

## **ABSTRACT**

### **IMPROVEMENT OF HEALTH WORKERS COMPLIANCE IN THE IMPLEMENTATION OF PATIENT SAFETY AT PRIMERY HEALTH CENTER MERTOYUDAN II, MAGELANG**

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**Background :** *Health workers often interact and contact with patients when providing health service, so they are at high risk of infection or contracting various diseases. One of the efforts in providing protection is to use PPE and handwashing. However compliance with the use of PPE on staff is still low, and increases the risk of HAIs.*

**Purpose :** *To know the improvement of officer compliance compared before implementation of action in patient safety at Puskesmas Mertoyudan II, Magelang.*

**Method :** *This research uses qualitative method with action research design which the result presented in narrative.*

**Result and discussion :** *The result of cycle I shows the existence of compliance of PPE usage and handwashing of 5 moments low obtained from the data of compliance questionnaire, attitude questionnaire and knowledge questionnaire. Cycle II is carried out by taking action based on the observation of cycle I. Through FGD and training / simulation of the use of PPE and hand washing implementation, there is increasing compliance in the use of PPE and hand washing implementation. Prior to the action, officer compliance to the use of masks was 42.88%, the use of gloves was 27.14% and hand washing 5 moments 58.56%. After the action was obtained, the officer compliance to the use of masks to be 78.6%, the use of gloves 80.9% and handwashing 5 moments to 75.7%.*

**Conclusions and suggestions :** *Following the action, there has been an increase in officer compliance with the use of PPE and the implementation of handwashing 5 moments through 2 cycles. Suggestion to Quality Team of Puskesmas Mertoyudan II to conduct FGD as refreshing about patient's safety periodically.*

**Keyword :** *personal protective equipment, hand washing, action research, compliance.*

## **I. INTRODUCTION**

Patient safety is an injury prevention measure against the patient. This requires a system to minimize the occurrence of risks and prevent an injury caused by errors due to an action execution or the consequences of not performing actions that should be done. Health facilities often occur the impact of health services that is nosocomial infection or often called Hospital Acquired Infection. The incident happened called HAIs (Health-care Associated Infection). HAIs are infectious diseases that occur within the first 48 hours of admission to the hospital / health facility, or 30 days after discharge from the health facility but the infection does not originate from the patient itself. This is a serious problem that can lead to longer morbidity / morbidity of patients, an increase in length of stay, higher healthcare costs, or an officer's safety rate declining. This incidence continues to increase to about 9% of the incidence of hospitalized patients in hospitals around the world or about 1.4 million people<sup>1</sup>.

High-risk health workers infected with germs or infected with various diseases, nurses and midwives are health workers at the forefront who interact with patients in providing nursing care and midwifery care<sup>2</sup>. There are several prevention efforts that can be done primarily by health personnel, so that nosokomial infection does not spread to other patients, one of the efforts is with Personal protective equipment (APD). Use of personal protective equipment does not eliminate or minimize any harm that may occur. But this equipment only reduces the possibility of contact with hazard conditions by providing a barrier between labor and hazardous conditions<sup>3</sup>. Hand hygiene and gloves are very important both to protect health workers and to prevent transmission to others. Facial cover, foot protector, dress or shirt, and head coverings are also considered potential to prevent transmission to health workers<sup>4</sup>.

As an accredited health center, the quality team of Mertoyudan II Community Health Center has determined the quality indicator to maintain the quality of its services. One indicator of the quality of service is the achievement of patient safety by monitoring and evaluating the patient safety indicators every month to keep the quality remains consistent. However, the results of the achievement of patient safety indicators for the use of personal protective equipment (PPE) and hand washing was low in the last 2 months (January and February). The low level of adherence to PPE use and 5 minute handwashing among service personnel can lead to high rates of nosocomial infection or prolonged patient morbidity.

In this case, there needs to be a change action, an effort in the action of change by way of group discussion in the form of Focus Group Discussion which conveys information about the importance of PPE and 5 moments hand washing.

## **II. RESEARCH METHODS**

### **1. Type And Research Design**

The type of research is qualitative with the design of action research. Action research begins by finding problems, determining planning, execution of actions, observation and reflection.

### **2. Subject And Object Research**

Subjects in this study are health care workers who deal directly with patients who are in Puskesmas Mertoyudan II Kab Magelang. While the object of this study is the compliance of officers in the use of personal protective equipment and handwashing 5 moments. The study was conducted from May to June 2018.

