

# Improving Knowledge Of DMT2 Patients Through D-Edu Moving Stories (MS)



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**Abstract:** Diabetes mellitus (DM) is a chronic pancreatic disease caused by insulin deficiency or the body's inability to properly use the insulin produced. Hyperglycemia, or increased blood sugar, is one of the symptoms of DM. The purpose of Community Service is to increase the knowledge of Type 2 DM Patients Through D-EDU Moving Stories (MS) at the Kota Tengah Community Health Center. The method used is to provide counseling through D-Edu MS to DM patients at the Kota Tengah Community Health Center with a total of 35 patients. Pre and post data collection on knowledge using questionnaires. The results of the Community Service activities obtained results that there was an increase in knowledge both after the provision of D-Edu MS from 12 respondents (34.3%) to 33 respondents (94.3%). The conclusion of the activity is that providing education is very useful for patients in obtaining information in preventing and controlling DM so that serious complications do not occur

**Keywords:** Type 2 Diabetes Mellitus (T2DM); Diabetes Education; Health Education; Patient Knowledge

## 1. Introduction

Diabetes mellitus (DM) is a chronic metabolic disease characterized by persistent hyperglycemia resulting from impaired insulin secretion, insulin action, or both. Among its various types, Type 2 Diabetes Mellitus (T2DM) accounts for approximately 90–95% of all diabetes cases worldwide. If not properly controlled, T2DM can lead to serious complications affecting the cardiovascular system, kidneys, eyes, nerves, and blood vessels, thereby increasing morbidity, mortality, and healthcare costs (American Diabetes Association, 2025).

The global burden of diabetes continues to rise at an alarming rate. According to the International Diabetes Federation (IDF), approximately 589 million adults aged 20–79 years were living with diabetes in 2025, and this figure is projected to reach 853 million by 2050. Indonesia is among the countries with the highest number of diabetes cases in the Southeast Asian region, reflecting the urgent need for effective strategies to improve diabetes prevention and management (IDF, 2025). At the local level, data from the Gorontalo Provincial Health Office also indicate a high number of diagnosed diabetes cases, demonstrating that diabetes remains a significant public health challenge in the province.

Despite advances in medical treatment, effective diabetes management relies heavily on patients' ability to perform appropriate self-management behaviors. Unfortunately, many individuals with T2DM still have limited knowledge regarding healthy dietary practices, medication adherence, blood glucose monitoring, physical activity, and the prevention of diabetes-related complications. Insufficient knowledge often leads to poor self-care practices, uncontrolled blood glucose levels, increased risk of complications, and reduced quality of life. Preliminary observations at the selected community health center also revealed that the incidence of T2DM is relatively high, while patients' understanding of diabetes management remains inadequate. Health education activities are generally delivered through conventional lectures and printed leaflets, which have limited effectiveness in maintaining patient engagement and improving long-term knowledge retention.

Diabetes Self-Management Education and Support (DSMES) has been widely recognized as an evidence-based intervention that improves diabetes knowledge, self-care behaviors, and health outcomes. One effective strategy within DSMES is peer education, where individuals with personal experience in successfully managing diabetes provide education, encouragement, and emotional support to fellow patients. This approach creates a more comfortable learning environment because patients tend to trust and relate more easily to people who share similar experiences (Shenoy, 2020; Azmiardi et al., 2021).



To further enhance the effectiveness of diabetes education, innovative learning media are needed. D-Edu Moving Stories (MS) is a digital educational innovation that integrates evidence-based diabetes education with engaging visual storytelling and animation. Through realistic patient narratives, D-Edu Moving Stories delivers educational messages in a simple, interactive, and emotionally engaging format, making health information easier to understand and remember. Story-based educational approaches have been shown to improve knowledge acquisition, motivation, and behavioral change by connecting health messages with patients' everyday experiences (Sharma et al., 2024).

Considering the high prevalence of T2DM, the limited knowledge among patients, and the need for more engaging educational methods, this community service program introduces D-Edu Moving Stories (MS) as an innovative health education intervention. The program aims to improve the knowledge of patients with Type 2 Diabetes Mellitus regarding disease management, promote better self-management practices, and ultimately contribute to the prevention of diabetes-related complications and improvement of patients' quality of life.

**2. Materials and Methods**

This community service activity was conducted using a health education approach targeting patients with Type 2 Diabetes Mellitus (T2DM) at the selected community health center. The program consisted of three main phases: preparation, implementation, and evaluation.

During the preparation phase, the community service team coordinated with the health center management and the person in charge of the Prolanis (Chronic Disease Management Program) to determine the schedule and participants. Educational materials were developed using the D-Edu Moving Stories (MS) media, an interactive digital storytelling approach designed to improve participants' understanding of diabetes management. In addition, a knowledge questionnaire was prepared to assess participants' understanding before and after the educational intervention. The venue, audiovisual equipment, and other supporting facilities were also arranged in collaboration with the community health center.

