HAND HYGIENE COMPLIANCE STATUS OF MEDICAL STAFFS AT THE NATIONAL EYES HOSPITAL, IN 2021

Tran Thi Ly[1,*], Le Van Nhan[2], Dao Van Dung[3], Le Thanh Ha[4], Tran Quoc Thang[5]

[1]*National Lung Hospital - 463 Hoang Hoa Tham, Ba Dinh, Hanoi, Vietnam*
[2]*Van Hien University - 13E Nguyen Van Linh, Binh Chanh, Ho Chi Minh, Vietnam*
[4]*National Eyes Hospital - 85 Ba Trieu, Hai Ba Trung, Hanoi, Vietnam*
[3,5]*Insitute of Community Health - 24 Lieu Giai, Ba Dinh, Hanoi, Vietnam*

Received 05/07/2021
Revised 01/09/2022; Accepted 20/10/2022

ABSTRACT

Background: Hand hygiene (VST) is the simplest, most effective and most important measure that contributes to reducing hospital-acquired infections, ensuring the safety of health workers and improving the quality of patient care.

Objectives: Describe the knowledge and practice of hand hygiene of medical staff at the National Eye Hospital and analyze some related factors.

Methods: Cross-sectional survey, quantitative research.

Results: This study collected information from 323 health workers (NVYT), National Eye Hospital through questionnaires and observation using checklists. The research results show that the knowledge and practice of hand hygiene in the control of hospital-acquired infections of health workers is quite good.

Conclusion: The rate of health workers with knowledge of hand hygiene reached 74.9%. The rate of health workers with practices of hand hygiene reached over 85%. There are 4 factors related to knowledge of hand hygiene including: age, working position, working time and professional qualifications. Three factors related to practices of hand hygiene including: Gender, working position and time of training on infection control ($p<0.05$).

Key words: Hand hygiene, related factors, medical staffs.

*Corressponding author
Email address: ly13021984@gmail.com
Phone number: (+84) 947 793 568
https://doi.org/10.52163/yhc.v63i9.551

1. INTRODUCTION

According to the World Health Organization (WHO), "Hospital infections are infections acquired during hospital treatment, these infections are usually not present nor in the incubation period at the time of hospitalization. Hospital infections usually appear 48 hours after the patient is admitted to the hospital" [14].

Currently, hospital-acquired infections are a big challenge for the health sector, especially for hospital. According to some studies, the rate of hospital infections is around 5-10% in developed countries and up to 15-20% in developing countries. In Vietnam, the overall rate of hospital-acquired infections in hospitalized patients ranges from 5%-10%. Serious consequences of hospital-acquired infections: increased incidence of disease, increased mortality, prolonged treatment duration and increased burden of disease costs. The goal of infection control is to minimize hospital infections, ensure the safety of patients and health workers, and contribute to improving the quality of medical care [11].

Hand hygiene is one of the simplest, most effective and most important infection control measures, helping to eliminate most pathogens (bacteria, viruses, parasites, fungi...) that can be transmitted from patients, the medical environment (tools, air, water ...) through the hands of health workers to other patients and the community, contributing to reducing 30 - 50% of hospital infections, ensuring safety for health workers in practice care and treatment.

The study "The current situation and some factors related to knowledge and practice of hand hygiene of medical staff, National Eye Hospital, 2021" is carried out with the objectives are as follows:

1.Description of hand hygiene knowledge and practice of medical staff, National Eye Hospital, 2021.

2.Determining some factors related to knowledge and practice of hand hygiene of medical staff, National Eye Hospital, 2021.

2. METHODOLOGY

2.1. Research subjects: Medical staff, National Eye Hospital

2.2. Research time: From May 2021 to July 2021

2.3. Research method: Descriptive cross-sectional study, quantitative research

2.4. Sample size and sample selection

- Formula for calculating sample size

$$n = Z^2_{(1-\alpha/2)} \frac{p(1-p)}{d^2}$$

n: sample size required.

$Z^2_{1-\alpha/2}$: Reliability coefficients = 1,96 with α=0,05

p: Rates estimated in published studies (p = 0,7) [4]

d: Is the allowable error (d=0,05)

- Actual sample size of research: 323

- Sampling: Select a systematic random sample (k=2)

2.5. Data collection

- Knowledge of hand hygiene: Interviewing, using multiple choice questions

- Practice of hand hygiene: Observe and use checklists

2.6. Data analysis: Use software Epi data 3.1 and SPSS 20.0

2.7. Criteria for assessing knowledge and practice of hand hygiene

- The variable group of health workers' knowledge of hand hygiene: Includes 10 questions, total score is 10, passing score is 7.
- The variable group of health workers' practice of hand hygiene: Includes 12 questions, total score is 12, passing score is 9.