### **3. Population And Sample**

The population in this study amounted to 35 people in accordance with the number of employees of Mertoyudan II

Community Health Center. The sample in this study was taken by purposive sampling technique and the sample was 14, consisting of 1 general practitioner, 1 dentist, 4 general nurses, 1 dental nurse, 2 midwife KIA and KB, 3 immunization officer, 1 drug officer, and 1 laboratory officer.

#### 4. Research Variables

Variable research is the object of research, or what is the point of attention of a study. Variables in this research are:

- a. Variabel free (independent variable) is a variable that causes change or the emergence of dependent variable (dependent variable) 5. The independent variables in this study are the change actions performed in cycle 1, cycle 2 or cycle 3, in the form of questionnaires filling, and small group discussion with Focus Group Discussion (FGD) method.
- b. Dependent variable (dependent variable) is variable that influenced or become result because of independent variable 5. The dependent variable in this research is the compliance level of the Officer in the use of personal protective equipment (APD) and handwashing 5 moments.

### III. RESEARCH RESULT AND DISCUSSION

#### 1. Sample Characteristics

The sample in this study were 14 people consisting of 1 general practitioner, 1 dentist, 5 nurses, 5 midwives, 1 laboratory staff and 1 pharmacy staff. Characteristics of the sample as follows:

No	Nama (inisial)	Usia (th)	Lama bekerja	Pendidikan
1	STM	50	28 th	D4 Kesehatan
2	SA	50	26 th	D3 Kesehatan
3	EBT	45	26 th	D3 Kesehatan
4	IS	44	14 th	S1 Kesehatan
5	ESS	50	31 th	D4 Kesehatan
6	HSU	46	25 th	D3 Kesehatan
7	PES	56	35 th	SLTA Kesehatan
8	MN	33	12 th	D3 Kesehatan
9	WW	48	26 th	SLTA Kesehatan
10	NR	50	30 th	SLTA Kesehatan
11	INW	36	13 th	D3 Kesehatan
12	BDK	36	8 th	D3 Kesehatan
13	EAW	48	19 th	S2 Kesehatan
14	NRB	42	15 th	D3 Kesehatan

#### 2. Test Validity And Reliability Instruments

Prior to doing research on the respondents, the questionnaire has been done first test the validity and reliability at the Public Health Center Mungkid Magelang regency on 14 health workers.

Validity test using Pearson Product Moment formula on the questionnaire of knowledge, attitude and compliance on each item question is valid because the value of  $R_{\text{arithmic}} > R_{\text{table}}$ , that is 0,532, while reliability test result above 0,532.

The results of reliabilitas test using Cronbach's Alpha test obtained results on the three items of questionnaires otherwise reliable because the value of cronbach's alpha ( $\alpha$ ) > 0.6.

#### 3. Overview of Initial Conditions

On April 1 - 14, 2018, a preliminary study was conducted by observing health workers who were considered to represent all officers in a disguised manner. The results of the observations are: During 2 weeks there are 144 APD usage activities, the officers only use masks as much as 27 activities or 18.75%, there are also 144 glove

use activities, but officers only use gloves as much as 13 activities or 9.02 %, there are 144 activities on hand washing 5 moment, it turns out officer only carry out hand washing as much as 3 activity or 2,1%.

From the results of the preliminary questionnaire it appears that the compliance officers in using masks 42.88%, compliance officers use gloves 27.14% and compliance officers wash hands 5 moments 58.56%. APD examined only the use of masks and gloves, because each service unit using 2 kinds of this APD. Only MCH units use full PPE at the time of delivery.

4. Action Research Results 1

a. Plan

Planning of taking of attitude data and knowledge of officer with questionnaire about APD usage and handwashing 5 moments. The questionnaire used is a closed questionnaire that is questionnaires with given alternative answers strongly agree, agree, disagree and disagree, consisting of 18 items statement include attitude to compliance of the use of personal protective equipment and handwashing.

b. Action

The results of the answers to the questionnaire fill in the knowledge, the data show the following results:

Frequency Distribution of Knowledge

Kategori	Frekuensi	Persentase
Baik	2	14,3 %
Cukup	8	57,1 %
Kurang	4	28,6 %
Jumlah	14	100 %

Based on the above table shows that most of the samples with sufficient level of knowledge that is as many as 8 samples (57.1%) and 4 people less knowledgeable (28.6%). As for the attitude data, the distribution of questionnaire results of sample attitude based on the sample answers on the attitude questionnaire obtained data as follows.

