

# The Effects of the Education about Hand hygiene on the Knowledge, Attitude and Hand Washing Compliance of the Paramedics in Nur Hidayah Hospital Yogyakarta

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## Abstract

**Background Knowledge and The Objective:** The Nosocomial infections are a big problem in all of the hospitals around the world. The prevalence of nosocomial infections in the developing countries are two to three times higher than in Europe or America. The incidence of nosocomial infections in intensive care units is higher than outside the intensive care unit. The objective of this study is to analyze the effect of education about hand hygiene on knowledge, attitudes and hand washing compliance to the paramedics.

**Methodology:** This research is a quasi-experimental research design with pretest and posttest non-control research design.

**Results:** The analysis result of nurses' knowledge about hand washing which was obtained is  $p = 0.989$  ( $p > 0.05$ ), there is no significant difference (Wilcoxon test). The analysis result of non-nurses' knowledge which was obtained is  $p = 0.510$  ( $p > 0.05$ ), there is no difference (Wilcoxon test). The analysis results of the attitude of nurses to wash hands which was obtained is  $p = 0.720$  ( $p > 0.05$ ), there is no difference (Wilcoxon test). The analysis result of the attitude of non nurses which was obtained is  $p = 0.080$  ( $p > 0.05$ ), there is no difference (Wilcoxon test). The analysis result of hand washing action on the nurses which was obtained is  $p = 0.158$  ( $p > 0.05$ ), there is no difference. The analysis result of hand washing action on the non nurses which was obtained is  $p = 0.489$  ( $p > 0.05$ ), there is no difference (Wilcoxon test).

**Conclusion:** The education about the hand hygiene has not significantly changed the knowledge, attitudes and hand washing compliance.

**Keyword:** nosocomial infections , education, hand washing

## 1. INTRODUCTION

The Nosocomial infections are a big problem in all of the hospitals around the world. The prevalence of nosocomial infections in the developing countries are two to three times higher than in Europe or America. The incidence of nosocomial infections in intensive care units is higher than outside the intensive care unit<sup>1</sup>. One of the effects of the nosocomial infections are the costs that patient should pay and a longer patient care time. The types of the nosocomial infections which is often found is pneumonia caused by the use of ventilator, the infection of the blood vessels, urinary tract infections and the infections due to surgery<sup>2</sup>.

The incidence of Nosocomial infections in the world is quite high. A study conducted by WHO (2008) 3, shows that about 8.7% of the 55 hospitals of 14 countries from Europe, the Middle East, Southeast Asia and the Pacific continued to show the presence of the Nosocomial infection with southeast Asia as much as 10.0%.

Hand washing can prevent about 1 million deaths per year caused by diarrhea, especially when washing hands with soap, it can reduce the number of diarrhea about 47%, so with proper hand hygiene, it is expected to prevent infection and the spread of anti mikroba<sup>4</sup> resistance. There are two basic concepts of different hand hygiene, i.e. hand washing and rub your hands with alcohol (hand rubbing)<sup>5</sup>.

Hand hygiene is a general term used for all activities associated with hand cleaning effort. Hand washing is washing the hand either using or not using anti-septic, soap and water. Alcohol base hand rubbing (ABHR) is rubbing hands with alcohol, whether it is liquid, gel or foam alcohol in order to reduce the growth of microorganisms<sup>6</sup>.

There are 3 types of the hand washing. First, routine hand wash which is also called social hand washing, is to wash your hands with water and non antiseptic soap. Second, antiseptic hand washing, it is divided into two, namely antiseptic handwash, made with water and antiseptic soap and antiseptic handrub, made with alcohol. Third, surgical hand washing, done with antiseptic soap and water or with water and nonantiseptik soap followed by rubbing hands with alcohol for 2-6 minutes (CDC, 2013)<sup>7</sup>.

## 2. RESEARCH METHOD

### 2.1 The research Objective

The objective of the study is to analyze the effects of the education about the hand hygiene on the knowledge, attitudes and hand washing compliance to the paramedics.



## 2.2. The Methodology

This research is a quasi-experimental research design with pretest and posttest non-control research design<sup>8</sup>.

### 2.2.1 The Population

The research population is the paramedics in Nur Hidayah Hospital Yogyakarta

### 2.2.2 The Sample

The research applies the purposive sampling. There are 40 respondents with 26 nurses and 16 non-nurses.

