

Hand washing behavior of international Cyprus University Dialysis Technician Students

Uluslararası Kıbrıs Üniversitesi Diyaliz Teknikerliği öğrencilerinin el yıkama davranışları

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ABSTRACT

Objective: This study was carried out to evaluate the behaviors and hand hygiene practices of the dialysis associate program students. **Materials and methods:** A questionnaire was conducted with face-to-face interviews with students from the first and second year students of the dialysis associate degree program of the Cyprus International Vocational School of Health Sciences. The data were analyzed in SPSS Version 21.0 statistical package program. Frequency test was used to analyze the data. **Results:** In our study, it was found that dialysis technician students were aware of the importance of hand hygiene and their visual awareness in reducing the incidence of infections acquired both from the society and in the hospital as a result of the education they received. **Conclusion and suggestions:** It is thought that in order for students to carry out hygienic hand washing procedures completely and accurately, their awareness should be increased and they should be used as a habit by repeating information both theoretically and practically.

ÖZET

Amaç: Bu çalışma Diyaliz önlisans programı öğrencilerinin el yıkama alışkanlıklarına ilişkin davranışlarını ve el hijyeni uygulamalarını değerlendirmek amacıyla yapılmıştır. **Gereç ve yöntem:** Uluslararası Kıbrıs Üniversitesi Sağlık Bilimleri Meslek Yüksekokulu diyaliz önlisans programı birinci ve ikinci sınıf öğrencilerinden ulaşılabilen öğrenciler ile yüz yüze görüşülerek anket yapılmıştır. Veriler SPSS Versiyon 21.0 istatistiksel paket programında analiz edilmiştir. Verilerin analizinde frekans testi kullanılmıştır. **Bulgular:** Çalışmamızda diyaliz teknikerliği öğrencilerinin almış oldukları eğitim sonucunda hem toplumdaki hem de hastanede edinilen enfeksiyonların insidansının azaltılması ve önlenmesinde el hijyeninin önemini bilincinde oldukları ve görsel farkındalıklarının yüksek olduğu bulunmuştur. **Sonuç ve öneriler:** Öğrencilerin hijyenik el yıkama prosedürlerini eksiksiz ve doğru bir şekilde yerine getirebilmesi için farkındalıklarının artırılması, hem teorik hem de uygulama olarak bilgilerin sürekli tekrar edilerek alışkanlık haline getirmelerinin sağlanması gerektiği düşünülmektedir.

INTRODUCTION

In addition to the positive developments in the field of health in recent years, the rapid increase of hospital infections has a negative impact on the quality of health services. Nosocomial infections due to insufficient hygiene and insufficient application of prevention methods constitute a major health problem. One of the risk factors of nosocomial infections is hand hygiene. However, the most effective, inexpensive and practical way to prevent nosocomial infections is hand hygiene. In this study, our aim is to evaluate the behaviors and hand hygiene practices of dialysis associate degree students. The universe of this descriptive and observational study consisted of the first and second year students of dialysis associate degree program of International Vocational School of Health Sciences

of Cyprus University. In order to obtain the data, evaluation of the hygienic handwashing application and face-to-face questionnaire were used. Frequency test was used for data analysis. The questionnaire included questions about the students hand hygiene habits in their daily lives, the necessity of hand hygiene education for health personnel, the opinions of health personnel about handwashing to prevent hospital infection, and awareness of handwashing poster in the laboratory. The hygienic handwashing, handwashing application steps of the first and second year students of the Dialysis Associate Degree Program were observed by the instructor and 100% of first grade students and 75% of second grade students performed hand washing in accordance with hand hygiene procedures. Of the second grade students, 80% of the students who could not perform proper hand hygiene were male and 20% were female students. It was

seen that 60% of the students who could not perform the right hand hygiene application were rubbing by rotating the right hand tips on the palm of the left hand and rubbing the left hand fingertips on the right hand, and 60% did not apply the procedures of rubbing the palms and the fingers between each other. As a result of the survey, according to the handwashing practices, it was seen that 100% of the participants washed their hands before the meal and 92.3% after the meal. It was found that 42.3% before entering the toilet and 100% washing their hands after entering the toilet. 100% of the participants think that health personnel should wash their hands before contact with the patient, 96.2% before and after invasive procedures, and 100% after contact with blood body fluids and secretions. As a result of this study conducted for the candidates of dialysis technicians, it is thought that students should be aware of in order to perform hygienic handwashing procedures completely and correctly and it should be ensured that the information is repeated by making use of both theoretical and practical habits.

