



Prevention And Control Of Hypertension With Yoga Exercises In Sambiroto Sindon Boyolali Village

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Abstract

Hypertension is a condition of increased systolic and diastolic blood pressure that exceeds normal limits. The Silent Killer is another name for hypertension because hypertension is a disease that can be without signs and symptoms. Hypertension sufferers in the world according to WHO reach 1.28 billion adults. This disease, which can cause various complications, needs strategic efforts to overcome it. Community service by providing knowledge to the community about hypertension and yoga exercises as a form of physical activity training is an alternative chosen to increase public understanding of the dangers of hypertension and how to prevent and control it. Community service carried out in Sambiroto Sindon Boyolali village was attended by 26 local residents, both people with hypertension and those at risk of hypertension. After the community service was carried out, the level of community knowledge about hypertension increased as evidenced by the community's ability to answer the questions given. Behavior change will be realized along with the increase in the level of public knowledge so that it can reduce the high number of people with hypertension.

1. Introduction

Hypertension is a non-communicable disease that is dangerous if it is persistent where there is an increase in systolic pressure of more than 140 mmHg and diastolic pressure of more than 90 mmHg (Tika, 2021). Hypertension is also known as the silent killer, because this disease does not cause symptoms or symptoms are difficult to recognize so that it immediately causes complications in the form of damage to certain organs of the body, causing diseases such as stroke, heart disease, and other cardiovascular complications (Superadmin, UPK Kemenkes). Symptoms of hypertension include headache, blurred vision,

palpitations, and fatigue (P2PTM Kemenkes). The results of a systematic review show that hypertension can not only reduce physical body functions but can also affect the psychological effects of hypertensive patients such as anxiety (Yovita et al., 2023).

T Hypertension sufferers in the world are estimated to reach 1.28 billion adults in the age range of 30-79 years, most of whom are found in countries with low and middle income. A percentage of 46% of hypertensive patients are unaware of their disease, 42% of patients are diagnosed and treated, and 21% of patients can control the disease (World Health Organization, 2023). The prevalence of hypertension in Indonesia is 34.1% of the population, which is estimated to be around 70 million more Indonesians suffering from hypertension (Kemenkes, 2023). The prevalence of hypertension in Central Java shows a percentage of 37.57% more suffered by women than men (Yulianto). It often causes life-threatening complications so that hypertension is the fifth cause of death at all ages according to Sample Registration System (SRS) data (Kemenkes, 2019). Lack of public knowledge about hypertension is one of the reasons this disease continues to increase from year to year, not only suffered by adults but this disease can also be suffered by children with a percentage of 20-30% caused by obesity (Nimah, 2019).

The high prevalence of hypertension both in the world and in Indonesia requires strategic efforts to overcome the disease. The level of knowledge affects a person in making efforts to prevent and relapse of hypertension because they do not understand the management of hypertension, and physical activity also affects a person's blood pressure because it affects the elasticity of blood vessels (Honesty et al., 2021). Based on puskesmas data, Sambiroto village is one of the villages with sufferers and at risk of hypertension. Some people in the scope of Rt 03 suffer from hypertension and do not take medicine or do routine checks at the nearest health service. To overcome these problems, community service is carried out by teaching yoga exercises as a form of physical activity to prevent and control hypertension. . Yoga exercise is a union of body, mind, and soul that provides a relaxing effect so that it makes blood circulation smooth and can stimulate the release of endorphin hormones as a tranquilizer to reduce high blood pressure (Setiyaningrum & Kusuma, 2021). The purpose of this community service is to provide insight to the community about non-communicable diseases, namely hypertension, and change people's behavior to be able to prevent and

control the disease, one of which is by doing regular physical activity. Increasing public knowledge, behavioral changes can occur to prevent and control the disease. One of the expected behavioral changes is to change the lifestyle to be healthier, regulate diet and do physical activity

2. Methods of Implementation

The field survey conducted by the community service team was conducted in Sambiroto Village RT. 03 RW 07, Sindon, Ngemplak, Boyolali Regency. The method used to obtain data related to the problems that occur in partners is to use observation and interview techniques. The problem that occurs in partners is that many people are ignorant of their health. starting from the preparation stage, implementation stage, and evaluation stage.

