

# THE EFFECTIVENESS OF HEALTH EDUCATION IN INCREASING PUBLIC KNOWLEDGE ABOUT NON-COMMUNICABLE DISEASES AS AN EARLY PREVENTION EFFORT

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E-ISSN : 3109-9777

Received: April 2026

Accepted: April 2026

Published: April 2026

## Abstract:

*Non-communicable diseases (NCDs) are the leading cause of mortality worldwide and represent a major challenge to public health development, including in Indonesia. The high prevalence of NCDs such as hypertension, diabetes mellitus, and cardiovascular diseases is closely associated with low levels of public awareness and unhealthy lifestyle behaviors. Therefore, promotional efforts through health education are essential strategies to enhance community knowledge and awareness regarding NCD prevention. This community service activity aims to improve public knowledge of non-communicable diseases and their prevention through health education interventions. The implementation method employed an educational approach through health counseling, accompanied by pre-test and post-test assessments to measure participants' knowledge before and after the intervention. The materials delivered included the definition of NCDs, risk factors, health impacts, and preventive measures through clean and healthy lifestyle behaviors. The educational sessions were conducted interactively using lectures, discussions, and question-and-answer sessions. The results showed that prior to the intervention, the majority of participants (93.3%) already had a good level of knowledge. After the health education intervention, this increased to 100% of participants achieving a good knowledge category. Additionally, participants demonstrate high enthusiasm during the activity, as reflected in their active participation in discussions and their ability to respond to questions related to the materials presented. In conclusion, health education counseling proved to be effective in improving community knowledge regarding non-communicable diseases. This improvement in knowledge is expected to serve as a foundation for promoting sustainable healthy behavior changes. However, follow-up efforts such as continuous mentoring and evaluation are necessary to ensure the practical implementation of knowledge in daily life in order to reduce the incidence of NCDs in the community.*

**Keywords:** Non-communicable diseases, health education, health promotion, community knowledge, disease prevention

## INTRODUCTION

Disease Non-infectious diseases (NCDs) is one of the challenge increasingly global health increase. World Health Organization / WHO (2020) noted that NCDs contributes about 71% of global death, with more of 85% of deaths the occurs in developing countries. Heart disease, diabetes, cancer, and hypertension are primary examples of NCDs that cause high morbidity and mortality. The primary causes of NCDs are a combination of unhealthy behavioral factors, such



as poor diet, lack of physical activity, smoking, and excessive alcohol consumption. Furthermore, genetic factors, age, and socioeconomic conditions also play a role in the development of NCDs (Menshaw et al. 2020).

In Indonesia, the prevalence of non-communicable diseases (NCDs) continues to rise, in line with changes in lifestyles, leading to an increasingly urbanized population and unhealthy food consumption. According to the 2018 Basic Health Research (Riskesdas), more than 30% of the Indonesian population suffers from hypertension, and the prevalence of obesity among adults reached 21.8%. NCDs not only increase the health burden but also have a significant economic impact on the country and society, increasing healthcare costs and reducing productivity (Azis et al. 2022).

A number of problem main issues faced in prevention and control of NCDs in Indonesia include :

1. Lifestyle Changes and Behavioral Factors. One of problem main is prevalence behavior No healthy in society , such as consumption food fast high serving calories , sugar, and salt, as well habit smoking that still High . WHO data shows that smoking causes more than 7 million deaths annually worldwide (WHO 2018). Furthermore, lack of physical activity, especially among urban populations, also increases the risk of NCDs.
2. Lack of Access to Health Services. Limited access to health services is a major barrier to the early detection and management of NCDs. In rural or remote areas, adequate health facilities to detect NCDs such as diabetes and hypertension are often unavailable. Furthermore, many people are unaware of the importance of regular check-ups or cannot access regular health services (Ministry of Health of the Republic of Indonesia 2018).
3. Limited Public Knowledge and Awareness. Although awareness of the importance of a healthy lifestyle is increasing, many individuals still do not fully understand the relationship between daily behaviors and the development of NCDs. Limited knowledge about healthy eating patterns, exercise, and the importance of early detection presents challenges to prevention efforts.

