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Prevention and Control of Hypertension through Tera Gymnastics with Guntung Paikat Residents of Banjarbaru

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Abstract: *World Health Organization estimates that in 2019 the global prevalence of hypertension is 22%. Referring to the 2018 Riskesdas report, the prevalence of hypertension in Indonesia is 34.11%, and South Kalimantan ranked first (44.13%). One of the risk factors for hypertension is a sedentary lifestyle. Therefore, community empowerment is needed to modify lifestyles that affect the occurrence of hypertension. Fifteen residents of RT.007 RW.005 in Guntung Paikat have participated in tera gymnastics to control blood pressure. Seven of them received leaflets to increase knowledge and attitudes related to hypertension. The evaluation results showed a decrease in the mean systolic (p-value=0.020) and diastolic (p-value=0.011) blood pressure between before and after exercise. The increase in mean knowledge (p-value=0.655) and attitude (p-value=0.436) was not significantly affected by the provision of leaflets.*

Introduction

In 2010, there were 9.4 million fatalities worldwide due to high blood pressure, accounting for 7% of disability-adjusted life years. Due to population growth and age, the number of people with hypertension who were not taking medication to control their high blood pressure or whose hypertension was resistant to therapy increased from 605 to 978 million. According to projections, there will be 1.56 billion adults worldwide with hypertension in 2025, up over 60% from the current figure [1]. Southeast Asia ranks 3rd highest in hypertension, with a prevalence of 25% of the total population. Adult Southeast Asians get a hypertension diagnosis in about one-third of cases [2]. Furthermore, 1.5 million deaths related to hypertension annually have also been estimated [3].

[1] Youness El Achhab et al., "Prevalence, Control and Risk Factors Related to Hypertension among Moroccan Adults: A Multicentre Study," *Eastern Mediterranean Health Journal* 139, no. 7 (2019): 447–453.
[2] Kemenkes RI, *Hipertensi Si Pembunuh Senyap*, *Kementrian Kesehatan RI*, 2019.
[3] Azmawati Mohammed Nawi et al., "The Prevalence and Risk Factors of Hypertension among the

The prevalence of hypertension in Indonesia shows an increasing trend from 25.8% in 2013 to 34.11% in 2018 [4]. Riskesdas (2018) found that women (36.85%) had a greater prevalence of hypertension than men (31.34%). Urban areas are more prevalent (34.43%) than rural areas (33.72%). Its prevalence has increased with increasing age. Based on the measurements in South Kalimantan, the prevalence rate for people aged 18 years who suffer from hypertension is 44.13%. This prevalence rate is higher than the national prevalence and places South Kalimantan in the first rank for the province with the highest prevalence of hypertension based on measurement results in Indonesia [5]. The prevalence rate for people aged 18 years who suffer from hypertension, based on the results of measurements in Banjarbaru is 32.83%, below the prevalence rate in South Kalimantan [6]. However, in several areas, one of which is South Banjarbaru District, this health problem is first among the ten most common diseases recorded by the Puskesmas.

Community diagnostics conducted on residents in RT.007 RW.005 Kelurahan Guntung Paikat showed that 4.63% of 103 residents aged 30 years had hypertension. This is also strengthened by problem priority determination. Through exploring risk factors, it is known that the problem of hypertension in RT.007 RW.005 is related to excessive salt consumption, lack of physical activity, overweight, excessive coffee consumption, stress, and lack of sleep duration by 50% for each variable. The results of collecting data on community needs indicate that the community needs activities related to physical activity to deal with the problem of hypertension.

Physical activity or sports such as gymnastics can stimulate the heart to work optimally. An exercise that can be carried out is tera gymnastic [7]. Tera gymnastics affects the blood vessels and the heart system to improve performance. There is a decrease in blood pressure because, during this exercise, there is a slowed breath movement, which relaxes the body and widens the capillaries to increase blood circulation. Deep breathing can increase the circulation of O_2 and CO_2. Inhaling and exhaling regularly can also increase the effectiveness of the heart's performance, so the mental and physical tension that creates increased blood pressure can be reduced [8].

