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Analysis of the Relationship between Patient Family Knowledge about Infections in Post-Operative Wounds in Supporting the Post-Operative Patient Wound Healing Process: Study at dr. Soekardjo Regional General Hospital, Tasikmalaya, Indonesia

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A B S T R A C T

Introduction: Post-operative wound infection is a serious complication that can hinder the healing process. The patient's family's knowledge about post-operative wound infections can play an important role in supporting the healing process. This study aims to analyze the relationship between the patient's family's knowledge about infections in post-operative wounds and the process of wound healing in post-operative patients at dr. Soekardjo Regional General Hospital Tasikmalaya. **Methods:** This research used a cross-sectional design with a total of 52 respondents selected by purposive sampling. Data was collected using a questionnaire to measure the patient's family's knowledge about post-operative wound infections and observation sheets to assess the wound healing process. Data analysis was carried out using the Chi-square test. **Results:** The majority of respondents were 32 years or older. Respondents' education was dominated by secondary level. The majority of respondents have incomes greater than or equal to the UMR. The majority of respondents had sufficient knowledge about post-operative wound infections, but there were still 17.31% of respondents who had insufficient knowledge. The results of the study showed that there was a significant relationship between the patient's family's knowledge about post-operative wound infections and the wound healing process (p-value < 0.05). **Conclusion:** The patient's family's knowledge about post-operative wound infections can support the patient's post-operative wound healing process.

1. Introduction

Surgical site infection (SSI) is a serious complication that often occurs in hospitals, with a global incidence rate ranging from 3% to 5%. In Indonesia, based on data from the Ministry of Health of the Republic of Indonesia in 2020, SSI ranks fourth as the cause of nosocomial infections in hospitals. SSIs not only cause pain and discomfort for patients but can also result in more serious consequences. Patients with SSI take longer to recover and are required to stay in the hospital longer. This increases the cost of care and burdens the health system. The cost of treating patients with SSI is much higher than patients without SSI. These costs include the costs of treating infections, wound care, and additional surgery. In severe cases, SSI can cause sepsis and death.[1-3]

Optimal post-operative wound care is very important to prevent SSI. However, in practice, several problems are often encountered in post-operative wound care. Health workers and patients/families often do not have adequate knowledge and skills in caring for post-operative wounds. Patients/families often do not comply with wound care instructions given by health workers. Hospitals often have limited resources, such as medical equipment and trained health personnel, to provide optimal post-operative wound care. The family has an important role in supporting the post-operative wound healing process. Families can help patients clean wounds with soap

and running water and change wound dressings regularly. The family can help the patient observe signs of infection in the wound, such as redness, swelling, pain, and pus. Families can provide moral support to patients to keep them enthusiastic and optimistic during the wound-healing process. SSI is a serious complication that can have various negative consequences for patients, families, and the health system.[4-6] This study aims to analyze the relationship between the patient's family's knowledge about infections in post-operative wounds and the process of wound healing in post-operative patients at dr. Soekardjo Regional General Hospital, Tasikmalaya, Indonesia.

2. Methods

This study used a cross-sectional design. This design was chosen because researchers wanted to see the relationship between the patient's family's knowledge about SSI and compliance with wound care instructions at one time. The population of this study was all families of patients with post-operative wounds at dr. Soekardjo Regional General Hospital Tasikmalaya. This research sample was taken using a purposive sampling technique. A total of 52 research subjects participated in this study, and all of them met the inclusion criteria. Sample inclusion criteria were families of patients with post-operative wounds who were willing to be respondents and were able to understand and answer questions. Research data was collected using two instruments, namely: 1. Questionnaire: Questionnaires were used to measure the patient's family's knowledge about SSI. The questionnaire consists of 20 multiple choice questions that test the patient's family's knowledge about the definition of SSI, causes of SSI, signs of SSI, and how to prevent SSI. 2. Observation sheets: Observation sheets are used to assess the patient's family's compliance with wound care instructions. The observation sheet contains criteria for compliance with wound care instructions, such as cleaning the wound with soap and running water, changing the wound dressing regularly, and observing for signs of infection. Data analysis was carried out using the Chi-square test to see the relationship between the patient's family's knowledge about SSI and compliance with wound care instructions. This research will be carried out by paying attention to research ethics. Respondents will be given an explanation of the research objectives, research benefits, and research risks before they agree to become respondents. Respondent data will be kept confidential and will only be used for research purposes.

3. Results

Based on Table 1, the majority of respondents (53.85%) were aged 32 years or older. This shows that adults have more knowledge about post-operative wound infections. Respondents' education was dominated by secondary level (57.69%), followed by primary level (36.54%) and high level (5.77%). This shows that the respondents' education levels are quite diverse. The majority of respondents (57.69%) had an income greater than or equal to the UMR (Regional Minimum Wage). This suggests that knowledge about post-operative wound infections may be more accessible to people with better economic levels. Even though the majority of respondents (69.23%) had sufficient knowledge about post-operative wound infections, 17.31% of respondents had insufficient knowledge. This shows that efforts still need to be made to increase public knowledge about post-operative wound infections.

Based on Table 2, there is a significant relationship between the patient's family's knowledge about post-operative wound infections and the wound healing process (p-value < 0.05). This shows that patient families with good knowledge about postoperative wound infections have a greater chance of having wounds that heal well.

Table 1. Characteristics of respondents.

