

HASIL CEK_Attitude, patient
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to prevent Surgical site
infections at PKU
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Attitude, patient safety, and stakeholders' efforts to prevent Surgical site infections at PKU Muhammadiyah Yogyakarta Hospital

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Abstract

Surgical site infections (SSI) are infections that occur after surgery with differentiating rates of 14%-16% in patients. According to several health-related studies, its impact is usually due to financial problems and quality of life (21). Therefore, this research aims to determine the attitude, patient safety, and stakeholders factors capable of preventing Surgical Site Infections. This is a qualitative research, with data obtained from SSI patients at PKU Muhammadiyah Yogyakarta Hospital, and analyzed using the multiple regression coefficients. The result showed that the attitude variable in terms of SSI prevention efforts was 51.9%, thereby indicating that the patients were obedient to the use of hand hygiene and personal protective equipment. Meanwhile, regarding patient safety, the value was 36.5%, despite the application of 7 strategies with the majority not properly adhered. Furthermore, the value of stakeholder support was in the medium category (46.1). This is because even though the management has provided adequate infrastructure, there were problems with coordination between units. In conclusion, surgical site infections (SSI) can be prevented by educating health workers on the importance of using protective equipment, hand hygiene, adherence to patient safety standards, and support for stakeholders in constructing infrastructure.

Keywords: Nosocomial infection, Surgical site infection, (SSI) prevention, Health promotion

1. Introduction

Nosocomial infection also known as Hospital Acquired Infection (HAI), is an infection obtained in a hospital or other health care facility. This type of infection can originate from patients, visitors, and health workers, such as doctors, nurses, medical personnel, etc. Therefore, preventive measures need to be taken by all individuals before and after coming in contact with patients (20). Quality health service is currently one of the essential needs of every society. Therefore, in response to this, several countries have implemented various indicators related to health services, one of which is accreditation. According to the Ministry of Health of the Republic of Indonesia (2012), the Hospital Accreditation Standard consists of several assessment indicators, and one of its goals is ensuring patient safety (15). Hospital patient safety is a fundamental part of health service used to ensure patients are safe. It comprises of identifying, assessing, managing, analyzing, minimizing and preventing risk patient-related risks caused by errors from carrying out or not taking action. The importance of patient safety in health services has created concern on various countries and one of the topics at international meetings, such as the World Health Assembly (WHA). The World Health Organization South-East Asia Region (SEARO 2015) has issued a regional strategy for 2016-2025, which is related to patient safety. This includes 5 strategic objectives, such as infection prevention and control due to health services. In line with this, the policy regarding patient safety in Indonesia is regulated by the Minister of Health Regulation 2011, and supported by its strengthening as part of hospital accreditation, with one of the targets aimed at reducing the risk of infection.

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Healthcare-Associated Infections (HAIs) are infections acquired by patients in a hospital or health facility. Infections are spread to patients through various means, such as bed lines, contaminated equipment, air droplets, etc. Most times, the infections do not incubate at the time the patient is being treated, rather it manifest after they must have returned home. In addition to patients, HAIs can occur in health care workers and hospital staff (WHO, 2010). Currently, there is a very limited global data on HAIs. However, according to the World Health Organization, and based on the literature review from various national or multicentre studies from 1995-2010, the overall HAIs prevalence in the world ranges from 3.5% - 12%. A 2011 research stated that the prevalence in developed and developing countries were 7.6% and 10.1% with a variation of 5.7% to 19.1%. The European Center for Disease Control and Prevention (ECDC) and WHO in 2015, reported that an average prevalence rate of 7.1% in Europe.

In Indonesia, there is no national data on HAIs. However, research by Widodo and Astrawinata, (2004) reported that HAIs data at Cipto Mangunkusumo Hospital from 1999 to 2002 were 1.1, 0.9, 0.6 and 0.4%. In 2003, Perdalin Jaya and Prof. Dr. Sulianti Saroso Hospital surveyed 11 hospitals in Jakarta. Based on these results, the prevalence data of nosocomial infections for Surgical Wound Infection (ILO), Urinary Tract Infection (UTI), Primary Blood Flow Infection (IADP), Pneumonia, Respiratory infections and others were 18.9%, 15.1%, 26.4%, 24.5%, 15.1%, and 32.1% (16). The data above places the infection incidence as one of the causes of death and morbidity in health care facilities, with an impact on increasing days and costs of care. Hospital is one of the health facilities that provide preventive, curative and rehabilitative services. A 2014 survey by the World Health Organization stated that the incidence of surgical site infections (SSI) increased from 1.2 cases per 100 surgical procedures to 23.6 (7).

Hospital patient safety is a system used to make patients safe. This system includes identifying, assessing, managing, analyzing, minimizing and preventing risk patient-related risks (1). Approximately one out of 20 patients treated in the United States suffers from API, with a total number of 1.7 million HAI patients per year, 99,000 deaths and an estimated economic impact of \$ 9.8 billion (USD). In European countries, the API incidence rate is estimated to be twice as high as the United States, with 148,000 deaths per year and an estimated economic impact of \$ 7.0 billion (EUR). In developing countries, the risk of infection is 2-20 times higher than in developed countries, and the proportion of infected patients exceeds 25% (5).

The only health promotional effort that has been fully implemented is hand hygiene (6). The effect of this process is greater than the sum of all infection prevention strategies (7). The principle of infection prevention in the surgical site (2004) is to reduce and prevent the risk of transmitting microorganisms from personnel, the environment, instruments, and patients. Both methods can be carried out in the pre-surgery, intra-surgery, and post-surgery stages. However, it does not reduce the incidence of infection during surgery because many health care workers do not adhere to standard operating procedures in hospitals. Therefore, a health promotional approach is needed to change the behavior of workers and prevent post-surgery infection.

