



Publish by: STIKes Karsa Husada Garut

Jurnal Pengabdian Masyarakat DEDIKASI

Homepage: <https://dedikasi.lp4mstikeskhg.org/home>

OPTIMIZATION OF LEAFLET MEDIA IN DIABETES EDUCATION FOR ADOLESCENTS AS A PREVENTION STRATEGY IN THE SETIARATU VILLAGE OF TASIKMALAYA CITY

ARTICLE INFO

Article history:

Received December 02nd, 2025

Revised December 18th, 2025

Accepted December 23rd, 2025

Keywords:

Adolescents, Diabetes Mellitus, Health education, Leaflets, prevention

ABSTRACT

Diabetes mellitus (DM) is a non-communicable disease whose prevalence continues to increase, including among adolescents. Lack of knowledge and awareness among adolescents about risk factors and prevention of DM can increase the likelihood of developing DM in adulthood. This community service activity aims to optimize the use of leaflets in educating adolescents about diabetes mellitus as an early prevention strategy. The method of implementation includes providing health education using leaflets containing information about DM, risk factors, signs and symptoms, and prevention efforts through the application of a healthy lifestyle. The target of this activity is adolescents living in the Setiaratu Village, Cibeureum District, Tasikmalaya City. This activity was carried out as part of the Tasikmalaya Health Polytechnic's IPTEKS community service program for the community (IbM). The activity was carried out in October 2025. The training results showed that adolescents' knowledge scores about diabetes mellitus increased by 30 points compared to before. Statistically, using the Wilcoxon test, the results showed a difference in the average knowledge scores before and after training, with a significance level of $p = 0.0001$ ($p < 0.05$). It is hoped that after receiving this training, adolescents will contribute to increasing public knowledge about Diabetes Mellitus. Thus, the optimization of leaflets has proven effective as a health education tool in increasing adolescents' awareness and knowledge about Diabetes Mellitus as an early prevention effort.

Keywords: Adolescents, Diabetes Mellitus, Health education, Leaflets, prevention

This is an open access article under the [CC BY-NC](https://creativecommons.org/licenses/by-nc/4.0/) license.



Corresponding Author*:

Peni Cahyati^{1*}, Dudi Hartono², Dewi Aryanti³, Yudi Triguna⁴, Tetet Kartilah⁵, Kusmiyati⁶, Sofia Februanty⁶,
Novi Indriani⁷, Novi Enis Rosuliana⁸, Syaukia Adini⁹
Tasikmalaya Health Polytechnic
Correspondent Email: peni_poltekestsm@yahoo.com*

1. INTRODUCTION

Diabetes Mellitus (DM) is a chronic metabolic disease characterized by elevated blood sugar levels and is classified as a non-communicable disease whose prevalence continues to increase worldwide and in Indonesia (Suharta & Lungguh Perceka, 2024). Recent data shows that school-based health education is an important strategy in early DM prevention efforts because it can increase adolescents' knowledge and awareness of healthy lifestyle habits and risk factors (Utami, 2025). The increase in the incidence of Diabetes Mellitus is generally preceded by prediabetes as an early stage of metabolic disorders that have the potential to develop into diabetes if preventive measures are not taken early on (Nuridah, 2024).

Prediabetes is a condition in which blood glucose or glycated hemoglobin concentrations are above normal but do not yet meet the criteria for diabetes mellitus (DM), which includes impaired glucose tolerance (IGT) and impaired fasting glucose (IFG). Based on the latest data published by the Indonesian Ministry of Health website, in 2021 the International Diabetes Federation conducted a survey which found that 19.47 million Indonesians have diabetes, placing Indonesia fifth among the countries with the highest number of diabetes sufferers in the world (KEMENKES, 2025).

The high number of diabetes mellitus patients in Tasikmalaya City indicates that this issue is a public health concern that requires serious attention. Therefore, comprehensive and sustainable prevention efforts are needed through a promotive and preventive approach, especially among adolescents as a high-risk population in the future (Perceka et al., 2022). Based on data from the Tasikmalaya City Government Open Data, in 2023, the number of people with diabetes mellitus in Tasikmalaya City was recorded at 11,782 (DINKES, 2024).

Preventive measures for diabetes mellitus need to be taken from an early age, especially among adolescents, through increasing knowledge, attitudes, and healthy behaviors (... et al., n.d.). School-based health education is an effective promotive and preventive strategy because schools are strategic environments for shaping long-term health behaviors. Through appropriate health education, it is hoped that adolescents will be able to understand the risk factors for diabetes mellitus and adopt a healthy lifestyle as a preventive measure from an early age (Nababan, 2026).

