

Studying Knowledge and Attitude of Patient Care Aides towards Hand Hygiene Before and After Face-To-Face and Distance Educations in Namazi Hospital of Shiraz In 2016

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Abstract

The present study aims to investigate the effect of face-to-face and distance educations of hand hygiene on knowledge and attitude of patient care assistants of Namazi hospitals of Shiraz in 2016. This is a cross sectional-interventional study. 68 patient care assistants who are working in Namazi hospital of Shiraz have been studied. Demographic specifications, knowledge and attitude of patient care assistants were collected by WHO questionnaire which validity and reliability were confirmed. SPSS 19, Mann-Whitney, Wilcoxon and Spearman correlation tests have been used for data analysis. Among 68 participants, 39 persons were female (57.3%). Mean age of patient care assistants was 29.7 years old, work experience of participants was 4.4 years and 67.6% of them had diploma. There was a significant relationship between knowledge amount of patient care assistants before and after face-to-face and distance educations but there was no significant relationship between attitudes of patient care assistants before and after face-to-face and distance educations. There was a direct and significant relationship between age and attitude in face-to-face education ($r = 0.46$, $p = 0.009$).

Continuous educational program for hand hygiene is necessary for those who are working in healthcare system especially patient care assistants. The knowledge of patient care assistants is not enough for good performance rather their attitudes have to be changed and their beliefs should be planned deeply and scientifically. One of the main measures is to create a sense of vulnerability to infections for all treatment team especially patient care assistants and nurses.

Keywords: hand hygiene, knowledge, patient care assistant, attitude

Introduction

According to definitions of WHO in 2006, hand hygiene is referred to hand cleaning, washing and rubbing (Maher, Eslami, & Ali-Mohammadzadeh, 2016). Nowadays, hand hygiene has been recognized as one of the most effective interventions for reduction of infection transmission in hospitals (Kapil, Bhavsar, & Madan, 2015). Hand hygiene is one of the most cost effective methods in reduction of microbial transfer and it has been introduced as one of the most important ways for prevention from hospital infections (Rodriguez et al.,

2015). Among different preventive ways from hospital infections, correct hand hygiene is considered as a key approach (Sakihama et al., 2016).

Based on WHO facts, 80% of hospital infections are transmitted by infectious hands (Mosadegh M, 2013). In Europe, 4544100 infectious cases have been estimated per year and 37000 people will die directly (Kingston, O'Connell, & Dunne, 2016) and such infections will cause 16 million days of extra hospitalization in hospital (Zingg et al., 2015). In the USA, annual cost of hospital infection treatments has been estimated between 28.4 and 33.8 billion dollars (Sakihama et al., 2016). Hospital infections in Iran have been reported between 1.9 and 25% (Abdollahi AA, 2003).

In recent years, many efforts have been done throughout the world to reduce hospital infections (Maher et al., 2016). One of methods that can guarantee effective control of such infections and health promotion of patients and personnel is to increase knowledge and attitude of personnel towards hand hygiene (Asadpour M, 2012). One of the most basic managerial programs is to codify effective educational programs (Najafi ghazljeh T, 2012). Studies indicated that healthcare personnel have no enough knowledge on correct principles of hand hygiene (Maher et al., 2016).

(Zingg et al., 2015) reviewed systematically papers published from 1996 to 2012 to determine the main elements in organizing preventive programs from hospital infections and he obtained ten key points from 92 studies. According to present study, education is one of ten key points and it is considered as a manageable strategy for reduction of hospital infections and promotion of patients' safety (Zingg et al., 2015).

In the study conducted by (Mosadegh M, 2013), hand hygiene was increased from 21 to 28% after holding educational courses and correcting structural and physical condition in hospital (Mosadegh M, 2013).

Since few studies have been done on the role of hand hygiene in control and management of hospital infections in our country, it seems necessary to conduct current research to obtain enough information about effective and favorable management of hygiene and control of hospital infections.

Materials and Methods

This is a cross sectional-interventional study conducted within 6 months to compare the effect of face-to-face and distance educations for hand hygiene on knowledge and attitude of patient care assistants of Namazi hospital of Shiraz in 2016. To determine sample size, formula has been used based on statistical expert opinion. Being over 18 years old, satisfaction with participation in the study, no affection to skin diseases, not using a special life style (due to disease or other factors) were among inclusion criteria of patient care assistants. WHO Hand hygiene questionnaire has been used in many studies. Its validity was confirmed and 0.79 coefficient for all items of the questionnaire suggest acceptable reliability of the study. The first part of questionnaire includes demographic information (age, gender, education, work experience) and the second part associates with knowledge and attitude of patient care assistants towards hand hygiene.

