Strengthening Health Literacy for Prevention and Management of Risk Factors for Non-Communicable Diseases (NCDs) in Gedangsari, Gunung Kidul

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Abstract. Non-communicable diseases (NCDs) are diseases that are often not widely detected and recognized because generally, NCDs do not cause symptoms or complaints. This has an impact on the examination of patients where NCDs are detected to have reached the final stage. The lack of citizen’s literacy regarding non-communicable diseases due to the lack of exposure to information is crucial to follow up because it has an impact on the lack of attitudes and behavior in the prevention and management of NCDs in the Gedangsari area. Access to health services is considered to be lacking because the distance to health services is quite far, plus the geographical conditions of the area and quite steep road conditions. Economic factors and the level of education of residents are also obstacles to the access of information and health services. NCDs prevention efforts are urgently needed so that the level of public health in the Gedangsari area increases. Prevention is meant through Information Communication and Education activities about NCDs to the public. This community service aims to increase public knowledge about NCDs and how to prevent and treat them. This activity was carried out by early detection of NCDs risk factors, health checks, presentation of material about NCDs general knowledge, and NCDs modality therapy. The activities carried out were evaluated through a pre-test and post-test with a questionnaire. The results of the activity showed that there was an increase in residents' knowledge regarding NCDs by 51.2% after the activity, the implementation of NCDs screening, and NCDs modality therapy. In conclusion, this community service activity can increase citizen literacy towards NCDs. It is hoped that the community will apply the preventive and therapeutic modalities that have been taught to prevent and control NCDs

Keyword: Non-Communicable Disease, NCDs, Health Literacy

1 Introduction

Non-communicable diseases (NCDs) are the cause of death for nearly 70% of the world and are often not recognized because they do not cause symptoms (Maulidina et al., 2019). NCDs are chronic dangerous diseases because they are silent diseases or do not give symptoms and complaints until the condition is severe, so many people are not aware that they are experiencing them (Tika, 2021). NCDs show a tendency to increase every year (Kemenkes RI, 2019). Data from the 2018 Risikesdas showed that the prevalence of NCDs had increased when compared to the 2013 Risikesdas. Based on examination of blood sugar, diabetes mellitus rose from 6.9% to

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8.5%, and blood pressure measurement results, hypertension increased from 25.8% to 34.1% (Kemenkes RI, 2018).

Based on the Integrated Disease Surveillance (STP) of health centers in the DIY area in 2019, there were more than 78 thousand cases of hypertension. Hypertension ranks first with a total of more than 311 thousand people (Dinas Kesehatan DIY, 2020). Patients with hypertension in the Gunung Kidul area are quite high. This happens with the trend of patterns of communicable diseases that are increasingly shifting their positions with non-communicable diseases. Increasing life expectancy also brings logical consequences to the emergence of cases of degenerative diseases, which are supported by unhealthy lifestyles (Girsang, Purba & Harefa, 2022).

Degenerative diseases that occupy the top ten diseases include hypertension and diabetes mellitus (DM) (Dinkes Kabupaten Gunung Kidul, 2021)

The hamlets Soko, Mertelu, Gedangsari, Gunung Kidul are areas located quite far from cities and have limited access to health facilities and other public services. Geographical conditions, the majority of which are in the hills with very steep and steep road conditions, make this location quite remote. The characteristics of people with low levels of education and economy also lead to a lack of accessibility to information and health services received in the community. The majority of the population is dominated by adults and the elderly. Increasing age causes a high risk of someone experiencing NCDs (Sari, 2017).

