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Community Diagnosis Activities in Efforts to Reduce Hypertension Cases in the Working Area of Legok Health Center, Legok District, Tangerang District, Banten Province

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ABSTRACT

Background: Hypertension is one of the most common causes of heart disease, stroke, and kidney failure. Hypertension cases in Indonesia until 2018 were recorded at around 34.1%. There was an increase compared to 2013 which was 25.8%. The number of new cases of hypertension during July to September 2023 at the Legok Health Center is known to increase every month, from 63 to 77 cases with the highest cases in Babakan Village. From the mini-survey, it was found that knowledge about hypertension was still lacking. Objective: To increase public knowledge about hypertension as a whole in the working area of the Legok Health Center. Methods: A community diagnosis approach was used to identify problems using Blum's Paradigm. Problem prioritization was determined using non-scoring Delphi technique and the root cause of the problem was determined through fish-bone diagram. Data on intervention outcomes were obtained through pre and post test questionnaires. Monitoring was conducted using the plan-do-check-action (PDCA) cycle. Results: Based on the results of the analysis using the fishbone diagram, the main problem is lifestyle. The results of the activity obtained all participants scored ≥70 points on the post-test and blood pressure screening ≥140 and / or ≥90 was obtained in 10 people (35.71%). The nutritional status of under-weight was found in 2 people (7.14%), normal in 5 (17.86%), overweight in 3 (10.71%), obesity level 1 in 12 people (42.86%), and obese level 2 in 6 people (21.43%) and abdominal circumference ≥80 cm in 21 people (75%). Conclusion: Based on our intervention, it can be stated that our intervention is successful so that it is expected to reduce hypertension cases at the Legok Health Center.

Keywords:

hypertension, knowledge, community diagnosis, blum's paradigm, intervention

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1. INTRODUCTION

Community diagnosis is a method of quantitative and qualitative health analysis regarding health conditions and health problems in the community as well as factors that influence their health conditions, which are identified and quantified thoroughly in terms of mortality and morbidity numbers and ratios, as well as identifying their relationships to determine those at risk. and need health care [1]. Information description health public used in primary care as background behind in give interventions focused on prevention and health promotion [2].

Hypertension is condition happen enhancement pressure blood above normal caused by various factors [3]. Hypertension shared into two types, namely primary and secondary. Hypertension secondary caused by causes specific ones only can detected in part small patient, meanwhile primary hypertension is caused interaction complex between genetics, the aging process and a number big factor environment [4].

According to World Health Organization (WHO), until in 2021 there is case hypertension as much around 1.28 billion in those aged 30-79 years, with two thirds originate from countries with income intermediate lower [5]. Hypertension cases in Indonesia are estimated amounting to 34.1%, showing enhancement compared to 2013, namely around 25.8% (Health Research and Development Agency, 2013). Hypertension called as " Silent Killer" because Lots from sufferer hypertension show no symptoms.(World Health Organization, 2023b) Indonesia Renal Registry (IRR) reports that incident hypertension become reason most common disease kidney chronic. (Lukito, 2023) Apart from disease kidney chronic, hypertension that is not controlled become reason most common from disease heart disease and possible stroke cause decline quality life and death [6].

Public health center Legok is Puskesmas located in the District Legok, Tangerang Regency, Banten. Based on Puskesmas data Legok from July to September 2023 there were 1,539 cases hypertension, where obtained amount case increase since July to September. In July it was obtained case new hypertension by 63 increased to 77 in September [7]. Based on these data, then need community diagnosis is carried out for identify more carry on factor reason enhancement amount case new hypertension to be able to done possible interventions prevent and reduce prevalence hypertension in the work area Public health center Legok, Tangerang Regency and is expected with community diagnosis is carried out can arranged solution problem in handle case hypertension at the Community Health Center Legok [8].

2. METHODS

Community diagnosis This follow stages as as follows : 1) Initial meeting For determine problem areas, 2) Determine instrument data collection, 3) Data collection from community, 4) Analyze and conclude data, 5) Create report results and presentation dissemination. Determination of problem areas achieved through analysis of the initial data obtained from Community Health Center, observation environment and society, and interviews public in a way direct For gather problems that exist in society. Determination priority problem done with use method non-scoring (Delphi) for prioritize problems and discussed at the Community Health Center Legok with Head Public health center Legok, General Practitioner at the Community Health Center Legok, part promotion health and related program holders [9].

Identification problem done with BLUM Paradigm. Data collection was carried out with observations, data collection at the Community Health Center, and mini-surveys conducted on visitors Public health center Legok as many as 30 respondents use existing questionnaire validated. After set priority problem, next is determine reason problem with use fishbone diagram. Fishbone diagram will identify various possibility root reason problem and analyze problem the through session brainstorming [10].

