



Using Integrated Intervention Strategies for Improvement of Health Behavior: A Case Study Across Community Health Service in Indonesia

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Abstract

Health behaviour in hypertension sufferers, a non-communicable disease (NCDs), becomes a serious health problem if it is not followed by good knowledge and treatment skills. Improvement of this condition requires several interventions that must be integrated but require scientific evidence. This research aims to prove scientifically and provide solutions to improve health behaviour problems at risk in society. We used some interventions that were applied and integrated with community health service based on a mutual agreement: health education, group therapy, and the promotion of physical exercise. The number of research subjects was 53 adults at risk of hypertension in Wedomartani Village, Sleman, Yogyakarta. Data collection was carried out in June-July 2022 and used interview and observation techniques using outcome indicators, knowledge level and health maintenance skills. The results showed an increase of 32.0% in knowledge and health maintenance of 36.0% for non-communicable disease prevention behaviour by making warm water therapy combined with basil leaf infusion to lower blood pressure. There is an increased understanding of the processing of meat ingredients and the calculation of healthy eating portions. Likewise, there was an increase in the subjects' activity to participate in physical exercise activities for hypertension exercise. The result was a decreasing prevalence of hypertension -24.5%. This study concluded that the combination of the three intervention strategies that have been given could be a choice of solution to the problem of health behaviour in adults with a risk of hypertension.

Keywords *Complementary, Hypertension, Intervention, Knowledge*

INTRODUCTION

As a developing country, Indonesia is experiencing a shift in disease cases from communicable to non-communicable diseases. However, the burden of both diseases is equally large. One of these non-communicable diseases is hypertension. The prevalence of hypertension is reported to tend to increase over time.

This data aligns with the increase in deaths from cardiovascular disease, which is a complication of hypertension globally by 9.4 million (WHO, 2013). Increased data on hypertension. Hypertension in 2018 was 34.1% in Indonesia (Ministry of Health Republic of Indonesia, 2018). Cases of hypertension in the Yogyakarta region are the highest cases of non-communicable disease, with 184,738 cases in 2022 (Dinas Kesehatan D.I Yogyakarta, 2020). This high number can be indicated as a result of inadequate healthy behaviour (Kim et al., 2000).

One of the unhealthy behaviours is medication adherence. Treatment adherence in regions in Indonesia is currently still low (Sinuraya et al., 2018; Massa & Manafe, 2021). The data is similar to that in the Yogyakarta area. The high rate of non-compliance with treatment is the impact of knowledge and healthcare skills to prevent hypertension (Kartikasari et al., 2022). In addition, the quality of basic health services received by people with hypertension cannot counteract the negative effects of lifestyle changes on the deterioration of the quality of knowledge and health care (Vrijens et al., 2017).

The basic health services provided are only of a supervisory and routine nature, such as

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incidental health promotion blood pressure checks, non-intensive counselling and non-comprehensive health education based on needs and problems in the community. These existing activities are not enough to raise the level of knowledge and health maintenance. Therefore there are additional interventions that can be integrated into public health services so that they can improve them.

These additional interventions combine health education measures, group therapy and the promotion of physical exercise. These activities are thought to be a solution to health behaviour problems. The implementation of this activity is carried out based on an agreement with people who are at risk of hypertension. However, these activities need scientific proof, and acceptance can be evaluated from their application. Hence, it is crucial to conduct this research as it can serve as a scientific foundation and contribute to advancing healthcare science.

LITERATURE REVIEW

Health behaviour: knowledge and health care

This study's health behaviour consisted of knowledge and health care based on nursing outcome standards (PPNI, 2019). Knowledge and health maintenance indicators are adjusted to the context of hypertension health problems. Health knowledge about hypertension is the adequacy of cognitive information related to hypertension. The indicators that serve as the outcome criteria are verbalization of interest in learning, the ability to explain the topic of hypertension, the ability to explain beforehand how to prevent hypertension, having questions about hypertension, and having the correct perception about preventing hypertension. These indicators are added to several indicators of health maintenance.

Health maintenance is the ability to identify, manage, and/or find assistance to maintain health (PPNI, 2019). The indicators of health maintenance in preventing hypertension include the subject's ability to show adaptive behaviour, show healthy behaviour, show interest in preventing hypertension, increase activities to prevent hypertension, and have a support system for carrying out these activities.