Samples were divided into groups 1 and 2 via simple random method. Hand hygiene was trained in form of lecture and slides in face-to-face education and it was trained to the second group similarly by educational pamphlets and CDs. Educational pamphlet was divided into two parts and each part lasted 7 days. Then, the researcher contacted subjects of the second group to ensure that they read educational pamphlet according to determined schedule and to solve their possible problems about educational materials. One week after face-to-face education (group 1) and also one week after distance education (group 2), the knowledge and attitude of participants about hand hygiene were studied. SPSS 19 was used for data analysis in 0.05 significance level.

Results and Discussion

Results showed that most patient care aides in Namazi hospital were female in groups 1 (54.3%) and 2 (60.6%). The highest age of patient care aides of Namazi hospital in group 1 was 43 years and the lowest age was 20 years old. The highest age of patient care aides of Namazi hospital in group 2 was 45 years and the lowest age was 20 years old. Mean age of patient care aides in groups 1 and 2 was 30.53 and 28.96 years old respectively. Mean work experience of patient care aides in groups 1 and 2 was 4.6 and 4.2 years old respectively. Results showed that most patient care aides of Namazi hospital in groups 1 (52.8%) and 2 (81.8%) had diploma. Regarding result of Fisher's exact test, there was a significant relationship between education and type of group ($P \leq 0.05$). Table 1 shows frequency distribution of patient care aides of Namazi hospital of Shiraz in 2016 in terms of their education.

Table 1: frequency distribution of patient care aides of Namazi hospital of Shiraz in 2016 in terms of their education

Statistic	Group type
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	face-to-face education		distance education		p-value
	NO	Percent	Number	percent	
Under diploma	4	11.1	3	9.1	
Diploma	19	52.8	27	81.8	0.02
Associate degree	3	8.3	1	3	
Bachelor	10	27.8	2	6.1	
Total	36	100	33	100	

Based on results, mean knowledge of patient care aides before intervention is similar in both groups (there is no significant difference, $p = 0.1 > 0.05$). Therefore, it is concluded that significant difference of knowledge between both groups before and after intervention is due to intervention. Mean difference before and after intervention is higher in group 2 than group 1. In addition, significance level in distance education is lower than that in face-to-face education. Therefore, it is concluded that distance education is more effective than face-to-face education. Table 2 compared effect of face-to-face and distance educations on knowledge of patient care aides in Namazi hospital of Shiraz in 2016.

Table 2: effect of face-to-face and distance educations on knowledge of patient care aides in Namazi hospital of Shiraz in 2016

	Before intervention		After intervention		p-value
	Mean	Standard deviation	Mean	Standard deviation	
face-to-face group	10.66	3.2	12.02	2.5	0.013
distance group	9.63	2.5	12.36	2.2	0.000
Man-Whitney	0.1				

Results showed that mean attitude of patient care aides before and after intervention is similar in both groups (there is no statistically significant difference, $p = 0.2 > 0.05$). There was no significant difference between mean attitudes of both groups before and after intervention.

Results obtained from Wilcoxon test indicated that there was no statistically significant difference between face-to-face and distance groups before and after intervention and mean scores of attitudes were the same. Table 3 compares effect of face-to-face and distance educations on attitudes of patient care aides in Namazi hospital of Shiraz in 2016.

Table 3: comparing effect of face-to-face and distance educations on attitudes of patient care aides in Namazi hospital of Shiraz in 2016

	Before intervention	After intervention	p-value
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	Mean	Standard deviation	Mean	Standard deviation	
face-to-face group	28.9	1.22	29.1	1.2	0.35
distance group	28.5	1.45	28.4	1.7	0.8
Man-Whitney	0.2				

Carroll (2006) believed that the key element for promotion of hand hygiene was support of authorities, rewards, encouragement of personnel and feedback (Carroll, Gladson, & Camins, 2006). The reasons for low attitude may be lack of equipment for hand hygiene, cultural ground and religious beliefs (Allegranzi et al., 2009).