After set root reason problem, stage next is preparation intervention. Drafting intervention use Log Frame Goals and Gantt Chart. After set schedule and type intervention, then the process progresses intervention assessed in a way organized use cycle Plan Do Check Act (PDCA). Evaluation success solution problem done with approach system. Based program evaluation approach system is an orderly and systematic process in compare the results achieved with yardstick measuring or standard of each indicator that has been set from element output (output), continued with find cause / causes, on other elements of system the Then done taking conclusion as well as preparation of recommendations that will be made repair achievement system That [11]. Approach system This own a number of elements, including input, process, output, feed feedback, impact and the environment.

3. RESULTS AND DISCUSSION

Epidemiological Data

Based on the results of the data obtained, work area Public health center Legok covers 71,621 people. Based on epidemiological data in the work area Public health center Legok in 2023 in July to September is available amount whole case hypertension as many as 1,539 cases with amount case new between range time the as many as 212 cases. Based on data from Public health center Legok obtained amount case new There were 63 cases of hypertension in July, 72 cases in August, and 77 cases in September [12]. Happen enhancement case new amounting to 18.18% of July to September 2023. Obtained case New cases in Babakan Vil-lage were 63 cases, Ranca Gong Village 43 cases, Legok Village 45 cases, Serdang Wetan Village 32 cases, and Palasari Village as many as 29 cases. Therefore that, in community diagnosis This writer chose Babakan Village as target For done community diagnostic intervention related problem hypertension [13].

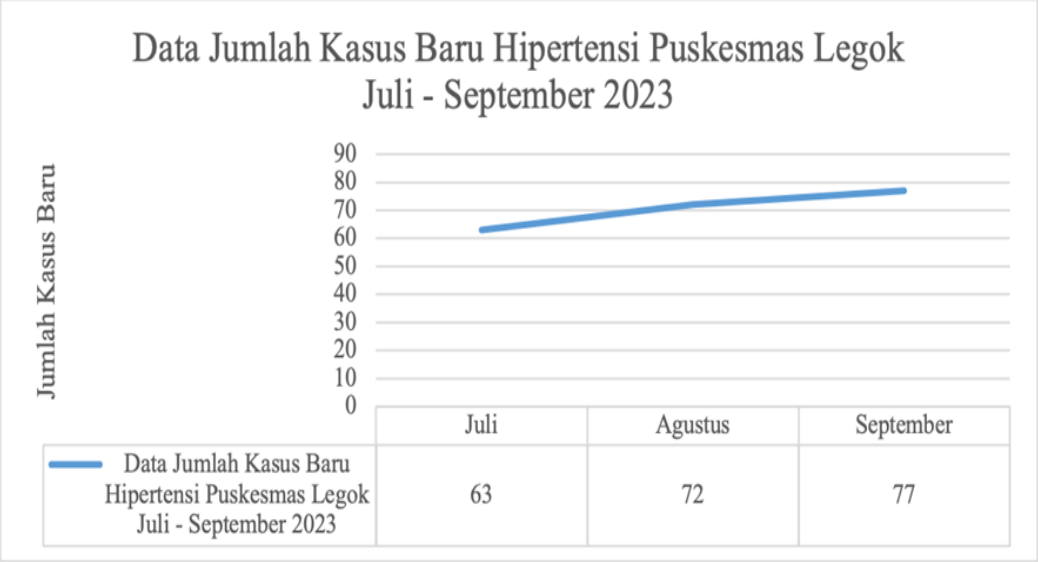

Figure 1. Graph Number of New Cases of Hypertension in Community Health Centers Legok

