

Analysis Transtibial Patient's Level of Knowledge in Maintaining the Health of the Stump in Prosthetics and Orthotics Clinic

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Abstract

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Prosthesis has a function to replace part of the body after amputation so amputees can continue doing their daily activities. All the prosthetic users must be educated to keep both stump and prosthesis hygiene. Based on the data of Prosthetic and Orthotic clinics report in 2013, the majority of prosthetics patients' knowledge in maintaining the health of the stump is still lacking; The stump and prosthesis condition was far from clean and maintained. This often causes problems to the skin, thus need to be avoided. Therefore this study was conducted to analyze the knowledge of patients with transtibial amputation at Prosthetic and Orthotic Clinic Polytechnic Jakarta I in maintaining stump health. Ten respondents were chosen to be part of respondents. Data retrieval method performed with *pre and post*. Data collected by interviewing respondents via questionnaire. While, leaflets were used as media to explain patients. The results showed a significant difference of patient's knowledge before and after given explanation ($p=0.002$). Knowledge value of transtibial patients increased from 10% "Good" to 80% "Good" after given explanation. Meanwhile, there is no significant relationship between age, gender and level of education to patient's knowledge of maintaining the health of the stump.

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Introduction

Knowledge is one of the human senses towards its object through the senses (eyes, nose, ears, etc.). Measurement of knowledge can be done by conducting interviews or questionnaires that ask about the content of the material that you want to measure from respondents regarding the level of knowledge (Soekidjo Notoatmodjo, 2003). Lower-limb amputees are frequently involved with skin problems. Complications occurred after amputation on the skin area becoming more sensitive, more usually dry and vulnerable. Therefore, caring and maintaining the hygiene of the stump (remaining limb) is necessary (Daniel, Rick, Nicole, 2012). The time of use of prosthesis used depends on the activity level of a person. The longer used, the stump more perspiration being produced that causes unpleasant odor if the prosthesis is not regularly cleaned the inside. It can also trigger the growth of fungi and bacteria. The result is irritation and skin diseases.

It is impartial to educate patients to take care of their stump and devices before it is delivered. According to the report on Prosthetic and Orthotic clinics in 2013, the majority of patients' awareness in maintaining stump health is still "lacking". It appears from the stump and prosthesis poor hygiene during the follow up. Some of the patients even required medication to help the skin from infection.

Methods

This research study used pre and post test methods. The study was performed at Prosthetic and Orthotic Clinic Polytechnic Jakarta I in June 2014. The population was all patients who have received transtibial prosthesis from Prosthetic and Orthotic Clinic Polytechnic Jakarta I 2013-2014, which were 68 patients. This study only took 10 respondents, who visited the clinic in June 2014 due to the unavailability of the access to gather the information from the respondents who lived in rural areas during that time.

Data were collected through interviews using questionnaires. The level of knowledge was measured by scoring the answers relating to the procedures for maintaining the health of the stump. The level of knowledge will be categorized as "good" if the respondent can answer questionnaire 76%-100% correctly while it'll be categorized as "lack of knowledge" if the respondent is only able to answer less than 56%. Score above 56% to 75% is categorized as "enough". After the first interview (pre-test) the patients are given education about how to clean and take care of the stump and prosthesis using leaflets.

Bivariate analysis with a dependent T-test method was used to determine the existence of a significant relationship to the knowledge of patients before being given education (pre-test) and after being given education (post- test) (Suharsimi, 2011).

Results

Based on the statistical test using paired T-test, there are differences in transtibial patients' knowledge in maintaining stump health before and after being given the education, with $p = 0.002$ ($p < 0.05$).

Table 1. Summary of Research Data of Transtibial Patient Knowledge Level in Maintaining Stump Health Before and After Being Given Education at Polytechnic of Health Jakarta I

Code	Before education given		After education given		Score Differences (%)
	Total correct	Score (%)	Jumlah betul total correct	Skor (%) Score (%)	
01	10	66.6	14	93.3	26.7
02	14	93.3	14	93.3	0
03	11	73.3	13	86.6	13.3
04	6	40	6	40	0
05	7	46.6	15	100	53.4
06	10	66.6	15	100	33.4
07	5	33.3	15	100	66.7
08	7	46.6	14	93.3	46.6
09	6	40	11	73.3	33.3
10	10	66.6	15	100	33.4

Based on Table 1 above, it can be concluded that, the level of transtibial patients' knowledge before and after being given education changed where the level of knowledge improved after being given education.

Table 2. Bivariate Statistics Test Results, Analysis of Transtibial Patients Knowledge in Maintaining Stump Health Before and After Being Given Education

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
pre-edukasi	57.290	10	18.9004	5.9768
post-edukasi	87.980	10	18.8040	5.9463

Table 3. Bivariate Statistics Test Results, Analysis of Transtibial Patients Knowledge in Maintaining Stump Health Before and After Being Given Education

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre-edukasi - Post-edukasi	-30.6900	21.8387	6.9060	-46.3125	15.0675	-4.444	9	.002

T test results obtained value $p=0.002$ ($p < 0.05$), which means there is a significant change in the level of knowledge of transtibial patients in maintaining stump health before and after being given education.

