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UNIVERSAL PRECAUTION OF SECTIO CAESARIA IN SURGICAL ROOM

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ABSTRACT

Background:Nosocomial infection is the presence of an infection seen in patients while in the hospital or while in other health facilities, currently this is are known as Health-care Associated Infections (HAI). One of useful strategy in controlling HAI is to improve the ability of health workers in the universal precautions method. To succeed in this strategy, we need a material briefing on universal precautions so that good knowledge is obtained between healthcare staff. Therefore it is necessary to know the relationship between knowledge about universal precautions with universal precautions attitude and safety skills on healthcare staff.

Methods:Article research was limited to articles from internet databases, such as ASMR, Elsevier Journal, IJCMPH, Sage Journals with the keywords universal precaution, knowledge, safety skills, attitude, and healthcare staff. Inclusion criteria, such as English articles and published from 2008-2018,were collected and reviewed. The searching process obtained 6 articles that met requirement for inclusion and exclusion criteria.

Results: There were two articles that found positive correlation between knowledge of universal precautions and safety skills or attitude, but the others showed otherwise. It shows inconsistent findings in all articles.

Conclusions:Knowledge of universal precaution is not the only factor that influences the safety skills or attitude of healthcare staff. It might be other factors that influence safety skill or attitude beside knowledge of universal precaution.

Keywords: Knowledge, Universal precaution, Safety Skills, Attitude, Health-care staff

INTRODUCTION

The WHO survey of 55 hospitals in 14 countries showed that 8.7% of the hospitals had patients with nosocomial infections. One effort to control infection in hospitals is by applying Universal Precautions [1].. Infection is the interaction between microorganisms and susceptible hosts that occurs through certain germicidal transmission codes. Microorganism transmission can occur through the blood, droplets, airborne, and direct contact. Hospital infections are known as nosocomial infections. Currently, nosocomial infections are known as Health-care Associated Infections (HAIs), which are health infections acquired during or as a result of hospital care manifesting after 48 hours of hospitalization [2].

One useful strategy in controlling Health-care Associated Infections (HAIs) is to improve the ability of health workers in the universal precautions method. Universal precautions are a series of actions needed



to prevent infection from infections transmitted through blood or body fluids. The main objective of universal precautions is to protect health workers and patients from infection [3]. In an effort to administer health services, qualified health workers are needed, because health workers have an important role in improving the quality of health services. Quality health workers not only have high ethics and morals but also efforts to continuously improve their expertise through improving education. Higher education is expected to be able to make health workers behave positively in understanding and implementing universal precaution procedures, in addition to being supported by facilities and infrastructure, as well as Standard Operating Procedures (SOP's) that regulate universal precaution measures [4].

Universal Precaution components consist of: the implementation of Hand Hygiene; the use of Personal Protective Equipment (PPE) which consists of gloves, face shields (masks, glasses), protective gowns, headgear, and shoes protection; prevention of needle puncture and other sharp objects; linen management; waste disposal; management of patient care equipment; patient placement; cough ethics and safe injecting practices [5].

The findings of the research conducted by Fayaz (2013) indicate a low level of Universal Precautions practices among health workers in Kabul; only 19.0% of respondents practiced fully with all 11 Universal Precautions items. Health workers in Kabul do not always change gloves when handling different patients, and 40.7% of health workers do not always wear eyewear when they are exposed to discharge or fluid splashes [6].

Compliance with Standard Awareness has been shown to reduce the risk of exposure to blood and body fluids. However, several studies have been shown that compliance with Standard Awareness among nurses is lack of optimal and inconsistent. In Myanmar, several studies show that most health workers in Myanmar have high knowledge and positive attitudes, but adherence to Universal Precaution / Standard Precaution is not consistent [7]. These results indicate that the behavior of nurses in hand washing as one of the universal precaution measures is still largely poor.

Research conducted by Zanele (2012) shows that although health workers take precautionary measures to prevent infection, they do not achieve full compliance with universal precautions. Qualitative data shows that the reasons for such non-compliance include a lack of knowledge about universal precautions, communication factors, and resources, including maintenance of equipment, lack of supply and lack of human resources and attitudes of health workers [8].

Nurses who are able to explain correctly about universal precautions, nurses are also able to justify or evaluate material about universal precautions, and are applied through universal precautions. This is indicated by Yusran's (2010) study of the level of knowledge about universal precautions in nurses at Abdoel Moeloek Bandar Lampung Hospital as much as 67.5% included in the criteria of good knowledge with a universal precautions compliance level of only 66.5% in the less category. The level of nurse compliance is still low, indicated by not reclosing disposable syringes and not using personal protective equipment (personal protection and face shield). The attitude also becomes a factor that plays a role in determining nurses adherence in implementing universal precautions and nurses who have good attitudes will be more obedient in implementing universal precautions in hospitals [9].