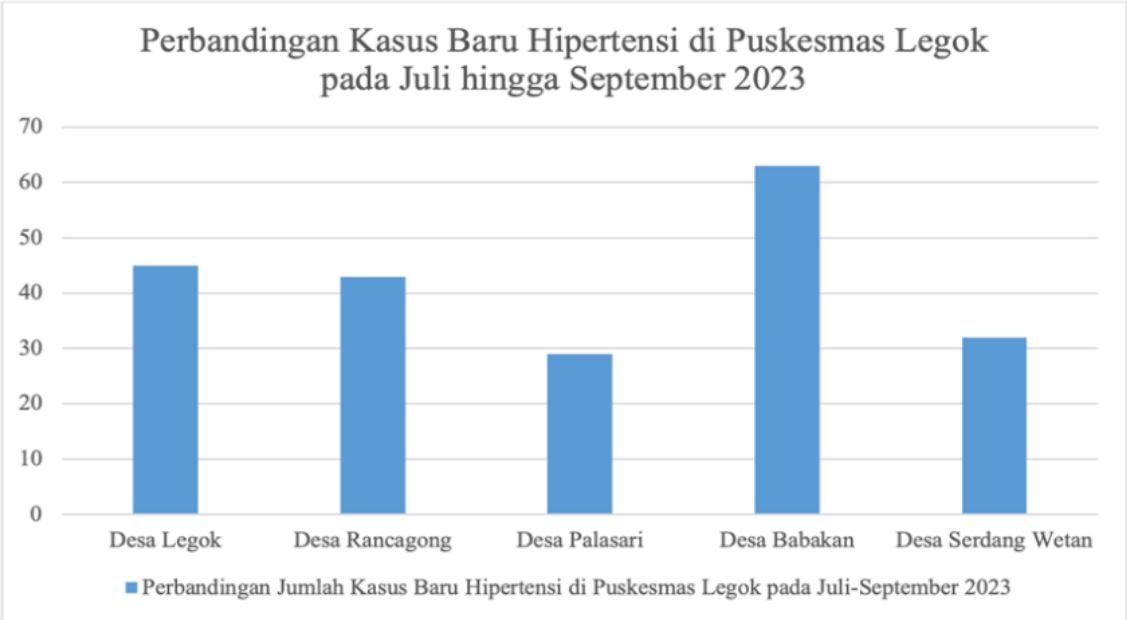

Figure 2. Graph Comparison of New Cases of Hypertension in Community Health Centers Legok July-September 2023

Identify the Cause of the Problem

Using the BLUM paradigm, problems related to hypertension have been identified at the Legok Community Health Center. In accordance with the preparation of the BLUM paradigm, the problems obtained can be seen in Figure 3. From the discussion of the Head of the Legok Community Health Center, the General Practitioner at the Legok Community Health Center, the health promotion section and related program holders, the component determined as a priority is lifestyle.

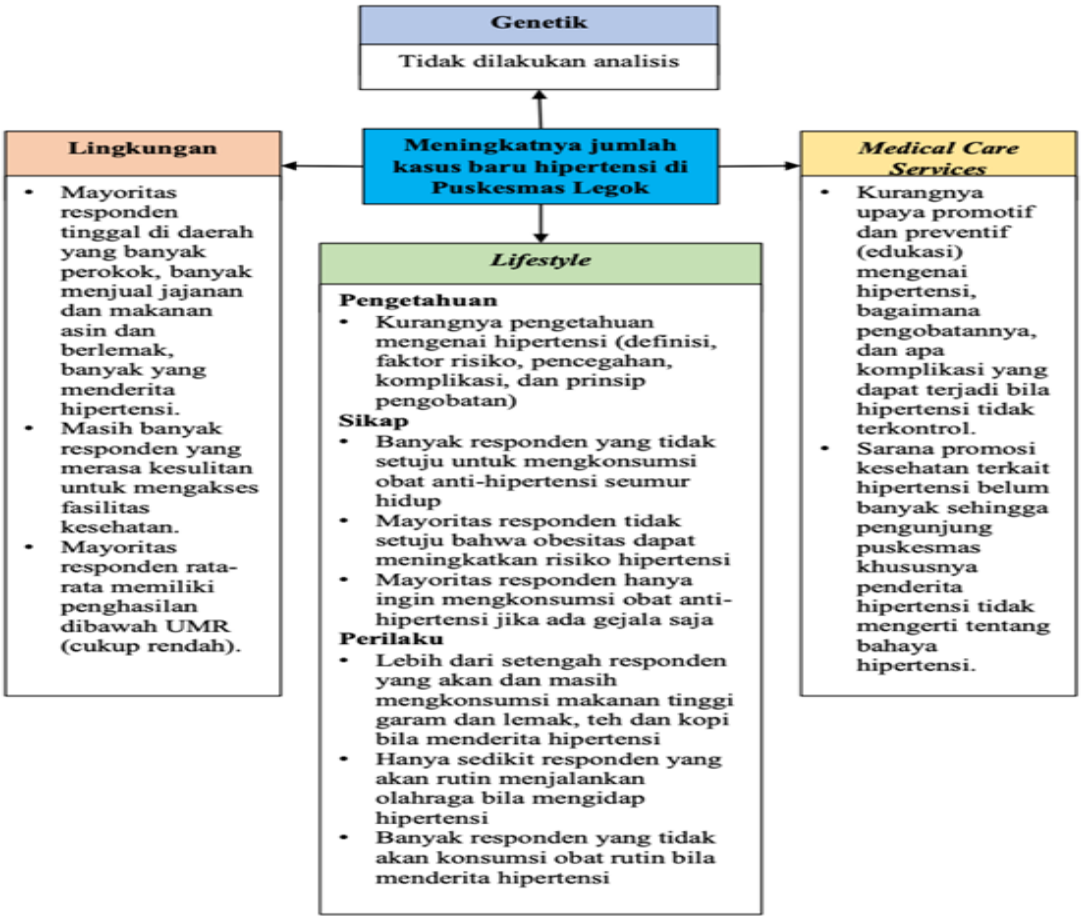

Figure 3. BLUM paradigm

Identify the Root Cause Problems and Alternative Solution Problem

Identification problem reason done using a fishbone diagram [14]. Brainstorming is done and found that all problems found rooted from lack of counseling Health workers to society and lack thereof awareness public related hypertension. Based on analysis fishbone, then can planned a number of alternative solution problem about risk tall hypertension in Babakan Village, namely do counseling about hypertension covers definition, causes, factors risks, foods that are allowed consumed and what not can consumed by sufferers hypertension, complications, methods prevention as well as treatment hypertension ; do screening hypertension in Babakan [15].

