**Abdimas Umtas: Jurnal Pengabdian Kepada Masyarakat**
**LPPM-Universitas Muhammadiyah Tasikmalaya**
Volume: 8, Issue: 4, October, 2025; pp: 1924-1928
E-ISSN: 2614 - 8544

# Workshop on the Implementation of Video-Based Guidelines for Diabetic Foot Prevention in the Community of Sungai Ambangah Village, Kubu Raya, West Kalimantan

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## ABSTRACT

Diabetic foot ulcer is one of the common complications experienced by patients with diabetes mellitus (DM). Loss of sensation in the distal part of the foot due to peripheral neuropathy is one of the triggering factors for the occurrence of ulcers. If not treated promptly, ulcers may progress into severe infections that can lead to amputation. Therefore, patients with DM need to be aware of early signs that may cause the development of ulcers. Independent assessment and care of diabetic feet should be carried out by patients themselves to optimally prevent diabetes complications; hence, guidelines or protocols are needed as a reference for patients in performing the steps of foot assessment and care to prevent diabetic foot ulcers. This activity aimed to train the community, particularly in Sungai Ambangah Village, Kubu Raya, West Kalimantan, in applying the guidelines for diabetic foot prevention, which was conducted on December 29, 2024. The implementation method included several stages: a survey of the target group, preparation of facilities and infrastructure, implementation of the activity, and evaluation. The results showed that the majority of participants were between 46–55 years old (18 participants, 60%), female (17 participants, 56.67%), had suffered from DM for more than 5 years (21 participants, 70%), and achieved an average difference score of 21.13 in their ability to apply the guidelines for diabetic foot prevention after the workshop. The average N-Gain Score was 57.37. Since the average N-Gain Score falls within the range of 56–75, this indicates that the workshop on the implementation of diabetic foot prevention guidelines was effective in improving participants' ability to perform diabetic foot assessment and care.

## ARTICLE INFO

***Article History***:
*Submitted/Received: 26 August 2025*
*First Revised: 17 September 2025*
*Accepted: 25 October 2025*
*First Available online: 31 October 2025*
*Publication Date: 31 October 2025*

***Keyword***:
Diabetes Mellitus
Diabetic Foot Prevention
Video-Based Education


https://doi.org/10.35568/abdimas.v8i4.7113

## INTRODUCTION

Diabetes mellitus (DM) is a chronic disease that affects millions of people worldwide and is associated with a high burden of morbidity and mortality. Globally, an estimated 1.5 million deaths each year are directly attributable to diabetes, and its prevalence has continued to rise over the past decades. One of the most serious complications of DM is diabetic foot, which often presents as ulcers that may become infected, require amputation, and ultimately reduce patients' quality of life (ADA, 2020). By 2030, the number of diabetes cases worldwide is projected to reach 643 million and further increase to 783 million by 2045. More than three-quarters of adults with diabetes live in low- and middle-income countries. In 2021, diabetes caused 6.7 million deaths—equivalent to one death every five seconds—while 541 million adults were reported to have impaired glucose tolerance (IGT), placing them at high risk of developing type 2 diabetes (IDF, 2021).

Indonesia ranks fifth globally in the number of people with DM, with 20.4 million cases in 2024, a figure projected to rise to 28.6 million by 2050 (IDF, 2025). National health surveys also indicate that the prevalence of diabetes among Indonesians aged ≥15 years has increased from 6.9% to 10.9%. In West Kalimantan, the prevalence of diabetes based on physician diagnoses reached 28,343 cases in 2018, with Pontianak City recording the highest number (3,611 cases), followed by Kubu Raya District (3,235 cases) and Sambas District (3,025 cases) (Riskesdas, 2018).

Diabetic ulcers are among the most common complications in patients with DM. Peripheral neuropathy, characterized by loss of sensation in the distal foot, is a major factor contributing to ulcer formation (Pratama et al., 2023). Without proper management, ulcers may progress to severe infections and eventually require amputation (Yusuf et al., 2016). These risks highlight the critical importance of raising awareness among DM patients about the early signs and symptoms of ulcers and encouraging the implementation of effective foot care practices.

Accordingly, regular assessment and preventive care are essential to reduce the risk of diabetic foot complications. Foot assessment provides valuable information regarding foot health, while appropriate foot care helps patients maintain foot integrity and prevent injuries (Andrei Cristian & Amorin Remus, 2018). However, the success of such preventive measures depends greatly on patient understanding and adherence to the recommended guidelines.

A preliminary field study conducted in Sungai Ambangah Village, Kubu Raya, revealed significant gaps in diabetic foot education. Interviews with healthcare workers indicated that health education on foot assessment and care had already been provided, yet the number of patients presenting with wound infections remained high. Furthermore, residents reported that although they had received counseling and were given guidebooks on foot care, the materials were difficult to understand, leading them to repeatedly consult nurses for clarification.

These findings underscore the limitations of traditional written health education and point to the need for more accessible, engaging, and user-friendly approaches. In response, a video-based intervention has been developed to provide clearer and more practical guidance on diabetic foot prevention. Video media not only offer visual demonstrations but also enhance comprehension and retention of key messages, making them a promising tool for community-based health education. This approach represents an innovative strategy to bridge the gap between knowledge dissemination and patient adherence in diabetic foot care, particularly in resource-limited settings such as rural Indonesia.