### 2.2.3 The Data Collection technique

The data collection technique is conducted using the questionnaires which are completed by the research subjects in the pretest and posttest.

### 2.2.4 Research Ethics

Letter airworthiness of conduct has been given to researchers from the ethics committee of the Faculty of Medicine and Health Sciences Muhammadiyah University of Yogyakarta.

## 3. The Result Of The Research and The Analysis

Table 1. Knowledge of Hand washing Measurement Results

Variable	Pretest Score (%)	Posttest Score (%)	p
Nurses	63,97	67,19	0,989*
Non nurses	35,39	40,9	0,510*

\*Not significant ( $p > 0,05$ )

Table 2. Attitude Assessment on the Hand Washing Result

Variable	Pretest Score (%)	Posttest Score (%)	p
Nurses	67,80	67,85	0,720*
Non nurses	68,79	74,61	0,080*

\* Not significant ( $p > 0,05$ )

Table 3. Hand washing Compliance Assessment Result

Variable	Pretest Score (%)	Posttest Score (%)	p
Nurses	67,07	60,82	0,158*
Non nurses	63,39	68,45	0,489*

\* Not significant ( $p > 0,05$ )

## 4. RESULTS AND ANALYSIS

### 4.1 The Analysis of Research Result

4.1.1 Results of analysis of nurses' knowledge about hand washing which was obtained is  $p = 0.989$  ( $p > 0.05$ ), there is no significant difference (Wilcoxon test). Results of the analysis of non-nurses' knowledge which was obtained is  $p = 0.510$  ( $p > 0.05$ ), there is no difference (Wilcoxon test).

4.1.2 The analysis results of the attitude of nurses to wash hands which was obtained is  $p = 0.720$  ( $p > 0.05$ ), there is no difference (Wilcoxon test). The analysis result of the attitude of non nurses which was obtained is  $p = 0.080$  ( $p > 0.05$ ), there is no difference (Wilcoxon test).

4.1.3 The analysis result of hand washing action on the nurses which was obtained is  $p = 0.158$  ( $p > 0.05$ ), there is no difference. The analysis result of hand washing action on the non nurses which was obtained is  $p = 0.489$  ( $p > 0.05$ ), there is no difference (Wilcoxon test).

4.1.4 The results of statistical tests on the nurses in order to determine the relationship between knowledge, attitudes and compliance with hand washing is conducted using the Pearson correlation test and Behavior, because the data are normally distributed. For the attitude of hand washing is conducted using the Spearman because the data were not normally distributed. The results of statistical analysis is: for knowledge  $p = 0.001$ , attitude  $p = 0.004$ , and hand-washing compliance  $p = 0.002$ ,  $p < 0.05$ , it can be concluded that there is a significant relationship between knowledge, attitude, and the hand washing compliance on nurses, which means that the higher the nurse's knowledge about hand hygiene, the higher the attitude and hand washing compliance they have.

### 4.2 Discussion

Knowledge is the result of human sensing or someone proceeds to the object through the senses possessed. At the time of sensing to generate knowledge is influenced by the intensity of attention and perception of the object. Most of people's knowledge is acquired through hearing and seeing<sup>9</sup>. In this study there was no significant difference between before and after treatment. This is probably due to the education received which has not changed the knowledge about hand washing.

Attitude is a form of evaluation or feeling reactions. someone's attitude toward an object is a a feeling of support or partiality does not support or is not in favor of the object. Attitude consists of three complementary components, namely cognitive, affective and conative component parts<sup>10</sup>. In this study there was no significant difference between before and after treatment. This is probably due to the education received cannot change attitudes about hand washing.

There are two concepts of compliance on i.e. conformity and obedience. Conformity is the tendency for a change of perceptions, opinions and behavior derived from the norms or rules that exist in the group. The factors related to the conformity are the influence of the information, the effect of existing rules, the size or magnitude of the group, awareness of the rules in groups, the differences in age, gender differences and cultural influences (Southerly, 2000)<sup>11</sup>. In this study there was no significant difference between before and after treatment. This is probably due to the education received has not changed the hand washing compliance

## 5.CONCLUTIONS

- a. The education about hand hygiene has not significantly changed the subject of research knowledge about the hand hygiene.
- b. The education about hand hygiene has not significantly changed the attitude of the research subjects about hand hygiene.
- c. The education about hand hygiene compliance has not significantly changed the research subjects about hand hygiene.

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