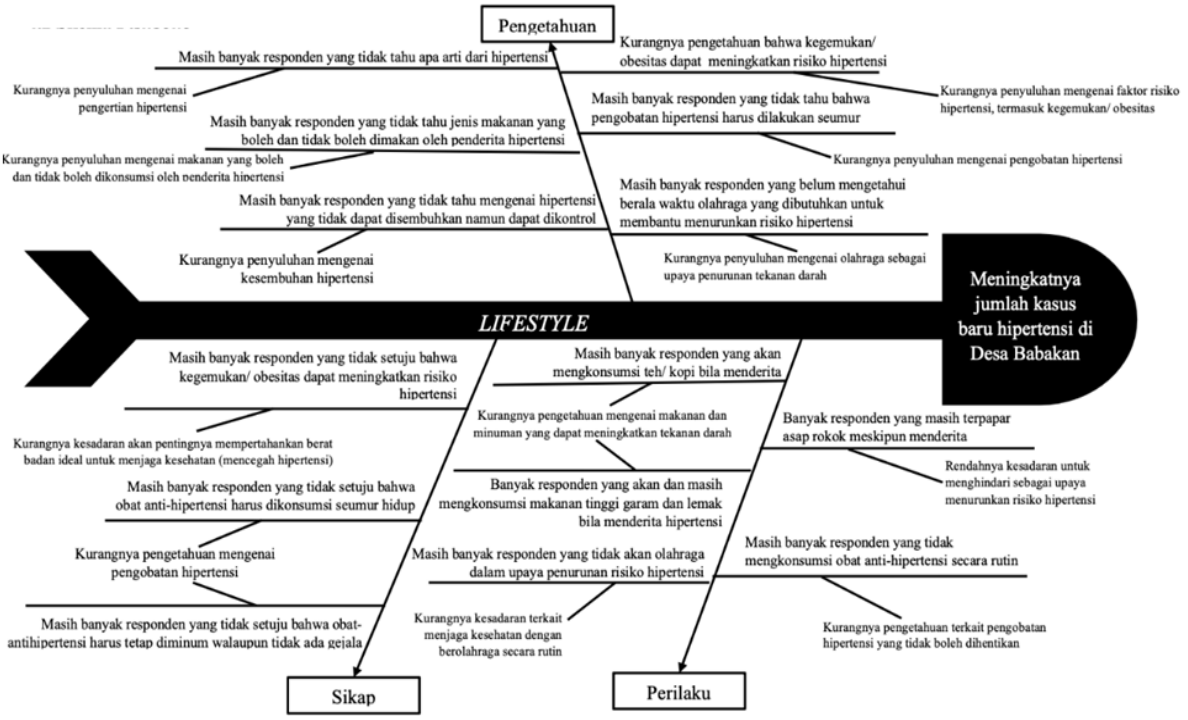

Figure 4. Fishbone Diagram

Village residents began from age mature productive until elderly ; and do screening obesity in Babakan Village residents as one factor risk happen hypertension [16].

Planning Intervention

The interventions that have been determined held in a way simultaneously on Saturday, October 28 2023 at the Citizens' Hall RW 012 Babakan Village. With Log Frame Goals, each intervention determined process input and expected output. Log Frame Goals from each in-tervention can seen in Table 1, Table 2 and Table 3. Timeline compiled use Gantt Chart is appropriate planning existing interventions set.

Table 1. Log Frame Goals from Intervention I: Do Hypertension Screening to the Community in Ba-bakan Village with Measurement Blood pressure

Masukan	Proses	*Output*		
		Jangka Pendek (6 minggu)	Jangka Menengah (1 tahun)	Jangka Panjang (5 tahun)
Man: 3 dokter muda *Money:* Rp. 0,- *Material:* - Tensimeter - Kertas - Bolpoin *Method:* Pengukuran tekanan darah	- Pengukuran tekanan darah pada seluruh peserta - Pencatatan data dan hasil pengukuran tekanan darah - Edukasi terkait hipertensi dan menyarankan para peserta untuk melakukan pemeriksaan tekanan darah berkala.	Peserta skrining dengan tekanan darah tinggi dapat segera memeriksakan diri ke Puskesmas Legok dan mendapat pengobatan bila diperlukan.	Masyarakat yang tinggal di Desa Babakan dapat melakukan skrining hipertensi secara rutin.	Menurunnya jumlah kasus hipertensi di wilayah kerja Puskesmas Legok.

