ORİJİNAL ARAŞTIRMA ORIGINAL RESEARCH

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Hand Hygiene Beliefs and Practices Conditions of Nurses in the Intensive Care Unit: Descriptive Study

Yoğun Bakım Ünitesindeki Hemşirelerin El Hijyeni İnançları ve Uygulama Durumları: Tanımlayıcı Çalışma

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ABSTRACT Objective: The research was carried out to determine the beliefs and practices of nurses working in the intensive care unit (ICU) about hand hygiene. **Material and Methods:** The research is cross-sectional and descriptive and was conducted between October 2019 and January 2020, with nurses working in the mixed ICU of a state hospital, the pediatric and neonatal care units of a city hospital and a university hospital. One hundred thirty-nine nurses working in the ICU and willing to participate in the study were included in the study. Personal Information Form, Hand Hygiene Belief Scale and Practice Inventory were used in the research. In the evaluation of the data, number, percentage, mean, t-test and one-way ANOVA, Mann-Whitney U and Kruskall-Wallis tests were used. **Results:** Nurses' hand hygiene belief score was 87.34±9.73, and practice score was 67.42±4.98. It has been determined that female nurses and nurses between the ages of 31-40 have high hand hygiene belief and practice scores. A significant difference was found between gender, age and hand hygiene belief score. It was found that the hand hygiene belief and practice score of the nurses who graduated from undergraduate and higher education were higher. It was determined that those who received hand hygiene training had higher positive attitudes (p=0.016). The lowest practice score was formed after the invasive procedure (4.64±0.69), after entering the isolation room (4.64±0.75) and after contact with the patient's secretions (4.64±0.74). **Conclusion:** It has been determined that nurses generally have a positive attitude and practice hand hygiene. Even if it is stated that hand hygiene is done, it is important to transform it into behavior. Hand hygiene observations and training should be done continuously, compliance should be further increased, especially after contact with the patient and patient's secretions. Institutions should develop and maintain multifaceted strategies to increase hand hygiene compliance.

Keywords: Beliefs; hand hygiene; intensive care unit; nurse; practices

ÖZET Amaç: Bu çalışma, yoğun bakım ünitesinde (YBÜ) çalışan hemşirelerin, el hijyenine olan inançlarını ve uygulama durumlarını belirlemek amacıyla gerçekleştirilmiştir. **Gereç ve Yöntemler:** Araştırma kesitsel ve tanımlayıcı tipte olup, Ekim 2019 ve Ocak 2020 tarihleri arasında, bir devlet hastanesinin karma yoğun bakım, bir şehir hastanesi ve bir üniversite hastanesinin çocuk ve yenidoğan bakım ünitelerinde çalışan hemşireler ile gerçekleştirilmiştir. Yoğun bakımda çalışan ve araştırmaya katılmak isteyen 139 hemşire, araştırmaya dâhil edilmiştir. Araştırmada; Kişisel Bilgi Formu, El Hijyeni İnanç Ölçeği ve Uygulama Envanteri kullanılmıştır. Verilerin değerlendirilmesinde; sayı, yüzde, ortalama, t-test ve one-way ANOVA, Mann-Whitney U ve Kruskall-Wallis testleri kullanılmıştır. **Bulgular:** Hemşirelerin el hijyeni inanç puanı 87,34±9,73, uygulama puanı ise 67,42±4,98 olarak bulunmuştur. Kadın hemşirelerin ve 31-40 yaş arasındaki hemşirelerin; el hijyeni, inanç ve uygulama puanlarının yüksek olduğu belirlenmiştir. Cinsiyet, yaş ile el hijyeni inanç puanı arasında anlamlı farklılık bulunmuştur. Lisans ve üzeri mezun hemşirelerin, el hijyeni inancı ve uygulama puanı daha yüksek bulunmuştur. El hijyeni eğitimi alanların daha yüksek pozitif tutuma sahip oldukları belirlenmiştir (p=0,016). En düşük uygulama puanını invaziv işlem sonrası (4,64±0,69), izolasyon odasına girdikten sonra (4,64±0,75) ve hastanın vücut sıvıları ile temastan sonra (4,64±0,74) yapılan işlemler oluşturmuştur. **Sonuç:** Hemşirelerin genel olarak pozitif tutuma sahip oldukları, el hijyeni uygulamalarını yaptıkları belirlenmiştir. El hijyeni yapıldığı ifade edilse de bunun davranışa dönüştürülmesi önemlidir. El hijyeni gözlemleri ve eğitimleri sürekli yapılmalı, özellikle hastayla ve vücut sıvıları ile temas sonrası uyum daha da yükseltilmelidir. Kurumlar, el hijyeni uyumunu yükseltecek çok yönlü stratejiler geliştirmeli ve sürdürmelidir.