This study supports the opportunity for further research on levels of knowledge and health care about hypertension prevention. There is a need for further development of understanding and prevention of hypertension activities based on the local values and culture of the community. This research focuses on understanding the impact of intervention strategies integrated into health services in the community on the level of knowledge and health care. Specifically, this study has two research questions:

- [1] What is the level of knowledge and health care in the at-risk community regarding the prevention of hypertension?
- [2] What is the impact of the integrated intervention strategy on the level of knowledge and health care, as a manifestation of healthy behaviour, in people at risk of hypertension?

RESEARCH METHOD

This type of research is a case study with data collected from 53 community subjects with a risk of hypertension who are willing to participate in an activity program that has been mutually agreed upon. Determination of the risk of hypertension is based on the results of factor assessment of age over 25 years, physical examination of blood pressure using a sphygmomanometer with a value above 130/90 mmHg, having activities that tend to be sedentary, body mass index above normal, and or having a family with hypertension (Littenberg et al., 1990).

The community involved resides in Wedomartani Village, Sleman, Yogyakarta, Indonesia. These locations were selected based on the acceptability of integrating the three intervention strategies into existing basic health services in the community. Approval of the implementation of

this activity is essential to form a commitment so that the activity is carried out properly during June-July 2022.

Three intervention strategies are provided, namely; 1) health education about the concept of hypertension and its preventive measures, which have been carried out two times. One is about the procedure for processing meat and calculating the meal portion (Diarz et al., 2020). This information is essential because the initial study's results found that the community wanted this information regarding a religious holiday followed by mass distribution of meat. Health education is carried out in person in group settings and the provision of health information stickers; 2) group therapy, which has been carried out two times, namely the use of warm water therapy as a foot bath and herbal infusion of basil leaves (Domondon et al., 2017). These two therapies are very easy to implement, and the herbal ingredients are easily available. In addition, both of these therapies have been scientifically proven to help lower blood pressure; and 3) promotion of physical exercise, namely hypertension exercise, which has been carried out four times a month in the afternoon. During the activity, researchers measured data on knowledge and health care.

Data on knowledge and health maintenance were collected using interview and observation techniques. Data collection used instruments in the form of assessment sheets and observation sheets. Community health specialists have expertly reviewed this instrument to ensure its validity and reliability. Data was collected in the form of oral reports and field notes. The data were analyzed inductively to conclude the condition of their health behaviour.

This case study research was carried out by considering human rights, respecting the right to autonomy and the impact of side effects of this activity. All subjects are treated fairly and wisely. Subjects received routine blood pressure checks once a week before and after physical exercise. Each subject was given the right to follow or refuse recommendations for hypertension prevention activities through warm water immersion therapy and herbal infusion of basil leaves. This also includes recommendations for determining the processing and dosage of meat food ingredients. There is no prohibition for the subject to access medical services and continue to take daily medication, if any. Subjects were informed about possible losses from participating in these activities, including the allocation of lost time for individual activities, fatigue due to physical exercise, and the possibility of a drastic decrease in blood pressure. Negative impacts were not reported during and after the activity took place.

FINDINGS AND DISCUSSION

In Table 1, it can be seen that the sex ratio is almost the same. Most research subjects were early adults, and only a few were late adults. Table 2 is the result of the assessment and physical examination, which found that most of the knowledge level data were in the adequate category, and most of the health maintenance data were in the poor category. Table 2 shows the impact of the integrated intervention strategy on the level of knowledge and health care, as an embodiment of healthy behaviour, in people at risk of hypertension. There was a significant change in knowledge of the high category by 32.0%, followed by an increase in the ability to maintain good health by 36%, and a decrease in hypertension by 24.5%.

Age is a factor in the high incidence of hypertension, but not gender (Astutik et al., 2020). The age variable cannot be changed, and it is quite difficult to change from the socioeconomic status variable in the near future. However, the variables of knowledge and behaviour can be corrected relatively quickly to stabilize blood pressure values.

The results of this activity indicate that there has been an increase in community knowledge where the community can participate in activities properly and is active during discussion sessions. When the presenter evaluates, the subject can answer properly according to the questions. The subject gave clear answers about how to prevent hypertension. One way of

prevention that is well answered is the topic of processing and determining the portion of consumption of meat food. This proves that health education through literacy, interaction, and communication skills can provide changes in a person's healthy behaviour related to hypertension (Hickman et al., 2016).