Table 2. Log Frame Goals From Intervention II: Do Hypertension Screening To The Community In Ba-Bakan Village With Measurement Blood Pressure

Masukan	Proses	*Output*		
		Jangka Pendek (6 minggu)	Jangka Menengah (1 tahun)	Jangka Panjang (5 tahun)
Man: 3 dokter muda *Money:* Rp. 55.000.00,- *Material:* - Timbangan berat badan - *Microtoise* - *Waist ruler* - Kertas - Bolpoin *Method:* Pengukuran berat badan, tinggi badan dan lingkar perut	- Pengukuran BB, TB dan lingkar perut pada seluruh peserta - Pencatatan data dan hasil pengukuran BB, TB dan lingkar perut. - Edukasi terkait obesitas sebagai faktor risiko hipertensi dan menyarankan peserta yang tergolong obesitas untuk skrining tekanan darah secara berkala di Puskesmas Legok.	Peserta yang terdeteksi obesitas diberikan edukasi mengenai factor risiko hipertensi.	Masyarakat yang tinggal di Desa Babakan dapat melakukan skrining obesitas dan menjaga berat badan ideal agar menurunkan faktor risiko hipertensi.	Menurunnya jumlah kasus hipertensi di wilayah kerja Puskesmas Legok.

Table 3.Log Frame Goals from Intervention III: Do Counseling About Hypertension to the Commu-nity in Babakan Village Timeline Implementation Intervention use Gantt Chart

No.	Kegiatan	Minggu							
		1	2	3	4	5	6	7	8
Perencanaan									
1.	Identifikasi masalah di wilayah kerja Puskesmas Legok	■	■						
2.	Identifikasi faktor penyebab: (menentukan target dan *mini survey*)		■	■					
3.	Menentukan akar penyebab maslaah dengan menggunakan *fishbone diagram*			■					
4.	Penentuan prioritas masalah dengan teknik Delphi			■					
5.	Perencanaan intervensi			■	■				
Pelaksanaan Intervensi									
6.	Pengajuan permohonan izin pelaksanaan intervensi				■				
7.	Persiapan penyuluhan: soal *pre-test* dan *post-test*				■				
8.	Intervensi I: Melakukan Penyuluhan Tentang Hipertensi kepada Masyarakat di Desa Babakan				■				
9.	Intervensi II: Melakukan *screening* Hipertensi kepada Masyarakat di Desa Babakan dengan Pengukuran Tekanan Darah di Desa Babakan				■				
10.	Intervensi III: Melakukan *screening* Obesitas kepada Masyarakat di Desa Babakan dengan Pengukuran IMT dan Lingkar Perut di Desa Babakan				■				
Pengawasan									
11.	Pengawasan proses intervensi				■				
Evaluasi									
12.	Evaluasi hasil intervensi				■	■	■		
13.	Penulisan laporan diagnosis komunitas		■	■	■	■	■		

Intervention Implementation and Results

Intervention I: Do Hypertension Screening to the Community in Babakan Village with Measurement Blood pressure

Activity pressure screening blood held on Saturday, October 28 2023, 09.00 – 10.00 WIB at the Citizens' Hall RW 012 Babakan Village. Before done activity counseling to society, third doctor young do measurement pressure blood with a blood pressure monitor. Measurement results pressure blood recorded and carried out screening by third doctor young [17]. Young doctor identify suffering participants hypertension, then collect and educate about hypertension so they come to Public health center Legok in time near For done evaluation periodically and accept treatment when required. Data are presented in Table 5.

Table 5. Intervention Results I

Karakteristik	Proporsi (%) N= 28	Mean	Median (Min – Max)
Tekanan Darah Sistolik (mmHg)			
≥140	8 (28.57)	150,5	148,5 (140 – 165)
<140	20 (71,43)	115,05	118 (87 – 137)
Tekanan Darah Diastolik (mmHg)			
≥90	7 (25)	99,28	100 (92 – 107)
<90	21 (75)	72,19	69 (56 – 87)
Hipertensi			
Ya	10 (35,71)		
Tidak	18 (64,29)		

Implementation Intervention I was evaluated with current PDCA cycle implementation. During implementation, obstacles found that is only 1 blood pressure meter is available so implementation activity need

time longer. Not found constraint other [18].

a. Intervention II: Doing Obesity *Screening* to the Community in Babakan Village with Measurement of

