



THE EFFECT OF HEALTH EDUCATION ON FAMILY'S ABILITY LEVEL IN GANGRENE WOUND CARE AT DIABETES MELLITUS PATIENTS IN TURI COMMUNITY HEALTH CENTERS, LAMONGAN

Research Report

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ABSTRACT

Introduction: Diabetes Mellitus causes neuropathy and abnormalities in blood vessels that cause changes in the skin and muscles, making it easier for gangrene to occur. Gangrene wounds that are left untreated or treated inappropriately can spread and increase the risk of amputation and death. Proper gangrene wound care is needed to speed up the healing process and prevent the wound from getting worse. Diabetes mellitus patients with wound gangrene need the help of other people (family) to carry out independent care at home. So that, the ability of the family to carry out proper care is needed. **Methods:** The design in this study used an analytical pre-experimental design with a one-group pre-test and post-test approach. The sampling of this study was total sampling used the Paired Sample T-Test. The population in this study was family who caring for family members with gangrene wounds at the Turi Community Health Center which met the inclusion criteria namely 25 respondents. **Results:** The results of this study showed that $T = -3.361$ means that there is an influence between the level of family ability in gangrene wound care before and after being given Health Education about Gangrene Wound Treatment. **Conclusions:** Health Education has a significant effect on the Family's Ability Level in gangrene wound care.

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INTRODUCTION

Along with technological advances in the world of health, there has been a shift in disease patterns in the world, including diseases caused by lifestyle, one of which is diabetes mellitus (Putri Nurlaili H, 2013). Diabetes mellitus has neuropathic disorders and abnormalities in blood vessels, both sensory and motor and autonomic neuropathy will result in various changes in the skin and muscles which then causes changes in the distribution of pressure on the soles of the feet and will further facilitate the occurrence of ulcers or wounds, wounds that are not immediately treated can spread to a widespread infection that will lead to gangrene (Arisman, 2010). Gangrene is the death of tissue in the body. Gangrene can be caused by a lack of blood flow to parts of the body or by a bacterial infection, gangrene can occur on body surfaces such as the skin. Symptoms that usually arise are changes in skin color, swelling

and pain in the affected area, heat, and a foul smell that requires treatment (X-plan Education, 2013).

Based on data from the World Health Organization (WHO), Indonesia is the 4th largest in the number of people with DM in the world. WHO estimates that in 2015 the number of people with diabetes mellitus will increase to 438 million people. In Indonesia, there are 1785 DM patients who have experienced complications such as neuropathy (63.5%), macrovascular (16%), microvascular (16%), and diabetic foot wounds (15%) while the mortality rate due to diabetic ulcers and gangrene reaches 17-23% and the amputation rate reaches 15-30%. In addition, the rate of mortality to the 1-year post-amputation was 14.8%, this is supported by RISKESDAS data (2013), that the increase in the number of diabetic ulcer sufferers in Indonesia can be seen from the increase of prevalence (15 %) (Purwati, 2013). According to the management

of the Indonesian Diabetes Association (PERSADIA) in East Java, the number of people with diabetes mellitus is 6% or 2,248,605 people from the total population of East Java as many as 37,476,757 people (Dinkes Surabaya, 2015). Based on the results of a survey conducted by researchers at the Turi Health Center. From the profile report of the Health Center with DM in 2018, there were 230 patients and 25 of them had gangrenous wounds.

Gangrene wounds in DM patients require appropriate treatment. There are several factors that influence the behavior of gangrene wound care management, namely 1) Predisposing factors include knowledge, attitudes, socioeconomic levels, work levels and education. If the education received by a person is higher, it can affect a person's perspective on the information he receives and the higher the socioeconomic level of a person, 2) Supporting factors include facilities and infrastructure, health service facilities. 3) The driving factors include the attitude of the family who does not know how to properly treat gangrene wounds, does not want to do gangrene wound care independently, and the family's inability to care for diabetic wounds and their treatment which will make the wound or ulcer worse (Purwanto, 2014).

