

Original Article

Evaluation of Knowledge, Attitudes and Behaviors of Student Nurses towards Employee Security

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Abstract

Background: It was aimed to determine the knowledge levels of student nurses on employee security and to increase their awareness.

Objective or Aims: The research was carried out with 315 students who were studying at the nursing school and agreed to participate in the research. The data were collected using the questionnaire form by receiving the permission of the institution and approval of the ethics committee. The questionnaires were evaluated using the SPSS 22.0 program.

Findings: When the knowledge, attitudes and behaviors of the students towards employee security were examined, it was determined that 66% of them did not receive education on employee security and there was a statistically significant difference between receiving education and grades ($p<0.05$), that 70.2% of them knew the measures that need to be taken for occupational accidents and there was a statistically significant difference between the measures that need to be taken for occupational accidents and the grades studied ($p<0,05$), that 93.3% of them knew that they should make a notice in case of occupational accidents, that 94.6% of them preferred using gloves as employee security measures, and that 80% of them considered infectious diseases and 72.7% of them considered sharp object injuries as risks in terms of employee security.

Results: Students' knowledge about occupational health and safety should be increased. Therefore, students' knowledge should be reinforced by using visual learning techniques and simulation application methods as well as theoretical trainings on the subject.

Keywords: Student Nurses, Employee, Employee Security

Introduction

Nowadays, although the developments in technology and industry have led to the creation of new areas of employment, they have also led to the increase in life-threatening risks. Many employees are exposed to these risks and the incidence of injuries and diseases has increased. It is quite important to avoid the problems that may arise by protecting the physical, mental and social well-being of employees. This is possible by knowing and implementing the occupational health and safety measures (Karaca, 2013).

According to the researches carried out, health care workers have a very high ratio of encountering occupational accidents and occupational diseases. Therefore, it is quite important for health care workers to take

necessary measures before occupational diseases and accidents occur. This can be provided through in-service trainings given in vocational schools and in the workplace environment (Ozkan, 2009). Student nurses are more at risk of making mistakes and tend to hide their mistakes. For this reason, to determine the risks in terms of employee health in hospitals and to tell students about these risks and the measures to be taken in the school curricula will enable to minimize the occupational accidents and occupational diseases that may arise (Ozkan, 2009; Karaca, 2013; Ozturk, 2014).

The aim of the study is to evaluate the knowledge levels of the student nurses on employee security and to increase their awareness. In the research, answers were

searched for the questions such as 'What are the levels of knowledge of student nurses' on employee security?', 'What are the attitudes of student nurses towards the implementation of employee security measures?' and 'What are the levels of knowledge of student nurses on the measures that need to be taken in situations that threaten their employee security?'

First of all, employee security should be ensured in order to keep employee health at the top level. These security measures should be taken with the aim of protecting employees before accidents happen. When it is evaluated in this context, the hospital environment poses a great threat in terms of health care workers (Meydanlıoğlu, 2013).

The International Labor Organization (ILO) and the World Health Organization (WHO) have defined occupational health as 'to bring the physical, mental and social well-being of the employees to the highest level, to provide their continuance, to prevent the impairment of their health due to working conditions, to protect from the health risks, to create a comfortable and safe working environment, and to ensure each employee's adaptation to his/her job'(Yavuz, 2009).

The concept of occupational health and safety that first emerged in Germany quickly spread to other European countries. In Turkey, the development of the concept of occupational health and safety was very slow. This is because Turkey is an agricultural country (Ozkan, 2009; Karaca, 2013; Ozturk, 2014).

It is very important for health care workers to be aware of the hazards and risks specified in health services for the prevention of them. This awareness primarily ensures that the employee protects himself/herself against risks (Ozkan, 2009; Karaca, 2013).

The fact that health care workers work under heavy job workload, in intense and stressful environments increases the ratio of making mistakes of the employees. To work in a healthy and secure environment is the right of every employee and ensures the employee's efficiency and productivity, economic independence and job continuity. It also ensures that employees are protected from preventable occupational accidents and occupational diseases and have increased quality of life and motivation. Therefore, it is necessary to take measures for

dangerous situations in the working environment in hospitals, to reduce the hazards and risks arising from the working conditions and to bring them to the lowest level that will not harm human health (Gul et al., 2013).

The risks in hospitals such as occupational accidents and occupational diseases negatively affect the motivation of the employees and cause their productivity to decrease. When the cause of the experienced accidents and diseases were analyzed, various causes were revealed such as the small number of employees, excessive workload, burnout, insomnia, providing 24-hour uninterrupted service, and stress due to the fact that the provided service usually needs state of emergency (Ocal, 2010).