The results of interviews with two health cadres in the Soko, Mertelu, Gedangsari, Gunung Kidul areas stated that most of the diseases affecting the adult and elderly population in this area were hypertension and diabetes mellitus (DM). Based on online news published in the daily jogja.com dated March 5, 2021, there was a case of suicide committed by a 77-year-old farmer because he was desperate for high blood pressure and gout that would not go away. A similar incident also occurred again on November 2, 2022, a resident of Gedangsari died by suicide due to hypertension. This shows that the incidence of NCDs in this region is quite serious and becomes a separate stressor for the sufferers. This condition is exacerbated by the typical geography which is located on hills with very steep and steep road conditions causing this location to be quite remote, far from access to health services. The characteristics of people with low levels of education and economy also lead to a lack of accessibility to information and health services received in the community. The provision of information from health workers regarding NCDs is considered very minimal. This is evidenced by the minimal frequency of visits by local Puskesmas (Community Health Center) health workers to the community, for example, the elderly Posyandu (Integrated Service Post). The Puskesmas only visit 2 times in one year. Community behavior towards the prevention of NCDs risk factors is still lacking, as marked by the lack of implementation of PHBS in the household setting, lack of a healthy lifestyle, and minimal access to health services.

Seeing these conditions, the communication of health education information through strengthening health literacy is very much needed in the context of preventing and controlling NCDs in this region. Increasing health literacy also has an impact on increasing health empowerment, increasing the ability to decide on
health problems, and increasing roles in treatment (Visscher et al., 2018). The low level of education of residents is a particular challenge in this activity. The packaging of this community service method needs to be done as effective as possible so that the information conveyed can be transferred properly and accepted by the community.

Based on these conditions, the provision of health information through strengthening health literacy is very much needed in the context of preventing and controlling NCDs in this region. Good health literacy can have a good impact on patients with NCDs (Prasetiani, 2020). Health literacy can increase self-awareness of health changes that occur (Vamos et al., 2020). Patients who do not have sufficient knowledge about NCDs will cause sufferers to continue to engage in inappropriate behavior (WHO, 2013). Efforts that can be made to increase patient knowledge about NCDs are by conducting information and education communication (IEC). The IEC carried out will increase the patient's knowledge so that they have awareness, will, and the ability to apply adaptive behavior. Health promotion interventions through increased literacy are effective strategies to be able to encourage people to learn and participate in the prevention and control of NCDs (Chao et al, 2018). Health literacy is part of health promotion, which can be given to patients, groups, and communities (Duplaga, 2020). The higher the health literacy, the better the patient's quality of life (Zheng et al., 2018).

2 Methodology
The method of implementing community service was through several activities, including:

a) Mass education

Mass education was carried out for the adult and elderly population who live in the Soko, Mertelu, Gedangsari, Gunung Kidul areas using lecture methods, FGDs, and simulations. The material provided was related to the definition of NCDs, risk factors for NCDs, complications of NCDs, and ways to prevent and manage NCDs pharmacologically and non-pharmacologically. Evaluation was carried out by providing written questions related to the material that has been explained during mass education during the pretest and posttest.

b) Demonstration

Demonstration steps of modality therapy as a non-pharmacological therapy for the management of NCDs was given. The selected modality therapy was simple, cheap, and easy to do. Modality therapy was done by soaking feet in warm water. Evaluation was carried out by observing the ability of residents to redemonstrate the modality therapy being taught.

c) Screening

NCDs risk factor detection interviews and health checks were conducted.

3 Result and Discussion
Education provision related to NCDs was carried out using the mass education method, involving 28 adult and elderly populations in the Gedangsari area, Gunung Kidul. Providing education related to NCDs including definitions, risk factors, complications, and ways to prevent and manage NCDs pharmacologically and non-pharmacologically. This activity was carried out in January 2023.

Table 1. Pretest and Posttest scores of NCDS knowledge

<table>
<thead>
<tr>
<th>Category</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>A score of NCDs' Knowledge</td>
<td>42,6%</td>
<td>93,8%</td>
<td>51,2%</td>
</tr>
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Based on Table 1, it can be seen the difference in knowledge related to NCDs between before and after the counseling on adolescent reproductive health, where before the counseling was carried out the pre-test results showed an average of 42.6% of participants answered correctly then after receiving counseling, and holding a post-test the results showed 93.8% of participants answered correctly. It can be concluded that there was an increase in the knowledge of the participants after conducting health counseling related to NCDs. Health literacy interventions are effective in promoting disease knowledge, attitude, and behavior across four chronic conditions that drive the burden of NCDs.