Leaflet-based health education is an effective method in increasing the knowledge of DM patients. Leaflets have the advantage of presenting information that is concise, easy to understand, and can be carried anywhere, allowing patients to access information at any time (Mardiana, 2025).

Based on initial observations of adolescents in Setiaratu Village, Tasikmalaya City, it was found that the information adolescents receive about DM is still general in nature and does not specifically discuss the prevention of DM (Muhammad et al., n.d.). Therefore, in this community service activity, the volunteers will equip adolescents with knowledge about DM through leaflets.

2. METHODS

The activity carried out was training to increase adolescents' knowledge about diabetes in the Setiaratu Village, Cibeureum District, Tasikmalaya City. The purpose of the activity was to provide knowledge through leaflets. The sample in this activity consisted of 20 adolescents. The activity was carried out in October 2025. The media used in the training was a leaflet about diabetes. Assessment was conducted by distributing pretest and posttest questionnaires to all participants.

The methods used in the activity were lectures and discussions. Participants were divided into two groups. Each group was given time to read and understand the material in the leaflets, followed by discussions/question and answer sessions. In addition to community service members, eighth-semester applied nursing students were also involved in delivering the material.

The pretest and posttest data were then analyzed. The analysis techniques consisted of data normality tests, univariate tests, and bivariate tests. The results of the data normality test on the knowledge variable of cadres before training with the Shapiro Wilk test ($n < 50$) obtained a value of $\rho = 0.0001$ ($\rho < 0.05$) and the knowledge variable of cadres after training with the Shapiro Wilk test ($n < 50$) obtained a value of $\rho = 0.0001$ ($\rho < 0.05$). Therefore, it can be concluded that both variables are not normally distributed. After performing data normality transformation, the results remained non-normal.

Optimization Of Leaflet Media In Diabetes Education For Adolescents As A Prevention Strategy In The Setiartatu Village Of Tasikmalaya City

3. RESULT AND DISCUSSION

Table 1. Average knowledge scores of adolescents before and after mental health training (n=20)

No.	Knowledge Score Variable	Mean Median	Min - Max Score
1	Before Training	60	58 - 80
2	After Training	90	75 - 98

The average knowledge scores of cadres before and after the Diabetes Mellitus training can be seen in Table 1 above. The results of the normality test for both variables showed that the data were not normally distributed; the mean was taken from the median value. The analysis revealed that the average knowledge score before the training was 60 (58-80) and after the training was 90 (75-98). The difference in the average knowledge scores of adolescents before and after the Diabetes Mellitus training can be seen in Table 2 above. The results of the normality test for both variables were not normally distributed, so the non-parametric Wilcoxon Signed Ranks Test was used. The Wilcoxon test yielded a p value of 0.0001 ($p < 0.05$), therefore, H_0 was rejected. It can be concluded that there was a significant difference between adolescents' knowledge scores before and after the Diabetes Mellitus training, with an average increase of 30 points after the training (Lemelman et al., 2018).

Table 2. Difference in average knowledge scores of adolescents before and after DM training (n=20)

	Mean Median	Min-Max	Mean Difference	p
Before Training	60	50 -80	29	0,0001
After Training	90	75 - 98		
$Z=-5,515 n = 20$				

This community service activity began with a pretest, followed by socialization and presentation of material so that training participants could understand the concept of diabetes. During the activity, participants listened very seriously to the material presented, followed by a discussion (question and answer session) and concluded with a posttest (Cole & Florez, 2020).

The results of the data analysis in this lbM activity showed an increase in knowledge scores after training of 30 points, and statistically there was a significant difference in the average knowledge scores before and after training. These results are in line with the results of a study (Pivari et al., 2019) which showed that of 92 students, 54% experienced an increase in their preparedness for flooding, 20% experienced no change, and 24% experienced a decrease. Statistically, there was a significant difference between preparedness before and after training ($r = 0.000$).

The mini group discussion learning method in the training was able to improve participants' understanding of the material and facilitate each individual to actively participate in the discussion (Filardi et al., 2019). The small group activity began with a review of the material by the facilitators, who were students of the Applied Nursing undergraduate program, followed by a discussion and question and answer session to explore the participants' understanding of DM, starting with the definition of DM, risk factors, signs and symptoms, and prevention efforts through the application of a healthy lifestyle. The facilitators gave participants the opportunity to understand the material that had been studied (Lovic et al., 2020). Knowledge measurement can be done through interviews or questionnaires that ask about the content of the material, measuring the research subjects or respondents' knowledge that is to be known or measured, which can be adjusted to these levels (Galicia-Garcia et al., 2020).

