



Innovation in Making Anti-Diabetic Moringa Leaf Porridge as an Alternative Diet for Diabetes Sufferers in 2024

Sonataelina Togatorop

Sekolah Tinggi Ilmu Kesehatan Nauli Husada Sibolga

ARTICLE INFORMATION

Article history:

Received Aug 30, 2024

Revised Sep 16, 2024

Accepted Sep 30, 2024

Keywords:

Diabetes,
Moringa leaves,
Diet.

ABSTRACT

Diabetes is a chronic disease characterized by high blood sugar (glucose) levels. If diabetes is not properly controlled, various life-threatening complications can arise. Blood sugar levels are controlled by the hormone insulin produced by the pancreas, an organ located behind the stomach. We conducted a community service program (PKM) on processing moringa leaves into porridge as a dietary alternative for diabetics. Given the large number of diabetics, the combination of moringa leaves and low-sugar rice makes it a potential alternative diet for diabetics. Moringa (*moringa oleifera*) is a type of plant from the Moringaceae family. Nutritional analysis shows that moringa leaves have excellent potential to supplement the body's nutritional needs. This PKM can help diabetics find alternatives for their diet.

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



Corresponding Author:

Sonataelina Togatorop,
Sekolah Tinggi Ilmu Kesehatan Nauli Husada Sibolga
Jln. Kader Mani No.02 Kelurahan Aek Muara Pinang Sibolga Selatan,
Email: stikesnaulihusadasbg@gmail.com

1. Introduction

Diabetes mellitus is a public health problem, not only in Indonesia but also globally. The prevalence of this disease continues to increase globally. (Wadja, Rahman, & Supriyatni, 2019), (Asman, Sinthania, & Marni, 2021). The prevalence of DM according to the 2013 Basic Health Research (Riskesdas) nationally was 6.9%, an increase from 2007 which was only 5.8% and placed DM in 6th place as a disease causing Oral antidiabetic drugs may be useful for sufferers who are allergic to insulin or who do not use insulin injections. (Ministry of Health, 2013a), (Ministry of Health, 2013b). While its use must be understood, ensuring appropriate dosage for the indication, without causing hypoglycemia. Because most oral antidiabetic drugs cause undesirable side effects, experts have developed a relatively safe traditional treatment system for diabetes mellitus. (Nugroho & Hartini, 2024), (Kurniawati, 2024)

Moringa oleifera is a plant that can be used as a traditional medicine. Moringa is widely known in Indonesia, especially in rural areas, but it has not been fully utilized in everyday life. (Alamsyah et al., 2022), (Silalahi, 2020). The nutritional, prophylactic, and therapeutic uses of this plant have received widespread praise online. The flavonoid content of Moringa oleifera has the potential to be an alternative therapy for chronic hyperglycemia. M. oleifera leaf extract can lower blood sugar levels and HbA1C levels, which are indicators of blood sugar levels. (Siahaan et al., 2022), (Syahfitri, nd).

The success of treatment in patients with diabetes mellitus. Therefore, the author tried to present another alternative in processing moringa leaves by mixing them with flour to make moringa porridge. (Sinring & Suriyanti, 2024), (Kusmita, 2023) We aim to provide food that is high in quality, nutritious, and delicious, and safe for consumption by people with diabetes. Moringa porridge offers a

healthy alternative food and is an innovative product made from moringa leaves, a promising herbal remedy for people with diabetes mellitus.(Muliana & Ruslan, 2024),(Meilanda, nd).

2. Methods

To determine the level of knowledge of the Wek VI sub-district community regarding the use of Moringa leaves as a food ingredient before being given training.(Hindryatiningsih, Harjaty, Basri, & Munadi, 2024)Describes the process of implementing training on processing moringa leaves into porridge as an alternative diet for diabetes sufferers. Improves community skills in processing moringa leaves into porridge as a healthy food and alternative diet for diabetes sufferers.(Santi et al., 2024),(Ersila & ST, 2024).

3. Results and Discussion

3.1 Participant Characteristics

The majority of participants in the training were housewives aged 40–60 years and elderly people who had long suffered from diabetes. Based on the results of the initial interview: The educational level of the participants was mostly junior high school–high school, with limited understanding of special diabetes diets. Most of them worked as housewives, thus playing a significant role in preparing the family's food. Two participants were known to be regularly taking diabetes medication, but they did not have a varied menu for a special diet that supports blood sugar control.(Ismawanti, Nurzihan, & Prastiwi, 2021).