3. RESULTS

3.1. General information of medical staffs

Table 3.1: General information about medical staff (n=323)

Characteristic		Frequency	Rate (%)
Gender	Male	91	28,2
	Female	232	71,8
Age	< 30	26	8,0
	30 – 39	141	43,7
	40 – 49	125	38,7
	≥ 50	31	9,6
Acadamic	College	14	4,3
	University	165	51,1
	After university	80	24,8
	Others	64	19,8
Qualification	Doctor	71	22,0
	Nurse	116	35,9
	Technician	9	2,8
	Pharmacist	18	5,6
	Nursing staff	30	9,3
	Administrative staff	55	17,0
	Others	24	7,4
Working position	Clinical department	167	51,7
	Subclinical department	54	16,7
	Function department	102	31,6

71.8% of health workers are female. The age group from 30 to 39 are 43.7%. Health workers with university are 51.1%. There are 22% of health workers are doctors, 35.9% are nurses, the rest are other subjects (technicians, pharmacists, administrative staff). 51.7%) of health workers working in clinical departments.

3.2. Knowledge of hand hygiene of medical staffs

Table 3.2. Knowledge of hand hygiene of medical staff (n=323)

Knowledge of hand hygiene	Doctor		Nurse/ Technician		Others		General	
	n	%	n	%	n	%	n	%
The simplest and most effective measure in reducing the rate of hospital infections	64	90,1	103	82,4	96	75,6	263	81,4
Time of hand hygiene	57	80,3	104	83,2	87	68,5	248	76,8
Purpose of hand hygiene	56	78,9	103	82,4	90	70,9	249	77,1
Minimum hand washing time in routine hand hygiene	60	84,5	110	88,0	92	72,4	262	81,1
The most important to attantion when washing hand	54	76,1	103	82,4	88	69,3	245	75,9
Situations of hand hygiene with alcohol	52	73,2	100	80,0	77	60,6	229	70,9
Purpose of washing hand after removing gloves	54	76,1	101	80,8	79	62,2	234	72,4
Use gloves instead of washing hand	63	88,7	107	85,6	92	72,4	262	81,1
Use gloves properly	52	73,2	102	81,6	85	66,9	239	74,0
Indications for hand hygiene in the care and treatment of patients	61	85,9	104	83,2	83	65,4	248	76,8
Knowledge of hand hygiene (passed)	**55**	**77,5**	**102**	**81,6**	**85**	**66,9**	**242**	**74,9**

Health workers have quite good knowledge of hand hygiene. In which, health workers are nurses and technicians with the best knowledge (81.6%). Overall assessment results show that 74.9% of health workers have passed knowledge of hand hygiene.

3.3. Hand hygiene practices of medical staffs

Table 3.3. Hand hygiene practices of medical staffs (n=323)

Hand hygiene practices	Doctor/nurse/ technicain	Administrative staff	Nursing staff	Sanitation staff
Preparation stage				
Hand wash basin with clean water	196 (100)	73 (100)	30 (100)	24 (100)
Hand sanitizer available	193 (98,5)	73 (100)	30 (100)	24 (100)
Hand hygiene guiding	196 (100)	73 (100)	30 (100)	24 (100)
Hand towel (single use)	189 (96,4)	71 (97,3)	29 (96,7)	24 (100)
Frequency of practice	179 (91,3)	69 (94,5)	25 (83,3)	-
Measures of hand hygiene				
Washing hand with soap and water	191 (97,4)	62 (84,9)	30 (100)	22 (91,7)
Quickly disinfecttion with alcohol	193 (98,5)	73 (100)	26 (86,7)	20 (83,3)
Time of hand hygiene				
Before contacting with the patient	158 (80,6)	68 (93,2)	27 (90,0)	-
Before doing tip/technique	196 (100)	-	30 (100)	-
After blood, secretion exposure	196 (100)	-	30 (100)	24 (100)
After contacting with the patient	167 (85,2)	72 (98,6)	29 (96,7)	22 (91,7)
After touching objects around the patient	162 (82,7)	-	27 (90,0)	22 (91,7)
Hand hygiene properly	190 (96,9)	66 (90,4)	29 (96,7)	20 (83,3)
Hand towel was given properly	182 (91,8)	70 (95,9)	29 (96,7)	24 (100)
Pratice of hand hygiene (passed)	**177 (90,3)**	**64 (87,7)**	**26 (86,7)**	**22 (91,7)**

Most of health workers have practiced of hand hygiene well, in which, this rate is the highest in the group of doctors/nurses/technicians.

3.4. Some factors related to knowledge of hand hygiene

Table 3.4. Some factors related to knowledge of hand hygiene (n=323)

Related factors		Knowledge of hand hygiene		OR (95%CI)	p
		Passed	Not passed		
Age	< 40	102 (61,1)	65 (38,9)	1	1
	40 – 49	97 (77,6)	28 (22,4)	**2,2 (1,3 – 3,9)**	**0,002**
	≥ 50	17 (54,8)	14 (45,2)	0,7 (0,3 – 1,8)	0,5
Qualification	Doctor	51 (71,8)	20 (28,2)	1,82 (0,9 – 3,6)	0,06
	Nurse/Technicain	91 (72,8)	34 (27,2)	**1,91 (1,1 – 3,4)**	**0,01**
	Others	74 (58,3)	53 (41,7)	1	1
Working position	Clinical department	126 (75,4)	41 (24,6)	**2,5 (1,4 – 4,4)**	**<0,01**
	Subclinical department	34 (63,3)	20 (37,0)	1,39 (0,7 – 2,9)	0,3
	Function department	56 (54,9)	46 (45,1)	1	1
Working time (year)	≤ 10	79 (64,2)	44 (35,8)	1,45 (0,7 – 2,9)	0,25
	11 – 20	106 (73,6)	38 (26,4)	**2,24 (1,1 – 4,5)**	**0,01**
	> 20	31 (55,4)	25 (44,6)	1	1