Distribution of Attitude Frequency

Kategori	Frekuensi	Persentase
Baik	6	42,9%
Kurang Baik	8	57,1%
Jumlah	14	100%

Based on the above table shows that the attitude of the sample on the use of personal protective equipment (APD) and carrying out hand hygiene mostly is not good as many as 8 respondents (57.1%).

c. Observation

Based on result of tabulation of data of level of knowledge most of sample with enough knowledge level that is as much as 8 samples (57,1%) and less knowledge as much as 4 sample (28,6%) or 85,7% less knowledge and cuckup. Based on the result of tabulation of sample attitude data on the use of personal protective equipment (PPE) and perform handwashing 5 moments mostly is not good as many as 8 respondents (57.1%).

d. Reflection

Obedience officers obtained <60% is evidenced by a questionnaire about attitudes and knowledge of officers. Where from the results of the knowledge questionnaire

showed that 57.2% knowledge about the use of PPE and handwashing is enough and 14.3% knowledge about the use of PPE and hand washing less, or 71.5% officers expressed enough knowledge and less in the use of PPE and implementation of handwashing 5 moments.

While the compliance officer who is also influenced by the attitude of officers is evidenced by filling questionnaires about attitudes in the use of PPE and the implementation of hand washing. The result is 57.2% have a bad attitude that affects adherence to the use of PPE and execute 5 minute handwashing moments.

## 5. Results Action Research II

### a. Plan

Planning in cycle II is to conduct FGD and simulate the use of PPE and hand washing movement. FGD will be followed by a sample of research on officer compliance in the use of personal protective equipment (APD) and handwashing. FGD materials are the obstacles or obstacles of the officers in the implementation of the use of PPE. Furthermore, the conclusions of FGD results will be included in the simulation material of the use of personal protective equipment (APD) and the implementation of handwashing 5 moments

### b. Action

When FGD was conducted, it was found some problems faced by samples why not adhere to the use of PPE and hand washing as in the following table.

## Sample opinion results on Use of PPE and Hand Hygiene Implementation

Pendapat	Kategori	Tema
“Saya malas menggunakan masker karena membuat saya menjadi sumpek dan gerah sehingga membuat saya tidak nyaman ketika melayani pasien” (Sampel 2)	Masker yang digunakan tidak nyaman dipakai	Sarana dan Prasarana
“Saya malas pakai APD karena membuat saya susah bergerak, menjadi mudah berkeringat dan terlalu ribet persiapannya” (Sampel 3,4,8,13)	Penggunaan APD dianggap menyulitkan	Ketidapatuhan penggunaan APD
“Saya tidak perlu melakukan cuci tangan setiap waktu karena saya tidak selalu bersentuhan dengan tubuh pasien” (Sampel 1,8,9)	Cuci tangasn dianggap tidak perlu dilakukan secara rutin	Ketidapatuhan melakukan hand hygiene
“Saya tidak perlu memakai masker karena tidak selalu bersentuhan dengan pasien. Masker juga membuat saya sulit untuk bernafas” (Sampel 8)	Masker yang digunakan tidak nyaman dipakai	Sarana dan Prasarana
“Saya tidak memakai sarung tangan karena	Sarung tangan yang digunakan	Sarana dan Prasarana

<i>membuat saya tidak nyaman dalam melakukan pelayanan pada pasien dan ukuran sarung tangan terlalu besar” (Sampel 3,4,5,8,9,13,14 )</i>	tidak nyaman dipakai	
<i>“Saya tidak memakai sarung tangan karena sayang jika hanya dipakai sebentar lalu dibuang” (Sampel 2,3,5,6)</i>	Penggunaan sarung tangan sayang terbuang	Ketidakpatuhan menggunakan APD
<i>“Saya tidak selalu melakukan cuci tangan karena sabun yang digunakan membuat kulit menjadi tipis dan agak panas ditangan” (Sampel 4,7,8)</i>	Pelaksanaan cuci tangan tidak dilakukan setiap waktu	Ketidakpatuhan melakukan hand hygiene
<i>“sering lupa memakai masker atau handscoon, apalagi jika melihat pasiennya menumpuk” (Sampel 1,2,3,5,6)</i>	Lupa	Ketidakpatuhan menggunakan APD
<i>“Saya tidak perlu menggunakan handscoon karena setelah kontak dengan pasien lalu memegang komputer” (Sampel 11,12,14)</i>	Banyak tugas	Ketidakpatuhan menggunakan APD
<i>“Saya tidak bisa menggunakan masker,</i>	Penggunaan APD menyebabkan sesak	Ketidakpatuhan menggunakan