Anahtar Kelimeler: İnançlar; el hijyeni; yoğun bakım ünitesi; hemşire; uygulama

It is very important to comply with hand hygiene rules in the prevention of human-to-human infectious diseases (such as coronovirus, severe acute respiratory syndrome, Middle East respiratory syndrome-coronavirus) and healthcare-associated infections.[1] The importance of hand hygiene is once again understood with the coronovirus pandemic (2020) in the world. Healthcare related infections, another infec-

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tion, is the most important public health problem worldwide, affecting mortality, morbidity and quality of life. World Health Organization (WHO) states that 10% of all patients in developing countries and 7% of developed countries can get these infections at least once in their lifetime.[2-5] The European Center for Disease Control and Prevention states that more than 2.6 million new cases of hospital infections occur in the European Union each year.[6,7]

These infections are more common in intensive care units (ICUs) due to the long stay in the hospital, the presence of underlying chronic diseases, the simultaneous application of many invasive procedures, the use of broad-spectrum antibiotics, and the suppression of immune systems. As the length of stay of patients in ICUs increases, the use of invasive tools increases and accordingly, the frequency of invasive tool-related infections increases.[8,9] While the rate of healthcare related infections is 5-10% in patients followed up in clinics, this rate rises to 20-25% in ICUs. It is known that 53.6% of healthcare-related infections in the ICU result in death. Therefore, it is important to follow infection control measures.[8,10,11] The most important source of transmission for the spread of healthcare-related infections is the hands of healthcare professionals.[12] Although it is known that the simplest, cheapest and most effective method of preventing these infections is hand hygiene, the hand hygiene compliance rates of health personnel are still low today.[13-15] Currently, hand hygiene compliance rates in healthcare workers remain below 40-50%.[16,17] Reasons for low hand hygiene compliance include lack of soap or paper towels, not having easy access to alcohol-based hand antiseptics, lack of knowledge about hand hygiene guidelines, lack of time devoted to hand hygiene, working with a high workforce and low number of personnel, not using hand antiseptics due to skin irritation caused by hand antiseptics. Thus, compliance with hand hygiene decreases and causes an increase in healthcare-associate infections.[2,11] Therefore, this study is an important study because it investigates whether the nurses working in the ICU have low compliance with hand hygiene and the factors affecting compliance.

The WHO has set indications for attention to hand hygiene. These are 5 important indications in hand hygiene, before contact with the patient, before aseptic procedure, after contact with body fluid, after contact with the patient, and after contact with the patient environment.[18] In a study where 5 important indications were observed in healthcare professionals; it was found that the total compliance was 25.7%, and the rate of application of the indications increased to 57.5% after the healing studies.[19] It is thought that there is a need for research on hand hygiene practices with nurses as it constitutes a group of nurses in contact with the most patients from health professionals. For this reason, this research was designed and managed as a clinical research aiming to reveal the beliefs and hand hygiene practices of nurses who are in direct contact with the patient and to create evidence in this regard.

Research questions 1: Do nurses working in the ICU have low belief in the hand hygiene and the rate of correct hand hygiene practices?

Research questions 2: What are the factors affecting the hand hygiene beliefs and correct hand hygiene practice rates of nurses working in the ICU?

MATERIAL AND METHODS

ETHICAL CONSIDERATIONS

Before starting the research process, permission was obtained from Karadağ et al., who conducted the validity and reliability of the scale, in order to use the Hand Hygiene Compliance Scale and Hand Hygiene Practice Inventory.[20] Ethics committee approval was received from Mersin University Rectorate Clinical Research Ethics Committee on 05.09.2019 and numbered 1152287 to conduct the study. In addition, written permissions were obtained from the researched hospitals. The study was carried out in accordance with the Helsinki Declaration principles.