The efforts to prevent bad wounds in diabetic wounds include using anti-diabetic drugs, improving blood flow to the feet, avoiding smoking, regular exercise, namely all people with diabetes mellitus are recommended to do light physical exercise regularly every day for about 20 minutes and perform behavioral gangrene treatment on a regular basis, education of gangrene wound care in patients and families. Foot care in patients with diabetes mellitus needs to be carried out properly

because if the feet are left untreated, there will be a risk of necrotizing ulcers which can eventually lead to amputation. (Sandra Fortuna, 2016). Based on this background, the researchers are interested in conducting research related to "The Effect of Health Education on Family's Ability Level in Gangrene Wound Care at Diabetes Mellitus Patients in Turi Community Health Centers, Lamongan"

MATERIALS AND METHODS

The research design used in this study was the Pre-Experimental design method used a one-group pre-test and post-test design approach without control, in which there is no comparison group (control), but at least the first observation (Pretest) has been carried out which allows testing the changes that occur after an experiment or program (Notoatmodjo, 2018). The pre-experimental method with a one-group pre-test and post-test design is that a group of subjects is observed before the intervention, then observed again after the intervention (Nursalam, 2014). The population in this study was family who caring for family members with gangrene wounds at the Turi Lamongan Health Center. The sample of this study was family who caring for family members with gangrene wounds at the Turi Lamongan Health Center which met the inclusion criteria, namely 25 respondents. The sampling used in this research is total sampling. Total sampling is a sampling technique where the number of samples is equal to the total population (Sugiyono, 2011). The reason for taking total sampling is because the number of the population is less than 100, the entire population is used as a research sample, all of them are families of diabetes mellitus patients who have gangrenous wounds (Notoatmodjo, 2018).

RESULTS

Family's ability to Care for gangrene wounds before giving Health Education (HE)

Table 1. Distribution of Family Ability to Care for Gangrene Wounds before Providing Health Education (HE)

Indicator	Frequency	Percentage (%)
Less	12	48,0
Enough	7	28,0
Good	6	24,0
Total	25	100

Based on Table 1. shows the level of family ability to Care for gangrenous wounds in patients with diabetes mellitus before Health Education, almost some families showed less

ability as many as 12 families or 48.0%, almost some families showed enough ability as much as 7 or 28% and a small proportion of families showed good ability as much as 6 or 24%.

Family's ability to Care for gangrene wounds after giving Health Education (HE)

Table 2. Distribution of Family Ability to Care for Gangrene Wounds after Providing Health Education (HE)

Indicator	Frequency	Percentage (%)
Less	7	28,0
Enough	9	36,0
Good	9	36,0
Total	25	100

Based on Table 2. shows the level of family ability to Care for gangrenous wounds in patients with diabetes mellitus after being given Health Education (HE) almost some families

show enough and good ability as many as 9 families or 36% and a small part of families show less ability as much as 7 or 28%.

Effect of Health Education (HE) on Family Ability to Care for Gangrene Wounds

Table 3. Paired T-Test sample test the effect of Health Education (HE) on the Family Ability Level to Caring for Gangrene Wounds in Diabetes Mellitus Patients

	Paired Differences					T	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre test - PPost test	-.32000	.47610	.09522	-.51652	-.12348	-3.361	24	.003

From the Sample Paired T-Test which was calculated using the SPSS program, the results of the correlation between pre and post showed the results Mean = -.32000, n = 25, t-test = -3.361 Df = 24 significant p = 0.003 (p<0.05) H1 is accepted, meaning that there is

an influence on the level of family ability before being given Health Education (HE) and after being given Health Education (HE) about gangrene wound care in diabetes mellitus patients.

DISCUSSION**Family's Ability to Care for Gangrene Wounds Before Giving Health Education (HE) to Diabetes Mellitus Patients**

Table 1. shows that before Health Education (HE) was conducted on Gangrene Wound Care, almost some families showed poor abilities and a small number of families had good abilities. Most families with diabetes mellitus work as farmers. When individuals have jobs, farmers tend to have less knowledge about gangrenous wound care because they carry out their daily activities in the fields from early morning to late afternoon so they rarely receive health education.

Ability is a condition that shows an element of maturity which is also related to knowledge and skills that can be obtained from education, training, and knowledge (Stephen P. Robbins & Timanty A. Judge, 2009) . This is corroborated by the theory above, most of the families have less ability, this can be influenced by factors of age, occupation, and education, it is found that half of the families have a junior high school education, and a small number of families have senior high school and

elementary school so that families are still lacking to accept and digest the information obtained, in the end the knowledge received is only a little besides that also the skills they have are only a little. This can hinder a person's development of the new values introduced, especially the family to Care for gangrenous wounds. The other factors that affect the ability of the family to Care for gangrene wounds are the age factor. The small part of the family aged <21 years. At that age, there is a lack of interest in seeking knowledge and experience so their abilities are still in the poor category because they are not supported by the information received.

