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The Effect of Education Using Media Modules on Non-Communicable Disease Control in Posbindu Cadres

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ABSTRACT

Introduction: Non-communicable diseases are a major global health issue, being the leading cause of death around the world. Based on data obtained from the 2022 Malang City Office NCD pain surveillance report, 165,993 NCD cases were recorded. The incidence of NCDs arises from a combination of risk factors that cannot be combined and can be combined. The government has created a PTM Posbindu program to overcome NCDs.

Objective: The purpose of this study is to determine the importance of the influence of education using module media on non-communicable disease control in posbindu cadres.

Method: This study used quantitative methods with a cross sectional approach. The sampling technique in this study is total sampling, namely all posbindu cadres in the Janti Health Center work area.

Result: The results showed that the knowledge of posbindu cadres before education showed that most respondents had less knowledge. Meanwhile, the knowledge of posbindu cadres after being given education shows that some respondents have good knowledge. From the results of Wilcoxon's analysis, p = 0.000 means that the p value < the value of α (0.05) means that Ha is accepted, indicating that there is an influence of education using module media on non-communicable disease control in cadres.

Conclusion: Conclusion, with this research media module proved effective as an effort to increase the knowledge of posbindu cadres.

Keywords: Education; Control of NCD; Knowledge

INTRODUCTION

Non-communicable diseases (NCDs) are chronic illnesses that develop slowly over an extended period due to a complex interplay of genetic, physiological, environmental, and behavioral factors (1). These diseases arise from a mix of factors that can be modified (like smoking, sedentary lifestyle, poor diet, and alcohol use) and those that cannot. Examples of NCDs include diabetes, hypertension, coronary heart disease, stroke, cancer, and chronic respiratory conditions such as chronic obstructive pulmonary disease (COPD) and asthma (2).

Non-communicable diseases (NCDs) lead to roughly 41 million deaths annually, making up approximately 74% of all global deaths. About 17 million people die prematurely (before the age of 70) due to NCDs, with 86% of these premature deaths occurring in low- and middle-income countries. Cardiovascular diseases are the primary cause of death among NCDs, resulting in approximately 17.9 million deaths each year, followed by cancer (9.3 million deaths), chronic respiratory diseases (4.1 million deaths), and diabetes (including chronic kidney disease due to diabetes, 2 million deaths). These four diseases together account for about 80% of all deaths related to NCDs (3).

According to data from the Hospital Information System (SIRS) in 2022, hypertension is one of the most prevalent non-communicable diseases in East Java, with a total of 195,225 cases. Additionally, type 2 diabetes mellitus (non-insulin dependent) is also a significant issue in East Java, with 172,917 cases reported. According to the non-communicable disease morbidity surveillance report from the Malang City Health Office in 2022, as of October, there were 165,993 cases of non-communicable diseases (NCDs) recorded.

Non-communicable diseases (NCDs) have adverse health impacts on individuals, families, and communities, as well as threaten healthcare systems. With high socio-economic costs, prevention and control of these diseases are critically important today (4). The promotion of Clean and Healthy Living Behaviors aims to control NCD risk factors through the PATUH approach: regular health check-ups, adherence to medical advice, proper disease management through consistent treatment, maintaining a balanced diet, engaging in safe physical activities, and avoiding tobacco smoke, alcohol, and other harmful substances are essential practices for promoting health and preventing non-communicable diseases. Periodic health checks can be conducted through Integrated Health Posts (Posbindu) for NCDs in villages or urban neighborhoods, as well as at Community Health Centers (Puskesmas).

The government has implemented the Posbindu for NCDs program since 2012. Posbindu for NCDs is a form of Community-Based Health Effort (UKBM) developed by the government to combat NCDs. This program involves three main components: surveillance of risk factors, health promotion, and prevention through innovation. Its goal is to control and maintain public health by prioritizing promotive and preventive efforts, without neglecting curative and rehabilitative efforts (5). The target of Posbindu for NCDs includes citizens aged 15 and above who are healthy, at risk, or suffering from NCDs in each village or neighborhood (6). The aim is to increase community participation in the prevention and early detection of NCD risk factors (7).

One effective way to increase public awareness and concern in detecting non-communicable disease (NCD) risk factors and utilizing available healthcare services is through health education. Health education is an integral part of comprehensive health efforts (promotive, preventive, curative, and rehabilitative) aimed at promoting healthy lifestyles (8). The objective is to improve community awareness, attitudes, and behaviors related to maintaining and enhancing their health. In this context, health education focuses on recognizing signs and symptoms, understanding risk factors, complications, and control of NCDs. Through these activities, it is expected that communities can become more proficient in screening and early detection of NCDs, as well as utilizing available community health services in their area.

Based on a preliminary study conducted at the Janti Community Health Center in Malang City, non-communicable disease cases were recorded at 343 cases in October 2023. Non-communicable diseases at Janti Community Health Center in Malang City ranked as the second highest among the top 10 disease cases in October 2023.

Given the outlined context, this research aims to investigate the impact of educational modules on controlling non-communicable diseases among Posbindu cadres to address these issues effectively.