In an effort to address these issues, the government, non-governmental organizations, and the private sector have taken steps. These efforts include health education, strengthening health services, and public policies that support behavior change and the prevention of NCDs (Rosyida 2020; Ernawati 2018; Umboro et al. 2022; Pakasi and Reni 2013; Hasanah 2016). The prevention and control of NCDs constitute a major challenge for global public health, including Indonesia. The main causes of NCDs, such as unhealthy lifestyles, lack of physical activity, and consumption of unhealthy foods, must be addressed through a comprehensive approach, including health education, early detection, increased access to health services, and public policies that support healthy lifestyles. Research has shown that these efforts have had a positive impact on reducing the prevalence of NCDs and improving public health. Therefore, it is crucial for all parties – the government, the community, and the health sector – to collaborate to reduce the burden of NCDs in Indonesia.

## **IMPLEMENTATION METHOD**

This Community Service Program (PKM) activity uses a health education method. This activity was carried out on November 8, 2025, in Pinaras Village, Tomohon City. The priority issue to be resolved was the low knowledge of PKM partners regarding PTM prevention and control efforts. The PKM-K2 approach method offered to resolve partner issues is adopting the Training Management Cycle (TMC) which consists of a *Training Needs Assessment (TNA)*, *training design*, *training delivery*, and *training evaluation*. Evaluation of the activity's success is measured based on the increase in PKM partners' knowledge. The evaluation steps that will be carried out include measuring the level of knowledge of partners before the counseling is carried out. Next, health counseling is carried out to partners for approximately 1 hour, followed by a re-measurement of knowledge. This measurement is carried out using a questionnaire that has been used in previous research.

## **FINDINGS AND DISCUSSION**

### **Activity Results**

#### **1. Extension Material**

The extension materials are as follows:

##### **WHAT IS A NON-COMMUNICABLE DISEASE?**

Non-communicable diseases (NCDs) are a group of chronic medical conditions that are not caused by infectious agents (such as bacteria or viruses) and cannot be transmitted from person to person.

##### **WHAT ARE THE TYPES OF PTM?**

The four main types of NCDs that are most common and cause the highest mortality rates globally include Cardiovascular Disease (heart disease, stroke, and hypertension), Cancer, Chronic Respiratory Disease, Diabetes, Obesity, Kidney Disease, Mental Disorders and others.

##### **CAUSATIVE FACTOR**

The factors causing NCDs can be divided into two main categories:

- a) **Modifiable Risk Factors.** Caused by four main lifestyle and environmental behaviors, such as smoking, physical inactivity, unhealthy diet, alcohol consumption, and others.
- b) **Non-Modifiable Risk Factors.** These factors cannot be changed but need to be considered in health risk management, such as age, gender, and genetics.

#### **2. Knowledge of extension participants**

Knowledge evaluation was conducted after health education and evaluated using a questionnaire. Below are photos of this community service activity.



*Figure 1 Introduction from the Head of Pinaras Village*



*Figure 2 Delivery of extension materials using X-banners as media*



*Figure 3 Counseling participants asking questions*



Figure 4 Group photo after the outreach activity

The knowledge of the health cadre mothers in Pinaras Village, Tomohon City can be seen in Table 1.

Table 1 Distribution frequency of knowledge

Knowledge	Pre-test		Post-test	
	n	%	n	%
Good	28	93.3	30	100.0
Not enough	2	0	0	0
Total	30	100	30	100

Based on the data presented , the following is bullet points analysis :

**1. Overview and Comparison of Pre-test and Post-test**

- a. Conditions (Pre-test): Before counseling , level knowledge participant is very high . As many as 28 people (93.3%) have own "Good" knowledge , and only 2 people (6.7%) whose knowledge was "Poor". This shows that audience Possible No the same group very blind information about disease No infectious .
- b. Post-test Condition : After counseling , occurred improvement until reach level knowledge perfect . All participants (30 people or 100%) were categorized as having "Good" knowledge. The "Poor" category was missing (0%).

**2. Effectiveness Counseling**

- a. Increase : Occurred improvement by 6.7% points ( from 93.3% to 100%) in the "Good" category .
- b. Elimination Ignorance : Counseling succeed remove The same very category "Lack of" knowledge . Two participants who initially his knowledge less , successful improved become good . This is very significant achievement Because show that intervention counseling effective For reach and improve understanding participants who need it most .
- c. Key Conclusion: This training proved effective in increasing participants' knowledge levels. Although the initial conditions were

good, the training successfully refined them, bringing all participants to an optimal level of understanding.