The results of the evaluation of this community service activity achieved the predetermined objectives, namely 100% participant attendance, all participants were active, and there was an increase in knowledge. Adolescents are a population at risk in the future, so by understanding diabetes mellitus from adolescence, it is hoped that the younger generation will be able to apply a healthy lifestyle and take early preventive measures for a better quality of life in the future.

4. CONCLUSION AND RECOMMENDATIONS

A total of 20 teenagers in the Setiaratu Village, Cibereum District, Tasikmalaya City, have been educated about diabetes mellitus. The knowledge score before the training was 60, and after the training, it was 90. There was a 30-point increase in knowledge scores after the training. Statistically, there was a significant difference in the average knowledge scores of adolescents before and after the training on diabetes mellitus, with a significance value of $r = 0.0001$ ($r < 0.05$).

5. ACKNOWLEDGMENTS

We would like to express our gratitude to the Head of Setiaratu Village, Cibereum District, Tasikmalaya City, for providing the opportunity and support for the implementation of the IbM activity.

6. REFERENCE

- ..., Perceka, A. A. L., & ... (n.d.). Penyuluhan Dan Pemeriksaan Kesehatan Dengan Tema “Gerakan Masyarakat Sehat Dengan Pemeriksaan Penyakit Tidak Menular Bagi Masyarakat Kabupaten Tidak Menular Bagi Retrieved <http://repository.lp4mstikeskhg.org/id/eprint/21>
- Cole, J. B., & Florez, J. C. (2020). Genetics of diabetes mellitus and diabetes complications. *Nature Reviews Nephrology*. <https://www.nature.com/articles/s41581-020-0278-5>
- Filardi, T., Panimolle, F., Crescioli, C., Lenzi, A., & Morano, S. (2019). Gestational diabetes mellitus: The impact of carbohydrate quality in diet. *Nutrients*. <https://www.mdpi.com/493688>
- Galicia-Garcia, U., Benito-Vicente, A., Jebari, S., & ... (2020). Pathophysiology of type 2 diabetes mellitus. *International Journal of ...*. <https://www.mdpi.com/812208>
- Lemelman, M. B., Letourneau, L., & Greeley, S. A. W. (2018). Neonatal diabetes mellitus: an update on diagnosis and management. *Clinics in Perinatology*. <https://www.sciencedirect.com/science/article/pii/S0095510817301070>
- Lovic, D., Piperidou, A., Zografou, I., & ... (2020). The growing epidemic of diabetes mellitus. *Current Vascular ...*. <https://www.ingentaconnect.com/content/ben/cvp/2020/00000018/00000002/art00003>
- Muhammad, B. R., Alfiyansyah, R., & Perceka, A. L. (n.d.). INCREASING COMMUNITY KNOWLEDGE ABOUT HYPERTENSION WITH A DIRECT EDUCATION PROGRAM AS AN EFFORT TO IMPROVE COMMUNITY HEALTH STATUS *Jurnal Pengabdian Masyarakat DEDIKASI INCREASING COMMUNITY KNOWLEDGE ABOUT HYPERTENSION WITH A DIRECT EDUCATION PROGRAM AS AN EFFORT TO IMPROVE COMMUNITY HEALTH STATUS INCREASING COMMUNITY KNOWLEDGE ABOUT HYPERTENSION WITH A DIRECT EDUCATION PROGRAM AS AN EFFORT TO IMPROVE COMMUNITY HEALTH STATUS*. Retrieved <https://dedikasi.lp4mstikeskhg.org/home>
- Perceka, A. L., Erlinawati, N. A., & ... (2022). PENYULUHAN KESEHATAN DAN PEMERIKSAAN FISIK, TEKANAN DARAH, GULA DARAH, DAN ASAM URAT RW 15 DESA SINDANGGALIH KARANGAPAWITAN *Jurnal ...*. <https://dedikasi.lp4mstikeskhg.org/index.php/home/article/view/43>
- Pivari, F., Mingione, A., Brasacchio, C., & Soldati, L. (2019). Curcumin and type 2 diabetes mellitus: prevention and treatment. *Nutrients*. <https://www.mdpi.com/511792>
- Suharta, D., & Lungguh Perceka, A. (2024). EXPERIENCE OF PUBLIC HEALTH CENTER NURSES IN RECORDING AND REPORTING NURSING SERVICES USING THE E-PUSKESMAS APPLICATION (Vol. 03). <https://jpic.lp4mstikeskhg.org>