DESIGN AND SAMPLE

The research was conducted descriptively with 139 nurses working in the mixed intensive care unit (MICU) of a state hospital, the pediatric intensive care units (PICUs) and neonatal intensive care units (NICUs) of a city hospital and a university hospital between 01.10.2019 and 31.01.2020. In the study, it was aimed to reach the whole universe (n=171), but the nurses who did not work in the ICU (n=12) and

did not accept to participate in the study (n=20) were not included in the study and 81% of the universe has been reached. There are 19 patient beds and 35 nurses work in the MICU (adult and pediatric patients) of the state hospital. There are 12 beds and 20 nurses work in the PICU of the university hospital and there, 27 beds and 30 nurses work in the NICU. On the other hand, for 15 beds, 29 nurses work in the PICU of the city hospital, while there are 54 beds and 57 nurses work in the NICU. Nurses usually work between 8-16, 16-08 hours.

DATA COLLECTION

In collecting data; The Nurse Information Form created as a result of the literature review, "Hand Hygiene Belief Scale" and "Hand Hygiene Practice Inventory" were used.

Nurse Information Form

In the nurse information form created by reviewing the publications about the research; there are variables such as unit, age, gender, duration of employment, educational status of nurses.[13,17,21]

Hand Hygiene Belief Scale

Hand Hygiene Belief Scale was developed by Thea van de Mortel in 2009. Turkish validity and reliability of the scale consisting of 22 items, including the perception of hand hygiene (19 items) and the importance of hand hygiene (3 items) by Karadağ et al. 1=strongly disagree, 2=disagree, 3=not sure, 4=agree, 5=definitely agree. The highest score that can be obtained from the scale is 110 and as the score gets closer to this number, the positive attitude increases.[20] The Cronbach alpha coefficient was determined as 0.76 by Karadağ et al.[20] In our study, the Cronbach alpha coefficient was found to be 0.81.

Hand Hygiene Practice Inventory

Hand Hygiene Practice Inventory is a 5-point Likert type scale consisting of 14 items, whose Turkish validity and reliability was developed by Thea van de Mortel (2009), and whose validity and reliability was made by Karadağ et al. It is scored as 1=never, 2=sometimes, 3=often, 4=often, 5=always. The highest score that can be obtained from the scale is 70, and as the score increases to this number, it means that hand hygiene practices are always done.[20] The Cronbach alpha coefficient was determined as 0.85 by Karadağ et al. In our study, the Cronbach alpha coefficient of the inventory was found to be 0.90. Informed consent was obtained from the nurses who agreed to participate in the research sample.[20] Then, the scales used in the research were applied face to face by the researcher and the research data were collected.

DATA ANALYSIS

Statistical evaluation was made in SPSS 21 package program. Data number percentage distributions, normal distribution data; t-test and one-way Anova, and non-normally distributed data were analyzed with Mann-Whitney U and Kruskall-Wallis tests. In the analysis of the data, $p<0.05$ was considered to be significant in the 95% confidence interval.

RESULTS

It has been seen from the data obtained that 81.3% of the nurses participating in this research are women. Of them, 44.6% are between the ages of 31-40 and 48.2% of these nurses work in the NICUs. In business life, it was revealed that 30.2% of the nurses had been working for 6-10 years, 89.2% of the nurses are at the level of undergraduate and above education. It was found that 41% of the nurses in the sample worked in the city hospital. Introductory features and Hand Hygiene Belief Scores (HHBSs) and Hand Hygiene Practices Scores (HHPSs) of nurses are given in Table 1.

The HHBSs of the nurses who participated in our study was found to be 87.34±9.73, and the HHPSs was 67.42±4.98. Female nurses' HHBSs were 88.14±9.03, while male nurses were 83.88±11.9. Women had a more positive attitude than men. A significant difference was found in advanced statistical analysis between them (p=0.044). On the other hand, it was found that there was no significant difference in advanced statistical analysis by hand in terms of hand hygiene practices conditions (p=0.870).

When the belief in hand hygiene and hand hygiene practice status of the nurses participating in our study were examined according to their ages, nurses between the ages of 31-40 formed the highest score in

TABLE 1: Hand hygiene belief and practice scores according to the sociodemographic characteristics of nurses (n=139).