In the development and increase of nosocomial infections, the hands of healthcare workers and the transportation of pathogenic microorganisms between patients play a major role as 20-40% (1). Despite the importance of hand hygiene in the control of nosocomial infections, despite the importance given to this issue and the guidelines prepared, it is an important problem that compliance with hand hygiene is insufficient in health workers and regular and frequent hand washing habits are not maintained (2). It has been observed that approximately 30–50% of hospital infections decrease with hand hygiene compliance (3). Therefore, it is important to make plans for individual, institutional and environmental factors and to adopt effective strategies for improving hygiene compliance (4). Among the strategies aiming to increase compliance with hand hygiene, training of healthcare workers constitutes the most critical step especially during patient care (5) and health workers should be sensitive about hand hygiene and support to maintain hand washing behaviors. In this context, in our study, we aimed to identify deficiencies in the handwashing behaviors of dialysis program students and to develop strategies to improve hygienic handwashing habits.

MATERIALS AND METHODS

In this study, handwashing behaviors of International Cyprus University Dialysis Technician students were evaluated. The universe of this descriptive and observational study consisted of the first and second year students of the dialysis associate degree program of the Vocational School of Health Sciences of Cyprus

International University. The sample was not random and all the students who could be reached were included in the study. The data were obtained in two stages. In the first stage, the hygienic handwashing training was given according to the World Health Organization in the dialysis laboratory where the hygienic handwashing poster was hung by the responsible instructor. One week later, the students were given hygienic hand washing and handwashing application steps according to the checklist handwashes are observed by the instructor and marked as "sufficient" or "inadequate".

Hand washing control steps wetting the whole hand surface, taking soap into the palm, spreading the soap into the palm, rubbing the back and fingers between the left hand with the right hand, rubbing the back and fingers between the right hand with the left hand, rubbing the palms and fingers between each other, clamping the fingers into the palms. rubbing, rotating the right thumb to be taken into the left palm, rubbing each other, and rubbing the right thumb to be taken into the right palm, right hand fingertips rotating on the left hand palms, left hand fingertips rotating on the right hand palms, rinsing hands with water, dry hands completely with disposable towels and closing with disposable towel.

In the second stage, a face-to-face questionnaire was applied. For this study, written informed consent and permission from the institution were obtained for participation in the study, which included informing that Dialysis students were conducted to determine their behaviors about hand hygiene. Questionnaire including questions about age, gender and classes, how often students wash their hands, what they use for hand cleaning, how to dry their hands, method, before-after meal, before-after-toilet, before-contact with animals, after cough-sneeze hand hygiene habits in their daily lives, necessity of hand hygiene training for health personnel, before and after contact of health personnel with patient, before-after invasive procedures, after infection with blood body fluids and secretion the opinions of health personnel including handwashing opinions about handwashing to prevent hospital infection and handwashing poster awareness in the laboratory were included. After the questionnaire application, the data obtained with the questionnaire forms were transferred to the database created in electronic environment. Data were analyzed in SPSS Version 21.0 statistical package program.

RESULTS AND DISCUSSION

In this study, hygienic hand washing behaviors of dialysis technician candidates were evaluated.

In the first stage, one week after the hygienic handwashing training given by the instructor, the students were asked

to perform hygienic handwashing and it was observed whether handwashing was sufficient according to the checklist of handwashing application steps.

As a result of the observation, it was found that 100% of first grade students and 75% of second grade students performed hand washing in accordance with hand hygiene procedures. Of the second year students, 80% of the students who could not perform proper hand hygiene were male and 20% were female students. It was seen that 60% of the students who could not perform the right hand hygiene application were rubbing by rotating the right hand tips on the palm of the left hand and rubbing the left hand fingertips on the right hand, and 60% did not apply the procedures of rubbing the palms and the fingers between each other.