Table 1. Age and blood pressure (n=53)

Variables	Frequency (f)	Percentage (%)
Gender		
Man	25	47.2
Woman	28	52.8
Age		
Early adulthood (26-35 yr)	33	62.3
Late adulthood (36-59 yr)	20	37.7

Table 2. Knowledge, health maintenance, and blood pressure (n=53)

Variables	Pre		Post		Differences	
	f	%	f	%	f	%
Knowledge						
High	3	5.7	20	37.7	17	32.0
Enough	42	79.2	30	56.6	-12	-22.6
Low	8	15.1	3	5.7	-5	-9.4
Health Maintenance						
Good	23	43.3	42	79.3	19	36.0
Not Good	30	56.7	11	20.7	-19	-36.0
Blood pressure						
Normal	16	30.2	20	37.7	4	7.7
Prehypertension	9	17.0	18	34.0	9	17.0
Hypertension	28	52.8	15	28.3	-13	-24.5

A person's knowledge is related to his education; generally, the higher the education, the wider the knowledge. One's knowledge contains two aspects, namely positive aspects and negative aspects. These two aspects will determine a person's attitude; the more positive aspects and objects that are known, the more positive attitudes towards these objects will arise. In addition, knowledge can come from individual experience. The more experience a person gains, it will have an impact on cognitive processes and decision-making. Thus, providing proper health education will impact increasing experience, thinking skills, and decision-making processes in acting.

Other hypertension prevention measures given in this activity are warm water therapy and herbal infusion of basil leaves which are carried out in groups. Most of the subjects knew well and could carry out independently the procedures for implementing warm water therapy and making a herbal infusion of basil leaves. Previously the subject did not know how complementary therapy in stabilizing blood pressure. This method has been studied previously in that low-warm water therapy can lower blood pressure (Ferayanti et al., 2017; Handono & Saputri, 2021). Likewise, herbal basil leaves used in specific doses can stabilize and lower blood pressure (Domondon et al., 2017). The combination of the two in this activity provides a good opportunity to be used as an integrated complementary action in basic health services in the community.

Another activity that is part of health maintenance is physical exercise in the form of hypertension gymnastics. Hypertension gymnastics is a sport that aims to increase blood flow and oxygen supply to the active muscles and skeleton, especially to the heart muscle (Kokkinos & Papademetriou, 2000). Hypertension exercise can encourage the heart to work optimally, increase the energy needs of the body's organs, and increase venous return to increase cardiac output directly (Pescatello et al., 2004). The initial effect is that the arterial blood pressure rises first. However, the impact after this phase is reduced respiratory and skeletal muscle activity, which causes a decrease in sympathetic nerve activity, heart rate, stroke volume, arteriolar venous

vasodilation, cardiac output, and total peripheral resistance. (Schultz & Sharman, 2013). Therefore, there will be a decrease in blood pressure.

Previous research has also proven that hypertension exercise affects blood pressure from prehypertension to mostly normal (Arindari & Alhafis, 2019). Other research also shows that there are significant results from the effectiveness of hypertension exercise therapy for reducing blood pressure in elderly people who have hypertension (Sartika et al., 2020). The integration of these activities can have an impact on improving health behaviour.

CONCLUSIONS

This study concluded that a combination of three intervention strategies that have been integrated into basic health services in the community could be a choice of solution to health behaviour problems in people with hypertension risk. It can be seen that the subject was able to answer and carry out recommendations for non-communicable disease prevention behaviour by making warm water therapy combined with basil leaf infusion as a lowering of blood pressure. In addition, the subject experienced an increased understanding of processing meat ingredients and calculating healthy eating portions. Likewise, there was an increase in the subject's activeness in participating in hypertension gymnastic physical exercise activities and a decrease in the percentage of hypertension.

The results of this study can be a reference for health workers who wish to integrate combination interventions from health education, group therapy, and physical exercise into health services in the community. The integrated interventions can be the same as in this study, or other interventions can be added according to the community's needs.

This study has deficiencies in controlling bias on external variables that can affect the decrease or increase in blood pressure. It could be that during the activity, subjects who have hypertension remain compliant with their medication or have difficulty complying with treatment, which is not identified. Because this study has drawbacks and possible bias, it is necessary to conduct further research to a more stringent level in controlling external factors that can affect blood pressure reduction.

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