METHODS

The research methodology employed in this study is quantitative research utilizing a cross-sectional approach. Data collection was conducted through a survey using a questionnaire distributed to all Posbindu cadres within the operational area of the Janti Community Health Center in Malang City. In this study, total sampling was used to select the entire sample size, which consisted of 30 individuals. The research instrument utilized a knowledge questionnaire comprising 10 questions, employing closed-ended multiple-choice format where respondents were required to select one correct answer from the provided options.

The data collection procedure involved several steps: the researcher clarified the study's objectives and the advantages of participating to potential respondents, provided a Pre-Consent Statement (PSP), obtained informed consent from the respondents, administered the pre-test questionnaire, conducted education on NCD control by distributing module media to the respondents, and finally administered the post-test questionnaire to collect data.

Data analysis utilized the Wilcoxon signed-rank test to examine the impact of education using module media on controlling non-communicable diseases among Posbindu cadres.

RESULTS

Characteristics of Respondents Based on Age, Study and Job

Table 1. Characteristic Respondent Based on Age

Characteristic	(f)	(%)
Age		
12 – 25 years	0	0%
26 – 45 years	7	23,3%
45 – 59 years	19	63,3%
≥ 60 years	4	13,3%
Total	**30**	**100%**

Source: Primary Data, 2024

Based on the table 1, the characteristics in this study were obtained that 63.3% (19 people) were aged 45-59 years.

Table 2. Characteristic Respondent Based on Study

Characteristic	(f)	(%)
Study		
SD	3	10%
SLTP/ SMP	5	16,7%
SLTA/ SMA	17	56,6%
D3/ Akademi	0	0%
Sarjana (S1/ S2)	5	16,7%
Total	**30**	**100%**

Source: Primary Data, 2024

Based on the table 2, the characteristics in this study were obtained that the last education of high school/high school was 56.6% (17 people).

Table 3. Characteristic Responden Based on Job

Caracterictic	(f)	(%)
Job		
Buruh Tani	0	0%
Wirausaha	5	16,7%
IRT	21	70%
Petani	0	0%
Pensiunan	0	0%
Swasta	4	13,3%

Total	**30**	**100%**

Source: Primary Data, 2024

Based on the table 3, the characteristics in this study were obtained that 70% (21 people) had jobs as IRTs.

The Level of Knowledge Before being Given Education Using Module Media on Controlling Non-Communicable Diseases (Ncds) among Posbindu Cadres

Table 4. Pretest Knowledge Data Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less	23	76,7	76,7	76,7
	Simply	7	23,3	23,3	100,0
	Total	30	100,0	100,0	

Source: Primary Data, 2024

Based on table 4, the frequency data from the pre-test in the questionnaire on knowledge of controlling Non-Communicable Diseases (NCDs) shows that 76.7% (23 individuals) have insufficient knowledge, while 23.3% (7 individuals) have sufficient knowledge.

The Level of Knowledge After being Educated Using Module Media on the Control of Non-Communicable Diseases in Posbindu Cadres

Table 5 Posttest Knowledge Data Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less	5	16,7	16,7	16,7
	Simply	8	26,7	26,7	43,3
	Good	17	56,7	56,7	100,0
	Total	30	100,0	100,0	

Source: Primary Data, 2024

Based on table 5, the frequency data from the post-test in the questionnaire on knowledge of controlling Non-Communicable Diseases (NCDs) shows that 16.7% (5 individuals) have insufficient knowledge, 26.7% (8 individuals) have sufficient knowledge, and 56.7% (17 individuals) have good knowledge.

Analysis of the Influence Before and After Education Using Module Media on Non-Communicable Disease Control in Posbindu Cadres

Table 6. Test Statistics[b]

	Postest – Pretest
Z	-4.503[a]
Asymp. Sig. (2-tailed)	.000

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Source: Primary Data, 2024

Based on the wilcoxon test table above, it obtained an asymp value of sig .000 < 0.05, so it can be said that H0 was rejected and Ha was accepted, which means that there is an influence of education using module media on the control of non-communicable diseases in posbindu cadres.

DISCUSSION

The Level of Knowledge Before Being Given Education Using Module Media on Controlling Non-Communicable Diseases (Ncds) among Posbindu Cadres

The education on controlling Non-Communicable Diseases (NCDs) conducted in the hall of the Janti Community Health Center in Malang City proceeded according to the planned activities, attended by a total of 30 female Posbindu cadres with a participation rate of 100%. The outcomes of the activity were measured through the completion of knowledge questionnaires before and after the intervention in the form of education on controlling NCDs.

The results before the intervention represent the entire percentage analyzed purely before any intervention. Based on the knowledge questionnaires administered by the researcher to respondents regarding the control of non-communicable diseases, it was found that there was no change in the cadre's knowledge level before the intervention involving education on controlling non-communicable diseases among Posbindu cadres. The description of cadre knowledge before treatment showed that 100% of the respondents did not understand that carcinogenic substances are not only found in food, with a mean pretest questionnaire score of 2.60 (26%). This is due to the lack of information sources available to cadres regarding various factors that can cause non-communicable diseases, leading cadres to answer based on their habitual practices at home.