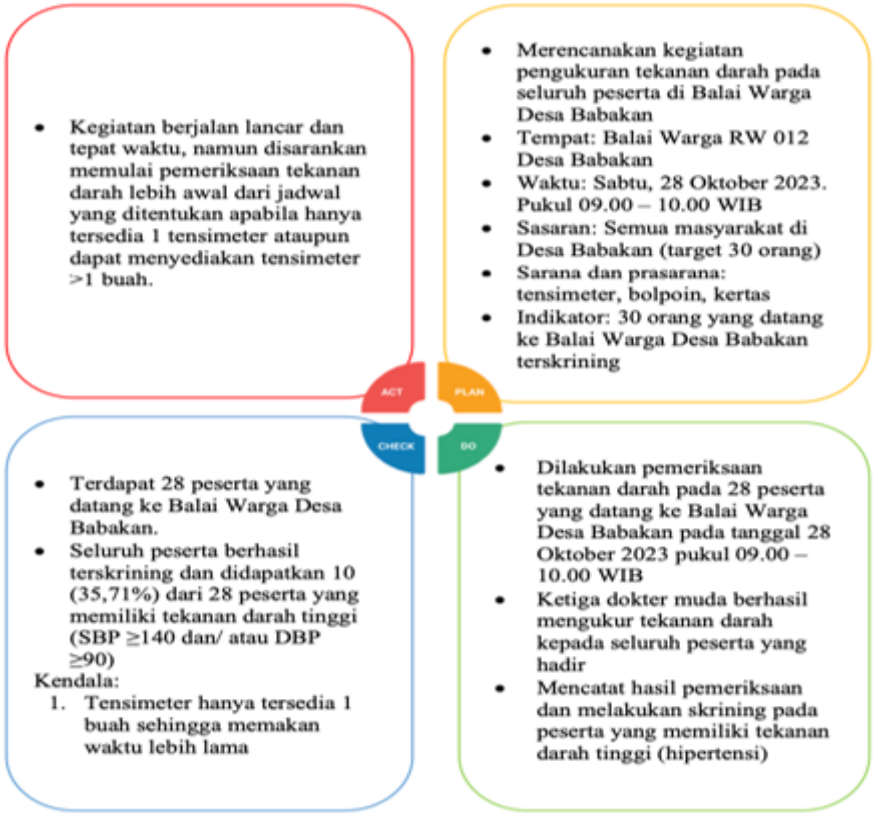

Figure 5. PDCA Intervention Cycle I

Figure 6. PDCA Intervention Cycle II

b. BMI and Abdominal Circumference

Activity Obesity *screening* will be held on Saturday, October 28 2023, 09.00 – 10.00 WIB at the Citizens' Hall RW 012 Babakan Village. Before done activity counseling to society, third doctor young do inspection weight, height, and circumference stomach use scales digital weight, *microtoise*, and *waist ruler.* Measurement results recorded and carried out *screening* by third doctor young. Young doctor identify included participants *overweight* / obesity and obesity central, then collect and educate about obesity as one of the factor risk happen hypertension and recommend doing so inspection pressure blood routinely [19]. Data are presented in Table 6.

Implementation intervention II was evaluated with current PDCA cycle implementation. During implementation, obstacles found that is *microtoise* used pasted on the wall use nails, however Because Afraid damage the walls of the Citizens' Hall so complicate things its use. sticking the done use masking tape so at the moment measurement *microtoise* often regardless. Another obstacle is measurement circumference stomach use *waist ruler* somewhat difficult done because of the participants difficult lifting clothes to be measured with Correct.

Table 6. Intervention Results II

Karakteristik	Proporsi (%) N= 28	Mean	Median (Min – Max)
Berat Badan (kg)		61,62	62,35 (41 – 93,2)
Tinggi Badan (m)		152,75	152 (141 – 164)
IMT (kg/ m^2)		26,3	26,39 (15,24 – 39,81)
Status Gizi			
Underweight	2 (7,14)	16,01	16,01 (15,24 – 16,79)
Normal	5 (17,86)	20,8	21,55 (19,3 – 21,98)
Overweight	3 (10,71)	24,02	23,82 (23,55 – 24,7)
Obesitas tingkat 1	12 (42,86)	26,88	26,74 (25,07 – 29,15)
Obesitas tingkat 2	6 (21,43)	32,9	31,83 (30,29 – 39,81)
Lingkar Perut (cm)			
<80	7 (25)	72,29	73 (60 – 79)
≥80	21 (75)	91,48	88 (81 – 124)

c. Intervention 3 : Do Counseling About Hypertension to the Community in Babakan Village

Activity started with submission permission to Head Public health center Legok, then do coordination with cadres at the Community Health Center Legok specifically regarding Babakan Village determination location intervention and determination timetable implementation intervention. Next, do it preparation tools needed For intervention form material presentation about hypertension. Counseling held on Saturday (28 October 2023 at 10.00 – 11.00 WIB) for 20 people aged >15 years in Babakan Village. Activity This carried out by 3 co-assistant doctors, purposeful For increase knowledge, attitudes, and behavior participant counseling about disease hypertension so that It is hoped that the participants will attend can increase knowledge, attitudes and behavior related hypertension and its prevention as well as with period long happen decline amount case hypertension in the work area Public health center Legok [20].

Activity started with introduction doctor young Then next with opening and introduction by 3 co-assistant doctors, then next with distribution questionnaire *pre- test* for know knowledge participant about hypertension (definition, factors risks, precautions, complications, and principles treatment). After results *pre-test* collected, carried out delivery material about hypertension using posters that have been printed with size A3 paper (29.7 x 42 cm).