Aim: It was aimed to determine the knowledge levels of student nurses on employee security and to increase their awareness.

Research Questions

- What are the levels of knowledge of student nurses' on employee security?
- What are the attitudes of student nurses towards the implementation of employee security measures?
- What are the levels of knowledge of student nurses on the measures that need to be taken in situations that threaten their employee security?

Methods

A descriptive design was used in this study.

Participants

Inclusion Criteria for the Research: All students who completed 18 years of age, who were studying in the school of nursing, agreed to participate in the research, had received or were receiving basic vocational courses, were included in the research.

Limitations of the Research: The time limitation and the fact that the study was limited with the students studying in the school of nursing of the studied university are among the limitations of the research.

Population and Sample

400 students studying in the School of Nursing of a Foundation University constituted the population of the research. Sample selection was not performed in the research; the whole

population was included in the study. A total of 315 students, including 60 first grade students, 58 second grade students, 97 third grade students and 100 fourth grade students who agreed to participate in the research, constituted the sample.

Instruments

The questionnaire form was prepared by the researcher by reviewing the labor law, the regulation on occupational health and safety, the regulations on the safety of patients and employees, and the relevant literature. The questionnaire form consisted of two parts.

Part 1. Student Information Form: This part includes the questions in which the data on socio-demographic characteristics of the students such as age, gender and grade were collected.

Part 2. The Form of Evaluating Knowledge, Attitudes and Behaviors towards Employee Security: This part includes 23 multiple-choice questions prepared by reviewing the literature in order to evaluate the levels of knowledge, attitudes and behaviors of the students about employee security. These questions consist of the items questioning the risky areas in terms of employee health, the risks in the working environment, the ways to protect against these risks, and the notification process (Yavuz, 2009; Meydanlıoğlu, 2013; Incesu & Atasoy, 2015).

Study Design

The study was carried out as a descriptive research with the students studying in the School of Nursing of a Foundation University located in the city center of Istanbul.

Statistical Analysis

The data were obtained using the following data collection tools. Permission was received from the instructors of the courses before starting the questionnaire study. The questionnaire studies were completed in the classroom environment. Explanations about the research were made and students were asked to respond to the questionnaire form without specifying their names. Informed Volunteer Consent Form was received from the students.

Evaluation of Data: The obtained data were evaluated using the SPSS 22 package program. Frequency distribution, percentage and Chi-Square analyses were used during the evaluation of data.

Ethical considerations

Explanations about the research were made and students were asked to respond to the questionnaire form without specifying their names. Informed Volunteer Consent Form was received from the students. The ethics committee approval of the Foundation University and the necessary permissions of the Directorate of the School of Nursing, where the research would be carried out, were received to carry out the study.

Results

It was determined that 83.5 % (n=263) of nursing students who participated in the research were female, 16.5 % (n=52) of them were male, the age average was 21.06 ± 2.229 , 78.1 % (n=246) of them had a nuclear family structure and 21.9 % (n=69) of them had an extended family structure. It was observed in the research that the ratio of the students who had previously undergone a serological blood test was 73 % (n=230).

It was determined that 66 % of nursing students who participated in our study did not receive education on employee security, 85.7 % of them did not have knowledge about "the law on occupational health and safety", 29.8% of them did not know the measures that need to be taken to prevent occupational accidents, 93.3% of them thought that it was necessary to make a notice after going through an occupational accident, and 71.4% of them knew that this notification should be made to the responsible nurse (Table 1).

When student nurses in our study listed the measures that health care workers should take in terms of employee security, although they are not presented in the table, it was determined that 94.6% of them stated the use of gloves, 93.3 % of them stated hand washing, 91.1% of them stated taking protective measures and 88.9 % of them stated following the hygiene rules as the measures; it was determined that the most risky areas in the hospital environments were operating rooms by 74.3 %, emergency department by 63.8 % and radiology by 59 % according to student nurses.

It was determined that 81.9% of student nurses would act in accordance with the procedure of spreading chemical drugs and 67.9 % of them would change their uniforms after contacting with chemical substances; it was determined that 87.9 % of student nurses knew using lead

shielding, 83.5% of them knew using protective glasses, 69.8 % of them knew ensuring that the lead-lined doors are closed during the operation, 69.2 % of them knew staying away from the

area when there is no operation, 86 % of them knew social hand washing and 73 % of them knew hygienic hand washing as a protection measure in radiology units operating with X-ray.

