

## EDUCATION ON THE APPLICATION OF FOOT EXERCISES TO PREVENT FOOT ULCER IN DIABETES MELLITUS PATIENTS AT THE ELDERLY POSYANDU IN TENDA 2

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### Abstract

Diabetic foot ulcers (DFU) are one of the most common complications in DM patients, 15-20% of patients who experience DFU must be amputated (Fawzy et al, 2019). Preventive measures and rehabilitation measures are the basic principles of treating diabetic foot. Rehabilitation measures include integrated programs, namely evaluation of ulcers, control of metabolic conditions, wound debridement, bacterial cultures, appropriate antibiotics, rehabilitation surgery and medical rehabilitation. Preventive measures include education on foot care, diabetes shoes and foot exercises (Yudhi, 2009). This community service activity was carried out in a Tenda 2 to be precise at the Tenda 2 elderly Posyandu, Langke Rembong District, Manggarai Regency. This community service activity was carried out in several stages, the first stage was identification of the number of DM sufferers at the Elderly Posyandu Tenda 2, then during the activities of the Elderly Posyandu there would be education about the importance of foot exercises to prevent diabetic ulcers, after that a video was played while teaching the elderly how to do leg exercises.

**Keywords:** Diabetic Foot Ulcer, Foot Exercise

### INTRODUCTION

Diabetes mellitus (DM) is a degenerative disease characterized by increased sugar in the blood, which causes an increase in blood sugar due to lack of insulin. This increase in blood sugar is closely related to the modern lifestyle where many food choices and lifestyles are less healthy in today's society. Diabetes mellitus itself is a disease that increases morbidity and death rates in the world. In 2017, there were around 425 million people suffering from DM, and about 75% came from families with lower middle income. Indonesia itself occupies the 6th position as the country with DM sufferers, approximately 6.3% of the total population in Indonesia, and as a large number of DM patients experience complications (IDF, 2017). According to research data in Manggarai alone, the number of patients suffering from DM was 535 people in 2019 (Ningsih, O.S., Iwa, K.R., Simon, M.G & Sinar, K.A, 2021).

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20% of patients with DFU must be amputated (fawzy et al, 2019). Preventive measures and rehabilitation measures are the basic principles of diabetic foot processing. Rehabilitation actions include integrated programs, namely tukat evaluation, metabolic condition control, wound debridement, germ culture, appropriate antibiotics, surgical rehabilitation and medical rehabilitation. Preventive measures include foot care education, diabetic shoes and foot gymnastics (Yudhi, 2009).

Foot gymnastics is an exercise performed for DM sufferers or non-sufferers to prevent injury and help improve blood circulation of the legs (soebagio, 2011). As one of the health workers, nurses have a role as educators and guide DM sufferers to do foot senanm until the patient is able to do it independently. Movements performed in foot gymnastics can improve blood circulation in the legs, improve blood circulation, and strengthen leg muscles and facilitate leg joint movements. With the implementation of senanm kakai, it is hoped that DM sufferers can treat their feet well and can avoid foot ulcers and can improve the quality of life of DM patients (Anneahira, 2011).

Based on data taken at BLUD dr. Ben Mboi around 17 DM patients who experience DFU, and based on preliminary data taken at the city health center, it was found that, Most DM patients know of complications such as DFU in DM, but have never done leg exercises to facilitate blood circulation in the legs. Based on this data, the author wants to do community service about education on the application of foot gymnastics to prevent foot ulcers in diabetes mellitus patients at the elderly posyandu tent 2. The urgency of this activity is to improve DM patients so that they can continue their usual activities even though they suffer from degenerative diseases.

Based on existing data, the solution provided by the author is to provide education about foot gymnastics for DM patients or those who have not experienced DM, in addition to training posyandu cadres how to do foot gymnastics so that later cadres can teach the elderly who follow the elderly posyandu to do this foot exercise. This activity is useful for improving the degree of health and quality of life of patients with DM so that later they will avoid DFU and leg amputation which are complications of diabetes mellitus patients.