	n	%	HHBSs	p value	HHPSs	p value
Gender				0.044*		0.870***
Female	113	81.3	88.14±9.03		67.48±4.97	
Male	26	18.7	83.88±11.9		67.15±5.11	
Age				0.028**		0.128****
21-30	61	43.9	86.13±12.12		66.36±6.75	
31-40	62	44.6	89.59±6.85		68.53±2.42	
41-50	16	11.5	83.25±6.92		67.18±3.56	
Working unite				0.609		0.260
Mixed ICU	35	25.2	86.02±7.90		67.91±2.86	
Pediatric ICU	37	26.6	87.29±9.98		67.13±3.80	
Neonatal ICU.	67	48.2	88.05±10.48		67.32±6.29	
Working year				0.476		0.221
1-5 year	39	28.1	87.12±11.96		65.92±7.92	
6-10 year	42	30.2	86.54±10.34		67.42±3.45	
11-15 year	36	25.9	89.44±8.07		69.02±1.48	
16+years	22	15.8	85.81±5.86		67.45±3.73	
Education status				0.535		0.118
High school-over	15	10.8	85.86±6.95		67.33±2.82	
Bacholar's+over	124	89.2	87.52±10.02		67.43±5.19	
Institution				0.594		0.657
Public hospital	35	25.2	86.02±7.90		67.91±2.86	
University hospital	47	33.8	88.25±11.97		66.89±7.21	
City hospital	57	41.0	87.40±8.70		67.56±3.61	
Total	139	100	87.34±9.73		67.42±4.98	

ICU: Intensive care unit; HHBSs: Hand Hygiene Belief Scales; HHPSs: Hand Hygiene Practice Scales.
*T-Test **One-Way Anova ***Mann-Whitney U Test ****Kruskal Wallis Test.

both cases. While there was a statistically significant difference between age and hand hygiene belief (p=0.028), in the "post hoc analysis", it was determined that 31-40 year old nurses had higher hand hygiene belief than 41-50 year old nurses and the difference was due to this group. There was no difference between age and hand hygiene practice (p=0.128).

While the nurses working in the NICUs have the highest HHBSs, the nurses working in the MICU were found to have the highest HHPSs. In statistical advanced analysis, it was determined that there was no significant difference between them (p>0.05). The HHBSs (89.44±8.07) and HHPSs (69.02±1.48) of the nurses between 11-15 years of study were determined as the highest average score.

When the hand hygiene (HH) scores according to the education level of the nurses are analyzed, the HHBSs of bachelor's degree and over graduate nurses are both on average of the positive HHBSs (87.52±10.02) and the average of HHPSs (67.43±5.19) turned out to have. It has been observed that as the education level increases, statistically, HHBS averages increase. When the hand hygiene belief and practice status of the nurses of three different hospitals where the study was conducted were compared, it was found that while the nurses with the highest belief were university hospital nurses, the nurses who applied hand hygiene best were state hospital nurses, and there was no statistically significant difference between them (p>0.05). It was determined that 98.6% of the nurses in the research sample received HH training. It was determined that those who received training on hand hygiene from nurses had a higher average score of hand hygiene belief than those who did not receive training. (yes: 87.58±9.53, no: 71.00±12.72). In the advanced statistical evaluation, there was a significant difference between the groups (p=0.016). It was also revealed that the nurses

TABLE 2: Averages of hand hygiene belief and practice points according to the nurses' training on hand hygiene training (n=139).

	n	%	HHBSs	p value	HHPSs	p value
Training on hand hygiene training				0.016*		0.053**
Yes	137	98.6	87.58±9.53		67.48±4.99	
No	2	1.4	71.00±12.72		63.50±0.70	
Training time				0.273		0.773
In the past year	117	84.2	87.21±9.52		67.33±5.31	
It's been over a year	20	14.4	89.75±9.56		68.35±2.27	
The need to receive hand hygiene training				0.253		0.039
Yes I need	122	87.8	86.99±9.67		67.22±5.17	
No I don't need	17	12.2	89.88±10.03		68.88±2.99	

HHBSs: Hand Hygiene Belief Scales; HHPSs: Hand Hygiene Practice Scales.
*T-Test **Mann-Whitney U Test.

who received training in the practice of hand hygiene in the same way had a high score of HHPSs (yes: 67.48±4.99, no: 63.50±0.70). When statistical advanced analysis was made in this group, it was thought that there was a significant difference between the groups (p=0.053). The rate of nurses stating that they have received HH education in the last year is 84.2%. The average of HHBS and HHPS of the nurses in the research sample who received training on hand hygiene more than a year ago (More than 1 year: Hand hygiene belief average score: 89.75±9.56, hand hygiene practice average score: 68.35±2.27). Expressing that there is no need for hand hygiene training, the nurses' HHBSs (89.88±10.03), HHPSs (68.88±2.99) were higher. In statistical advanced analysis, while there was no significant difference between the need for hand hygiene training and hand hygiene belief, the difference between the mean scores of hand hygiene practice was found to be significant (p=0.039). The mean values of HHBSs and HHPSs that vary according to the nurses' training in HH are given in Table 2.