Table 1. Distribution of Nursing Students' Levels of Knowledge on Employee Security (N=315)

Characteristic	Category	n	%
Have you received education on employee security?	Yes	107	34.0
	No	208	66.0
Have you read the Law on Occupational Health and Safety?	Yes	45	14.3
	No	270	85.7
Do you know the measures that need to be taken for occupational accidents?	Yes	221	70.2
	No	94	29.8
Do you know a health care worker who has had an occupational accident?	Yes	70	22.2
	No	245	77.8
Would you make a notice if you have an occupational accident?	Yes	294	93.3
	No	21	6.7
Place to report when an occupational accident happens	Responsible Nurse	225	71.4
	Hospital Administration	40	12.6
	Quality Department of the Hospital	20	6.3
	Infection Control Nurse	15	4.7
	I would not notify anyone	15	4.7

Table 2. Relationships between Nursing Students' Significant Knowledge, Attitudes and Behavioral Characteristics towards Employee Security and their Current Grades (N=315)

Characteristic		Grade				x ²	p
		1 st grade	2 nd grade	3 rd grade	4 th grade		
Have you received education on employee security?	Yes	8	8	17	74	102.718	0.000
	No	51	50	80	27		
To know the necessary measures for occupational accidents	Yes	33	37	57	94	38.165	0.000
	No	26	21	40	7		
Do you know a health care worker who has had an occupational accident?	Yes	14	6	21	29	7.292	0.063
	No	45	52	76	72		
Would you make a notice if you have an occupational accident?	Yes	57	49	89	99	12.274	0.006
	No	2	9	8	2		

x²: Pearson Chi-Square

When the relationship between nursing students' significant knowledge, attitudes and behavioral characteristics towards employee security and their current grades was examined, a statistically significant difference was found between the state of receiving education on employee security, the state of knowing the necessary measures for occupational accidents and the state of making a notice if when an occupational accident happens and their current grades ($p < 0.05$) (Table 2). It is an expected situation that 4th grade students are equipped in terms of knowledge, attitudes and behaviors towards employee security compared to other grades.

Discussion

In this study in which student nurses' knowledge, attitudes and behaviors towards employee security were evaluated, it can be said that the characteristics of the students show similarity the literature. Accordingly, in the research carried out by Yildirim on vocational high school students, it was determined that 74.5 % of students had a nuclear family structure, 23.6 % of them had an extended family structure, 1.9 % of them had a fragmented family structure, and 92.7 % (102 people) of them had previously undergone a serological blood test (Demiral et al., 2007).

It was determined that 66 % of nursing students who participated in the study did not receive education on employee security. In the research carried out by Yavuz on employee security with 500 nurses, it was also seen that 71.2 % of the nurses did not receive education. This research result is in parallel with our study. In the same research, it was also reported that 56.9 % of the nurses received the relevant education on occupational safety during the school term, 26.4 % of them received it in scientific activities such as seminars, courses, congresses and symposiums, 19.4 % of them received it during orientation programs in the institutions where they worked, and 31.9 % of them received it during in-service trainings (Yavuz, 2009).

Students should firstly be informed about the legal legislation and regulations to be able to protect themselves against occupational accidents in the hospital environment. Therefore, it is important that the regulations related to laws and legislations are provided in detail in the schools where vocational education is given. In our study, when students' status of having

knowledge about the "Law on Occupational Health and Safety" was evaluated, it was determined that 85.7 % of them had no knowledge. In Yavuz's research, it was also seen that 29 % of the nurses were informed about the presence of legal legislation on occupational health and safety in Turkey, 15.8 % of them were not informed about it, and 55.2 % of them had no idea. These data are in parallel with our study and also show that there is a need for more detailed training on laws and regulations while giving occupational safety trainings in school curricula. These results show that although the nurses know the measures related to occupational health and safety, these rules are not followed in the workplace environment (Yavuz, 2009).

Health care workers usually know that when they have an occupational accident, they should report this situation to a senior individual responsible. In our study, 93.3 % of nursing students stated that they should make a notice after undergo an occupational accident. In the research carried out by Ozarslan, it was determined that 7.4 % of 217 nurses who had an accident in the past year reported the accident to the necessary units and 92.6 % of them did not report it. The option "I did not know I had to report the incident" constituted 31.7% of the reasons for not reporting accidents and the option "There is no procedure/unit in the hospital to which I can report the occupational accidents" constituted 29.2 % of the reasons. In the study carried out by Demiral, 34 % of the nurses who participated in the study and were exposed to sharp object injuries stated that they reported to the relevant units after getting injured. In the study of Aldem, 87.3 % of the employees in the research group consisting of 956 people did not report the sharp object injury; and when the reasons for not reporting the injuries were examined, 48.6 % of employees responded that "I did not know that I had to report", 17 % of them said "I did not worry", and 16 % of them responded that "I did not know the process" (Demiral et al., 2007; Ozarslan, 2009; Aldem et al., 2013).