After done counseling, continued with session ask answer to current participants not enough understand about material counseling. Young doctor give quiz for participants and those who can answer question about material counseling with Correct given *souvenirs.* The event continued with distribution questionnaire *post-test* for measure enhancement knowledge participant about hypertension after counseling finished. After gather results *post-test* that has been done, activities closed with distribution *snack* to all over participant. After activity done, doctor young do evaluation *pre-test* and *post-test* [21].

Intervention III followed as many as 20 participants. Result of mark *pre-test* was obtained as many as 1 (5%) participant get score <70 and 19 (95%) participants get value ≥70. In *the post-test* it was found as many as 0 (0%) participants get value <70 and 20 (100%) participants get value ≥70. Implementation intervention evaluated with current PDCA cycle implementation. During implementation, obstacles found that is a number of participant only fill in *pre-test* and not attend outreach events nor charging *post-test.* Additionally, several participant go home before the event ends There is respective activities (work, pick up children) so that the target participants counseling No achieved [22]. Next obstacle that is there is a number of participants who did not Can read so that must accompanied in a way full during charging questionnaire. Lastly, no available board For put up posters when counseling.

Evaluation

Interventions that have been done evaluated with use approach system. From evaluation all over intervention, the gaps obtained from planning compared achievement that is participant No reached the target (the target was 30 participants, however only 28 participants came). In intervention III, it was found gap that is No all attendees finish *post-test* because Already go home before the event ends [23].

Table 7. Intervention Results III

Variabel	Proporsi (%) N: 20	Mean (Min – Max)
Jenis Kelamin		
Perempuan	20 (100%)	
Laki-laki	0 (0%)	
Usia (tahun)		47,8 (33 – 63)
Pre-test		
≥70	19 (95%)	84,73 (70 – 100)
<70	1 (5%)	50 (50 – 50)
Post-test		
≥70	20 (100%)	96 (90 – 100)
<70	0 (0%)	0 (0 – 0)