The nurses' practice of hand hygiene is given in Table 3. The mean score of hand hygiene practice of nurses ranged from 4.93±0.50 to 4.64±0.69. As seen in this table, the nurses participating in the study had the lowest score in the case of applying hand hygiene; after placing an invasive device in the patient (4.64±0.69), entering the room of the patient undergoing isolation (4.64±0.75), after receiving contact with the patient's secretions (4.64±0.74). In other words, it is generally believed that nurses have high hand hygiene practice scores.

TABLE 3: The mean scores of the Hand Hygiene Practices İnventory.

I cleanse my hands:	Mean score±SD
After going to the toilet	4.92±0.41
Before caring for a wound	4.72±0.62
After caring for a wound	4.87±0.47
After touching potentially contaminated objects	4.83±0.45
After contact with blood or body fluids	4.85±0.44
After inserting an invasive device	4.64±0.69
Before entering an isolation room	4.78±0.54
After physical contact with a patient	4.86±0.57
After exiting an isolation room	4.64±0.75
Before endotracheal suctioning	4.92±0.36
After contact with a patient's secretions	4.64±0.74
Before patient contact	4.84±0.88
After removing gloves	4.93±0.50
If they look or feel dirty	4.92±0.34
Total hand hygiene inventory score	67.42±4.98

SD: Standard deviation

DISCUSSION

The most important strategy in the prevention of hospital infections is hand hygiene. Today, it has become more important with the coronavirus disease-2019 pandemic. However, many studies show that hand hygiene compliance is low in healthcare personnel.[4,22] It was determined that the nurses who participated in our study generally had positive beliefs. However, the positive attitudes of nurses towards HH may increase even more. Hand hygiene practice scores are high. Nurses stated that they practiced hand hygiene. According to publications on hand hygiene, although nurses and other healthcare profes-

sionals stated that they always comply with HH, HH compliance was low in observation studies and increased after remedial studies.[4,22-25] In the study of Watson, it was found that hand hygiene compliance in health care workers (nurses, doctors and other healthcare workers) was 51.3%, and compliance after healing interventions increased to 98.6%.[15] This suggests that there is always a need for training and supporting studies that support hand hygiene practices and beliefs. In another study conducted in Vieatnam, HH compliance was 25.7%, after interventions to hand hygiene practices, it increased to 57.5%, and with the increase in HH compliance rates, from 31.7% to 20% of hospital infections, it was also determined that it decreased to 3 and the cost decreased.[19] It is promising to state that hand hygiene practices are always performed in this study.

However, in our study, the procedures in which the least compliance with hand hygiene was observed were after inserting an invasive device, after entering the isolated patient room, and after contact with the patient's secretions. The feeling of the trust in gloves reduces the importance of hand hygiene, especially in these operations performed with gloves. After the gloves are removed, the hands are considered to be clean and hand hygiene is not performed. With the coronovirus pandemic, which is still happening all over the world, the importance of HH has become more and more understood. Nurses play a key role in preventing contamination to nurses and patients, especially before leaving the isolated patient room, after leaving the patient room, after contact with the patient's secretions and after invasive procedures.[26]

In this study HHBS and HHPS of women and nurses between the ages of 31-40 were higher than the other groups and there was a significant difference between them. In their study, Dijk et al. found that pre-intervention hand hygiene compliance was 42.6% and 51.8% after intervention in middle-aged nurses.[4] Those who have the highest positive belief about hand hygiene are the nurses of the NICUs. Wetzker et al. found that hand hygiene compliance is higher in neonatal intensive care than surgical and internal intensive care.[27] The results of Wetzker et al. show similar characteristics to the findings of this study. This can be attributed to the increased awareness of nurse about hand hygiene since the immune systems of the patients hospitalized in the neonatal unit are suppresed and infections can be transmitted easiliy.