First of all, employee security should be ensured for the prevention of occupational accidents. The first step of employee security is to know and apply barrier measures to be taken by the nature of the job. In our study, student nurses listed the measures that health care workers should take in terms of employee security, it was determined that 94.6 % of them stated the use of gloves, %

93.3 % of them stated hand washing, 91.1 % of them stated taking protective measures and 88.9 % of them stated following the hygiene rules as the measures. In the study of Aldem et al., it was determined that the applications of washing hands after contact with the patient by 95.4 % and using personal protective equipment by 77.1 % were among the applications performed for the prevention of infection, and that the most commonly used personal equipment was single layer glove by 55 % (Aldem et al., 2013).

The most important step of employee security measures is to identify risky areas in the working environment. Thus, the measures to be taken against the identified risks will be more easily determined. In our study, it was determined that the most risky areas in the hospital environments were operating rooms by 74.3%, emergency department by 63.8 % and radiology by 59 % according to student nurses. In the research of Arda, the health care workers working in surgical units and intensive care units reported more experiences of injury in intensive care units by 89.7 %, in surgical units by 88.1 %, in emergency units by 69.9 % and in internal sciences by 66.3 % compared to other units (Arda et al., 2005).

Depending on the properties each risk area identified, the protective barriers used should have a quality that prevents the employee from being harmed in case of scattering and splashing. Thus, it is ensured that the employee is minimally affected by the harmful effects of the environment. According to our study, it was determined that 81,9 % of student nurses stated that they would act in accordance with the procedure of spreading chemical drugs and 67.9 % of them stated that they would firstly change their uniforms after contacting with chemical substances. Saricam found the average of those who washed the zone region within 5 minutes when chemical splashes on the skin/eyes and open wound as 4.66. In their study, Onder et al. stated that 21 % , 26.7 % , 10 % and 44.9 % of the nurses were affected by antiseptics, anesthetics, chemotherapeutic agents and disinfectants, respectively (Onder et al., 2011; Saricam, 2012).

In our study, it was determined that 87.9 % of student nurses used lead shielding, 83.5 % of them used protective glasses, 69.8 % of them would ensure that the lead-lined doors are closed during the operation, and 69. 2 % of them kept

stay away from the area when there is no operation as a protection measure in radiology units operating with X-ray. In the study of Vural et al., it was found that operating room nurses and anesthesia technicians were in the more risky group than the other workers in terms of exposure to radiation multiple times during the day ($p < 0.05$). It was determined that all workers were informed about the adverse effects of radiation on health and knew that they should wear a lead shirt (Vural et al., 2012).

In our study, it was determined that student nurses knew social hand washing by 86 % and hygienic hand washing by 73 %. In the study of Demiral, 38 (50.7 %) of the nurses and 36 (48 %) of the assistants correctly answered the question on the duration which is considered ideal in social hand washing (10-30 sec). 82.7 % of nurses correctly answered the question on the requirement that the hands should be dried after washing. It was determined that the nurses reported the reasons for reducing the hand washing frequency as the excess of work load by 58.7 %, damage to the hands by 22.7 %, the lack of sinks by 12 % and the lack of confidence in hand-washing environment and material by 5.3 % it was determined that 89.2 % of nurses answered that protective equipment such as apron, mask, glasses and gloves should be worn before entering the patient room, 87.9 % of them answered that the symbols which are suitable for the disease causing the need for isolation should be attached to the patient's bedside or room door, 82.5 % of them answered that other workers serving the patient should be trained in terms of protection measures, and 85.1 % of them answered that the visit of patients restriction should be applied, for isolation measures; it was determined that 94.6 % of nurses answered that the glove should be used before contact with blood, body fluids and extracts, 85.7 % of them answered that it should be used before establishing and removing intravenous vascular access and taking blood, 81 % of them answered that it should be used before entering into the rooms of the patients administered with isolation, and 76.8 % of them answered that it should be used in invasive procedures, for the situations where the use of gloves is required at the hospital; and it was determined that 69.8 % of nurses answered that they would examine the screening results of the patient for infectious diseases and 61.9 % of