<i>karena saya sesak nafas” (Sampel 9)</i>	nafas	APD
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Based on the FGD results with the sample can be concluded the FGD results are:

- 1) Health workers are not obedient in using masks when performing health services because masks are considered uncomfortable to use and not free to communicate with patients.
- 2) Health workers are disobedient in wearing gloves because gloves cause discomfort in the hands for reasons of hotness, greatness and affection if disposable dispose.
- 3) Wash your hands is not done obediently in accordance with 5 moments of hand washing on the grounds do not always come into contact with the patient, the hand becomes thin and the soap used is slightly hot.
- 4) Awareness of health workers in the use of PPE and hand washing is still lacking.
- 5) The availability of limited facilities and infrastructure such as uncomfortable masks used and gloves of the same size that cause the health workers there who feel the greatness.
- 6) There is no regular direct control of health personnel regarding the use of PPE and hand washing.

After the implementation of FGD, then conducted training and simulation of the implementation of PPE and hand washing movements.

Wash hands agreed is 6-step handwashing from WHO.

c. Observation

Observation is done by check list on the research sample whether it has implemented compliance of PPE usage and hand washing 5 moments as done in training / simulation of APD usage and handwashing 5 moments.

From the check list data, it was found that: adherence to the use of mask 78,6%, obedience to the use of gloves 80,9%, compliance to hand washing 5 moments 75,7%.

d. Reflection

Researchers re-do reflection on the compliance of use of PPE and hand washing, by comparing observation data from cycle I and cycle II. And the result is an increase in officer compliance after the change action. It's just that this change has not become a safety culture of patients, given the results obtained not fully 100%

#### IV. DISCUSSION

##### 1. Discussion of Action

The data collection of attitudes and knowledge of the officers on compliance with the use of PPE and the implementation of handwashing is done in cycle I, where cycle I is cycle to find the root cause of non-compliance officer. While in the second cycle is done in the form of FGD and training / simulation of the use of PPE and tanagan movement.

The implementation of FGD is based on observation result and reflection of cycle I which shows that most of the sample is not obedient in the use of PPE and hand washing implementation, and from the questionnaire of attitude and knowledge data, most of the

knowledge is sufficient and less. While the data from the questionnaire results attitude, less good attitude is more dominant than those who are good in compliance with the use of PPE and hand washing.

In the observation of compliance with PPE use in the form of masks and gloves, it was found that the sample did not use PPE because they felt uncomfortable with masks and gloves provided and felt no need to use PPE because they did not always come into contact with patients, especially on the answers of health workers in general Poly (doctor).

The use of PPE is very important for healthcare workers because the purpose of using PPE is to protect themselves from certain hazards, which come from work and the work environment and in an attempt to prevent or reduce the likelihood of injury or illness<sup>9</sup>. APD gloves are used by health workers for two main reasons: to reduce the risk of contamination with the patient's blood and body fluids and to reduce the risk of spreading germs into the environment and transmitting from officer to patient or vice versa, or from patient to patient<sup>10</sup>.

Masks are used to prevent officers from inhaling the microorganisms from the respiratory tract of patients and prevent transmission of pathogens from the respiratory tract to the patient, or vice versa. For example, when interacting with people with tuberculosis, or when performing actions in patients suffering from respiratory infections, because it can happen airborne transmission (airborne). When using the

minimize speech mask, the damp mask is immediately replaced and used only once in use<sup>11</sup>.

The lack of compliance of public policemen in the use of PPE can be caused by the lack of awareness of the health worker about the importance of the use of PPE, because although the knowledge is good but the attitude is not necessarily supportive. Compliance (compliance) is one form of behavior that can be influenced by internal and external factors. Use of Personal Protective Equipment (PPE) includes environmental factors because PPE is one tool to protect themselves workers to reduce the risk of work accident. Thus, compliance in the use of personal protective equipment is a specific safety behavior toward the workplace object. Compliance with the use of personal protective equipment has an important role in creating workplace safety<sup>12</sup>.

In health workers, of course, the risk of contracting a disease if compliance of PPE is neglected. This can be due to every day health workers always experience direct contact with patients with various types of diseases.