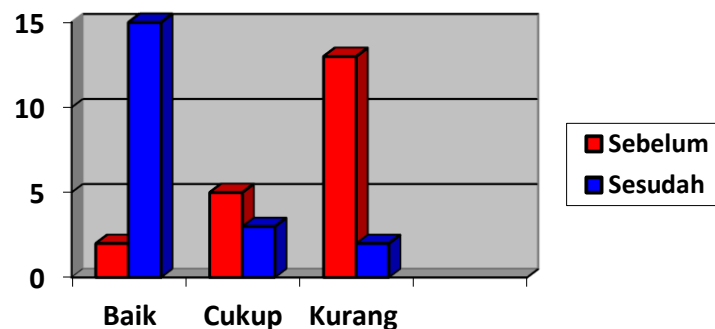
## **IMPLEMENTATION METHOD**

This community service activity was carried out in a tent, precisely at the tent 2 elderly posyandu, Tenda sub-district, Langke Rembong District, Manggarai regency. This activity will be carried out for 2 days on May 9-10, 2023. This community service activity is carried out in several stages, the first stage is the identification of the number of DM sufferers in the elderly Posyandu Tenda 2, from the identification results it was found that the number of DM sufferers at the Posyandu was 20 people suffering from diabetes mellitus.

After that, on the day of the elderly posyandu, the community service team conducted counseling by distributing leaflets and playing foot gymnastics videos to be practiced together with the elderly. On the following day, the service team conducted training for posyandu cadres so that they could continue to do foot exercises during elderly posyandu activities.

## RESULTS AND DISCUSSION

This community service activity is carried out in 2 stages. That is the preparation stage and the implementation stage. At the preparation stage, the service team identified the number of elderly with diabetes in the Tenda 2 posyandu area and from the data it was obtained that the number of elderly people with diabetes mellitus was 20 people. After getting the number of elderly people with diabetes, the team then discussed with the person in charge of the posyandu to involve the team in posyandu activities in tent 2. On May 9, 2023, the posyandu activity in Tent 2 was carried out, the service team was given the opportunity to conduct counseling for the elderly. Before conducting counseling, the team distributed questionnaires containing questions about the knowledge of the elderly about diabetic foot exercises, where the same questionnaire was also redistributed after the counseling activities were carried out.



**Graph 1 Graph of differences in knowledge of the elderly before and after counseling.**

After being given a questionnaire to measure the knowledge of the elderly about diabetic foot sneak, the team conducted counseling, where this counseling was explained about what foot gymnastics is, the purpose and benefits of doing foot gymnastics and the movements of doing foot gymnastics. After that, the team played a video containing the movements of foot gymnastics, after the video was watched, the service team together with the elderly did the initial gymnastics as a warm-up and then continued by demonstrating foot gymnastics as had been practiced through video, when doing practice with the elderly, the video of diabetic foot gymnastics was still played. After the activity was carried out, the team again distributed questionnaires so that they could get post test results from this activity.

Based on the graph shown, it can be seen that there are changes in knowledge that occur in the elderly. Before counseling or pretest, it was seen that most of the elderly were included in the category of lack of knowledge, although from the results it was also seen that there were also some elderly who were included in the category of good knowledge. The graph also shows that there is an increase in knowledge after counseling, the elderly show an increase in knowledge shown by the graph that most of the elderly are in the category of good knowledge. The knowledge referred to in this case is knowledge about the understanding of foot care and diabetic foot exercises, the purpose of foot care and physical exercise in the form of foot gymnastics, the benefits of foot care and physical exercise in the form of foot gymnastics, things included in the treatment of foot diabetes mellitus and steps for implementing foot gymnastics. It is hoped that with this knowledge, the elderly can avoid complications from diabetes mellitus which include blood vascular disorders, neuropathy and foot infections seen in participants with diabetes mellitus. Diabetic foot is any form of disorder that occurs in the foot caused by diabetes

mellitus which can be in the form of ulcers, infections and gangrene and Charcot's arthropathy (Mustafa, 2016). One of the biggest risk factors for diabetic foot is the presence of peripheral neuropathy disorders, so controlling blood sugar levels regularly and preventing injuries to the feet is very necessary in preventing diabetic foot (Desalu et al., 2011). Therefore, examination, treatment and diabetic foot exercises are highly recommended for people with diabetes mellitus to prevent complications of diabetic neuropathy.

The next day the service team conducted training and counseling for elderly posyandu cadres, it was hoped that there would be foot gymnastics training and counseling. The cadres are able to perform and teach the elderly every time this elderly posyandu activity takes place. The cadres were very enthusiastic about participating in this training activity and were excited. During the activity the cadres actively asked questions and actively demonstrated leg gymnastics.



**Picture 1 The team conducts counseling to the elderly before gymnastics together**



**Figure 2 Doing gymnastics together with the elderly**

## **CONCLUSION**

This activity is one of the community service activities with the theme of Health, where Health is still a problem that is still quite high in Indonesia. Degenerative diseases are still one of the diseases with a fairly high incidence including Diabetes mellitus, and not a few who experience complications so that they must be amputated. Through this devotion, it is expected to be able to change the lifestyle of the elderly so that they can do leg exercises and avoid all the complications that occur.

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