Field Learning Experience or FLE is a learning process for public health students in carrying out priority intervention activities for health problems in RT.007 RW.005 Kelurahan Guntung Paikat, like hypertension and lack of physical activity as the root of

Urban Population in Southeast Asian Countries: A Systematic Review and Meta-Analysis," *International Journal of Hypertension* (2021): 1–14.

[4] Kemenkes RI, *Hipertensi Si Pembunuh Senyap*.

[5] Kemenkes RI, *Laporan Nasional Riskesdas 2018*, *Lembaga Penerbit Badan Litbang Kesehatan* (Jakarta, 2019).

[6] Kemenkes RI, *Laporan Provinsi Kalimantan Selatan Riskesdas 2018*, *Lembaga Penerbit Badan Litbang Kesehatan* (Jakarta, 2019).

[7] Uswatul Khasanah and Siti Nurjanah, "Pengaruh Senam Tera Terhadap Penurunan Tekanan Darah Pada Lansia Dengan Hipertensi," *Indonesian Journal of Nursing Science and Practice* 3, no. 1 (2020): 23–34.

[8] Ibid.

the problem based on the results of a community diagnosis. Therefore, it is necessary to intervene at the root cause of the problem to prevent and control hypertension. Intervention is carried out through activities in the FLE follow-up plan, i.e. the implementation of tera gymnastics. This activity is expected to control hypertension in RT.007 RW.005 Guntung Paikat Village.

Method

The community empowerment program in FLE is carried out through a process that includes planning, organizing, actuating, and controlling [9]. All procedures carried out offline during the Covid-19 pandemic comply with health protocols. The first step is the planning stage, which is carried out by diagnosing the community, and involving residents to discover health problems in RT.007 RW.005 Kelurahan Guntung Paikat. Hypertension is a priority health problem after being assessed by the Reinke scoring technique (Magnitude, Importance, Vulnerability, and Cost), likewise, determining the priority of problem-solving [10], namely physical activity or sports, which were previously known through filling out the risk factor questionnaire. Planning occurs with community participation in completing questionnaires, scheduling intervention activities, and preparing intervention infrastructure.

Figure 1. Distribution of Community Diagnostic Questionnaires

The organization was performed non-formally with the assistance of the RT (Rukun Tetangga) to determine the activity's location and residents who participated in distributing questionnaires and invitations to activities. The FLE team facilitates blood pressure checkpoints and distributes hypertension leaflets.

The community empowerment program consists of 2 activities: implementing hypertension exercises (tera) and discussions about hypertension based on leaflet. Both activities were carried out with assistance from the FLE Team. Monitoring or monitoring

[9] Aulia Firda Rahmawati, Besar Tirto Husodo, and Novia Handayani, "The Analysis of Lamongan Toddler Nutrition Care (PELITA LA) Program in Dradah Health Center Lamongan," *Journal of Public Health for Tropical and Coastal Region* 4, no. 1 (2021): 1–8.

[10] Denas Symond, "Penentuan Prioritas Masalah Kesehatan Dan Prioritas Jenis Intervensi Kegiatan Dalam Pelayanan Kesehatan Di Suatu Wilayah," *Jurnal Kesehatan Masyarakat* 7, no. 2 (2013): 94–100.

is carried out during the program. At the same time, the evaluation is carried out before and after the activity.

The effectiveness of tera gymnastics is evaluated by measuring blood pressure before exercise and 30 minutes after exercise. The break was used to open a discussion session on the leaflet. The effectiveness of giving leaflets was evaluated by completing the pre-test before exercise and the post-test after the second blood pressure measurement. As many as 15 residents had their blood pressure measured, and 7 of them filled out the pre-test and post-test.

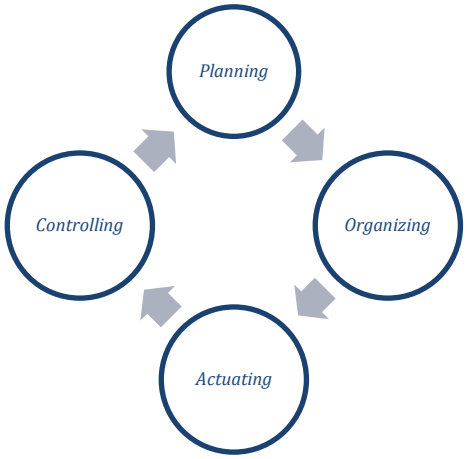

Figure 2. Community Empowerment Program Implementation Method

The monitoring and evaluation results will be considered for planning programs in the following period. An adjusted plan is written in a PoA (Planning of Action) or a follow-up plan. PoA contains a new strategy for running the next program after knowing the previous constraints.