In this research, those who state that hand hygiene practices are always done are mixed intensive care nurses. In a study evaluating the compliance of HH in PICUs and NICUs, HH compliance was 57% in nurses working in PICUs, while it was 66% in NICU nurses.[28] In another study where HH non-compliance was determined in ICUs, it was determined that the overall non-compliance was 57.6%, the highest non-compliance was 64.4% and physicians, while this ratio was 55.4% in nurses. When the incompatibility is compared with the types of ICUs, the incompatibility in pediatric intensive care was found to be the highest with 64.6%, while it was found to be 53.1% in the newborn.[9] In this study, the nurses in the NICUs were with the highest HHBS. High level of hand hygiene belief in nurses working in the neonatal unit may be due to the higher incidence of hospital infections in newborns, it can be attributed to high awareness of nurses. In another study evaluating the compliance of HH in the PICUs, the rate of compliance with hand cleaning rules was found to be 8.8%, and it was found to be quite low. According to occupational groups, the best hand hygiene compliance was observed in nurses (75%).[29]

Again, in this study, nurses working between 11-15 years have higher HHBSs and HHPSs compared to other groups. Similarly, when the education status of nurses is examined; HHBSs and HHPSs are also high in nurses who have graduated from or above, and as the education level has increased, it has emerged as an increased attitude towards HH. In this sample where nurses work in different institutions, there is no difference in terms of hand hygiene belief and practices conditions with the institution worked. In another study evaluating the HH compliance of the auxiliary service personnel working in ICU; there was no significant relationship between educational status, working year and HH compliance scale mean score.[30] In this study, there is no significant relationship between the education level of the nurses, the year of work and the HHBS and HHPS. This can be

attributed to the understanding of the importance of nosocomial infections and hand hygiene across the country and the world.

In 2009, the "Danger is in Your Hands" campaign was organized across the country by the Ministry of Health in Türkiye, all personnel working in hospitals were ensured to participate in hand hygiene trainings, and efforts to raise awareness about hand hygiene have increased since then. In addition to all these, infection control committees in Türkiye periodically organize training meetings on the requirements of complying with hand hygiene rules. Studies such as the feedback of the observation results to the relevant units, hand hygiene training activities related to the results, and the hanging of reminder posters were organized. Despite all these, although hand hygiene score averages are high, it is thought that there is still a need for training and research to increase compliance.

Physical properties in the working environment such as training activities carried out in hospitals, the infection control team regularly monitoring hand hygiene and feedback of observation results to the services related to regular periods, hanging reminders posters explaining HH and opportunities in ICUs, easy access to alcohol based hand antiseptics and sinks. HH should be continued as practices that increase compliance.[11,24,31] In a study evaluating hand hygiene compliance in the ICU in Indonesia, it was found that hand hygiene compliance in healthcare personnel was 27% at the beginning of the study, and hand hygiene compliance increased to 77% with the multi-faceted program including training.[13] Educational studies increase the importance of hand hygiene. Those who received hand hygiene training more than a year ago had high belief in hand hygiene and practice score. However, as a result of further statistical analysis, there was no significant difference between the groups. The hand hygiene belief and practice score of those who did not need hand hygiene training were found to be higher than those who did. Nurses who think that they are trained in hand hygiene are those who have a positive attitude.

LIMITATIONS

The study can be done in ICUs in different branches and with other health workers.

CONCLUSION

In this study, it was determined that the nurses had positive beliefs and practiced hand hygiene. However, the belief in HH may increase even more. Even if you have a positive attitude about hand hygiene, it is important to turn it into a behavior. Institutions should develop and maintain multi-faceted strategies to improve HH compliance. Regular hand hygiene observations, feedback of observation results, easy access to hand hygiene materials, communication with infection control committees, periodic hand hygiene training, and posters describing the 5 indications rule and hand hygiene techniques, use of evidence-based guides, determining its own strategy are the practices that will incrase hand hygiene compliance. Although it is stated that HHP are always done, comparing the results of HH observation of nurses with the applications is thought to be a guide for future studies.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Zuhal Artuvan, Hacer Çetin;* ***Design:*** *Zuhal Artuvan, Hacer Çetin;* ***Control/Supervision:*** *Zuhal Artuvan, Hacer Çetin;* ***Data Collection and/or Processing:*** *Zuhal Artuvan;* ***Analysis and/or Interpretation:*** *Zuhal Artuvan, Hacer Çetin;* ***Literature Review:*** *Zuhal Artuvan, Hacer Çetin;* ***Writing the Article:*** *Zuhal Artuvan, Hacer Çetin;* ***Critical Review:*** *Zuhal Artuvan, Hacer Çetin.*

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