BLAMBANGAN
Journal of Community Services
(BJCS)
e-ISSN : 3026-2771; p-ISSN : 3026-1554
Published by
The Blambangan Scholar

Article

Implementation of the CERDIK programme to prevent primary non-communicable diseases in the community

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Abstract

Background: Non-communicable diseases (NCDs), including hypertension, diabetes mellitus, heart disease, and stroke, remain major public health challenges due to their increasing prevalence and contribution to morbidity and mortality. Strengthening primary prevention through healthy lifestyle promotion is essential to reduce modifiable risk factors at the community level.

Identification problems: A community assessment identified limited family knowledge and awareness regarding NCD risk factors and healthy lifestyle practices. The implementation of the CERDIK programme had not been optimally integrated into family-based health promotion activities, highlighting the need for community empowerment through health education.

Methods: This community service programme targeted families at risk of NCDs through a Family-Centered Nursing approach. The programme was implemented using health education on the CERDIK programme, which promotes regular health check-ups, avoidance of cigarette smoke, regular physical activity, a balanced diet, adequate rest, and stress management. Programme effectiveness was evaluated by comparing participants' knowledge before and after the educational intervention.

Results: The educational programme improved participants' knowledge of NCD risk factors and the principles of the CERDIK programme. Families demonstrated a better understanding of healthy lifestyle behaviours and the importance of adopting preventive practices to reduce the risk of NCDs within the household.

Conclusion: The family-based implementation of the CERDIK programme effectively enhanced participants' knowledge and awareness of NCD prevention. Integrating the Family-Centered Nursing approach into community health education has the potential to strengthen family empowerment, promote healthy behaviours, and support sustainable primary prevention of non-communicable diseases.

Keywords: CERDIK programme; community service; Family-Centered Nursing; health education; non-communicable diseases

1. Introduction

Non-Communicable Diseases (NCDs) are one of the world's major public health challenges and are the largest cause of death globally (Suharsono et al., 2025). NCDs include cardiovascular disease, diabetes mellitus, cancer, and chronic respiratory diseases that are largely influenced by behavioral risk factors such as smoking, lack of physical activity, unhealthy diet, alcohol consumption, and poorly managed stress. According to the World Health Organization (WHO), NCDs cause about 74% of all global deaths, so prevention and control of risk factors are an important priority in public health development (Hezagira et al., 2025).

In Indonesia, the burden of NCDs still shows a high figure. The results of the 2023 Indonesian Health Survey (SKI) show that the prevalence of hypertension in the population aged ≥18 years based on blood pressure measurement results reached 30.8%, while the prevalence of diabetes mellitus in the population aged ≥15 years based on blood sugar level examination reached 11.7%. The data also shows that there is a considerable gap between diagnosed cases and health examination results, which indicates that there are still many people who are not aware of their health conditions (Setyoningrum et al., 2025). This condition shows that NCD risk factors are still

a serious health problem and require more effective and sustainable prevention efforts. The increase in the prevalence of NCDs not only has an impact on increasing the number of illnesses and deaths, but also poses a great economic burden on individuals, families, and the national health system (Arini et al., 2022). Most NCDs can actually be prevented through behavior modification and the implementation of a healthy lifestyle from an early age (Siswati et al., 2025). Therefore, a promotive and preventive approach through primary prevention is a very important strategy in reducing the risk factors of NCDs in the community.

As a form of effort to control NCDs, the Ministry of Health of the Republic of Indonesia has developed the CERDIK Program which consists of regular health checks, quitting cigarette smoke, diligent physical activity, healthy and balanced diet, getting enough rest, and managing stress (Setyowati & Pratama, 2024). The CERDIK program is a promotive-preventive approach that aims to build healthy living behaviors to prevent NCDs before the appearance of disease manifestations (Liana et al., 2026) However, the implementation of CERDIK behavior in the community still faces various obstacles, such as low health awareness, lack of motivation to maintain healthy behaviors, and lack of optimal environmental and family support in changing health behaviors (Indra et al., 2025)

The family is the smallest unit in society that has a great influence on the formation and maintenance of individual health behaviors. In the context of NCD prevention, the family acts as a source of emotional, informational, instrumental, and social support that can influence family members' health decisions and habits (Vitaliati et al., 2023). Good family support has been shown to be associated with increased adherence to healthy living behaviors, including dietary regulation, physical activity, regular health checkups, and stress management (Mananggel et al., 2023) Therefore, family involvement is one of the important components in the success of NCD prevention programs at the community level.