Family's Ability to Care for Gangrene Wounds After Giving Health Education (HE) to Diabetes Mellitus Patients

Based on table 1.6, it can be explained that in the family after giving Health Education (HE) regarding gangrenous wound care, almost some families showed enough and good ability and a small number of families showed less ability. Health Education is any planned effort to influence other people, whether individuals, groups, or communities, so that they do what is

expected by education or health promotion actors, and this limitation is implied by the input elements (targets, educators, and education), the process (planned effort to influence others) and output (doing what is expected) (Notoatmodjo, 2012). Health promotion aims to increase awareness, provide or increase public knowledge about maintaining and improving health for themselves, their families, and their level of ability to do something.

From the theory above, almost some families show good and enough abilities. This is because Health Education or the provision of health education is very helpful for families in increasing knowledge and abilities in gangrene wounds care. All people do not have the same ability to get information even though the information is provided by the same person and at the same time. There are still other factors that influence it so the Care of gangrenous wounds in this study does not all have good abilities because of these other factors, such as interest in the material, level of concentration while getting information, intelligence in receiving information, repetition of receiving information.

The higher the individual's education, the more knowledge, experience, and the easier it is for a person to accept information of a certain value and it will be easier to understand what is going on with him so that he can maintain, care and maintain his health by taking care of gangrene wounds regularly properly and correctly

Effect of Health Education (HE) on Family Ability Level in Gangrene Wounds care at Diabetes Mellitus Patients

The results of the Sample Paired T-Test which were calculated using the SPSS program, the results of the correlation between pre and post showed significant results $p = 0.03$ ($p < 0.05$) H_1 was accepted, meaning that there was an influence on the level of family ability before being given Health Education (HE) and after being given Health Education (HE) about Gangrene Wound Care $Z = -.32000$ with a negative correlation direction, it means that by giving Health Education (HE) it can increase the family's ability in gangrene wounds care at Diabetes mellitus patients

An increase in the ability of families shows that health education can really improve the knowledge and skills of families in this study because Health Education is one of the methods to provide information. The advantages of Health Education, when compared to other ways of providing information, are the feedback or two-way method. During health education, recipients of

information can ask questions if they do not understand the information obtained and the questions asked are in accordance with the conditions experienced by the recipient of the information so that the answers given by the extension worker are in accordance with their wishes so that they will always be remembered and increase their knowledge and skills. On the other hand, other advantages of health education are to increase knowledge and skills if the recipient of the information has a sufficient level of education according to the material, has a good socio-economic level, according to customs the extension material is not contradictory, the counseling material is given by people who are trusted by the community and there is sufficient time to attend health education

Health Education is an activity or effort to convey health messages to communities, groups, or individuals (Notoatmodjo, 2012). With this message, it is hoped that the community, group, or individual can gain knowledge about better health. From the above understanding, it can be concluded that Health Education (HE) is an educational activity carried out by spreading messages, instilling confidence so that people are not only aware, know and understand, but also willing and able to carry out a recommendation that has to do with health. Activities are carried out by disseminating information.

In previous research conducted by Citra Windani Mambang Sari (2012) Regarding family-based wound care education, significant results (p value = 0.000) had an effect on the ability to care for wounds in type 2 diabetes mellitus patients in the work area of Pasir Kaliki Public Health Center, Bandung City. From the research above, there is an influence on the level of family ability before being given Health Education and after being given Health Education, where before being given Health Education the level of family ability is less and after being given Health Education the level of family ability is good. This is due to the level of education, socioeconomic, customs, public trust, and time availability. From the research above, it has been proven that Health Education (HE) regarding wound care in patients with diabetes mellitus is very influential in the formation of wound care abilities in order to prevent further complications of gangrene wounds in patients with diabetes mellitus.

Based on the above discussion, it shows that gangrene wound care given to patients with diabetes mellitus who rarely or never does wound care can have an increasing effect on patients in performing gangrene wound care independently at home, no need to

come to the hospital every day. But an increase in Gangrene wound care is not only influenced by health education because the patients used in this study were not quarantined by the researchers so researchers could not monitor other triggering factors that could improve gangrene wound care. But judging from the condition of the patient, it can be seen that the desire and ability of the patient to treat the wound encourages the patient to believe that he will heal by taking daily wound care. An increase in the ability of the family to show that health education can really improve the knowledge and skills of the family in Gangrene Wound Car.

CONCLUSION

Health Education has a significant effect on the Family's Ability Level in gangrene wound care. Therefore, it is necessary to provide comprehensive health education about the treatment of gangrene wounds to people with diabetes mellitus with gangrene wounds as an effort to improve their health status.

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