them answered that they would have a periodic blood test, for the situations during which they encounter with sharp object injury such as needle stick injury while doing their apprenticeship. Yorganci et al. determined the average real hand washing performance in cases where hand washing is necessary as 40 %, based on 298 hand washing observations. The hand washing habit after contact with body fluids was found 72 % in all health care workers. However, hand washing habit after wound care was reported as % 15. While nurses wash their hands by 76 % in contact with urinary catheter or bladder, the frequency of hand washing before and after contact with the patient is 26 %. In the study of Yavuz, when nurses' status of using gloves in all cases where nurses are contacted with blood and other body fluids, it was seen that 74.6 % (n=373) of them used gloves and 25.4 % (n=127) of them did not use. Aldem found the body fluids to which health care workers are mostly exposed as the blood (68.3 %), vomit (7.8 %), urine (6.9 %), draining mires (4.1 %), sputum (2.3 %), feces (1.4 %) and genital secretion (0.5 %) (Yorganci et al., 2002; Demiral et al., 2007; Yavuz, 2009; Aldem et al., 2013).

In the study carried out by Yildirim on vocational high school students, it was stated that final year students were more knowledgeable about employee security measures compared to students in other grades (Yildirim & Ozpulat, 2015).

Conclusion

According to the study results, students' knowledge about occupational health and safety should be increased. Therefore, students' knowledge should be reinforced by using visual learning techniques and simulation application methods as well as theoretical trainings on the subject. It is necessary to further include the subject of occupational health and safety in the school curricula starting from first grade occupational courses in order to increase the knowledge levels of student nurses about employee security and to ensure that they know the risks they will encounter in their working environment and the measures they should take.

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References

- Aldem M, Arslam FT, Kurt AS. (2013) Employee Security in Health Professionals. *Journal of Medical Research*, 11(2):60-67.
- Arda B, Tasbakan IM, Yamazhan T, Sipahi OR, Arsu G, Ulusoy S. (2005) Assessment of Following the Hand Cleaning Rules in Ege University Faculty of Medicine Intensive Care Units. *Intensive Care Journal*, 5(3):182-186.
- Karaca Y. (2013) Occupational Health and Safety in Health Care Workers. *Beykent University Social Sciences Institute, Istanbul*.
- Ozarslan A. (2009) Incidence of Occupational Accidents in Nurses working in a Training Hospital in Ankara. *Gazi University Institute of Health Sciences, Ankara*.
- Ozturk N. (2014) Occupational Accidents Exposed by Nurses working in the Hospital (The Case of a Public Hospital in Denizli). *Beykent University Institute of Social Sciences, Istanbul*.
- Meydanlıoğlu A. (2013) Health and Safety of Health care Workers. *Bahkesir Journal of Health Sciences*, 3:192-199.
- Yavuz E. (2009) Investigation of Occupational Health and Safety Situations of Nurses Working in a University Hospital. *Halic University Institute of Health Sciences, Istanbul*.
- Gul G, Bol P, Erbaycu AE. (2013) Risk Management in Patient and Employee Safety: Risk Analysis and Improvements performed in a Training Research Hospital. *Journal of Quality and Performance in Health*, 5:1-13.
- Ocal A. (2010) Occupational Health and Safety in Health Care Workers. *Beykent University Social Sciences Institute, Istanbul*.
- Incesu E. & Atasoy A. (2015) Examination of Nurses' Employee Health and Safety Culture Perceptions Using Employee Health and Safety Culture Scale. *Journal of Health Academicians*, 2(3);119-126.
- Yildirim A. & Ozpulat F. (2015) Medical Vocational High School Students' Knowledge and Awareness Levels on Occupational Risks, 24(1):18-23.
- Demiral T, Uyar S, Demirturk N. (2007) Assessment of Hand Washing Practices and Knowledge Levels in Employees in a University Hospital. *Kocatepe Medical Journal*, 8(3):39-43.
- Saricam H. (2012) The Effect of Risks and Hazards Faced by Nurses on Job Stress within the context of Occupational Health and Safety. *Dokuz Eylul University Institute of Health Sciences, İzmir*.
- Onder O, Agirbas I, Yasar G, Aksoy A. (2011) Evaluation of Physicians and Nurses working in Ankara Numune Training and Research Hospital in terms of the Occupational Accidents and Occupational Diseases they have had. *Ankara University Journal of Dikimevi Health Services Vocational School*, 1:31-44.
- Vural F, Fil S, Ciftci S, Dura AA, Yildirim F, Patan R. (2012) Radiation Safety in Operating Rooms;

Knowledge, Attitudes and Behaviors of Employees. *Balikesir Journal of Health Sciences*, 1(3); 132-136.
Yorganci K, Elker D, Kaynaroglu V. (2002) Hand

Washing Habits of Health Personnel in a Surgery Intensive Care Unit. *Intensive Care Journal*, 2(1):58-63.