The Family Centered Nursing (FCN) approach places the family as the focus of nursing services and an active partner in efforts to improve health (Vitaliati et al., 2025) FCN emphasizes collaboration between health workers and families through the process of education, empowerment, joint decision-making, and strengthening family capacity in recognizing and overcoming health problems. Through this approach, the family not only plays the role of a recipient of information, but also as an agent of change who is able to create a healthy environment for all family members.

Recent studies have shown that family-based interventions are effective in improving health behaviors and controlling NCD risk factors. Feng et al., (2023) report that family-based digital health interventions can improve self-care behaviors and glycemic control in patients with type 2 diabetes mellitus. Research by Azmiardi et al., (2021) also shows that family support through an application-based approach improves blood glucose level control in the elderly with diabetes mellitus. In addition, research by Mayberry et al., (2023) found that the Family/Friend Activation to Motivate Self-Care (FAMS 2.0) intervention significantly improved self-care behaviors, psychological well-being, and control of HbA1c levels in people with type 2 diabetes mellitus. Similar findings were also shown by Mananggel et al., (2023) who stated that patient and family partnerships have a positive impact on blood pressure control in people with hypertension in rural communities. Furthermore, a systematic review and meta-analysis conducted by (Susanti et al., 2023) concluded that family-based diabetes management interventions significantly reduced HbA1c levels compared to standard interventions. The results of these studies strengthen the evidence that family involvement is an effective strategy in encouraging health behavior change and controlling NCD risk factors.

Although various studies have proven the effectiveness of family-based interventions in the management of chronic diseases, most studies still focus on patients who have been diagnosed with NCDs, especially diabetes mellitus and hypertension. This community service integrates the CERDIK Program as a promotive and preventive strategy with a family approach at the community level as a primary prevention effort is still relatively limited. In fact, the integration of these two approaches has the potential to improve the ability of families to recognize NCD risk factors, build healthy living behaviors, and maintain sustainable health behavior changes.

Based on this description, it is necessary to implement the CERDIK Program with a family approach as a primary prevention effort for NCDs in the community. This approach is expected to be able to increase family knowledge in implementing a healthy lifestyle and strengthen the role of the family as the main support system in the prevention of NCDs. Therefore, this community service is carried out to increase family knowledge in the implementation of the CERDIK Program as an effort to prevent primary non-communicable diseases in the community.

2. Identification problem

Non-communicable diseases (NCDs) remain a major public health challenge in Indonesia due to the high prevalence of modifiable risk factors, including unhealthy diets, physical inactivity, smoking, and poor stress management. Although the CERDIK programme has been introduced as a national preventive strategy, its implementation at the community level remains suboptimal because of limited public knowledge, inconsistent healthy behaviours, and insufficient family involvement. As families play a central role in promoting healthy lifestyles, integrating the Family Centered Nursing (FCN) approach with the CERDIK programme is needed to strengthen family empowerment and support sustainable primary prevention of non-communicable diseases.

3. Implementation methodology

This community service activity uses the Family Centered Nursing (FCN) approach which focuses on family empowerment as the main unit in the prevention of non-communicable diseases (NCDs). The target of the activity is families who live in the assisted area and have risk factors for NCDs, such as a history of hypertension, diabetes mellitus, obesity, smoking habits, lack of physical activity, or an unhealthy diet. Activities are carried out through the stages of preparation, implementation, and evaluation.

Preparation Stage

In the preparation stage, coordination was carried out with village officials, health cadres, and local health centers to determine the target of activities and implementation schedules. The service team then compiled educational media in the form of leaflets, observation sheets, and knowledge questionnaires about CERDIK's behavior. Furthermore, initial identification of public health conditions and risk factors for NCDs is carried out through interviews.

Implementation Stage

The implementation of the activity began with a pre-test measurement to determine the level of knowledge of participants about PTM and the CERDIK Program. Furthermore, participants were given health education about NCDs and the CERDIK Program which includes regular health checks, eliminating cigarette smoke, diligent physical activity, healthy and balanced diet, adequate rest, and stress management. Education is carried out through interactive lectures, group discussions, demonstrations, and distribution of educational media.

The Family Centered Nursing approach is applied through education to families to improve their ability to recognize NCD risk factors, make health decisions, provide support to family members, and apply CERDIK behavior in daily life. Each family is encouraged to make a joint commitment in implementing healthy living behaviors as a form of primary prevention of NCDs.

