bath, even if the weather is cold.	34	33.0
15. I neglect to turn off electric heaters such as electric heater and electric stoves or heated appliances such as toaster and iron when I'm done.	20	19.4	40. I had to pay a penalty for my bills (electricity, water, telephone, mobile phone, etc.) because of not paying attention to their deadlines of payment.	41	39.8
16. I do not give signal while driving.	24	23.3	41. I leave devices such as mobile phones, shavers and laptop computers in charge while I sleep at night.	80	77.7
17. When I am together with the people who have infectious diseases like influenza, I do not take measures to protect myself from disease.	31	30.1	42. After I use the toilet, I go out without washing my hands.	13	12.6
18. I stroke homeless cats and dogs I see on the streets and avenues by touching them.	60	58.3	43. I buy outdoor food and beverages	70	68.0
19. I sometimes work until I get tired.	79	76.7	44. I sometimes use the items such as razor blade, nail clippers, cosmetics or bath washcloth used by others.	23	22.3
20. I do not pay attention to the expiry dates of the drugs I use.	19	18.5	45. I do not pay enough attention to the ventilation of the house while using heaters such as bottled gas or natural gas fired stoves and water heaters.	27	26.2
21. I kept the doors and windows open to draft while airing my house and workplace.	74	71.8	46. I sometimes carry a large amount of money or valuables in my pocket or bag.	50	48.5
22. I drank and drove or I traveled in the car driven by a drunk driver.	38	36.9	47. I sometimes go up and down the stairs by running.	89	86.4
23. I passed through the cars and crossed the street on a road with heavy traffic despite the presence of a pedestrian crossing.	68	66.0	48. I accepted the food and drink offer of someone I just met.	58	56.3
24. I leave the key of my house, my workplace or my car in the places where others can easily reach.	41	39.8	49. I overstepped the warning lines or came very close to railroad tracks while waiting for the train or subway.	29	28.1
25. I worked by hanging out the window, balcony or roof for works like wiping the window glass and adjusting the antenna.	46	44.7	50. I entered my password in a way that others could see while withdrawing money from atm.	53	51.5

It was determined that the mean scores of the participants with a moderate level of satisfaction in the profession in the drug applications and transfusion and hospital infections dimensions of the Medical Malpractice Tendency Scale were higher in comparison to others. However, the difference between the groups was statistically insignificant (Table 4).

In the study, it was determined that the mean total score of the Medical Malpractice Tendency Scale among those who thought of doing their profession was higher than those who did not think of doing their profession, but the difference between the groups was not statistically significant (Table 4).

It was determined that the participants gave the answers of "I sometimes go up and down the stairs by running", "I leave devices such as mobile phones, shavers and laptop computers in charge while I sleep at night", "I sometimes work until I get tired" and "I don't wear a seat belt while driving or sitting in the passenger seat" for imprudent behaviors (Table 5).

DISCUSSION

Malpractices in nursing may cause damages to the patient and their family, as well as material and moral losses for nurses. It is important for nurses to realize their mistakes, know the situations that increase malpractices and take the necessary precautions to prevent the patients and their family from damage and protect themselves against the law (17).

It was determined that the great majority of the participants in the study stated factors such as small number of nurses working, high workload, fatigue, stress and loading nurses with off-duty (secretary duty) jobs as causes of medical malpractice. In the study carried out by Özata and Altuncan (2010), it was determined that the main causes of medical malpractices were high workload, insufficient number of nurses working, loading nurses with off-duty jobs, stress and fatigue (7,17). In line with these results, the results of our study showed great similarity with the literature.

It was determined that the students participating in the study received positive (high) points in the Medical Malpractice Tendency Scale and its dimensions (Table 3). It was determined that the highest mean score of the dimensions of the scale belonged to the drug applications and transfusion dimension, and the lowest mean score belonged to the dimensions of communication and falls (Table 3). In the studies carried out by Yiğitbaş et al., Cebeci et al. and Avşar et al., it was determined that nurses received high points in all dimensions of the scale, the mean score of the "Drug and Transfusion Applications" dimension was the highest, and the mean score of the "falls and patient monitoring/material safety" dimension was the lowest (17-19). Medication errors are the most common type of errors that threaten patient safety (17,20,21). Similarly, patient falls are reported to be among the most common medical malpractices (17,22).

According to the results of the study, the fact that the total and dimension mean scores of the scale were high indicated that the nurses' medical malpractice tendencies were low.

Any practice of the student with a healthy or ill individual may be a source of stress for both the student and the individual to be treated. Encountering the patient in the field of application and application on the patient for the first time lead to anxiety and fear in students, which may cause students to perform medical malpractice. In the literature, it was reported that student nurses are further at risk of making mistakes and have a tendency to hide their mistakes due to reasons such as being afraid of the reactions of administrators and the fear of being blamed and punished (23). Making a mistake is an inevitable fact of life everywhere people exist. However, the main objective in patient safety is to prevent the occurrence of mistakes and eliminate the possibility of it during service delivery (23,24).

No significant difference was found based on the students' gender, year of study, voluntary choice of profession, level of satisfaction in profession and thinking of performing their profession in the dimension scores and total scale mean score of the Medical Malpractice Tendency Scale. It was seen that this result was consistent with similar studies carried out with nurses (18,23,25).

