Education on hand disinfection focusing on five important timings

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Abstract

When nurses touched hospitalized patients, we examined whether hand disinfection was properly implemented. We surveyed the acquisition situation concerning hand hygiene for 33 nurses working in a ward. After that, we conducted classes and educational activities focusing on five timings. As a result of re-examining the acquisition situation, understanding about hand hygiene improved in general. The implementation rate in contaminated scenes after the risk of body fluid exposure was high, but hand hygiene priority was low in scenes without obvious contamination and patient environment contact. It is important to repeat exercises assuming practical situations as well as lectures, to judge scenes where hand hygiene is necessary, and to apply them to timing and make them into habits.

Key words: hand hygiene, direct observation method

Introduction

Hand hygiene is one of the most important infection countermeasures for reducing medical-related infections and transmission of pathogens. In the surveillance result at A hospital, the number of hand disinfection implementations per day per patient in 2015 was three times on average, which was generally low. Also, at A hospital, although the implementation rate of hand disinfection was high when there was a possibility of being exposed to body fluids, the implementation rate after touching the surrounding environment of the patient was low. Also, nurses often do not distinguish between hand washing and hand finger disinfection. It is important to understand the necessity of hand hygiene, to have correct knowledge and to use proper timing. We focused on the nursing schedule where there are many opportunities in daily nursing work, and checked whether hand finger disinfection was performed correctly according to five timings. Furthermore, we conducted education aimed at imparting correct knowledge and skills in regard to finger disinfection, and carried out enlightenment activities by poster posting. We compared the hand hygiene compliance status before and after the enlightenment activity and judged the effect of the effort.

Subjects and methods

The subjects were 33 nurses in B ward.
The method was as follows.
1) We created our own study sheet and direct observation sheet
2) We surveyed the acquisition situation on hand hygiene before the education.
3) Using the direct observation method, hand hygiene implementation status at 5 timings was investigated. The observation results were entered directly onto the observation sheet.
4) Education on hand hygiene and team-specific activities was carried out.
(1) We conducted education, focusing on five timing
(2) We created a poster to improve the implementation rate of hand hygiene
5) After the education, we conducted a survey on the acquisition situation

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concerning hand hygiene.
6) After the education, we examined the implementation status of hand hygiene. The observation results were entered directly onto the observation sheet.

Analysis method

Hand hygiene implementation rate (%) = number of hand hygiene implementations / number of scenes requiring hand hygiene × 100. In statistical processing, Wilcoxon's signed rank sum test was implemented to analyze the correct answer rate of timing by questionnaire survey before and after the education. In addition, we used Wilcoxon's signed rank sum test for timing by hand by direct observation before and after the education.

Ethical considerations

We explained the research outline to the target person by letter and orally and gained consent. A name was entered for the questionnaire survey and direct observation. However, when announcing the research results, individuals were not identified. Also, I explained that the data would not be used for purposes other than research, that participation in the research was voluntary, the patient's treatment would not be affected by non-participation, and that participation in the research could be ended by the patient even after consent had been given. The questionnaire was submitted by posting it in a lockable post box. After the research is completed, the consent form, the withdrawal letter of consent, the question paper and the direct observation sheet will be strictly kept in a lockable storage cabinet for three years, after which the paper medium will be destroyed with a shredder, and the data is explained to be discarded appropriately.

Results

There were 33 survey participants, and the questionnaire collection rate was 33 respondents (recovery rate 100%) both before and after the education. Table 1 and Table 2 show the test results of the five timings of hand hygiene. Although each item increased after the education, there was no statistically significant difference in total score ($p = 0.08$) (Table 1 · Table 2).

The results for the hand hygiene implementation rate by direct observation are shown in Tables 3 and 4. In Wilcoxon's signed rank sum test, they were 27.3% (6.1% -59.7%) before the education, 12.1% (0% - 31.2%) after the education (median (range)), There was a significant difference in academic significance ($p = 0.043$).

Discussion

After the training in hand hygiene, although the correct answer rate of the written examination increased, the practical examination showed a decrease in the implementation rate at all five timings. The reason for the reduction in the implementation rate may be that it was difficult to apply it at the site even though they understood the five timing as knowledge. In addition, although the implementation rate was high when there was a possibility of being exposed to blood / body fluids, the priority given to hand hygiene declined at scenes without apparent contamination. In education and awareness raising activities, effects appeared shortly thereafter, and knowledge was improved. It seems that it did not lead to behavioralization in practical nursing scenes. In order to motivate behaviors, it is important to repeat exercises not only for lectures but also for practical situations.

Table 1. Correct answer rate for questions on the five timings of hand hygiene from questionnaire survey before and after education

	Correct answer rate（%）	
	Before education	After education
Before touching the patient	78.8	90.9
Before clean and aseptic operation	57.6	87.9
When there is a possibility of being exposed to blood / body fluid	84.8	81.8
After touching the patient	72.7	84.8
After touching the patient's surroundings	63.6	84.8

Table 2 Comprehensive correct answer rate before and after education

	Overall grades	
	Median (range)	*p*
Before education	72.7（57.6-84.8）	0.08*
After education	84.8（81.8-90.9）	

*Wilcoxon's signed rank sum test（$p < 0.05$）

Table 3 Implementation rate of hand hygiene

	Implementation rate（%）	
	Before education	After education
Before touching the patient	15.2	12.1
Before clean and aseptic operation	43.4	15.2
血 When there is a possibility of being exposed to blood / body fluid	59.7	31.2
After touching the patient	27.3	10.6
After touching the patient's surroundings	6.1	0

Table 4 Implementation rate before and after education

	Implementation rate（%）	
	Median (range)	*p*
Before education	27.3（6.1-59.7）	0.043*
After education	12.1（0-31.2）	

*Wilcoxon's signed rank sum test（$p < 0.05$）