Although hospitals have made efforts to prevent nosocomial infection due to surgical wounds which are monitored by the infection prevention team or PPI RS (Hospital Infection Prevention Control), not all health workers comply with standard surgical procedures. This is evidenced by the results of an internal audit carried out by the PPI RS which shows that 65% of health workers did not comply with handwashing and the use of personal protection (hospital survey results). Furthermore, data on the incidence of infection due to surgery showed that infections are not properly documented due to the higher cost of hospitalization. Therefore, this research aims to examine the problem of SE.

RESEARCH METHODOLOGY

This research uses a quantitative exploratory approach and is supported by qualitative information. The research design used was an analytic survey with a cross-sectional approach. Furthermore, the research was carried out at the PKU Yogyakarta Hospital units 1 and 2. The simple random sampling technique was used to obtain data from 104 health workers consisting surgeons, surgical nurses, sanitation workers, household workers, PPI Financial Officer team, directors, patient medical records, infection control officers and patients (8), through in-depth interviews and questionnaires. This study used three types of data analysis, namely, descriptive, path, and logistic regression. The path analysis stages consist of (9) specification, identification, estimation, modification, and result reporting models. Logistic regression analysis is used to determine the effect of health workforce compliance to prevent and reduce infection in the operating area (10).

RESULTS

The hypotheses to be tested in this section comprises of perception factors on infection prevention efforts in the surgical site (X 1), attitudes towards infection prevention (X 2), policy on patient safety (X 3), stakeholder support (X 4) and efforts to promote infection prevention (X 5). The results of

Table 1: Regression analysis that influence health promotion regarding infection prevention efforts in the surgical site (X 5)

Dependent Variable	Independent Variable	Regression coefficient (B)	P
Health promotion regarding infection prevention in the surgical site (X ₅)	Perception factor on infection prevention efforts in the surgical site (X ₁)	0,111	0,737
	Attitude towards infection prevention efforts in the surgical site (X ₂)	0,156	0,111
	Patient safety policy (X ₃),	0,408	0,017
	Stakeholder support (X ₄)	0,408	0,000
No observed	Stakeholder support (X ₄)	=104	
Adjusted R ²		=0.504	
Fit the Model	X ²	= 4.482	
	P	=0.214	
	Gfi	=0.988	
	AGFI	=0.888	
	RMSEA	=0.069	
	NFI	=0.984	
	Cfi	=0.994	

Table 1 shows that the first hypothesis is not proven, hence it needs to be corrected by the pruning method. The perception factor regarding infection prevention efforts in the surgical site (X 1) does not contribute to promotional efforts in promoting infection prevent health (X 5). Furthermore, factors influencing health promotion, such as prevention efforts in the surgical site (X 5), attitudes toward infection prevention (X 2), policies on patient safety (X 3), and stakeholder support (X 4) are shown in Figure 1 below:

Figure 1: Perpetrator F influencing health promotion regarding infection prevention efforts in the surgical site (X5)

The number of coefficient determination (R^2) is 0.504, which means that statistically, trend factor variables, patient safety support policies, and stakeholders are able to explain 50.4% of the health promotion variables. The number of residual coefficients (ϵ_1) with a 49.6% influences other external variables towards infection prevention efforts in the surgical site (X 2), policy on patient safety (X 3), and stakeholder support (X 4). Furthermore, the influence of perceptual factors regarding infection prevention efforts in the surgical site comprises of attitudes towards PR, policies, patient safety, and stakeholder support for health promotion regarding infection prevention efforts in the surgical site. Perceptions and attitudes significantly influence health promotion and improve competence. Therefore, health workers need to take preventive measures before carrying out the surgery. Meanwhile, patient safety policies in hospitals are only to protect authorities from infecting patients during and after the surgical process. Stakeholder support plays a very strategic role because they can intervene in policies. Therefore, surgical actions are expected to be safer and more optimal. Everything can be implemented when there are clear rules, good infrastructure, commitment, and also the compliance of health workers during and after surgery. Conceptual health promotion is an attempt to intervene in all determinants of health, including behavior. The dimensions of any behavior do not only change people, rather it also changes the behavior of the authorities or determine policies. In other words, the health promotion approach changes people and stakeholders behavior and other determinants of health promotion. This concept of change was initiated by the World Health Organization (WHO) in 1984. According to Rikayanti's research, the effect of attitudes on IDO prevention efforts is 51.9%, and in the good criteria, as proven by officers' compliance with the use of personal protective equipment and hand hygiene (21). Efforts to prevent infection in the operating area through patient safety policies are in moderate criteria of 36.5%. However, not all workers complied with the implementation of 7 patient safety standards, especially in hand hygiene. This is in line with Eva Agustin's research on the effect of operating procedures on contaminated clean surgery (6). The documentary variable of the role of stakeholders in the procurement of infrastructure facilities is at moderate criteria of 46.1%. According to Handayani's research, although the stakeholder is committed to meeting the needs related to (SSI) surgical site infections, not all health workers comply to the implemented health-related policies (9). The health promotion activities carried out by hospital management in the form of counselling for infectious and non-communicable diseases in the operating area was 58.7% and in the moderate category. This is because home management illness concentrates more on infectious diseases than the non-communicable ones, in accordance with the research carried out by Hartono in 2011 (11).

Conclusion

In conclusion, patients can be prevented by acquiring nosocomial infection from a hospital or other health care facility by ensuring the compliance and awareness of health workers in the use of

protective equipment, hand hygiene, and disinfectants. Furthermore, the safety role of patients with 7 established standards needs to be obeyed, in infection prevention.

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