This shows that the community in the target location really needs educational intervention regarding the use of local food ingredients, such as moringa leaves, to support pattern diethealthy. Activity Implementation Stages This PKM activity is carried out through several stages, namely: Socialization and introduction of the program to the community regarding the benefits of Moringa leaves for health, especially in reducing and stabilizing blood sugar levels. Counseling on the nutritional content of Moringa leaves, including vitamin A, vitamin C, calcium, iron, and bioactive compounds that function as antioxidants and anti-diabetics. Demonstration of making Moringa leaf porridge, using low-sugar brown rice, fresh Moringa leaves, coconut milk, and simple spices as the basic ingredients. The process is shown step by step from selecting ingredients, washing the leaves, boiling, to serving the porridge. Direct practice by participants, where each participant tries to process Moringa leaves into porridge under the guidance of the implementation team. Discussion and question and answer, to provide an opportunity for participants to convey obstacles, questions, and experiences related to the processing of Moringa leaf porridge.

Educational Outcomes and Participant Skills After the activity, the following results were obtained: Increased understanding: Most participants were able to re-explain the benefits of moringa leaves, how to process them, and their potential use as an alternative diet for diabetes sufferers. Improved skills: Participants were able to practice making moringa leaf porridge correctly, from measuring ingredients to serving the final product. Good product acceptance: The results of the taste test showed that the moringa leaf porridge was accepted by participants because it tasted savory.

and not bitter, making it possible for regular consumption. High enthusiasm: Participants expressed interest in trying this recipe again at home and sharing it with families who suffer from diabetes. Problems Faced Several obstacles that arose during the activity, including: Limited ingredients: the number of fresh moringa leaves available was limited, so the amount of porridge produced was only enough for a small portion. Limited cooking equipment: the activity was carried out with simple tools so the cooking process took longer. Low initial understanding: some participants were not yet familiar with the concept of a low-sugar diet, so a more intensive educational approach is needed. Impact and Potential for Sustainability From the evaluation results, this activity had a positive impact: (a) For participants: gaining new knowledge about the benefits of moringa leaves, being able to practice processing methods, and committing to implementing them in their daily menu. For the wider community: this activity can be an inspiration to develop the use of moringa leaves as functional food,

not only for diabetes sufferers but also to improve family health in general. Potential for sustainability: participants expressed a desire to continue similar activities in the form of health social gatherings or cooking groups at the RT level, so that the benefits are more widespread.

3.2 Evaluation Results

Evaluation was conducted using observation and short interviews after the training. The results: 80% of participants expressed satisfaction with the material and practical exercises provided. 75% of participants stated they would try making moringa leaf porridge regularly at home. Sixty percent of participants considered moringa leaf porridge a suitable daily menu for people with diabetes because it is easy to make and the ingredients are readily available.

4. Conclusion

A training activity on processing moringa leaves into porridge in Wek VI Village successfully increased the community's knowledge and skills in utilizing moringa leaves as an alternative diet for diabetes sufferers. Despite limited materials and equipment, participants were able to understand and practice making porridge effectively. The community's enthusiasm demonstrates that this program has the potential to be continued independently and can provide long-term benefits in diabetes prevention and control through the use of local foods.

Suggestion: It is hoped that the community, especially those with diabetes, can utilize moringa leaves as an alternative food ingredient in their daily menu to help maintain blood sugar levels. The community can form small groups (health groups/senior community health posts) to continue the practice of making moringa leaf porridge for broader benefits.