Motivation also affects the application of universal precaution. Nurses, who have high motivation, appear a desire to fulfill universal prevention needs. Kusmiyati's research (2009) shows that there is a relationship between nurses' motivation towards the application of universal precautionary procedures and nurses behavior in carrying out universal precautionary procedures at Telogorejo Hospital Semarang [10].



Based on the above problems the researchers considered that the implementation of Universal Precaution is very important to improve the infection prevention and control program in the operating room because it can detect the occurrence of Health-care Associated Infections (HAIs) such as in Caesarean Section/Sectio Caesarean (SC) in the operating room. There is a trend of increasing action of Caesarean Section in a number of hospitals, both in private hospitals and government hospitals, even though the clinical risk of mothers giving birth through SC surgery is greater than the risk of normal labor [11].

Knowledge about infection prevention is very important for surgical staff or nurses and other health care staff, because it is a public facility that is very dangerous in the sense that transmission of infection in hospitals and prevention efforts for infection are the first level in providing quality services, especially Universal Precaution. This is related to health vigilance and ethics, one of which is beneficence, prioritizing the interests or safety of patients, not only in the context of the present but also in the context of the future and striving for the good or benefits of the actions taken more compared to an ugliness.

METHOD

The research used literatur ereview through articles that are accessed from internet searches from databases, namely: ASMR, Elsevier Journal, IJCMPH, Sage Journals with the keywords: universal precaution, knowledge, health care staff, medic and paramedic, and surgery room. The article inclusion criteria used were full text journals that using English and published from 2008-2018, while the exclusion criteria were abstract articles, articles that did not use English and the articles displayed were not full text. Articles that meet the inclusion criteria were collected and reviewed.

Based on the searching results, there were 12 articles that are considered to be in accordance with the objectives of the systematic review and then put them together then screening whether the title of the article is appropriate title or not. After screening there were 10 articles with the same title. Of 10 articles then those were screened according to the inclusion and exclusion criteria and found 6 articles for further review.

Searching with Keywords	ASMR	Elsevier Journal	IJCMPH	Sage Journals		
Results	2	4	3	3		
Appropriate title	2	3	2	3		
Fulltext, pdf, 2008-2018	1	2	2	1		
Fit to the criterion	6 articles					
Reviewed	6 articles					

Table 1. The literature Searching Result

RESULTS

Proper researches consist of several studies conducted in various countries. The analysis of the 6 articles shows those 4 journals with a quantitative design with a cross-sectional study, 2 journals with a mixed method design and 2 journals with a qualitative design with a cross-sectional study. After the study of quality studies of 6 articles can be categorized as good, then data extraction is carried out. This data extraction is done by analyzing the data based on the name of the author, title, purpose, research method and results, namely grouping important data in the article. The results of data extraction can be seen in table 2.

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extraction is done by analyzing the data based on the name of the author, title, purpose, research method and results, namely grouping important data in the article. The results of data extraction can be seen in table 2. From the articles above, it was found that all articles discussed universal precautions knowledge, and the factors that influenced them, including medical and paramedical officers. The article also try to connect between knowledge and safety skills or the practice of universal precautions [3,12,13,14,15,16].

These researches were carried out in various places in several countries, such as Uganda [13], Afghanistan [14], India [3], Egypt [15] and in Myanmar [16]. This represents the majority of developing countries in Asia.

The article above also tried to identify knowledge (n = 5), attitudes (n = 1) and compliance (n = 2) in medical officers / doctors [12,14,15] and paramedics [3,12,13,14,15,16]. All research methods that were used cross sectional studies, using questionnaires [3,14,15,16] or interviews [13].

In the first article it was stated that safety knowledge of health professionals has a positive correlation with attitudes and safety skills [12]. This is also similar to the fifth article, which also explains the positive correlation of the level of adherence to standard precautions in surgeons at Zagazig University Hospital - Egypt [15].

Different things were found in the other four articles. They stated that there was a negative correlation between knowledge and safety skills in health workers, not only nurses [3,13,14,16], but also doctors, midwives, laboratory / blood bank technician [14].