Evaluation Stage

The evaluation of activities was carried out through the measurement of participants' knowledge using questionnaires before and after education (pre-test and post-test). Indicators of the success of the activity include increasing participants' knowledge scores about PTM and the CERDIK Program. The data obtained were analyzed descriptively to illustrate the effectiveness of program implementation.

4. Results and Discussion

Implementation Results

The community service programme was conducted among 30 families residing in Jenggawah Village using a Family Centered Nursing (FCN) approach integrated with the CERDIK programme. Activities included health education on non-communicable disease (NCD)

prevention, interactive discussions, family mentoring, and evaluation of participants' knowledge before and after the intervention. The programme encouraged families to actively discuss healthy lifestyle practices and their role in preventing NCDs within the household.

Knowledge assessment demonstrated an improvement following the intervention, with the mean score increasing from 63.4 during the pre-test to 86.7 in the post-test, representing an increase of 23.3 points, as presented in Table 1.

Table 1. Participants' knowledge before and after the CERDIK programme (n = 30)

Indicator	Pre-test	Post-test
Number of participants	30	30
Mean knowledge score	63.4	86.7
Score improvement	–	+23.3

Community Impact

The community service programme positively improved families' knowledge and awareness of NCD prevention through the implementation of the CERDIK programme. Following the educational intervention, participants demonstrated a better understanding of NCD risk factors and healthy lifestyle behaviours, including regular health check-ups, physical activity, healthy dietary practices, smoking avoidance, adequate rest, and stress management.

The programme also strengthened family engagement in health promotion by encouraging family members to participate actively in discussions, share experiences, and support one another in adopting healthier lifestyles. These findings indicate that integrating the CERDIK programme with the Family Centered Nursing approach is a practical strategy for empowering families and strengthening community-based primary prevention of non-communicable diseases.

Discussion and Practical Reflection

The improvement in participants' knowledge indicates that family-based health education is an effective strategy for increasing awareness of NCD prevention. Families who actively participated in the educational sessions were better able to understand health information because they discussed health issues collectively, shared experiences, and developed action plans together. This finding is consistent with previous studies showing that family-centered education enhances family knowledge and encourages greater involvement in chronic disease management (Safaruddin & Permatasari, 2022; Wulansari & Ismiriyam, 2024; Yusnayanti et al., 2022).

The positive outcomes of this programme also support the principles of Family Centered Nursing, which position families as active partners throughout the processes of problem identification, planning, implementation, and evaluation of health interventions (Yusuf et al., 2024). Family involvement promotes greater responsibility for maintaining healthy behaviours and contributes to better health outcomes, including improved quality of life and caregiving capacity while reducing family burden (Chrismilasari et al., 2025).

Furthermore, the findings reinforce previous evidence that structured health education is an effective approach for strengthening primary prevention of non-communicable diseases. Educational interventions have consistently been shown to improve knowledge, awareness, and self-management of chronic disease risk factors, thereby supporting healthier lifestyle behaviours and reducing the risk of future complications (Cindy et al., 2025; Hezagira et al., 2025). In this programme, combining the CERDIK programme with the Family Centered Nursing approach provided practical opportunities for families to develop sustainable healthy behaviours within their home environment.

From a practical perspective, active family participation was one of the main factors contributing to programme success. However, maintaining healthy lifestyle behaviours requires continuous reinforcement beyond a single educational intervention. Ongoing collaboration between community health workers, primary healthcare centres, and families is therefore recommended to sustain behavioural changes and strengthen community-based prevention of non-communicable diseases.

5. Conclusion

Family education about the CERDIK program has been proven to be effective in increasing family knowledge about risk factors for Non-Communicable Diseases (NCDs) and healthy living behaviors as primary prevention efforts. The sustainability of the program is needed through periodic assistance by health workers and health cadres so that CERDIK's behavior can be maintained in daily life. In addition, collaboration between health centers, village governments, and the community needs to be strengthened to support the implementation of family-based NCD prevention programs more widely and sustainably

Acknowledgments

The authors sincerely thank all families who participated in this community service programme. The authors also express their appreciation to the Head of the Community Health Center, healthcare professionals, and community health volunteers (kader kesehatan) for their valuable support in facilitating programme implementation. Gratitude is extended to all members of the community service team whose commitment and collaboration contributed to the successful completion of this programme.