Discussion

The level of knowledge of transtibial patients in taking care of the stump and transtibial prosthesis increases after they are

given education using leaflets on how to clean the stump and prosthesis. It was also supported by (Soekidjo Notoatmodjo, 2003) that the provision of the information would affect cognitive function, affective, and behavior. Explanations using leaflets are more easily understood and accepted by the patients compared with only verbal explanations. This happens because the respondents had three levels; receiving, responding, respect and responsibility. Respondents receive the stimulus provided in the form of a leaflet which contains the concept of how to maintain the hygiene of the stump and prosthesis, then the respondents respond to the content of the information by answering questions correctly and proving that respondents appreciate and are responsible. Knowledge will make people think and try not to experience stump problems.

Knowledge is the result of "knowing" and this occurred after people perform sensing to a particular object. Most human knowledge is obtained through the eyes and ears. Health education in the form of education; counseling, discussions, and simulation can improve the knowledge of diarrhea significantly for the homeless in Semarang. The method that was used in the study included counseling, discussions, and simulations. Health education is a process of learning to develop a sense of right and positive attitude of individuals or groups to keep healthy so that those concerned can implement healthy living as part of their habit. There were 20 homeless aged 8 to 13 years as respondents. Results showed that there were significant differences regarding knowledge of diarrhea before and after health education in the form of counseling, discussions, and simulations to the homeless with $p=0.000$.

The study was conducted in Public Health Sciences University of North Sumatra in August 2011 about the effect of contact dermatitis to tofu makers in Mabar, Medan Deli. Contact dermatitis, which is a skin disorder often occurs in industries such as industrial plants that can reduce worker productivity. Data from Public Health Centre in Medan, Deli acquired cases of contact dermatitis approximately 93.42% and the rest were all

types of skin diseases that exist. This type of research is analyzing surveys using a quasi-experimental research design that aims to analyze the influence of giving education about contact dermatitis to the level of knowledge and attitude to tofu makers in Medan Deli Mabar, to about 76 people. Data collected by using questionnaires and observation where the previous tofu makers have been given education and counseling intervention. The results showed there was a significant effect of giving education and counseling the level of knowledge and contents of education also interfered with attitudes changed to tofu makers (Ginting et al., 2021).

Conclusion and Recommendation

From this study it can be concluded that there is a relationship between the level of knowledge of transtibial patients amputations before and after being given counseling in maintaining the health of the stump (Suharsimi, 2011). The increase of patients' knowledge after the explanation about how to maintain the hygiene of the stump and prosthesis by using leaflets, making them easier to understand.

To all patients who use assistive devices such as prostheses in order to maintain the hygiene of stump is always healthy and protected from various kinds of problems, and knowledge in taking care of the prosthesis, in terms of hygiene that will affect the health of the stump (Esquenazi & DiGiacomo, 2001). Prosthetists and Orthotists expected to provide clear information to all transtibial patients on how to maintain good health of the stump. Researchers are aware of the shortcomings found in this study, and therefore for further research, the advice to use more respondents involved and can add other variables such as occupation, socioeconomic level, and the condition of the neighborhood. This can be done to describe the phenomenon that occurs at the present (Baars et al., 2008; Suharsimi, 2011).

References

- Baars, E. C. T., Dijkstra, P. U., & Geertzen, J. H. B. (2008). Skin problems of the stump and hand function in lower limb amputees. *Prosthetics & Orthotics International*, 32(2), 179-185. <https://doi.org/10.1080/03093640802016456>
- Daniel, Rick, Nicole, L. (2012). *Contemporary medical-surgical nursing (SECOND)*. Clifton Park, NY : Delmar, Cengage Learning.
- Esquenazi, A., & DiGiacomo, R. (2001). Rehabilitation After Amputation. *Journal of the American Podiatric Medical Association*, 91(1), 13-22. <https://doi.org/10.7547/87507315-91-1-13>
- Ginting, E., Damayanti, D., Fetarayani, D., & Hidayati, A. N. (2021). Contact Dermatitis in Tertiary Hospital: A 2-year Retrospective Study. *Berkala Ilmu Kesehatan Kulit Dan Kelamin*, 33(2), 88. <https://doi.org/10.20473/bikk.V33.2.2021.88-92>
- Soekidjo Notoatmodjo. (2003). *Pendidikan dan perilaku kesehatan / Soekidjo Notoatmodjo*. Rineka Cipta.
- Suharsimi, A. (2011). *Prosedur penelitian : suatu pendekatan praktik*. Rineka Cipta.