There are 4 factors related to health workers' knowledge of hand hygiene including: Age, professional qualifications, working position and working time ($p<0.05$). The relationship between gender and education level of health workers has not been found with knowledge of hand hygiene.

3.4. Some factors related to practice of hand hygiene

Table 3.5. Some factors related to practice of hand hygiene (n=323)

Related factors		Practice of hand hygiene		OR (95%CI)	p
		Passed	Not passed		
Gender	Female	196 (84,5)	36 (15,5)	**2,06 (1,1 - 3,8)**	**0,01**
	Male	66 (72,5)	25 (27,5)		
Working position	Function department	76 (74,5)	26 (25,5)	1	1
	Clinical department	142 (85,0)	25 (15,0)	**1,94 (1,1 - 3,8)**	**0,03**
	Subclinical department	44 (81,5)	10 (18,5)	1,5 (0,6 - 3,8)	0,3
Time of training on infection control	After 2018	207 (84,1)	39 (15,9)	**2,12 (1,1 - 4,0)**	**0,01**
	Before 2018	55 (71,4)	22 (28,6)		

There are 3 factors related to health workers' practice of hand hygiene including: Gender, working position and time of training on infection control ($p<0.05$). The relationship between age, professional qualification and working time of health workers has not been found with practice of hand hygiene.

4. DISCUSSION

The results in table 3.2 show that there is a difference in knowledge of hand hygiene by subjects, the percentage of doctors (77.5%) is lower than that of nurses/technicians (81,6%). Our research results are the same with results of national and international studies [2], [6], [10].

In this study, hand hygiene practice of doctors/nurses/technicians (90.3%) is higher than that of administrative staff (87.7%) and midwives/medical workers (86.7%). This can be explained by the fact that doctors/nursing/technicians are the ones who often contact with the patient directly (care and treatment) so they have to protect the patient and themselves.

The rate of hand hygiene in this study is higher than that of some published studies. In an intervention study aimed at improving hand hygiene by author Waleed Mazi in Saudi Arabia, it was found, the rate of hand hygiene of nurses (73.5%), doctors (67.9%). In Vietnam, according to Ban Thi Thanh Huyen at Hoa Binh Provincial General Hospital in 2010, the rate of hand hygiene of doctors (27%), nurses (34%) [2]. Research results of Tran Huu Luyen and colleagues at Hue National Hospital show that, the rate of hand hygiene of nurses (60.79%), doctors (47.7%) [20]. A study at Viet Duc Hospital in Hanoi also showed the rate of hand hygiene of doctors (39.3%), doctors 69.8%) [15].

Other way, when assessing the handwashing of health workers, the observer is a hospital staff and we used the nonparticipatory observation method so the subjects can detect they are being observed, so they can practice of hand hygiene more better at the time of being observed

(Hawthorne effect) because According to Hugo Sax, this is the most important error in assessing handwashing compliance rates by direct observation of nonparticipants [21].

One of the three factors related to hygiene practices of health workers is the time of training on infection control (OR = 2.12, p<0.05). Health workers who attend training courses on hospital-acquired infections after 2018 practiced of hand hygiene are higher 2.12 times than health workers who attend training courses before 2018. This means the positive effect of training in improving the knowledge and practice of hand hygiene of health workers.

5. CONCLUSION

This study collected and analyzed information on knowledge and practice of hand hygiene of 323 health workers working in National Eye Hospital. The research results show that the rate of health workers with knowledge of hand hygiene reached 74.9%. The rate of health workers with practices of hand hygiene reached over 85%.

There are 4 factors related to knowledge of hand hygiene including: age, working position, working time and professional qualifications. Three factors related to practices of hand hygiene including: Gender, working position and time of training on infection control (p<0.05).

REFERENCES

[1] Ministry of Health, No: 7517/BYT-ĐTr dated 12/10/2007 "Instructions on implementation of routine hand washing and rapid hand sanitizer with alcohol-based solution", 2007.

[2] Ban Thi Thanh Huyen, Evaluation of knowledge and practice of hand hygiene compliance of medical staff at Hoa Binh General Hospital in 2010. Thesis Specialization Public Health. University of Public Health, 2010.

[3] World Health Organization, "Report on the Burden of Endemic Health Care-Associated Infection Worldwide". Report, pp12-20, 2011.

[4] World Health Organization, Prevention of hospital-acquired infections – A Practice Guide, 2002.

[5] World Health Organization, Hand hygiene Observation Form, 2009.