According to the World Health Organization (WHO), the most reliable way of measuring compliance with hand hygiene rules is the observation method. In this context, Karaoğlu and Akin reported that 2.2% of the handwashing practices performed by the nurses were washing the hands with the right technique (6). Karabey et al. found that the frequency and technique of hand washing were insufficient as a result of their study in an intensive care unit (7). Aktuğ Demir et al. found that only 26% of hand hygiene applicators used the right technique (8).

Handwashing time and technique determine the handwashing efficiency (9). In our study, it is seen that the majority of the students perform the hygienic hand washing application with the right technique. This means that the candidates of dialysis technicians have performed hand washing effectively.

In the second stage of our study, 26 students (10 girls and 16 boys) were included in the questionnaire application for International Cyprus University Dialysis program students. 7 of the students are first grade and 19 are second grade. The mean age of the research group was 20.04. (Table 1)

Table 1. Characteristics of dialysis students

Features	N	%
Gender		
Woman	10	38.5
Male	16	61.5
Which grade		
Class	7	26.9
Class	19	73.1

The hand hygiene behavior of the research group is given in Table 2.

Table 2. Hand Hygiene Behavior of Dialysis Students in Daily Life

Hand Hygiene Behavior	N	%
Does he wash his hands after a cough-sneeze?		
Yes	12	46.2
No	2	7.7
Sometimes	12	46.2
Does he wash his hands before meal?		
Yes	26	100
No	-	-
Sometimes	-	-
Does he wash his hands before he goes to the toilet?		
Yes	11	42.3
No	7	26.9
Sometimes	8	30.8
Does he wash his hands after he goes to the toilet?		
Yes	26	100
No	-	-
Sometimes	-	-
Does he wash his hands after contact with animals?		
Yes	21	80.8
No	1	3.8
Sometimes	4	15.4
Does he wash his hands after entering the house from the outside?		
Yes	23	88.5
No	1	3.8
Sometimes	2	7.7

According to handwashing, 46.2% of the participants wash their hands after cough-sneeze, 46.2% sometimes wash, 7.7% do not. It was seen that 100% of the hands washed before the meal and 92.3% after the meal.

It was found that 42.3% of the participants had washed their hands before entering the toilet, 30.8% had sometimes washed, 26.9% had not washed, and 100% had washed their hands after entering the toilet. After contact with animals, it was found that 80.8% was washing their hands, 15.4% was washing sometimes and 3.8% was not washing their hands.

It was seen that 88.5% of the participants washed their hands after entering the house from outside, 7.7% sometimes did, and 3.8% did not.

In the study of Turkmen and Bakir's health technician candidates' knowledge, behaviors and attitudes related to hand hygiene, 97.7% before-after contact with animals, 95.4% before-after meal, 72.5% before food contact - 91.4% of them were washing their hands (10).

Ergin et al. in their study with Pamukkale University students found that 70.6% of them washed their hands after eating, and 74.6% of them washed their hands after contact with animals, and 90.8% of them contacted the animals (11).

It is known that food-borne infections, which have become a serious problem, can be reduced by 50% or more by handwashing method. As a result of our study, the high percentage of handwashing before and after a meal and after entering the toilet shows that awareness is high. This is an important finding in terms of controlling foodborne diseases.

As shown in Table 3, it was found that 100% of our participants used liquid soap and water as hand washing product. It was determined that 69.2% of them used disposable paper towels as hand drying method.

Table 3. Handwashing and drying method of dialysis students

	N	%
What is it used as a hand washing product?		
Water only	-	-
Mold soap and water	-	-
Liquid soap and water	26	100
What is the method of hand drying?		
Hand dryer	-	-
Disposable towels / paper	18	69.2
Other	6	23.1
Unanswered	2	7.7

Karaoğlu and Akın according to the results of the survey conducted with nurses they stated that 47.6% of the nurses used water and antiseptic soap for hand cleaning, 30.2% of them used water and 17.5% of normal soap and only 4.8% of them used antiseptic solution for hand hygiene (6).

The liquid soap and water use of the participants is high and in some countries the use of water and soap varies. According to the annual research report published by the global handwashing partnership in 2015, this rate is 70.4% in Afghanistan and 49-77% in India (12).

Inadequate drying or inadequate drying after washing hands is also a source of infection. Therefore, it will be an important step in infection control to be trained in the field of health care for those who will use or receive the correct drying method after handwashing.