Recommendations or sustainability plan

To ensure the sustainability of the programme, the CERDIK programme should be integrated into routine community health promotion activities through collaboration between primary healthcare centres, community health volunteers (kader kesehatan), and local community leaders. Regular family-based health education and follow-up activities are recommended to reinforce healthy lifestyle behaviours and maintain family engagement in NCD prevention. The Family Centered Nursing (FCN) approach should be adopted as a complementary strategy in community health programmes to strengthen family empowerment, promote sustained behaviour change, and support long-term prevention of non-communicable diseases.

References

Arini, H. N., Anggorowati, A., & Pujiastuti, R. S. E. (2022). Dukungan keluarga pada lansia dengan Diabetes Melitus Tipe II: Literature review. *NURSCOPE: Jurnal Penelitian Dan Pemikiran Ilmiah Keperawatan*, *7*(2), 172. https://doi.org/10.30659/nurscope.7.2.172-180

Azmiardi, A., Murti, B., Febrinasari, R. P., & Tamtomo, D. G. (2021). The effect of family involvement in diabetes self-management education on glycemic control in patients with type 2 diabetes mellitus : a systematic review and meta-analysis. *Journal of Public Health and Development*, *19*(3). https://he01.tci-thaijo.org/index.php/aihd-mu/article/view/251881?utm_source=chatgpt.com

Chrismilasari, L. A., Jamini, T., Negara, C. K., Machelia, S., Studi, P., Ners, P., Lambung, U., & Banjarmasin, M. (2025). Family-Based Diabetes Self Management Education (DSME) Terhadap Self-Care Pasien dengan Luka Ulkus Diabetikum. *Jurnal Kesehatan Saelmakers Perdana*, *8*(3). https://doi.org/10.32524/jksp.v8i3.1701

Cindy, P., Yanti, C., Intan, N., Wiguna, P., Made, N., & Dewi, S. (2025). KAJIAN LITERATUR PERAN DUKUNGAN KELUARGA TERHADAP SELF-CARE DAN KONTROL GULA DARAH PADA PENDERITA DIABETES MELITUS TIPE II (DMT2). *Jurnal Kesehatan Tambusai*, *6*(4), 16407–16417. https://doi.org/https://doi.org/10.31004/jkt.v6i4.53355

Feng, Y., Zhao, Y., Mao, L., Gu, M., Yuan, H., Lu, J., Zhang, Q., Zhao, Q., & Li, X. (2023). The Effectiveness of an eHealth Family-Based Intervention Program in Patients With Uncontrolled Type 2 Diabetes Mellitus (T2DM) in the Community Via WeChat : Randomized Controlled Corresponding Author : *JMIR Mhealth Uhealth*, *11*, 1–16. https://doi.org/10.2196/40420

Hezagira, E., Gashema, P., Harelimana, J. de D., Siddig, E. E., Iradukunda, P. G., Mbwirabumva, I., Uwimana, A., Sayinzoga, F., Rwamwejo, F., Tuyishime, A., Umuhire, J., Musafiri, S., & Muvunyi, C. M. (2025). Three decades of community health workers in primary healthcare delivery in Rwanda: evolution, impact and policy lessons. *BMJ Global Health*, *10*(12), 1–7. https://doi.org/10.1136/bmjgh-2025-021339

Indra, R. L., Rasyid, T. A., Sandra, S., Kartika, D. E., & Saputra, B. (2025). Giatkan Perilaku CERDIk untuk Mencegah Penyakit Tidak Menular, Ayo Cek Kesehatan. *Jurnal Pengabdian Masyarakat (JUPE)*, *2*(3). https://jurnal.naiwabestscience.my.id/index.php/jupe/article/view/116/80

Liana, Y., Nurbaiti, M., Aulianah, H., & Sidik, A. B. (2026). Promosi Kesehatan Berbasis CERDIK dalam Pencegahan Penyakit Tidak Menular di Masyarakat. *JURNAL PENGABDIAN MASYARAKAT BANGSA*, *3*(11), 6484–6488. https://doi.org/https://doi.org/10.59837/jpmba.v3i11.3811

Mananggel, S. L., S.Lamonge, A., & Polii, G. B. (2023). Family based education program in increasing family support for elderly with hypertension. *LasalleHealthJournal*, *2*(November), 77–83. https://journal.unikadelasalle.ac.id/index.php/lhj/article/view/92/68

Mayberry, L. S., Guy, C., Hendrickson, C. D., Mccoy, A. B., & Elasy, T. (2023). Rates and Correlates of Uptake of Continuous Glucose Monitors Among Adults with Type 2 Diabetes in Primary Care and Endocrinology Settings. *Journal of General Internal Medicine*, *38*(11), 13–19. https://doi.org/10.1007/s11606-023-08222-3