### 3. Interpretation and Implications

- a. Quality of Material and Methods: Success reaching 100% shows that material counseling delivered with easy way understood , relevant , and the methods used ( lectures , discussions , tools ) visual aids , etc. ) as appropriate with audience .
- b. Existing Audience Exposed Information : Level of knowledge high initial ( 93.3 %) indicates that participant Possible Already own background behind information from other sources ( social media , human resources) health previously , or experience personal ). The role of counseling in matter This Possible For deepen , clarify and straighten out information that has been there is , and consolidate understanding they .
- c. Impact Potential : With level 100% good knowledge , can expected that participant now have strong capital For adopt behavior life healthy to prevent disease No contagious . Knowledge is foundation from change behavior .

### **Discussion**

Based on the results of community service activities that have been carried out, counseling on non-communicable diseases (NCDs) has proven effective in increasing participants' knowledge, as also reported in various previous studies that show that health education is a key intervention in increasing public awareness and understanding regarding risk factors and prevention of NCDs (Kumalasari et al., 2023; Sari et al., 2022). The high level of knowledge achieved by participants after the intervention strengthens the role of health promotion as a relevant promotive-preventive strategy in the context of public health.

The high level of initial knowledge (pre-test) among the majority of participants (93.3%) indicates increased public awareness of NCDs. This is likely influenced by exposure to information from various sources such as mass media, the internet, and direct family experiences. This phenomenon aligns with findings that NCDs, such as hypertension, diabetes mellitus, and heart disease, are increasingly well-known in the community and are a major focus in health promotion efforts (Pobas et al., 2025; Sumampouw et al., 2023). Furthermore, participants' tendency to be proactive about their health also contributed to the high level of initial knowledge.

Despite this, the outreach intervention still demonstrated significant success, with all participants (100%) achieving good knowledge. This demonstrates that the outreach materials and methods used were well-targeted, both in strengthening the understanding of participants who already had basic knowledge and in improving those who previously had low knowledge. This success also confirms that health education is not only reinforcement but also capable of reaching groups most in need of basic health information (Sari et al., 2022; Kumalasari et al., 2023).

This increased knowledge has important implications for health behavior change when analyzed through the Health Belief Model framework. With increased understanding, participants are expected to have a better perception of the vulnerability and severity of NCDs, as well as an understanding of the benefits of preventive measures such as a healthy diet, physical activity, and avoidance of risk factors like smoking. Furthermore, increased self-efficacy is also key in encouraging individuals to independently adopt healthy behaviors (Pobas et al., 2025; Syahadat et al., 2025).

However, a key challenge that needs to be addressed is the knowledge-attitude-practice gap. Good knowledge doesn't always translate directly to actual behavioral change, as it's influenced by various factors such as access to resources, social support, and established habits. Therefore, continued efforts in the form of regular behavioral evaluations are needed to ensure that increased knowledge is truly implemented in daily life (Syahadat et al., 2025; Sumampouw et al., 2023).

To maintain the sustainability of the program's impact, several strategies can be implemented, including providing educational media such as leaflets or posters as reminders, and utilizing social media for educational follow-up. A sustainable approach through collaboration with community health centers, health cadres, and local government is also crucial in creating an environment that supports healthy behavior change. Previous studies have shown that sustainable interventions have a stronger impact on reducing NCD risk factors in the community (Pobas et al., 2025; Kumalasari et al., 2023).

Overall, this community service activity successfully achieved its goal of increasing participants' knowledge about non-communicable diseases (NCDs). The achievement of 100% of participants with good knowledge is a significant indicator of success and provides a strong starting point for encouraging changes in public health behaviors. Moving forward, the primary focus needs to be on strengthening the implementation of sustainable healthy behaviors to reduce the incidence of NCDs and improve the community's quality of life (Sumampouw et al., 2023; Sari et al., 2022).

## **CONCLUSION**

Overall, this activity shows very positive and encouraging results. Counseling about disease, including non-infectious, succeeded very well in increasing the level of knowledge among participants, even until reaching the level of Perfection (100%). Successfully eliminating the "Poor" category is a key indicator of program effectiveness. Despite this success, further evaluation is recommended to measure knowledge retention and, most importantly, actual changes in participant behavior as a final outcome of the training.

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