2.1 Preparation Stage

In the preparation stage, the community service team prepared materials and media that would be used in delivering health education. In delivering material and demonstrations using PPT, projectors, laptops, mats and sound systems. A measuring instrument in the form of a *sphygmomanometer* is also needed in this community service to determine the criteria for respondents who can do yoga exercises.

2.2 Implementation Stage

The community service team checked blood pressure to respondents before the event began, as a first step in determining the criteria for respondents to follow the yoga exercise demonstration. This community service was held offline on Monday, December 04, 2023 at the MI Sindon 2 hall at 09.00 WIB. Material delivery was carried out for 45 minutes and continued with a panel discussion for 15 minutes. Submission of material using PPT makes it easier for respondents to understand the material presented. The population of respondents in this community service amounted to 26 respondents. After the delivery of the material, a yoga exercise demonstration was carried out by involving the community to follow the gymnastic movements guided by one of the community service team members.

2.3 Evaluation Stage

The evaluation stage carried out by the community service team is to ask questions verbally to respondents to determine the level of understanding and knowledge after being given health education related to efforts to prevent and control hypertension with yoga exercise demonstrations.

3. Results and Discussion

The produce community in the village is on average elderly and ranges affected by non-communicable diseases, the disease that ranges suffered by people in the village is hypertension. This can be seen from the unhealthy lifestyle of the community by not paying attention to one of them diet. This community service is carried out looking at the incidence of diseases that occur in the village, every month there are villagers who are sick but do not immediately check to health services and only consume drugs in the stall. From the results of the preliminary study, it was found that there were 20 people with hypertension in one RT and as many as 30 people at risk of hypertension. There were 26 respondents both suffering from hypertension and those at risk of hypertension. The need for strategic steps to reduce or anticipate hypertension with yoga exercises. Community Service for the Prevention and Treatment of Hypertension with Yoga Exercises in Sambiroto Sindon Boyolali Village delivered by Silviana Pusparindi on Sunday, December 10, 2023 at 09.00. This panel discussion was led by moderator and MC Anni Sekar. Closing and prayer together led by Aditya Dhimas, in addition to conveying about hypertension and yoga exercises led by fita claudia, rizqi adi amelia and also checking blood pressure led by alifah azahra, husnul fauziyah, and sofia istiqomah.

Of the 26 people with yoga exercise therapy, almost 70% experienced a decrease in systole pressure from mild and moderate hypertension to normal and some 30% were in the fixed category or there was no change in blood pressure before and after being taught yoga exercises, and almost entirely 80% experienced a decrease in diastole blood pressure from severe, moderate, and mild hypertension there was a slight decrease. Table 1 is the blood pressure before and after the yoga exercise intervention.

In the first step of meditation, people will be directed to do a little movement to relax the muscles, then continue with prayanama, which is to regulate breathing. After breathing starts to be regular, then do the core yoga movements which consist of 6 movements, namely, triangle pose, vrksasana pose, bound angle pose, forward bending pose from head to knee, mudrasna pose, paschimottasana pose. Yoga at this stage the community will be guided by the meditator. When people are guided by the meditator, they will slowly reach the stage of relaxation, where during the state of relaxation theta waves will dominate the brain. The brain is the center of all nervous system settings. Sympathetic nerves in the brain will experience decreased stimulation when a person is in the relaxation stage. Due to the decrease in sympathetic nerve work, norepinephrine secretion will be reduced, the heart organ will decrease its contractility slightly and the resistance in the vessels will decrease so as to make a decrease in blood pressure (Lundy, 2024).