The implementation phase began with the invitation and registration of T2DM patients through the Prolanis program. On the scheduled day, participants completed a pre-education knowledge questionnaire, followed by a health education session delivered using the D-Edu Moving Stories (MS) media. The educational session covered essential topics related to Type 2 Diabetes Mellitus, including disease understanding, healthy lifestyle modification, medication adherence, blood glucose monitoring, and prevention of complications. The session was conducted interactively, allowing participants to ask questions and discuss their experiences. At the end of the session, participants completed the same questionnaire to evaluate changes in their knowledge.

The evaluation phase focused on both the implementation process and the educational outcomes. Process evaluation assessed participant attendance, the availability of facilities and educational media, adherence to the planned schedule, and the effectiveness of communication throughout the activity. Outcome evaluation was conducted by comparing participants' knowledge before and after the educational intervention using the questionnaire results. A total of 35 patients with Type 2 Diabetes Mellitus participated in the activity, which was conducted according to the planned schedule from 09:00 to 10:30 WITA. Overall, the educational session proceeded smoothly, participants were actively engaged throughout the discussion, and the D-Edu Moving Stories (MS) media was successfully utilized as an innovative educational tool to improve patients' knowledge regarding diabetes management.

**3. Results**

**Table 1.** Knowledge of Type 2 DM Patients About DM Disease through D-EDU MS at the Kota Tengah Community Health Center

| Variable       | Good |      | Less |      | Total |     |
|----------------|------|------|------|------|-------|-----|
|                | n    | %    | n    | %    | n     | %   |
| Pre Knowledge  | 12   | 34,3 | 23   | 65,7 | 35    | 100 |
| Post Knowledge | 33   | 94,3 | 2    | 5,7  | 35    | 100 |

Based on the table above, it shows that of the 35 respondents who had good knowledge before being given D-Edu MS, there were 12 respondents (34.3%) and 23 respondents (65.7%) had poor knowledge, while after being given D-Edu MS, there was an increase in good knowledge, namely 33 respondents (94.3%) and poor knowledge decreased to 2 respondents (5.7%).





Figure 1. Opening of PkM Activities by the Head of the Central City Health Center



Figure 2. PkM Implementation Activities

**4. Discussion**

The community service program demonstrated that health education delivered through D-Edu Moving Stories (MS) has the potential to improve knowledge among patients with Type 2 Diabetes Mellitus (T2DM). Knowledge is the result of an individual's cognitive process in recognizing and understanding information obtained through the senses, particularly hearing and vision. The level of knowledge acquired depends on the intensity of attention, perception, and the individual's ability to process the information received (Notoatmodjo, 2014). Therefore, educational methods that actively engage both visual and auditory senses are more likely to enhance learning outcomes.

Health education is a planned process that aims to improve knowledge, shape positive attitudes, and encourage individuals to adopt healthier behaviors. Beyond merely transferring information, effective health education empowers individuals to make informed decisions regarding disease prevention and management (Evi Martalinda Harefa, 2025). In patients with T2DM, adequate knowledge is a fundamental component of successful self-management because it influences adherence to medication, dietary modification, regular physical activity, blood glucose monitoring, and the prevention of long-term complications.

The use of D-Edu Moving Stories (MS) as an educational medium provides a more engaging learning experience by combining evidence-based health information with visual storytelling. Compared with conventional lectures or printed materials, story-based digital media are more attractive, easier to understand, and more memorable because they present information through real-life scenarios that patients can relate to. This interactive approach encourages participants to pay closer attention, actively participate in discussions, and retain the educational messages more effectively.

These findings are consistent with previous studies indicating that structured health education significantly improves patients' knowledge. Providing clear, systematic, and repeated educational interventions helps participants understand and remember essential health information more effectively (Ilham, Zainuddin, & Suardi, 2024). Likewise, Khurin et al. (2022) and Suardi et al. (2021) reported that increasing patients' knowledge through educational interventions contributes to better understanding of disease management and supports healthier behavioral changes.



Improved knowledge among patients with T2DM is expected to contribute to better diabetes self-management, including greater adherence to treatment, healthier lifestyle practices, regular blood glucose monitoring, and early recognition of potential complications. In the long term, these improvements may help reduce the progression of diabetes-related complications, improve patients' quality of life, and strengthen the effectiveness of chronic disease management programs implemented at primary healthcare facilities. Furthermore, the successful implementation of D-Edu Moving Stories (MS) demonstrates that innovative digital educational media can serve as an effective and practical strategy for community-based diabetes education.

## 5. Conclusions

The implementation of community-based health education using D-Edu Moving Stories (MS) was successfully conducted and demonstrated its potential as an innovative educational approach for patients with Type 2 Diabetes Mellitus (T2DM). The use of interactive digital storytelling facilitated participants' understanding of diabetes management by presenting health information in an engaging and easy-to-understand format. The educational activity contributed to improving participants' knowledge regarding diabetes, healthy lifestyle practices, medication adherence, blood glucose monitoring, and the prevention of complications.

This community service program highlights that D-Edu Moving Stories (MS) can be utilized as an effective educational medium to support diabetes self-management education in primary healthcare settings. Continuous implementation of innovative educational strategies is recommended to strengthen patients' knowledge, encourage sustainable self-care behaviors, and ultimately improve health outcomes and quality of life among individuals with T2DM.

## Conflict of Interest

No conflicts of interest

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