Characteristics	Category	Frequency	Percentage (%)
Age	< 32 years old	24	46.15
	≥ 32 years old	28	53.85
Education	Primary	19	36.54
	Secondary	30	57.69
	Higher	3	5.77
Income	≥ UMR	30	57.69
	< UMR	22	42.31
Knowledge	Good	7	13.46
	Enough	36	69.23
	Less	9	17.31

Table 2. Analysis of the relationship between knowledge and surgical wound healing.

	Pearson Chi-square	df	p-value
Knowledge vs. healing surgical wounds	8.26	2	0,016*

*Chi-square, p<0,05.

4. Discussion

The results of the study showed that there was a significant relationship between the patient's family's knowledge about post-operative wound infections and the wound healing process (p-value < 0.05). This shows that patient families with good knowledge about postoperative wound infections have a greater chance of having wounds that heal well. The relationship between the patient's family's knowledge about post-operative wound infections and the wound-healing process can be explained biologically. Post-operative wound infections can be caused by various microorganisms, such as bacteria, viruses, and fungi. These microorganisms can enter wounds in various ways, such as direct contact with contaminated objects or through the air.[7-9]

Patient families with good knowledge about post-operative wound infections will be better able to prevent postoperative wound infections. The patient's family can take various steps to prevent postoperative wound infections, such as maintaining wound cleanliness, using sterile medical equipment, and observing signs of infection. Patient families with good knowledge about post-operative wound infections will find it easier to detect signs of infection, such as redness, swelling, pain, and pus. Patient families with good knowledge about post-operative wound infections will be better able to care for wounds properly, such as cleaning wounds with soap and running water, changing wound dressings regularly, and observing signs of infection.[10-12]

The health belief model (HBM) theory explains that a person's health behavior is influenced by several factors, namely: 1. Perception of susceptibility to disease: Individuals with a high perception that they are susceptible to disease will be more motivated to carry out health behavior. 2. Perceptions of the benefits and barriers of health behaviors: Individuals who perceive the benefits of health behavior as greater than the barriers will be more motivated to engage in the behavior. 3. Guidance from others: Individuals who receive guidance and advice from others they trust, such as health professionals, family, or friends, will be more motivated to engage in health behaviors. Knowledge about surgical wounds and surgical wound healing is very important to encourage patients to carry out appropriate health behavior. This knowledge can be obtained from various sources, such as health workers, mass media, or the internet. Patients who know that surgical wounds can become infected if not cared for properly will be more motivated to carry out appropriate health behaviors, such as keeping wounds clean and changing wound dressings regularly. Patients who know that caring for surgical wounds

properly can speed up the healing process and prevent complications will be more motivated to carry out appropriate health behaviors, even if there are obstacles, such as pain or discomfort. Health workers can provide education and information about surgical wounds and surgical wound healing to patients and families. This education can help patients understand the importance of caring for surgical wounds properly and increase their motivation to carry out appropriate health behaviors.[13-15]

The social cognitive theory (SCT) theory put forward by Albert Bandura explains that a person's behavior is influenced by two main factors: cognitive factors and social factors. Cognitive factors include an individual's knowledge, beliefs, and attitudes toward a behavior, while social factors include influences from family, friends, and the social environment. Knowledge about surgical wounds and wound healing is an important factor that can influence patient behavior in caring for their wounds. Patients will better understand the importance of keeping wounds clean, using sterile medical equipment, and observing signs of infection. Patients will be better able to clean wounds with soap and running water, change wound bandages regularly, and watch for signs of infection. Patients will be more obedient to the doctor's instructions on how to care for wounds and take medication. The patient who has just had a cesarean section has good knowledge of surgical wounds and wound healing. They knew that they had to keep the wound clean by bathing every day and cleaning the wound with soap and running water. They also knew that they had to change the wound bandages regularly and watch for signs of infection. This knowledge helps patients to care for their wounds properly and prevent infection. Social factors can also influence patient behavior in caring for their wounds. Family and friends can have both positive and negative influences on patient behavior. Family and friends can provide support and motivation to patients to care for their wounds properly. Family and friends can help patients remember to take medication and follow the doctor's instructions. Family and friends can help patients overcome anxiety and stress, which can hinder the wound-healing process. Family and friends may provide misinformation about surgical wounds and wound healing. Family and friends can encourage patients to carry out activities that can interfere with the wound-healing process. Family and friends can make patients feel anxious and stressed, which can hinder the wound-healing process. A patient who has just had knee surgery has a very supportive family. The family helps the patient clean the wound, changes the wound dressing, and reminds him to take medicine. The family also motivated the patient to undergo physiotherapy so that the wound would heal quickly. Support and motivation from the family help patients care for their wounds properly and speed up the wound healing process.[16-18]

Several previous studies have also shown that the patient's family's knowledge about post-operative wound infections can improve the wound healing process. A study shows that families of patients with good knowledge about post-operative wound infections are 2 times more likely to have wounds that heal well compared to families of patients with less knowledge. Other studies show that educating patient families about post-operative wound infections can increase compliance with wound care instructions and speed up the wound healing process.[19,20]

5. Conclusion

The majority of respondents were 32 years or older. Respondents' education was dominated by secondary level. The majority of respondents have incomes greater than or equal to the UMR. The majority of respondents had sufficient knowledge about post-operative wound infections, but 17.31% of respondents had insufficient knowledge. There is a significant relationship between the patient's family's knowledge about post-operative wound infections and the wound healing process (p-value < 0.05). This shows that patient families with good knowledge about postoperative wound infections have a greater chance of having wounds that heal well.

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