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No	Name of researchers (Year of Publication)	Research Title	Objectives	Method	Results
1.	Brasaite, 2016 [12]	Health Care Professionals' Knowledge and Attitudes Regarding Patient Safety and Skills for Safe Patient Care.	The overall objective of this research is to describe knowledge, attitudes and skillshealth care professionals regarding patient safety, and explain the relationship.	Cross-sectional	The safety knowledge of health professionals has a significant positive association with all safety attitudes and safety skills scalesused in evaluations, thus supporting the hypothesis.
2	Nderitu Esther W, 2015 [13]	The Experience of Ugandan Nurses in the Practice of Universal Precautions.	The purpose of this study is to explore the experiences of nurses in Uganda regarding universal precautions when treating patients suffering from HIV.	Interviews	The results showed that even though nursesknowledge good about universal precautions, the main challenge for practiceuniversal precaution is inadequate supplyresources, both material and health workers.
3	Fayaz, 2013 [14]	Knowledge and Practice of Universal Precautions among Health Care Workers In Four National Hospitals In Kabul, Afghanistan.	The purpose of this study is to assess the knowledge and practice of health care workers (health workers) against universal precautions and to find out the relationship between Universal Precautions knowledge and practice.	Cross sectional	The results showed that health workers had insufficient knowledge and poor practice of UP. Training for health workers is needed to encourage them to adhere to practices based on increased knowledge.
4.	Solanky <i>et</i> <i>al</i> ,2016 [3]	Knowledge and Practice of Universal Precautions Among Nursing Staff at A Tertiary Care Hospital In South Gujarat, India.	The purpose of this study is to explore knowledge and practice of universal precautions among nursing staff.	Cross sectional	The results show that correct knowledge of universal precautions among nursing staff is still not at a satisfactory level and training at repeated intervals needs to be provided to ensure correct knowledge and implementation of universal precautions.



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5.	Mortada & Zalat, 2014 [15]	Assessment of Compliance to Standard Precautions amongSurgeons In Zagazig University Hospitals, Egypt, Using TheHealth Belief Model.	This study aimed to assess the compliance of surgeons for standard precautions and determine the beliefs felt by surgeons to influence their compliance with the Health Belief Model.	Cross sectional	The results showed that there was adequate compliance with standard precautions among surgeons in ZagazigUniversity Hospitals, especially female surgeons, with a high level of knowledge among themobedient compared to surgeons who are not obedient.
6.	Sa Aung, 2007 [16]	Factors Affecting The Compliance of Myanmar Nurses In Performing Standard Precaution.	This study aims to analyze the factors that influence the compliance of nurses in Myanmar in carrying out Standard Precaution actions	Cross sectional	Barriers to implementing standard precautions by Myanmar nurses can be reduced by providing basic training, supervision, and improving standard operating procedures.



DISCUSSION

Universal precautions have been used extensively in health care facilities. Universal Precaution Components WHO (2008) precautions in health care standards are as follows:

1. Hand Hygiene

Washing your hands should be done before and after taking nursing actions even if you wear gloves and other personal protective equipment. This action is important to reduce the microorganisms in the hand so that the spread of infection can be reduced and the work environment is protected from infection. Hand washing indicators are used and must be done to anticipate the transfer of germs by hand, namely: [5]

- a. Before taking action, for example when going to check (direct contact with clients), when going to wear clean or sterile gloves, when going to do injection and infusion.
- b. After taking action, for example after examining a patient, after holding used equipment and contaminated material, after touching the mucous membrane.
- c. The principles of effective hand washing with alcohol-based soap or hands rub use 7 steps according to WHO.
- 2. Use of Personal Protective Equipment (PPE)

Personal protective equipment is used to protect the skin and mucous membranes of the officer from the risk of blood exposure, all types of body fluids, secretions, excreta of the skin that is not intact and the patient's mucous membrane. Use of personal protective equipment that is appropriate for every action such as: [5]

a. Use of glove

Protect hands from infectious material and protect patients from microorganisms in the hands of officers. This tool is the most important physical barrier to prevent the spread of infection and must always be replaced to prevent cross infection. There are three types of gloves, namely:

- 1) Surgical gloves, used when carrying out invasive or surgical actions.
- 2) Examination gloves, used to protect health workers when conducting checks or routine work.
- 3) Household gloves, used when processing equipment, handling contaminated materials, and when cleaning contaminated surfaces. The procedure for using sterile gloves is as follows:
 - a) Wash hands
 - b) Prepare a large enough area, clean and dry to open the glove package. Pay attention to the place to put it (sterile or minimal DTT).
 - c) Open the glove wrapper, ask another officer for help to open the glove wrapper. Place the glove with the palm facing up.
 - d) Take one of the gloves by holding it to the inner side of the fold, which is the part that will come into contact with the skin of the hand when worn.
 - e) Position the glove at waist height and hang it to the floor, so that the holes in the fingers are open. Put hands (keep gloves so they don't touch the surface).
 - f) Take the second glove by tucking the fingers that have been wearing gloves to the folds, that is, the part that will not come into contact with the skin of the hand when worn.
 - g) Install the second glove by inserting the fingers that have not yet worn gloves, then straighten the folds, and adjust the position of the glove so that it feels right and feels good in the hand.



b. Use of face shields (masks, glasses)

The use of face shields is intended to protect the mucous membranes of the nose, mouth during patient care that allows splashes of blood and other body fluids. Masks without glasses are only used at certain times such as treating open tuberculosis patients without skin lesions or bleeding. Glasses and face shields are simultaneously used by officers who carry out or help carry out high-risk measures for long exposure to blood and other bodily fluids including wound cleaning, dressing wounds, changing catheters or decontaminating used equipment. If there are indications of using all three types of protective equipment, the mask is always installed before wearing a protective gown or gloves, even before performing surgical hand washing.