Yoga exercises also stimulate the release of the hormone endorphin, which acts as a natural tranquilizer produced by the brain. Endorphin creates a feeling of well-being and increases endorphin levels in the body which can help reduce high blood pressure (Lundy, 2024). A decrease in blood pressure occurs due to a decrease in peripheral resistance, which occurs when doing regular exercise. Over time, physical exercise will make blood vessels more relaxed, resulting in dilation and relaxation of blood vessels. It can also reduce the risk of fat accumulation on the walls of blood vessels, which in turn helps maintain the elasticity of blood vessels (Lundy, 2024).

Based on the reference journal in this community service, according to Wiyono's research (2021) there is a significant effect between giving yoga exercises on changes in blood pressure in hypertensive patients in the Pandanwangi Health Center working area in Malang City.

The community also did a yoga demonstration together to reduce and prevent hypertension. Documentation of each activity by all teams involved. Figure 1 illustrates the measurement of blood pressure before being given counseling on hypertension and yoga exercises to reduce or prevent hypertension. Figure 2 is the delivery of material related to hypertension and yoga exercises to prevent and reduce hypertension to the community, delivered by the speaker directly. The speaker uses a participatory method, so that

participants can ask directly or comment. Figure 3 shows the community participating in yoga exercises demonstrated by a student of ITS PKU. Figure 4 shows the community following a series of community service events. Figure 5 shows at the end of the event the community is rechecking blood pressure after being given yoga exercises.

Table 1. Results of Blood Pressure Before and After Counseling and Yoga Gymnastics

No.	Name	Blood Pressure Before	Blood Pressure After
1.	Ms. M	115/80 mmHg	115/80 mmHg
2.	Ms. M	125/90 mmHg	120/80 mmHg
3.	Ms. T	120/80 mmHg	120/80 mmHg
4.	Ms. D	130/80 mmHg	125/85 mmHg
5.	Ms. S	110/80 mmHg	110/80 mmHg
6.	Ms. S	140/90 mmHg	130/85 mmHg
7.	Ms. S	125/80 mmHg	120/80 mmHg
8.	Ms. E	130/80 mmHg	125/80 mmHg
9.	Ms. U	120/75 mmHg	120/80 mmHg
10.	Ms. J	115/80 mmHg	115/80 mmHg
11.	Ms. M	140/90 mmHg	125/85 mmHg
12.	Ms. H	100/80 mmHg	105/80 mmHg
13.	Ms. S	120/90 mmHg	120/80 mmHg
14.	Ms. M	137/76 mmHg	125/80 mmHg
15.	Ms. G	120/90 mmHg	115/85 mmHg
16.	Ms. S	176/97 mmHg	160/90 mmHg
17.	Ms. S	147/97 mmHg	135/90 mmHg
18.	Ms. S	133/67 mmHg	125/70 mmHg
19.	Ms. I	130/91 mmHg	125/85 mmHg
20.	Ms. M	184/91 mmHg	170/90 mmHg
21.	Ms. K	133/67 mmHg	125/80 mmHg

22.	Ms. S	130/90 mmHg	120/85 mmHg
23.	Ms. M	130/80 mmHg	125/80 mmHg
24.	Ms. D	110/90 mmHg	110/80 mmHg
25.	Ms. S	173/84 mmHg	165/85 mmHg
26.	Ms. U	130/80 mmHg	125/80 mmHg



Blood Pressure Measurement Before Health Education and Yoga Exercise



Figure 2. Delivery of Hypertension Reduction and Prevention Materials with Yoga Gymnastics



Figure 3: People Participate in Yoga Gymnastics



Figure 4: People Who Participate in Community Service



Figure 5. Blood pressure measurement after health education and yoga exercises

4. Conclusion

People in Sindon Village know how to reduce and prevent hypertension after health education on how to reduce and prevent hypertension with yoga exercises. The need for continuous follow-up to carry out yoga exercises regularly in the village so that the objectives of community service can be maximally realized, because hypertension can attack a person anytime and anywhere so it is important to always be monitored by various parties to ensure that the community conducts routine checks at the nearest health service by coordinating through health cadres in the village posbindu.

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