Table 4. Dialysis Students' Health Personnel's Views on Hand Hygiene

Hand Hygiene of Health Personnel	N	%
Is hand hygiene training required for Health Personnel?		
Yes	26	100
No	-	-
I do not know	-	-
What is the role of the health worker in the prevention of hospital infections)		
Important	26	100
Not important	-	-
I do not know	-	-
Should Medical Staff wash their hands before contact with the patient?		
Always	26	100
Sometimes	-	-
Never	-	-
I do not know	-	-
Should health personnel wash their hands before invasive procedure?		
Always	-	-
Sometimes	25	96.2
Never	-	-
I do not know	-	-
Should medical personnel wash their hands after invasive procedure?		
Always	25	96.2
Sometimes	1	3.8
Never	-	-
I do not know	-	-
Should health personnel wash their hands after contact with blood, body fluids and secretions?		
Always	26	100
Sometimes	-	-
Never	-	-
I do not know	-	-

When the views of dialysis technician students about the hand hygiene of the health personnel were examined, it was found that 100% of the participants thought that hand hygiene training was needed for health personnel and that health worker had an important role in hospital infections.

Again, it was determined that 100% of the health personnel should be washed before contact with the patient, 96.2% before and after invasive procedures, and 100% after contact with blood body fluids and secretions.

Karaoğlu and Akın according to the survey they conducted with nurses reported that 41.3% of the nurses washed their hands before contact with the patient. In addition, after contact with the patient, 44.4% reported that they frequently wash their hands and 49.2% always wash their hands, 68.3% of nurses' hands after contact with body fluid reported that they always wash their hands and 25.4% frequently wash their hands (6).

Toraman et al. in their study, the rate of hand washing before contact with the patient and 70% after, and 81% after contact with body fluids (13).

Tibbalis et al. found that the rate of hand washing was 12.4% before contact with the patient and 10.6% after patient contact. (14)

Aktuğ Demir et al. reported that health care workers provided hand hygiene most frequently after contact with the patient (88.3%) (8).

Our opinions about health hygiene of health personnel were higher than the literature. The reason for this is thought to be due to the recent training of the students.

Table 5. Hand Hygiene Training and Applications of Dialysis Students

	N	%
Health Professionals Is it necessary to hand hygiene education?		
Yes	26	100
No	-	-
I do not know	-	-
Has he been trained in hand hygiene?		
Yes	25	96.2
No	1	3.8
Did he see the handwash banner in the laboratory?		
Yes	24	92.3
No	2	7.7
Did he read the handwash banner in the laboratory?		
Yes	24	92.3
No	2	7.7

When dialysis students were evaluated about hand hygiene education and practices, it was found that 100% of them thought that hand hygiene education was necessary for health workers and 96.2% of them received hand hygiene education. In addition, it was determined that 92.3% of them saw and read the poster hanging in the laboratory environment where hand hygiene education and application were made. Aktuğ et al. in their study on the level of knowledge of hand workers about hand hygiene and compliance with hand hygiene, it was found that 80.4% of the participants received hand hygiene training and 19.6% did not receive training (8).

Karaoğlu and Akın reported that nurses need training because of their negative knowledge and attitude in terms of hand washing indications. (6)

The findings obtained in our study show that dialysis technician students are aware of the importance of hand hygiene in reducing and preventing the incidence of infections acquired both from the community and in the hospital as a result of the education they have received and their visual awareness is high.

RESULT

There are many risk factors in the formation of nosocomial infections that become a public health problem, some of which belong to the host and some of them belong to hospital and health personnel. One of these risk factors is the insufficiency of hand hygiene which is the cause of 20-40% of hospital infections. Proper hand hygiene can reduce the rate of infection from health care services by preventing the spread of nosocomial pathogens. For this reason, the strict follow-up of the standard handwash procedure of clinical staff and patients is essential to patient care in dialysis centers, as is the case everywhere. In this context, as a result of the study conducted for the candidates of dialysis technicians, it is thought that students should be aware of in order to perform hygienic handwashing procedures completely and accurately, and it should be ensured that the knowledge is repeated and repeated as a habit both in theory and practice.

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