According to Jumaa (2005), the role of religious beliefs especially in Muslim countries is effective on acceptance of hand hygiene with alcoholic solution (Jumaa, 2005). Concerning "comparing the effect of face-to-face and distance educations for hand hygiene on knowledge and attitude of patient care assistants", results from Namazi hospital in Shiraz showed that mean knowledge of patient care aides before intervention and face-to-face education of patient care aides in Namazi hospital was 10.66 and it was 12.02 after intervention. There was a significant relationship between knowledge of patient care aides before and after face-to-face education of patient care aides of Namazi hospital. Therefore, knowledge of patient care aides after intervention and face-to-face education was higher than that before intervention. The study conducted by Yaghubi et al (November 2012) indicated that most participants of the research had low knowledge on hand hygiene and control of hospital infections (M, S.SH, & H., 2013). The result was consistent with results of the present research. the study conducted on nurses by Rahimi et al (2006) was inconsistent with current results (K, M, L, & L, 2006). It seems that the difference of groups under study and applied instruments have played important roles in such discrepancy. But more efforts have to be done to increase knowledge of patient care aides who play preventive role in reduction of affection to hospital infections.

Concerning "knowledge of patient care aides before and after distance education of patient care assistants in Namazi hospital of Shiraz", mean knowledge of patient care aides before intervention and distance education of patient care aides was 9.6 and it was 12.3 after intervention. There was a significant relationship between knowledge of patient care aides before and after distance education of patient care aides in Namazi hospital. Therefore, knowledge of patient care assistants after intervention and distance education was higher than that before intervention. It can be stated that the primary goal of educational programs for those who are working in healthcare system is to transfer knowledge obtained in clinical setting. Results indicated that face-to-face and distance educations were effective on learning of patient

care aides but amount of knowledge and learning of patient care assistants in distance group was higher than that in face-to-face group. It is apparent that effect of both methods on increase of patient care aides' learning is due to similar behavioral content and goals and they are based on learner's requirements. In the study conducted on 108 junior nursing students in 1990, similar results were obtained. In above study, students in distance education group spent less time on content learning in addition to obtaining higher scores in posttest than the other group (Goldrick, Appling-Stevens, & Larson, 1990).

Concerning "attitude of patient care aides before and after face-to-face and distance educations", results obtained from patient care aides of Namazi hospital of Shiraz showed that mean attitude of patient care aides before intervention and face-to-face education was 28.9 and it was 29.1 after intervention. There was no significant relationship between attitude of patient care aides in Namazi hospital before and after face-to-face education. The study conducted by Yaghoubi et al (M et al., 2013) indicated that most patient care assistants had negative attitude towards hand hygiene items. The result was not consistent with studies of Austin et al (Stein, Makarawo, & Ahmad, 2003), (Allah-Bakhshian, Moghaddasian, Zamanzadeh, Parvan, & Allah-Bakhshian, 2010), (Abdollahi AA, 2003) and (Angelillo, Mazziotta, & Nicotera, 1999). Therefore, it can be concluded that different research settings and educational programs in various studies had different effects on attitude of patient care assistants suggesting different decisions made on infection control and hand hygiene. It seems necessary to conduct educational courses thus to increase and reinforce positive attitudes of patient care assistants and to correct some false performances resulted from wrong beliefs.

Conclusion

Results from patient care aides in Namazi Hospital of Shiraz indicated that the correlation between age and knowledge and also between knowledge and attitude is not significant in face-to-face education but there is a direct and significant relationship between age and attitude ($r= 0.46$, $p= 0.009$). The study conducted by (Abdollahi AA, 2003) showed that there was no significant relationship between knowledge and attitude and between knowledge and performance. This result is consistent with current results. The knowledge cannot lead merely to increasing attitude and performance because facilities and environmental condition are effective on performance. Results of the research conducted by (Linden, 1990) showed that nurses had good knowledge on infection control but there was no significant relationship between their knowledge and performance. (GH., 2000) wrote: knowledge merely cannot lead to good performance rather attitudes should be changed and the structure of beliefs should be planned deeply and scientifically in order that proper performance is created. To create a positive attitude and to reinforce healthy beliefs, one of the main measures is

to create a sense of vulnerability to such infections in all treatment personnel especially patient care assistants and nurses in nursing team because they do not believe in risk of infections due to their job, dealing with affected patients and risky behaviors (Dubik-Unruh, 1999).

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