Safaruddin, S., & Permatasari, H. (2022). Dukungan Keluarga Dengan Manajemen Diri Diabetes Pada Pasien Diabetes Melitus Tipe 2: Tinjauan Sistematik. *Jurnal Kesehatan Komunitas*, *8*(2), 195–204. https://doi.org/10.25311/keskom.vol8.iss2.1148

Setyoningrum, U., Liyanovitasari, & Aryanti3, N. (2025). Peningkatan Peranan Kader Kesehatan dalam Pelaksanaan Posyandu Integrasi Layana Primer (ILP) di Dusun Tegalrejo Desa Lerep Kabupaten Semarang. *Indonesian Journal of Community Empowerment (Ijce)*, *7*(1), 121. https://jurnal.unw.ac.id/index.php/IJCE/article/view/4062

Setyowati, G. chandra, & Pratama, A. Y. (2024). The Overview of "Perilaku CERDIK" Application As An Effort to Control Risk Factor For Non Communicable Disease Of Communities At Kelurahan Sidorejo Kidul Salatiga City 2023. *Jurnal Penelitian Keperawatan*, *10*(1), 47–54. file:///C:/Users/hp/Downloads/722-Research Results-2057-1-10-20240202.pdf

Siswati, T., Olfah, Y., Attawet, J., Nurhidayat, N., & Waris, L. (2025). Assessing Posyandu Cadres' Readiness in Implementing Integrated Primary

Health Services in Yogyakarta, Indonesia. *Indonesian Journal of Health Administration*, *13*(1), 44–57. https://doi.org/10.20473/jaki.v13i1.2025.44-57

Suharsono, Isworo, A., & N, N. A. (2025). Efektivitas Pelatihan Pencegahan dan Pengendalian Penyakit Tidak Menular terhadap Efikasi Diri Kader Posyandu Pendahuluan Dalam konteks program Integrasi Layanan Primer (ILP) yang diinisiasi dari temuan awal di wilayah kerja mendalam mengenai indikator. *Jurnal Abdi Kesehatan Dan Kedokteran (JAKK)*, *4*(2). file:///C:/Users/hp/Downloads/14.+89.+JAKK+V4N2+2025+pp.+204-214.pdf

Susanti, N., , Nursalam, N., & Nadatien, I. (2023). Pengaruh Pengaruh Education and Support Group Berbasis Teori Self Care Terhadap Kepatuhan, Kemandirian Perawatan Kaki Dan Kadar Glukosa Darah Pada Pasien Diabetes Melitus Tipe 2. *Jurnal Keperawatan Suaka Insan (Jksi)*, *8*(1), 21–29. https://doi.org/10.51143/jksi.v8i1.413

Vitaliati, T., Angelia, I., Maurida, N., & Basri, A. A. (2025). Family-Centred Nursing Theory and the Functional Consequences Model Improve Diabetes Self-Management in Elderly Diabetics. *Jurnal Keperawatan Global*, *9*(2), 147–159. https://doi.org/https://doi.org/10.37341/jkkt.v5i2

Vitaliati, T., Maurida, N., & Silvanasari, I. A. (2023). Hubungan Dukungan Keluarga dan Efikasi Diri dengan Kualitas Hidup Lansia Penderita Diabetes Melitus Pendahuluan. *Jurnal Ilmu Keperawatan*, *18*(1), 1–7. https://doi.org/https://doi.org/10.30643/jiksht.v18i1.232

Wulansari, & Ismiriyam, F. V. (2024). Gambaran Pendekatan Keluarga Dalam Pelaksanaan Pendidikan Kesehatan. *Indonesian Journal of Nursing Research (IJNR)*, *7*(1), 7–12. https://doi.org/https://doi.org/10.35473/ijnr.v7i1.3179

Yusnayanti, C., Nazaruddin, & Noviati. (2022). Peningkatan Pengetahuan Keluarga tentang Pencegahan Luka Diabetes Melitus melalui Pendidikan Kesehatan di Wilayah Kerja Puskesmas Puuwatu. *Jurnal Pengabdian Masyarakat Bumi Anoa*, *1*(2), 45–50. https://doi.org/10.54883/jpmba.v1i2.674

Yusuf, A., Purba, J. M., Putri, D. E., & Aditya, R. S. (2024). *Family-Centered Care Experiences in Elderly with Chronic Diseases in Communities : Qualitative Study of Patients , Families , Nurses , and Volunteers*. *8*, 338–350. https://doi.org/10.1089/heq.2024.0009