Result

The Reinke method determines problem priority and problem-solving (score 1-5). The bigger the problem, the bigger the score given.

M = Magnitude of the problem

I = Importancy

V = Vulnerability

C = Cost. The greater the cost, the smaller the score

$$\text{Total} = (M \times I \times V) : C$$

Tabel. 1 Problem Priority Determination

Health Problems	Score				Total	Priority
	M	I	V	C		
Hypertension	5,00	3,20	3,60	3,00	19,20	1
Overnutrition in adolescents	4,00	3,60	3,40	3,40	14,40	2
Chronic energy deficiency in Girls	5,00	3,20	3,20	3,60	14,22	3
Diabetes mellitus	3,00	3,20	3,20	3,00	10,24	4
Acute respiratory infection	5,00	3,00	2,60	4,00	9,75	5
Obesity	2,00	2,20	3,00	3,40	3,88	6
Asthma	2,00	2,40	1,80	3,20	2,70	7
Diarrhea	1,00	2,40	2,60	2,60	2,40	10
Risk of overnutrition	1,00	2,00	2,80	3,20	1,75	8
Overnutrition	1,00	2,00	2,80	3,20	1,75	9

Some of the risk factors for hypertension are lack of knowledge, consumption of foods with excess salt, lack of physical activity, and irregular medication can be overcome. Several ways are considered to be problem-solving and determined by the Reinke method.

Tabel. 2 Problem-Solving Priority Determination

Problem-Solving	Score				Total	Priority
	M	I	V	C		
Communication, information, education	2	3	2	4	3	3
Cooking demonstration	2	3	4	2	12	2
Physical activity	5	3	3	3	15	1
Counseling	2	3	2	4	3	3

The results of determining the priority of problems and problem-solving become the basis for organizing society.

Figure 3. Planning Activities with Residents

The FLE team determines the location and time of activities with residents. Hypertension exercise activities were held on Saturday, October 30, 2021, at the Buana Permai field.

Figure 4. Exercise and Evaluation

Children to the elderly follow tera gymnastics. However, the evaluation was conducted only on those older than or equal to 15 years old.

Characteristics of participants in hypertension exercise can be observed in Table 3.

Tabel. 3 Characteristics of Participants

Variables	Frequency (n)	Percentage (%)
Sex		
Female	15	100
Age		
25-34 y.o	1	6,7
35-44 y.o	7	46,7
45-54 y.o	4	26,7
55-64 y.o	3	20
Occupation		
Civil servant	1	6,7
Entrepreneur	1	6,7

Variables	Frequency (n)	Percentage (%)
Housewife	13	86,8
The Latest Level of Formal Education		
Elementary school	1	6,7
Junior high school	2	13,3
Senior high school	9	60
Diploma	1	6,7
Bachelor	2	13,3
History of Diabetes		
Yes	3	20
No	12	80
Consumption of Antihypertensive Medicine		
Yes	3	20
No	12	80

All of the evaluated participants were female with various work and educational backgrounds. Most were housewives (86.8%) and had education up to high school (60%). Most of them were 35-44 years old (46.7%). Participants who had diabetes and had taken antihypertensive medicine were 20% each.

Tabel. *4* Condition of Participant's Blood Pressure

Blood Pressure	Frequency (n)	Percentage (%)
Before Tera Gymnastic		
Normal	3	20
Pre-hypertension	6	40
Grade 1 hypertension	6	40
After Tera Gymnastic		
Normal	6	40
Pre-hypertension	8	53,3
Grade 1 hypertension	1	6,67

Before participating in the exercise, most participants experienced pre-hypertension and grade I hypertension, with a percentage of 40% each. In

comparison, the other 20% have normal blood pressure. After exercising, the percentage reversed to 40% for normal blood pressure, 53.33% for pre-hypertension, and 6.67% for grade I hypertension. Participants who experienced pre-hypertension or hypertension grade I tended only to have a higher systolic or diastolic blood pressure.