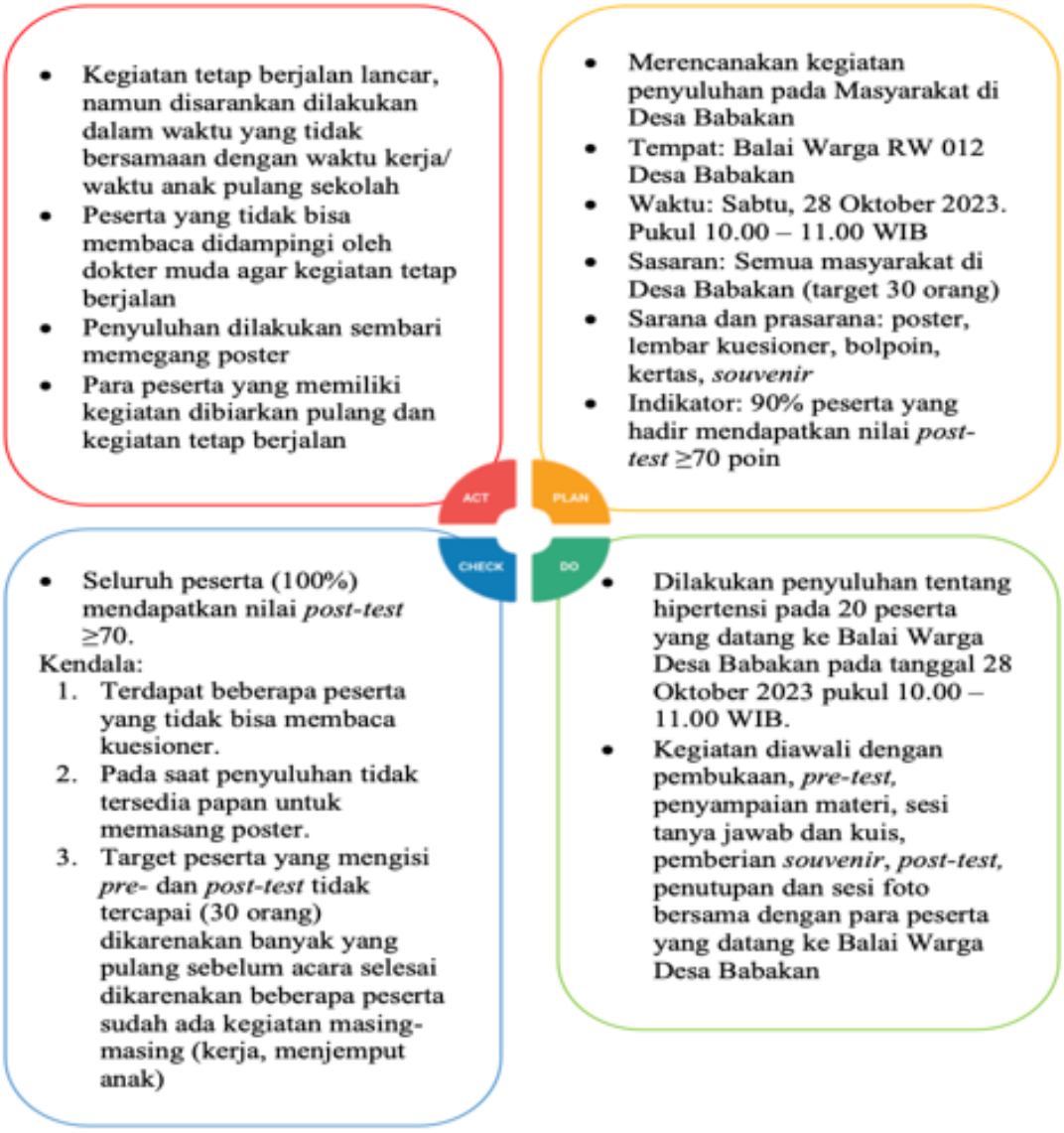

Figure 7. PDCA Intervention Cycle III

Community diagnosis is something step important in enhancement quality of public health. Basically, a community diagnosis process based on the principles of clinical diagnosis ; the difference is that community diagnosis applied to the community in role more doctors broad, while the clinical diagnosis applied on a more personal level. Community diagnosis is beginning from cycle solution problem and working as base introduction problems in the community so that next with something planning intervention, implementation intervention as well as evaluation How intervention the succeed carried out in the community.

The interventions we have carried out own objective main that is For increase knowledge public about hypertension and improve the lifestyle of the people which is problem main thing found. Intervention I carried out that is screening hypertension to the people of Babakan Village with measurement pressure blood. Sufferer hypertension that is not controlled usually caused Because previously No There is complaint from patient. Detection early is also a key For manage hypertension and preventing complications. Intervention based public can facilitate inspection pressure easy blood accessible, so possible identification early case hypertension. With provide examination, we empower individual For monitor pressure blood they in a way effective [24].

Intervention II carried out that is obesity screening to the people of Babakan Village with BMI calculation and measurement circumference stomach. One of factor risk the most significant hypertension is obesity. Apart from examination pressure blood and treatment hypertension, changes style life is an integral part of management hypertension. Intervention based community can push habit Healthy like activity physique regular, pattern Eat balance, reduction stress, and quit smoking. Intervention This grow resilience and im-prove obedience towards management strategy hypertension.

Intervention III carried out that is counseling about hypertension to the people of Babakan Village. Increasing case hypertension can caused by one factor that is lack of knowledge. Knowledge related Indonesian society handling management hypertension assessed Still low. Mostly sufferer hypertension Not yet know how much Good intake food consumed sufferer hypertension, level education is still there classified low and rare get in-formation health or counseling related management hypertension is carried out Health workers Lack of knowledge public about management hypertension can cause pressure blood No controlled and the complications that accompany it. Re-search show that increase awareness will hypertension is one of the most effective way For control pressure blood and reduce incident disease cardiovascular related. Activities promotion health can go through counseling. Extension method is the simplest method with using health promotion media. Intervention education about knowledge related disease can help patient For more understand problem health them and their therapy that leads to beneficial change in behavior health and compliance to treatment regular in increase results health [9].

Based programs community own benefit in combat root reason disease and prevent case new, give influence to various other diseases that have factor the same risks, as well can reach society that doesn't own access to service adequate health. Be-cause that, the program must done in a way sustainable [25]. Counseling lifestyle and monitoring pressure blood by officers health public effective in lower pressure blood in a way significant, however when intervention discontinued, benefits This No will endure in period long. This confirm that power health must always do screening, promotion and monitoring pressure blood level home and society are just that need approach medical base [26]. The basics are needed here Can easy and fast For taught without need details scientific ones are not need. The study found that training and approach simple This Already Enough For pro-duce change behavior public related disease No contagious (NCD) such as hypertension [27]. Via partnership with organization service health local and prominent community, intervention based community bridge gap between provider service health and society, for ensure access to service health quality, care follow-up, and necessary treatment. Collaborative effort This maximizing source power and increase giving service health [10]. Prevention and control program integrated hyperten-sion This expected will produce behavior health and compliance later treatment reduce cost maintenance health period long [28].

During intervention, some minor gaps have been found during implementation that is related to logistics and participation. Regarding logistics, it was found constraint like lack of blood pressure monitor during inspection pressure blood as well as impracticability microtoise and discomfort patient moment measurement circumference stomach. All constraint This should become material evaluation For activity similar next [29]. Determined target participants previously is 30 participants, however only 28 participants attended activity intervention. this obstacle can overcome with increase spread information available done in activities fur-thermore. This matter can achieved through spread information through head villages, health workers at community health centers until via social media like Whatsapp [30].

4. CONCLUSION

Control hypertension involve element public capable increase awareness and understanding public related hypertension. Control pressure blood and screening hypertension involve community expand service promotional and preventive more effective. The education carried out has a purpose For change behavior inner society operate pattern life Healthy. Based on the interventions we carry out can stated Our intervention was successful so that expected can lower case hypertension at the Community Health Center Legok.

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