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## METHOD

Community service activity is carried out in partnership with the Institute for Branch, Sub-Branch, and Mosque Development (LPCR-PM) of Muhammadiyah Regional Leadership, West Kalimantan. The methodological approach of this activity consists of the following stages: Target Group Survey. The first stage aims to gather information about locations and objectives that have not previously received similar assistance. This stage has been conducted by the author, assisted by the LPCR-PM DPW West Kalimantan partner, in understanding the situation and conditions of the target group. Preparation of Facilities and Infrastructure. This stage focuses on preparing the facilities and infrastructure that will support the activity. Preparations include the venue and location to be used. Other necessary facilities will be arranged gradually, taking into consideration the level of need. Implementation of the Action Program. The core component of this program is providing training on diabetic foot care for community leaders, village health cadres, and families with members who have diabetes mellitus and are at risk of diabetic foot ulcers. Patients will also be equipped with a protocol in the form of a developed video. At this stage, the author will be assisted by students and the team in delivering and disseminating the contents of the protocol and instructions for its use. The activity will begin with an explanation of the protocol, after which participants will be asked to demonstrate the protocol content as presented in the video. This activity also serves as an implementation of the Basic Wound Nursing course; thus, students participating in this program will earn 1 practicum credit from the course. Evaluation: The evaluation stage consists of two phases: short-term evaluation and long-term evaluation. In the short-term evaluation, after the training activity, the community will be provided with feedback regarding guidance in assessing and caring for diabetic feet. In the long-term evaluation, the partners will assist in evaluating the use of the video-based protocol. The expected outcome of the evaluation is that the community truly understands and can prevent complications from diabetic foot ulcers.

## RESULT AND DISCUSSION

The workshop on the implementation of diabetic foot prevention guidelines involving 30 participants with diabetes mellitus in Sungai Ambangah Village, Kubu Raya Regency, West Kalimantan, revealed that the majority of participants were in the age range of 45–55 years, categorized as middle adulthood, totaling 18 individuals (60%). This finding indicates that diabetes generally begins to manifest when individuals enter a vulnerable age, particularly after 45 years. Individuals aged over 45 years have a higher risk of developing diabetes mellitus as well as glucose intolerance. This condition is influenced by degenerative factors, namely the decline in physiological functions, particularly the reduced capacity of beta cells to produce insulin, which consequently leads to an increase in blood glucose levels (Prasetia et al., 2021). In terms of gender, the majority of participants were female, totaling 17 individuals (56.67%). This finding is consistent with the study conducted by Fauzia et al. (2015), which also reported that the majority of respondents were female, amounting to 26 individuals (86.7%). Data from the 2018 Basic Health Research further demonstrated that the prevalence of diabetes mellitus is higher among women. This increased risk is associated with a greater tendency toward higher body mass index, menstrual cycle disturbances, and hormonal changes during menopause, all of which contribute to fat accumulation and impaired glucose transport into cells (Hayima & Fitriani, 2020). Based on disease duration, the majority of respondents had been living with diabetes mellitus for more than 5 years, totaling 21 individuals (70%). This result is consistent with the study conducted by Simajuntak in 2020, which reported that the majority of patients with diabetes mellitus had a disease duration of more than 5 years (53.5%) (Simanjuntak & Simamora, 2020). The longer an individual experiences diabetes mellitus


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accompanied by hyperglycemia, the higher the risk of developing chronic complications due to abnormal blood glucose levels. Disease duration may reflect the degree of pathogenicity of diabetes mellitus. The increasing incidence of diabetes mellitus over time is largely influenced by genetic factors, lifestyle patterns, and environmental conditions (Hamzah et al., 2021)

The results of this activity demonstrated an improvement in participants' skills in assessing and caring for diabetic feet after the dissemination of a video on the application of the Diabetic Foot Assessment and Care Protocol in lay language, with an average difference of 21.13% and a mean N-Gain Score of 57.37%. This finding is consistent with the study conducted by Rahmasari & Anggraini (2023), which reported that health education delivered through video was highly effective in improving knowledge for the prevention of diabetic foot ulcers among patients with type II diabetes mellitus. Similarly, research by Wicahyani (2021) indicated that video-based education effectively enhanced family support in preventing diabetic foot complications. The use of audiovisual media in health education has been proven to be more effective than single media approaches. Audiovisual media can enhance cognitive absorption and strengthen memory retention, with recall ability reaching 50%, compared to audio media (10%) and visual media (40%). Moreover, message retention rates with audiovisual media are superior, at 85% for < 3 days and 65% for > 3 days, while audio and visual media show a more significant decline in retention rates (Wicahyani et al., 2021).

## CONCLUSION

The community service activity in the form of a Workshop on the Implementation of Diabetic Foot Prevention Guidelines was successfully carried out. A total of 30 participants attended and completed the entire series of activities. The majority of participants were individuals with diabetes mellitus in the middle-adulthood age group, with a disease history of more than 5 years. The implementation of this activity also demonstrated an improvement in participants' skills in applying the diabetic foot prevention guidelines.

## ACKNOWLEDGMENTS

The author would like to express sincere gratitude to the Council for Higher Education, Research, and Development of the Central Board of Muhammadiyah for providing the grant under the Community Service Scheme Batch VIII. Appreciation is also extended to the Muhammadiyah Institute of Technology and Health, West Kalimantan, for their support, which enabled the successful implementation of this activity.

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