Tabel. 5 Wilcoxon Test Results: Relationship between Tera Gymnastic and Participant's Blood Pressure

Blood Pressure	Mean (mmHg)	Z	*P-Value*
Systolic			
Before tera gymnastic	120,00	-2,32	0,020
After tera gymnastic	114,00		
Diastolic			
Before tera gymnastic	80,67	-2,53	0,011
After tera gymnastic	75,33		

After exercise, both systolic (6.00 mmHg) and diastolic blood pressure decreased on average (5.34 mmHg). Systolic blood pressure was tested by Wilcoxon test, and the p-value of 0.020<0.05 indicates a strong relationship between tera gymnastic and a drop in systolic blood pressure. Tera gymnastic and a decrease in diastolic blood pressure have an important link, according to the p-value of 0.011<0.05 for diastolic blood pressure.

Figure 5. Leaflet

The leaflet contains material on definitions, risk factors, symptoms,

complications, prevention, and control of hypertension.

Tabel. 6 Wilcoxon Test Results: Relationship between Giving Leaflets and Participants' Level of Knowledge

Knowledge Level	Mean	Z	*P-Value*
Before receiving the leaflet	8,86	-0,45	0,655
After receiving the leaflet	9,14		

As many as 14.28% of leaflet recipients increased their knowledge, as did those who decreased the value of their knowledge. In contrast, the remaining 71.42% did not experience a change in knowledge level. The mean value of knowledge after receiving the leaflet has increased. The results of the Wilcoxon test p-value 0.655> 0.05 indicated an increase in the participants' average level of knowledge that was not significantly related to the distribution of leaflets.

Tabel. 7 Paired T-Test Results: Relationship between Giving Leaflets and Participants' Attitudes

Attitude	Mean	t	*P-Value*
Before receiving the leaflet	77,14	-0,83	0,436
After receiving the leaflet	80,00		

As many as 28.57% of leaflet recipients experienced an increase in attitude and a decrease in attitude. At the same time, the other 42.85% did not experience a change in attitude. The average attitude after receiving the leaflet has increased. Paired t-test results show p-value = 0.436 or exceed α = 0.05. It means the average attitude increase is unrelated to giving leaflets.

Discussion

The p-value for the Wilcoxon test comparing blood pressure before and after tera gymnastics was 0.020<0.05, indicating that tera gymnastics significantly lowers systolic blood pressure. A p-value of 0.011<0.05 was obtained from the Wilcoxon test on diastolic blood pressure, indicating that tera gymnastics impacted diastolic blood pressure levels. P-values for various test findings for systolic blood pressure (0.000) and diastolic blood pressure (0.003) before and after exercise were found in a related investigation. The blood pressure has considerably changed. Those with hypertension can lower their blood pressure with this activity. With an average reduction in diastolic blood pressure of 6.00 mmHg and an average decrease in systolic blood pressure of 8.00 mmHg, exercise can lower blood pressure in older persons. The results of interviewing the participants

revealed that they felt fitter and healthier after exercises, although sometimes they underwent traditional medication and pharmacological medicines given once a week, they still carried out exercises as instructed. This exercise can be an alternative non-pharmacological therapy for people with mild high blood pressure (hypertension) [11].

Diastolic blood pressure above 80 mmHg and systolic blood pressure above 130 mmHg are considered high blood pressure. AMI or acute myocardial infarction and stroke risk are two times higher in people with systolic blood pressure of 130-140 mmHg than in those with normal systolic blood pressure. An increase in the risk of consequences, including coronary heart disease, stroke, and kidney failure, can be brought on by uncontrolled blood pressure. This means that stroke and ischemic heart disease are the causes of the highest incidence of death in the world in the last 15 years, i.e., 15.2 million deaths. Various factors have a role in reducing the incidence of hypertension, for example, physical activity. Physical activity is vital in preventing and treating high blood pressure. Physical activity includes everyday tasks like commuting, household chores, work-related activities, and movements that are done to promote good health. It is defined as any bodily movement produced by the contraction of skeletal muscles that increases energy expenditure above resting levels [12].

