

## Original Article

## Situation Awareness of Cough Etiquettes of Hospital Security Personnel and Janitors

\*Kusbaryanto<sup>1</sup>, Listiyowati<sup>2</sup>**Abstract**

Nosocomial infection is a major problem in hospitals around the world. To minimize the risk of infection in hospitals and other healthcare facilities, cough etiquette has to be applied. Thus, good situation awareness and the understanding why cough etiquette is important are necessary. The purpose of this study was to find out the effective education on cough etiquette on hospital security personnel's and janitors' situation awareness on cough etiquette. This research study followed quasi experimental design with pretest and post test control group design. The sampling technique was purposive sampling involving 24 respondents for experimental group and 27 respondents for the control group. The analysis of the data employed Wilcoxon test and it employed Mann Whitney test to find out the difference of independent variable medians. Questionnaires were used to gather data collection. The result of the analysis presented a mean of 97.7 on the post-test of control group and a mean of 116.3 on the post-test of treatment group. Wilcoxon and Mann Whitney tests resulted  $p = 0.001 (< 0.05)$ , which meant there were significant differences. Education on cough etiquette is effective to raise hospital security personnel and the janitors' awareness on cough etiquette situation.

**Keyword:** Situation awareness, cough etiquette, hospital security, janitors

**INTRODUCTION**

Nosocomial infection is a major problem in hospitals around the world. The prevalence of nosocomial infections in developing countries is two to three times higher than in Europe or America. The incidence of nosocomial

infections in intensive care units is higher than the other units.<sup>1</sup> Nosocomial infection may lead to the additional cost that the infected patient has to pay and may lead to additional time the patient has to stay. Nosocomial infections may occur because of the use of ventilator in pneumonic patients, infection of the blood vessels, urinary tract infections and infections due to surgery.<sup>2</sup>

To minimize the risk of infection occurs in hospitals and other health care facilities, prevention and infection controls have to be applied, which cover planning, implementation, consultation, education and training, and monitoring and evaluation.<sup>3</sup> Concrete manifestation of these efforts is the application of standard precautions. The application of standard precautions is expected to reduce the risk of pathogen transmission from known and unknown source.

In the application of standard precautions, there are several things to consider which are hand hygiene, the use of gloves, eye protection (covering face, nose, mouth), protective suit, needle and other sharp objects of wound prevention, respiratory hygiene or cough etiquette, environmental hygiene, linen, waste disposal and patient care equipment.<sup>4</sup>

Cough etiquette is one component of standard precautions meant to prevent the transmission of microorganism that cause respiratory tract infections that high level of health care<sup>5</sup>. When a persons exposed to a respiratory tract, coughing or sneezing, that person will excrete droplet-shaped disease particles containing viruses or microorganisms that, when entered into the respiratory tract of other people, may cause infection as well.<sup>6</sup>

Livnat et al (2007)<sup>7</sup> reveal that there are three levels of situation awareness. The first one is perception of all aspects in the environment, namely the basic knowledge or the understanding of the environment obtained through sight, touch and feeling. The second is comprehension which is the ability to analyze the collection or integration of the received of various information. The third is projection, which is the ability to predict future environmental conditions based on information and data received.

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Situation awareness has been recognized as an important variable and all divisions require it for performance enhancement. Situation awareness is to know and aware of the circumstances covering the place and the job.<sup>8</sup> A study is needed to investigate effective methods to improve the situation awareness. The method may vary dependent on the local habits and culture. The purpose of this study was to find out the effective education of hospital security personnel's and janitors situation awareness regarding cough etiquette. Thus, improving situation awareness to cough etiquette would reduce spreading of microorganism in the hospital.

**MATERIALS AND METHODS**

This research followed study quasi experimental design with pretest and posttest control group design<sup>9</sup>. The sampling technique was purposive sampling involving 24 respondents for experimental groups and 27 for control groups. The analysis of the data employed Wilcoxon test and it employed Mann Whitney test to find the difference of independent variable medians. Questionnaires were used to gather collect data.

**RESULTS**

The results measurement of the situation awareness in the control group, mean 103,9 and SD 98,4 and in the treatment group, mean 104,92 and SD 10,84 differences of situation awareness in the control group before and after treatment was  $p = 0.015 (> 0.05)$ , the result was not significant. Differences of Situation awareness in the treatment group before and after treatment was  $p = 0.003 (< 0.05)$ , the result was significant differences of situation awareness in the control group and treatment group after treatment was  $p = 0.001 (< 0.05)$ , the result was significant.

The results measurement of the age of respondent (table 1) by chi square test,  $p = 0.782$ , this data were homogenously distributed.

**Table-1: Age of respondents**

Variables	Control Group		Treatment Group	
	Frequency	Percentage	Frequency	Percentage
< 20	2	7.4	1	4.2
20 – 30 years	14	51.9	10	41.7
31- 40 years	9	33.3	10	41.7
>40 years	2	7.4	3	7.4

$p 0.782^{**}$

**\*\*Not Significant ( $p > 0.05$ )**

**Table-II: Respondents employing time**

Variables	Control Group		Treatment Group	
	Frequency	Percentage	Frequency	Percentage
< 1	6	22.2	7	29.2
1 - 5 years	20	74.1	16	66.7
> 5 years	1	3.7	1	4.2

$p 0.841^{**}$

**\*\*Not Significant ( $p > 0.05$ )**

The results measurement of the age of respondent (Table I) by chi square test,  $p = 0.841$ , this data were homogenously distributed.

**Table-III : Differences of situation awareness between Control Group and Treatment Group**

Variable	Control Group			Treatment Group			P Value
	n	Mean	SD	n	Mean	SD	
Situation Awareness of before treatment	27	103.9	8.4	24	104.92	10.84	
Situation Awareness after treatment	27	97.7	9.6	24	116.3	12.75	0.001*
p	0.015**			0.003*			

\*Significant ( $p < 0.05$ )

\*\*Not Significant ( $p > 0.05$ )

## DISCUSSION

After educating, hospital security officers and janitors situation awareness on cough etiquette had increased. Their awareness had risen because of they had acquired the educational materials. The educational materials served as positive reinforcement and as stimuli for situation awareness of cough etiquette.<sup>10</sup>

Infectious diseases are easily transmitted through respiratory systems in a form of droplet. It also can be transmitted through a contact with such fluid entering through then nose, mouth and eyes. One of the preventions is by making such droplets not spreading. Thus, Centre of disease Control and prevention has urged to apply cough etiquette.<sup>11</sup>

Since the end of the Second World War, coughing and sneezing have been a big concern. Now handkerchief is no longer the theme to deal with coughing and sneezing. Now, cough etiquette has become the an alternative to prevent the spread of diseases being transmitted through breathing. Some serious illnesses such as influenza, Respiratory Syncytial Virus (RSV), SAR transmitted through coughing and sneezing, as well as through unhygienic and which come in contact with contaminated material.<sup>12</sup>

## CONCLUSIONS

On this basis, we conclude that education on cough etiquette with lecture was effective to improve hospital security personnel and the janitors situation awareness on cough etiquette, the significance was 0.001.

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