Health literacy is an important contributor to the burden of non-communicable diseases (NCDs); particularly in settings where health illiteracy is part of a perpetuating system of risk factors. Interventions that promote health literacy may provide an important tool in the primary and secondary prevention of NCDs. Knowledge is information known or realized by a person based on sensory observations (Heine et al., 2021). A person’s knowledge affects his perspective on something and makes it easier to accept or adopt positive behavior. Knowledge is influenced by several factors, including education, media, and exposure to information. The method used in this community service activity is the health education method with mass education. Health education is a consciously planned process to create opportunities for individuals to always learn to improve their literacy and improve their knowledge and skills (life skills) for the benefit of their health (Putri, 2018). The mass education method was chosen because it is suitable for the community, the purpose of this method is general regardless of age, gender, occupation, social status, and level of knowledge.

Based on the results of health screening, it was found that 31% of participants had hypertension. As many as 60% of them have not examined health workers. The results of interviews with participants showed that the majority of participants said they were afraid to go to health services for fear of knowing their disease condition which would increase the risk of psychological stress. The remaining 40% have already checked into health services, but the health management that has been carried out has not been effective, as evidenced by interviews showing that most have not adhered to treatment and lifestyle...
management such as managing a hypertension diet and physical activity as recommended. Based on these conditions it can be concluded that participants for the current study also highlight that there is a general lack of knowledge and awareness on NCDs, resulting in adverse health outcomes. Existing literature states that a lack of awareness and knowledge about health conditions is a demand-side barrier that hinders the utilization of health services (Kamvura et al., 2022).

The next activity was a demonstration of non-pharmacological therapy, namely modality therapy for NCDs, including warm water foot soaks. The reason for choosing warm water foot soaks in this activity is that this therapy is effective for lowering blood pressure in hypertension sufferers, where based on screening results it was found that 31% of participants had hypertension. After the activity was carried out, 75% of the participants said they understood how to do warm water foot soaks and would carry out these activities at home independently. During the training, all participants looked enthusiastic and demonstrated the therapeutic steps.

Gambar 1. Documentation of Community Health Services

Nonpharmacological therapy is an alternative to traditional or complementary therapy. Warm water foot soak therapy is a type of non-pharmacological therapy for people with hypertension. This therapy can help dilate blood vessels, lower blood pressure and increase blood circulation in relaxing body temperature (Pramono & Masita, 2021). Hydrotherapy or soaking feet in warm water is a technique that works to relieve pain and cure disease (Nurpratiwi, 2021).

Warm water foot soak therapy is a non-pharmacological therapy that can reduce high blood pressure. This therapy can reduce stress and anxiety levels as well as blood pressure in people with hypertension (Harnani & Axmalia, 2018). Handoyo in 2014 in Nurpratiwi (2021), explained that warm water is beneficial for blood circulation and refreshes the body. This therapy can help lower blood pressure and lower pulse rate by reducing stress, dilating blood vessels, relieving joint pain,
eliminating odor, eliminating germs, and improving sleep quality. In addition, this therapy can calm the mind, and strength, generate self-confidence, feel safe and peaceful, and instill a sense of joy and happiness.

Patients with hypertension can do warm water foot soak therapy for 20-30 minutes with a temperature of 38-40 °C above the ankles through conduction which will transfer heat from the warm water to the body. This therapy also causes dilated contractions in the blood vessels which can reduce the tension in the muscles. The tools and materials used for this therapy are easily available and can be done at any time so that people with hypertension can do therapy independently at home.

4 Conclusion

There is an increase in knowledge regarding NCDs and the ability to manage non-pharmacological NCDs in the Gedangsari area, Gunung Kidul. With this increase in literacy, it is hoped that residents will be able to apply it in their daily lives for the prevention and control of NCDs.

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