Lack of physical activity globally reaches 27.5%, while Riskedas data (2018) indicates that Indonesia's lack of physical activity reaches 33.5%. It means that the level of physical activity is still deficient. WHO recommends physical activity based on age; adolescents and children carry out a moderate-strength physical activity for at least 60 minutes a day, and adults 18-64 years and adults over 65 years carry out a moderate physical activity for at least 150 minutes per week [13]. Exercise or physical activity recommended for the main lifestyle therapy for adults with hypertension is prepared individually to fulfill the principles of Frequency, Intensity, Time, and Type or has the designation FITT. Exercise enhances cardiorespiratory fitness. For patients with hypertension, moderate physical activity has been shown to help control blood pressure. Exercise improves cardiorespiratory health directly and causally (reduced risk of cardiovascular disease, coronary heart disease, high blood pressure, and stroke). The amount of time spent exercising affects its ability to reduce blood pressure [14].

Physical activity, in terms of theory, can reduce individual blood pressure. The more frequent physical activity, the lower the risk of experiencing high blood pressure.

[11] Liza Merianti and Krisna Wijaya, "Pelaksanaan Senam Jantung Sehat Untuk Menurunkan Tekanan Darah Pada Pasien Hipertensi Di Panti Sosial Tresna Wherda Kasih Sayang Ibu Batusangkar," *Jurnal Ilmu Kesehatan 'Afiyah* 2, no. 1 (2015).

[12] Siti Maskanah et al., "Hubungan Aktivitas Fisik Dengan Tekanan Darah Pada Penderita Hipertensi Di Rumah Sakit Muhammadiyah Palembang," *Jurnal Keperawatan Muhammadiyah* 4, no. 2 (2019): 97–102.

[13] Ibid.

[14] Abdul Aziz and Fitri Arofiati, "Aktivitas Fisik Untuk Menurunkan Tekanan Darah Pada Penderita Hipertensi: Literature Review," *Jurnal Kesehatan Karya Husada* 1, no. 7 (2019): 2655–8874.

Physical activity is influenced by various factors, for example, the perceived disease process and age. Regular physical activity can help increase the efficiency of the heart's overall performance. The cause of increased blood pressure is difficult to identify with certainty because the factors that support increased blood pressure are very diverse and specific to each individual. Physical activity is influenced by age because the addition of an individual's age impacts the functional decline of the limbs, thus affecting the level of physical activity. The body's organs, blood supply, and oxygen become crowded when little physical activity raises blood pressure. Frequent physical activity and exercise can lower or stabilize blood pressure [15].

The results of the Wilcoxon test p-value 0.655> 0.05 indicating an increase in the average level of knowledge of the participants was not significantly related to the distribution of leaflets. There was no effect of giving leaflets on the recipient's knowledge, possibly due to defective material or level of understanding. This finding differs from earlier research, which found that health education positively impacted families with high blood pressure, with a p-value of 0.0001<0.05 [16].

Health education is a learning experience process that aims to influence attitudes, understanding, and behavior related to individual or group health. Providing health promotion services can change a person's knowledge and attitude. The more diverse health information there is, the more varied knowledge can be obtained related to health and can shape a person's healthy attitude [17]. Health promotion media is a promotional event showing the message or information the communicator will give. Health promotion is an action or endeavor to spread health messages to citizens, individuals, or groups to improve their understanding of health. Health promotion is conveyed through several media so that the various information messages conveyed can be more interesting and easy to understand. The target can more easily accept the message and learn to make positive behavior. In implementing health promotion, media assistance is needed to convey messages to optimally achieve the promotional objectives. Health promotion media is printed media such as leaflets, brochures, pamphlets, posters, etc.

Presentation of leaflet media to provide increased insight with sentences and pictures related to the material conveyed. Using leaflets as a promotional medium is perfect for conveying education and using demonstration methods so individuals and groups can easily understand them. Leaflets as a media for health promotion in sharing

[15] Hasanudin, Vita Mariyah Adriyani, and Pertiwi Perwiraningtyas, "Hubungan Aktivitas Fisik Dengan Tekanan Darah Pada Masyarakat Penderita Hipertensi Di Wilayah Tlogosuryo Kelurahan Tlogomas Kecamatan Lowokwaru Kota Malang," *Journal Nursing News* 3, no. 1 (2018): 787–799.