The steps for using a mask are as follows: [5]

- 1) Take the top edge of the mask (usually along the edge / thin metal).
- 2) Hold the mask on two straps or tie the top. Tie the two upper straps to the top of the back of the head with the rope over the ears.
- 3) Tie two lower straps tightly around the neck with a mask down to the chin.
- 4) Gently clasp the upper metal band on the bridge of the nose.

c. Use of protective gowns

Protective dress is one type of work clothes. The type of material is as translucent as possible [5]. The purpose of using protective gowns is to protect officers from possible puddles or splashes of blood or other body fluids. Protective gowns should be worn if there are indications such as when cleaning wounds, conducting irrigation, carrying out drainage actions, pouring contaminated liquid into a toilet hole, replacing sanitary napkins, handling patients with massive bleeding.

We recommend that every time the service always wears clean work clothes, including protective gowns. Protective gowns should be replaced immediately if exposed to dirt, blood or body fluids. How to use a protective gown as follows:

- 1) Only the outside is contaminated, because the purpose of wearing a dress is to protect the user from infection.
- 2) Dresses can be used alone by the wearer or worn by others [5].
- d. Use of protective shoes

Closed shoes, worn when entering tight areas. These shoes can be in the form of ordinary closed shoes limited to ankles and closed booth shoes that are commonly used in operations that allow the occurrence of puddles of splashes of blood or body fluids of patients, for example in caesarean section surgery or laparatomy [5].

The components above are universal precaution components which are expected to reduce the risk of transmission of pathogens through blood and other body fluids from known and unknown sources. This application is an infection prevention and control that must be routinely carried out for all patients and in all health service facilities (FPK) in optimizing patient safety (patient safety).

Research conducted by Brasaite, shows that the safety knowledge of health professionals has a significant positive association with all safety attitudes and safety skills scales used in evaluations. Patient safety is avoidance, prevention and improvement of adverse outcomes or injuries originating from the health care process and avoiding accidental injury originating from the health care process. The application of universal precaution is inseparable from the role of each party involved in it such as the service provider and service users, namely patients and visitors. To be able to work optimally, health



workers must always get protection from the risk of contracting the disease and for patient safety (patient safety) [12].

Whereas the research conducted by Nderitu Esther W (2015), shows that although nurses have knowledge of universal precautions prevention measures, the main challenge for the practice of universal precautions is the inadequate supply of resources, both material and health workers [13].

The results of these studies are not in line with the research conducted by Solanky, et al (2016) that good knowledge of universal precautions among nursing staff is still not at a satisfactory level and training at repeated intervals needs to be given to ensure correct knowledge and implementation of actions universal prevention [3].

The results of the Mortada and Zalat's study (2014) showed that there was adequate compliance with standard precautions among surgeons at the Zagazig University Hospital, especially female surgeons, with a high level of knowledge including obedient surgeons. The overall results of the study showed a direct correlation with the compliance of the surgeon while the one that did not correlate was the perceived obstacle [15].

The results of Sa Aung's (2017) study show that nurse characteristics do not significantly affect compliance with Standard Precaution measures. However, there is a significant influence between compliance with standard precautions in the incidence of injuries from needle puncture with p-value = 0.01. Barriers to implementing standard precautions by Myanmar nurses can be reduced by providing basic training, supervision, and improving standard operating procedures [16].

The results of these studies are not in line with the research conducted by Fazay (2015) that health workers have inadequate knowledge and bad universal precaution practices. Training for health workers is needed to encourage compliance with practices based on increased knowledge. For this reason, it is necessary to develop and implement policies related to universal precautions by providing appropriate equipment and training for health workers to refer to the precautions in health care standards which consist of the implementation of Hand Hygiene and the use of Personal Protective Equipment (PPE) [6].

The study that we were doing was still very limited. In addition, studies in the article were carried out in several developing countries. These limitations need attention as input for further studies, such as number of articles used in the review and wherever possible studies that carried out in developed countries.

CONCLUSIONS

Based on the results of the analysis of the articles above, there is an inconsistent relationship between knowledge about universal precautions and attitude and safety skills. So there are other factors that also influence attitude and safety skills.

It should be explored further on factors that affect the level of compliance with universal precautions in medic and paramedic personnel, whether with other articles from developed countries and with other studies.

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