This initial assessment is supported by Notoatmodjo's opinion (2007), which states that factors influencing knowledge include educational level, access to information, cultural factors, and individual experience. Generally, the easier someone obtains information, the quicker they acquire new knowledge (9).

The Level of Knowledge After Being Educated Using Module Media on The Control of Non-Communicable Diseases in Posbindu Cadres

Based on the previous results from the pretest questionnaire, respondents were subsequently given an educational intervention on controlling non-communicable diseases (NCDs) using module media. Following this, respondents were given a posttest questionnaire. From the posttest results obtained after the intervention, the description of knowledge among the cadres showed a mean score of 7.17 (71.7%), indicating that respondents' knowledge increased after receiving education with module media. This occurred due to the respondents' curiosity and high interest in participating in health education, supported by an effective group approach using methods such as lectures and interactive discussions between facilitators and respondents, which helped engage Posbindu cadres in listening to what was presented. This is consistent with the theory presented by Notoatmodjo (2014), which identifies knowledge as a result of the process of knowing that occurs after individuals sense specific objects (10).

Human sensory perception occurs through five senses: sight, hearing, smell, taste, and touch. Visual observation and auditory information are the primary means through which most human knowledge is acquired. Without knowledge, individuals lack the basis to make decisions or take actions regarding the issues they face. The research findings have demonstrated alignment with this theory, as the organization of non-communicable disease control education activities—comprising lectures on disease control, distribution of modules, and interactive Q&A sessions—fostered enthusiasm among Posbindu cadres to engage in non-communicable disease control education. Post-intervention, 83% of respondents understood the physical needs of adults based on the descriptions of cadre knowledge following treatment. In addition, pretest and posttest assessments were employed to measure changes in Posbindu cadre knowledge before and after the intervention, showing an average knowledge score increase of 45%. Initially, the mean score during the pretest was only 2.60 (26%), whereas during the posttest, it increased to 7.17 (71.7%).

Lectures and interactive discussions between speakers and respondents during education would not be effective without media. According to Notoatmodjo (2005), the purpose of using health promotion media is to facilitate information delivery, avoid perceptual errors, and clarify information conveyed to the elderly, whose intellectual capabilities may have declined (11). Media can depict objects related to the material and facilitate communication between speakers and respondents.

The most appropriate health promotion media for implementing non-communicable disease control education is module media—a booklet containing no more than 30 pages, featuring simple sentences and illustrations so that cadres can comprehend its contents and refer to it repeatedly. In creating health promotion media related to non-communicable diseases for Posbindu cadres, using plain language, readable font sizes, and a simple book design helps cadres understand health messages and revisit them. This supports them in conveying health messages to the community, particularly within the jurisdiction of Puskesmas Janti, and in independently practicing healthy behaviors to prevent non-communicable diseases.

Analysis of the Influence Before and After Education Using Module Media on Non-Communicable Disease Control in Posbindu Cadres

Based on the research findings, after the implementation of education using module media, there was a significant increase in the mean posttest score, which was 7.17 (71.7%), compared to the pretest score of 2.60 (26%). This difference aligns with Notoadmodjo's theory (2007), which identifies information as one of the factors influencing knowledge (12).

Respondents who initially had insufficient information about controlling non-communicable diseases were provided with re-education using module media. The statistical analysis showed a significance level of asymp sig .000 < 0.05, indicating that the null hypothesis (H0) is rejected and the alternative hypothesis (Ha) is accepted. This means that there is an effect of education using module media on controlling non-communicable diseases among Posbindu cadres.

The posttest results indicate an improvement after the health education intervention on non-communicable disease control, observed through the comparison between pretest and posttest scores. Therefore, there is a significant impact before and after the intervention with health education on non-communicable disease control, aiming to enhance the knowledge of Posbindu cadres in the Puskesmas Janti area, Malang City.

Supported by the study conducted by Wuri Ratna Hidayani, S.KM., M.Sc, Hesti Adzani Ramadhanti, and Imelda Sintya on "Utilization of Non-Communicable Disease (NCD) Posbindu Modules in Increasing Knowledge of NCD Posbindu Cadres in Cikunir Village in 2019," which demonstrated that community service activities successfully increased the knowledge of cadres. In their study, all 16 cadres showed an increase in average scores from pretest (65.62) to posttest (81.75), indicating a 100% improvement among the participants.

CONCLUSION

In this study, it was found that educating Posbindu cadres using module-based media led to increased knowledge about non-communicable disease control. The majority of participants showed good knowledge levels. Additionally, the module "Control of Non-Communicable Diseases through Posbindu PTM" effectively improved the understanding of Posbindu cadres in Puskesmas Janti, Malang City, regarding non-communicable disease management.

SUGGESTION

For cadres, it is hoped that they can use the module media as a reference to increase understanding of non-communicable disease control. In addition, the Puskesmas expects that the media of the non-communicable disease control module can be multiplied, socialized and distributed to cadres during health education training.

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