[16] Ainal Mardhiah, Asnawi Abdullah, and Hermansyah, "Pendidikan Kesehatan Dalam Peningkatan Pengetahuan, Sikap Dan Keterampilan Keluarga Dengan Hipertensi - Pilot Study," *Jurnal Ilmu Keperawatan* 3, no. 2 (2015): 111–121.

[17] Hanifah Mirzanie, Shinta Prawitasari, and Shofwal Widad, "Pengaruh Metode Promosi Kesehatan Terhadap Pengetahuan Dan Sikap Kader Tentang Deteksi Dini Kanker Leher Rahim," *Jurnal Kesehatan Reproduksi* 6, no. 1 (2019): 19–23.

information or messages with a sheet. The information in the leaflet can be in the form of sentences, combinations, or pictures. Leaflet health promotion media aims to improve a person's knowledge or behavior to achieve optimal health [18].

Through leaflet media, counseling increases one's knowledge with writing or pictures. Leaflets were chosen as promotional media that can increase understanding because they are easy to store, economical, and can function as a reminder to the target. Thus, an attempt was made to increase knowledge by providing counseling using leaflet media. With leaflets, information is created to be more compact, concise, and easily understood. Leaflets can support or complement the first material given and can be easily distributed to the audience. In addition, leaflet media can be reprinted or updated for discussion material and stored for a long time. Someone who is exposed to information through leaflet media can find out more knowledge [19].

Leaflets are obtained easily and efficiently used for information media. Media in the form of photographs and images must be determined under the outlined purposes for which they are made. Photos or pictures can trigger someone's motivation to read, interpret, and remember messages related to images or pictures in leaflets [20]. Various studies have found that leaflet health promotion media is more effective than some health media. Increasing knowledge through leaflets is higher because this media contains clear and concise messages and is easy to understand so that someone can understand the message's contents [21]. Many previous studies have proven significant changes in a person's knowledge when given health education through leaflets. This happens because individuals often use their five senses when learning to use leaflet media. The five senses that most channel knowledge to the brain are the eyes, which are 75% to 87% [22].

Paired t-test results show p-value = 0.436 or exceed α = 0.05. Meaning, the increase in the average attitude is not significantly related to giving leaflets. The absence of the effect of giving leaflets was possibly due to the time gap between the intervention and the evaluation. In addition, the evaluation arrangement that allows participants to bring leaflets and post-test sheets to be done at home provides for bias that the FLE Team

[18] Alini and Indrawati, "Efektivitas Promosi Kesehatan Melalui Audio Visual Dan Leaflet Tentang Sadari (Pemeriksaan Payudara Sendiri) Terhadap Peningkatan Pengetahuan Remaja Putri Tentang Sadari Di SMAN 1 Kampar Tahun 2018," *Jurnal Ners* 2, no. 2 (2018): 1–9.

[19] Cynthia Ayu Ramadhanti, Dea Amarilisa Adespin, and Hari Peni Julianti, "Perbandingan Penggunaan Metode Penyuluhan Dengan Dan Tanpa Media Leaflet Terhadap Pengetahuan Dan Sikap Ibu Tentang Tumbuh Kembang Balita," *Jurnal Kedokteran Diponegoro* 8, no. 1 (2019): 99–120.

[20] Gusti Ayu Dwina Mastryagung, Ni Made Ayu Yulia RT, and Ni Ketut Noriani, "Efektivitas Pemberian Leaflet Terhadap Motivasi Dan Pengetahuan Ibu Hamil Tentang IMD," *Jurnal Riset Kesehatan Nasional* 1, no. 2 (2017): 164–169.

[21] Fauziah Nasution, Putra Apriadi Siregar, and Emmy Yustina, "Improvement of Knowledge and Attitude of Community Figure in Preventing Malaria Disease through Discussion with Leaflet and Module," *Jurnal Kesehatan* 12, no. 2 (2019): 154–164.