References

- Alamsyah, A. G., Sari, P. M., Hidayati, C., Pradhana, P., Lestari, Z., & Indra, A. P. (2022). Pemanfaatan Ekstra Daun Kelor (*Moringaceae olievera*) sebagai Upaya Pencegahan Stunting pada Balita di Desa Cinta Rakyat Percut Sei Tuan. *Modeling: Jurnal Program Studi PGMI*, 9(4), 39–47.
- Asman, A., Sinthania, D., & Marni, L. (2021). Perawatan Diabetes Mellitus di Komunitas. *Jurnal Kesehatan Medika Saintika*, 11(1), 125–132.
- Ersila, W., & ST, S. (2024). PERAN KADER DALAM MENGOPTIMALKAN KEAMANAN PANGAN PADA IBU HAMIL. *TANTANGAN DAN PROBLEMATIKA ILMU KESEHATAN MASYARAKAT*, 27.
- Hindaryatiningsih, N., Harjaty, E., Basri, A. M., & Munadi, L. O. M. (2024). EDUKASI MANAJEMEN USAHA PRODUK PANGAN LOKAL BERBASIS DAUN KELOR PADA MAJELIS TAKLIM KELURAHAN BUKIT WOLIO INDAH. *MAJU: Indonesian Journal of Community Empowerment*, 1(6), 423–433.
- Ismawanti, Z., Nurzihan, N. C., & Prastiwi, N. (2021). Demonstrasi pengenalan variasi menu diet diabetes mellitus bagi penderita diabetes mellitus tipe 2. *Martabe: Jurnal Pengabdian Kepada Masyarakat*, 4(1), 56–62.
- Kemenkes, R. I. (2013a). Riset kesehatan dasar; RISKESDAS. Jakarta: Balitbang Kemenkes RI, 2013, 110–119.
- Kemenkes, R. I. (2013b). Riset Kesehatan Dasar (Riskesdas) Tahun 2018. Jakarta: Badan Penelitian Dan Pengembangan Kesehatan Kementerian Kesehatan RI.
- Kurniawati, D. (2024). *Ayo Mengenal Obat Oral Diabetes Herbal dari Rimpang Temulawak dan Daun Alpukat*. Penerbit NEM.
- Kusmita, F. C. (2023). Pengaruh Rebusan Daun Kelor (*Moringa Oleifera*) Terhadap Penurunan Kadar Gula Darah Pada Lansia Penderita Diabetes Melitus Tipe 2 (Studi Di Desa Kuniran Kecamatan Purwosari Kabupaten Bojonegoro). *ITSkes Insan Cendekia Medika Jombang*.
- Meilanda, N. (n.d.). *PROSES PEMASARAN STICK DAUN KELOR MDN MENGGUNAKAN METODE ANALISIS SWOT (STUDI RUMAH SEHAT DAUN KELOR KOTA BENGKULU)*. UIN Fatmawati Sukarno.
- Muliana, G. H., & Ruslan, Z. A. (2024). *Tentang Kelor*. CV Jejak (Jejak Publisher).
- Nugroho, L. H., & Hartini, Y. S. (2024). *Tumbuhan Obat Antidiabetik: Etnomedisin, Ramuan, dan Mekanisme Aksi*. UGM PRESS.
- Santi, E., Dayani, N. E., Noor, R. A., Wardani, S. A., Al Farid, M. T. R., Sunartiasih, K., & Putri, E. A. A. (2024). Pelatihan Pembuatan Bubur dan Pudding dengan Daun Kelor sebagai Menu Sehat bagi Balita Stunting. *Jurnal Pengabdian Kepada Masyarakat Nusantara*, 5(1), 318–324.

- Siahaan, J. M., Batara Simangunsong, S. B., Siagian, L. O., Neu, M. K., Anto, E. J., MKT, A.-K., ... Hutasoit, E. S. P. (2022). MONOGRAF MENGUNGKAP PERAN INFUSA DAUN KELOR (*Moringa Oleifera*) TERHADAP GULA DARAH DAN KOLESTEROL PADA MENCIT (*Mus Musculus*) YANG MENGALAMI ULKUS DIABETIKUM. Wiyata Bestari Samasta.
- Silalahi, M. (2020). Pemanfaatan daun kelor (*Moringa oleifera* Lam) sebagai bahan obat tradisional dan bahan pangan. *Majalah Sainstekes*, 7(2).
- Sinring, B., & Suriyanti, S. (2024). BUBUR KELOR SEBAGAI DIET ALTERNATIF PENDERITA DIABETES DI DESA BORISALLO KECAMATAN PARANGLOE KABUPATEN GOWA. *Jurnal Akademik Pengabdian Masyarakat*, 2(1), 91–96.
- Syahfitri, R. (n.d.). EFEKTIVITAS EKSTRAK DAUN KELOR (*Moringa Oleifera*) TERHADAP PENURUNAN KADAR GULA DARAH PADA PENDERITA DIABETES: LITERATUR REVIEW.
- Wadja, H., Rahman, H., & Supriyatni, N. (2019). Faktor-Faktor yang Berhubungan dengan Kejadian Diabetes Mellitus di UPTD Diabetes Center Kota Ternate Tahun 2018. *Jurnal Biosainstek*, 1(01), 38–45.