## 2. Discussion of Results of the Action

After the FGD conducted the observation in cycle II shows the compliance of health officers in the use of PPE and the implementation of hand washing 5 moments are still lacking even though the infrastructure has been met as needed. This is because the awareness of health workers will use PPE and do hand washing is still lacking.

This can be caused by the attitude and motivation of health workers who are still lacking in the use of PPE and the implementation

of hand washing. Attitude is a determinant of behavior associated with perception, personality, and motivation. Attitude is a mental preparedness that is learned from experience and affects the outcome of one's reaction in interacting. Attitudes in the service of health workers play an important role because they can shape and change the behavior of health workers. In addition, knowledge is still lacking the importance of use of PPE and handwashing. A person's knowledge of an object contains two aspects, namely the positive and negative aspects. These two aspects that will determine a person's attitude more and more positive aspects and objects are known, it will lead to a more positive attitude towards a particular object<sup>6</sup>.

## 3. Discussion on Reflection Results

The result of reflection on cycle I shows that most of the sample with knowledge level is enough and less that is 12 samples (85,71%), sample attitude toward the use of personal protective equipment (APD) and hand washing mostly is not good as many as 8 samples (57.1%) and compliance using mask 42.88%, compliance with gloves 27.14% and compliance with handwashing 58.6%. While in the second cycle after the change action in the form of FGD and PPE simulation and handwashing movements, mask compliance use to 78.6%, compliance using gloves to 80.9%, and handwashing malakukan to 75.7% compliance. The low compliance behavior using personal protective equipment (APD) on the use of masks and gloves and perform handwashing indicates that the training provided can not improve the use of personal

protective equipment (PPE) and perform handwashing. The low compliance behaviors using personal protective equipment (APD) and handwashing and attitudes on the use of PPE indicate that the implementation of self-protective equipment (APD) behavior and handwashing is not determined by the knowledge factor.

Behavior is a product of one's knowledge and attitude. However, knowledge can not necessarily be adopted to change behavior because knowledge only determines the awareness factor. Through awareness, the subject begins to have interest, then perform evaluation and trial before doing adaptation<sup>7</sup>.

The absence of rewards causes non-compliance to be high due to the absence of reward consequences for those conducting PPE compliance. Meanwhile, the absence of supervisory directives will not provide a corrective effect for compliance of future use of APD behavior<sup>8</sup>. Reward factor for officers who run PPE compliance needs to be given to motivate officers in enforcing PPE.

The next problem is related to the provision of facilities PPE. The problem of providing PPE facilities here is not related to the standard of PPE because all APD have met the WHO and MOH standards. The problem is the inconvenience of officers in the use of PPE. FGD results also suggest that medical personnel are reluctant to use PPE because of heat, greatness and cause uncomfortable use. The results of discussions with the health workers also found that health workers realized that the use of PPE and do hand washing is important routine. Compliance in

the implementation of the use of PPE and hand washing is important because it can be used as a personal protective equipment, because health workers at high risk of infection with germs or contracting various illnesses, nurses are health workers at the forefront of 24 hours interacting with patients in providing nursing care.

## **V. CONCLUDE AND SUGGESTIONS**

### **1. CONCLUDE**

Based on the result of the research and discussion, before the officer compliance action toward the use of mask is 42,88%, compliance to the glove use is 27,14% and the compliance of handwashing 5 moments 58,56%. After two cycles, there was an increase of officer's compliance to the use of mask to 78,6%, the use of 80.9% gloves and handwashing 5 moments to 75,7%.

### **2. SUGGESTIONS**

Based on the results of research and discussion of problems that have been done, in order to improve the quality continuously, the effort to improve patient safety can be done through the suggestions as follows:

#### **a. For Puskesmas Mertoyudan II**

The results of the study indicate that the facilities provided by the puskesmas are not appropriate, and late provided, thus affecting the compliance of officers in the use of PPE and the implementation of handwashing. Additional tasks for the organizer of consumables are monitored by a household supervisor, in order to provide consumables tailored to the needs of the user.

#### **b. Quality Team of Mertoyudan II Community Health Center**

Quality team under Accreditation team to make compliance of PPE usage and handwashing 5 moments serve as quality indicator, so monitoring and evaluation of APD usage and hand washing implementation 5 moments done every month. Refreshing about patient safety to be done regularly, to improve the quality of human resources in the implementation of patient safety.

c. The Management Team of Puskesmas Mertoyudan II

In order to make SK about reward and punishment, to give stimulation to officer to do obedience of usage of PPE and hand washing to become patient safety culture.

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