It was determined that the participants gave the answers of "I sometimes go up and down the stairs by running", "I leave devices such as mobile phones, shavers and laptop computers in charge while I sleep at night", "I sometimes work until I get tired" and "I don't wear a seat belt while driving or sitting in the passenger seat" for imprudent behaviors (Table 5). The majority of medical malpractices occur due to causes of preventable imprudence. When it is considered that medical malpractices mostly emerge due to negligence, coping with negligence appears to be an important factor in prevention of medical malpractices (17). Therefore, it is very important to determine students' imprudent behaviors and malpractice tendencies.

CONCLUSION

According to the students in this study, the causes of malpractice included factors such as small number of nurses working, high workload, fatigue, stress and loading nurses with off-duty (secretary duty) jobs. It was concluded that the tendency of the nursing students who were included within the scope of the study to perform medical malpractice was low, and medical malpractices may result from both humans and the system. In line with these results, students' training requirements for prevention of malpractice should be determined by qualitative and quantitative evaluation methods, and the continuity and timeliness of trainings should be ensured.

It is recommended to raise "Patient Safety" awareness in students, improve their level of awareness and include "Patient and Employee Safety" courses in the nursing curriculum to prevent medical malpractices at healthcare institutions.

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REFERENCES

1. Ertem G, Oksel E, Akbıyık A. A retrospective review about the malpractice applications in medicine. *Dirim Medical Newspaper* 2009;84:1-10.
2. Hanci IH. Physician's punishment and indemnity responsibility for medical interventions. Ankara: Seckin Publishing 2002.
3. Sahin ZA, Ozdemir FK. Examination of the tendency for nursing malpractice and affecting factors. *Journal of Education and Research in Nursing* 2015;12:210-5.
4. Taghizadeh Z, Pournakhtiar M, Ghadipasha M, et al. Claims about medical malpractices resulting in maternal and perinatal mortality referred to Iranian legal medicine organization during 2011–2012. *Iran J Nurs Midwifery Res* 2017; 22:294-8.
5. Sweeney CF, LeMahieu A, Fryer GE. Nurse practitioner malpractice data: Informing nursing education. *J Prof Nurs* 2017; 33:271-5.
6. Karatas M, Yakinci C. Causes of medical errors and solutions. *Inonu University Faculty of Med* 2010; 17:233-6.
7. Ozata M, Altuncan H. Frequency of medical errors in hospitals, determination of medical error types and medical errors: Konya sample. *J Medical Research* 2010; 8:100-11.
8. Kohn LT, Corrigan JM, Doyle DJ. To err is human: building a safer health system. *Canadian Medical Association* 2001; 164:527.
9. Polat O, Pakis I. Physician liability in medical malpractice. *Acibadem University J Health Sciences* 2011;2:119-25.
10. Isik O, Akbolat M, Cetin M, et al. The causes of medical error from the perspective of nurses. *TAF Preventive Medicine Bulletin* 2012;11:421-30.
11. Aypay A, Ogulmus S. (2011). Determinants of imprudent behaviour. *Education Sciences* 2011;6: 1618-34.
12. Cevik AB, Demirci A, Guven Z. Medication administration errors and medical error awareness of nursing students during clinical training. *Acibadem University J Health Sciences* 2015;6:152-9.
13. Brock DM, Nicholson JG, Hooker RS. Physician assistant and nurse practitioner malpractice trends. *Med Care Res Rev* 2017;74:613-24.
14. Miller KP. Malpractice: nurse practitioners and claims reported to the National Practitioner Data Bank. *J Nurse Pract* 2011;7:761-73.
15. Dikmen Y, Yorgun S, Yesilcam N. Identification the level of tendency in malpractice among nurses. *Hacettepe University J Nursing Faculty* 2014;2014:44-56.
16. Aypay A. Investigating the factors that determine adult imprudent behaviors. doctoral thesis, Ankara University, Ankara 2007.
17. Yigitbas C, Oguzhan H, Tercan B, et al. Nurses' perception, attitudes and behaviors concerning malpractice. *Clinic of Anatolia* 2016;21:207-14.
18. Cebeci F, Gursoy E, Tekingunduz S. Determining the level of tendency in malpractice among nurses. *Anatolian J Nursing and Health Sciences* 2012;15:188-96.
19. Avsar G, Atabek Armutcu A, Karaman Ozlü Z. Determining the level of tendency in malpractice of nurses: a hospital sample. *J Health Sciences And Professions* 2016;3:115-22.
20. Brady AM, Malone AM, Fleming SA. Literature review of the individual and systems factors that contribute to medication errors in nursing practice. *J Nurs Manag.* 2009;17:679-97.
21. Nguyen EE, Connolly PM, Wong V. Medication safety initiative in reducing medication errors. *J Nurs Care Qual* 2010;25:224-30.
22. Demir-Zencirci A. Nursing and malpractice. *J Research and Development in Nursing* 2010;12:67-74.
23. Gunes U, Zaybak A, Baran L, et al. Determining the tendency levels of intern nurses toward medical errors. *Ege University J Nursing Faculty* 2016;32:41-9.
24. Gokdogan F, Yorgun S. Patient safety and nurses in health services. *Anatolian J Nursing and Health Sciences* 2010;13:53-9.
25. Isik Andsoy I, Kar G, Oztürk O. A study on trends to medical error for nurses. *J Health Sciences and Professions* 2014;1:17-27.