[22] Febby Amelia Rachman, Margaretha Haiti, and Morlina Sitanggang, "Edukasi Kesehatan Menggunakan Leaflet Dengan Pengetahuan Dan Sikap Hand Hygine," *Cendekia Medika* 3, no. 1 (2018): 17–21.

cannot control to assess changes in attitude and level of knowledge. This is not the same as previous research, which indicated that health education had an effect on increasing family attitudes regarding high blood pressure with a p-value of 0.000 <0.05 [23].

Another study obtained results from the Friedman test with a significance value of 0.006, meaning that health promotion using leaflets significantly affects attitude change [24]. Research on clean and healthy living behavior obtained a significance value of 0.000 <0.1, indicating differences in residents' attitudes in the treatment and the control group with an average value of 2.805 using poster media and leaflets. This study's results show that using posters and leaflets can increase the effectiveness of health education. Success in public health counseling depends on information elements. Health education media is an element or component that supports other features [25].

Attitude is an individual response that is still close to the stimulus object. The manifestation of attitude cannot be observed directly, but only an interpretation can be made of the hidden behavior. Attitude actually, as a connotation, there is harmony in response to a stimulus [26]. Attitude is an individual response to a particular object or stimulus. Attitudes cannot be seen directly, but interpretation can be made beforehand from closed behavior. Changing personal attitudes is very difficult to implement because it requires continuous stimulus and takes time to process. Giving a trigger or stimulus requires effective and appropriate communication media so that changes in individual attitudes are aligned with what is desired [27].

Health education is a suitable strategy to alter attitudes and broaden public awareness. The primary goal of health education is to disseminate knowledge about health to groups, individuals, and the general public. Providing socialization and direction including health education is expected to be able to change negative attitudes. Individual attitudes can be influenced by receiving good information and delivering health education. Individual attitudes can change after obtaining additional information [28].

Changes in blood pressure, level of knowledge, and attitudes can be seen as indicators to assess the success of efforts to prevent and control high blood pressure.

[23] Mardhiah, Abdullah, and Hermansyah, "Pendidikan Kesehatan Dalam Peningkatan Pengetahuan, Sikap Dan Keterampilan Keluarga Dengan Hipertensi - Pilot Study."

[24] Syukaisih et al., "Efektivitas Promosi Kesehatan Dengan Media Leaflet Dan Video Terhadap Pengetahuan Dan Sikap Masyarakat Miskin Tentang Merokok," *Jurnal Penelitian Kesehatan Suara Forikes* 9, no. 4 (2018): 248–257.

[25] Alan Jabir, Firdaus J. Kunoli, and Ahmad Yani, "Pengaruh Media Poster Dan Leaflet Terhadap Sikap Masyarakat Tentang 10 PHBS Dalam Kedaruratan Di Huntara Gawalise Kota Palu," *Jurnal Kolaboratif Sains* 1, no. 1 (2019): 745–751.

[26] Anisha Tiara Putri, Farit Rezal, and Akifah, "Efektivitas Media Audio Visual Dan Leaflet Terhadap Peningkatan Pengetahuan, Sikap Dan Tindakan Tentang Pencegahan Penyakit Gastritis Pada Santriwati Di Pondok Pesantren Hidayatullah Putri Dan Ummusshabri Kota Kendari Tahun 2017," *Jurnal Ilmiah Mahasiswa Kesehatan Masyarakat* 2, no. 6 (2017): 1–11.h

[27] S Notoatmodjo, *Promosi Kesehatan Dan Perilaku Kesehatan* (Jakarta: Rineka Cipta, 2012).

[28] Uswatun Hasanah, "Pengaruh Penyuluhan Kesehatan Terhadap Perubahan Pengetahuan Dan Sikap Masyarakat Pada Penderita Gangguan Jiwa," *Jurnal Keperawatan Jiwa* 7, no. 1 (2019): 87.

These efforts can include face-to-face education or other media such as e-mail, manuals, videos, lines, booklets, etc. Various studies have shown decreased systole and diastolic blood pressure after receiving educational interventions [29].

Conclusion

The evaluation of community empowerment revealed that tera gymnastic reduced systolic (p-value = 0.020) and diastolic (p-value = 0.011) blood pressure. Meanwhile, the increase in the mean knowledge and attitude of the participants was not significantly related to the provision of leaflets. The next program can overcome the limitations in evaluating the provision of leaflets by using a valid and reliable questionnaire.

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