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Original Article

The Effectiveness of Education with Video in Increasing Family Support and Compliance with Treatment for Hypertension Patients

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ABSTRACT

Hypertension is a national problem in Jambi Province and East Tanjung Jabung Regency. This situation is exacerbated by low regularity of taking medication in East Tanjung Jabung Regency (39.07%), which is far below the national figure of 54.40%. The behavior of taking medication regularly is closely related to a person's adherence to following recommended or prescribed treatment process. In this regard, the study aims to determine effectiveness of video educational media increasing family support and adherence of hypertensive patients to undergo treatment process. Research is quasi-experimental and non-randomized pre-post for control group. The participants were determined by non-probability with 40 people for intervention group and 40 people as controls. The independent sample difference test used Mann-Whitney test and paired sample difference test used Wilcoxon Signed Ranks test. Determine effectiveness of intervention using N-Gain Score test. Results before intervention there was no significant difference between intervention and control groups regarding family support (Asymp. Sig. = 0.853), as well as regard level of adherence (Asymp. Sig. = 0.785). After intervention, there were significant differences regarding family support (Asymp. Sig. = 0.000) and level of adherence (Asymp. Sig. = 0.000). There were significant differences regarding family support and adherence, before and after the intervention, both in intervention and control groups (Asymp. Sig. = 0.000). Video is effective increasing family support (average 47.23%) and compliance (average 53.07%), with moderate effectiveness. The Randomized controlled trials (RCTs), the larger sample sizes, longer follow-up periods, and objectives and outcomes measurements face limitations in the study. Additional future needs to explore complementary intervention or multi-component approaches to optimize hypertension management and patient outcomes

Keywords : *Video, Family Support, Adherence, Hypertension*

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INTRODUCTION

Based on the 2018 Riskesdas data, the prevalence of hypertension by measurement in Jambi Province is 28.99%, while in East Tanjung Jabung Regency at 33.82% is in 3rd place out of all Regencies/Cities in Jambi Province. Jambi Province Health Profile in 2019 also shows that hypertension is in 1st place out of The 10 most common diseases in Jambi Province as well in 2020.[1] Management of hypertensive patients consists of controlling risk factors and pharmacological therapy.[2] One of the behaviors that must be carried out by people with hypertension is the regularity of taking anti-hypertensive medication. Nationally, there were only 54.40% of hypertension sufferers who regularly took medication in 2018, while in Jambi Province it was 44.35% and in East Tanjung Jabung Regency only 39.07%. [3]

Irregularly taking antihypertensive medication can cause a problem. If the treatment is stopped, sooner or later the blood pressure will rise again until it is like before antihypertensive treatment was carried out.[4] Burnier and Egan (2019) stated that poor adherence to taking antihypertensive drugs

contributed to poor blood pressure control in hypertension. The negative impact of non-compliance is multiplied and the unintended economic impact is potentially enormous. The clinical consequences of nonadherence include uncontrolled hypertension and hypertensive crisis, various target organ changes associated with a greater risk of cardiovascular events, including vascular rigidity, left ventricular hypertrophy (LVH), and microalbuminuria. several adverse cardiovascular events including acute coronary syndrome, stroke and transient ischemic attacks, and chronic heart failure and death.[5]

Hossain et al. (2016) in their research showed that the chance of developing a stroke was 4.78 times higher in the group that took antihypertensive drugs irregularly than in the group that took antihypertensive medication regularly.[6]

Research by Setyoningsih and Zaini (2020) shows that there is a significant relationship between the level of adherence to taking medication and achieving the expected therapeutic effect. In this regard, the behavior of regular medical treatment for people with hypertension is very important. [7] The behavior of taking the medication regularly is closely related to a person's adherence to following the recommended or prescribed treatment process.

Based on the opinions of experts, such as Lukito (2019) and Rapoff (2009), patient non-compliance in carrying out treatment is influenced by several things, including lack of understanding of the benefits of treatment, emotional health (depression), lack of motivation, knowledge, adjustment and coping, demographic factors, less than optimal patient-health worker relationships/communication, lack of family support, disease factors (length, symptoms, severity).[8,9]

Sukma's research (2018) showed that 55.6% of respondents were obedient and there was a significant relationship between knowledge, level of education, beliefs, motivation, family support, and compliance with hypertension patients in taking medication.[10] Research by Dewi, Wiyono, and Candrawati (2018) also obtained a significant relationship between family support and adherence to treatment in hypertensive patients.[11] Meanwhile, research by Haeruddin et al. (2021) showed that there was an effect of family support, level of knowledge, and role of health workers on medication adherence.[12]

The role of Puskesmas officers in increasing compliance is very important. However, due to time constraints and a large number of sufferers, it is certainly difficult for officers to explain and motivate each patient. One form of effort to overcome this is the existence of educational media in the form of videos which include: the importance of routine health checks, regular medication, a balanced diet, physical activity, and avoiding cigarette smoke and alcohol.

Research by Oktianti, Furdiyanti, and Karminingtyas (2019) shows that the use of video media can increase medication adherence in hypertensive patients, while research by Jannah (2019) and Oktianti (2019) shows that the use of audio-visual media can increase compliance.[13,14] Both of these studies have shown a relationship between the use of video media and adherence, but the effectiveness of these videos has not been measured quantitatively.

Based on the description above, we examined the effectiveness of video education in increasing family support and adherence to the treatment of hypertension sufferers. This study aims to determine the effectiveness of video educational media in increasing family support and adherence of hypertensive patients to undergo the treatment process.

METHOD

This type of research is a quasi-experimental design with a non-randomized pre-test and post-test control group, The participants were divided into 2 groups and all received intervention. The study design, with a quasi-experimental approach and non-randomized sampling, may introduce bias and limit the generalizability of the findings. The control group was given lecture treatment, while the intervention group was given lecture treatment and videos sent to the participants' mobile phones. The videos used were created specifically for this study and have been reviewed by health promotion and information technology experts. Before the intervention, measurements were carried out (pre-test) and after the intervention, measurements were also carried out (post-test). The post-test was carried out 2 months after the intervention. For future research, hypertension management requires sustained adherence to treatment over time, and longer follow-up periods would provide a more

comprehensive understanding of intervention efficacy.

Changes that will be measured are family support and the level of community compliance in treating hypertension in healthcare facilities (Puskesmas). To measure this level of adherence, a questionnaire using the MMAS-8 scale was used, and a questionnaire consisting of 14 questions was used to measure family support. There for this measurements had been potential for social desirability bias and inaccurate reporting.

The research was carried out in the Mendahara Hulu District, East Tanjung Jabung Regency in 2021.

In this study, the number of participants was determined by non-probability sampling as many as 40 people each in both the intervention and control groups, who met the established criteria.

Primary data was about participants' characteristics, family support, and adherence, they were carried out using home visits to conduct interviews with participants using a prepared questionnaire.

Bivariate analysis was carried out using a "difference test" to determine differences in family support and adherence levels before and after intervention in both the control and intervention groups. This research does not include the control group that receives no intervention.

Because the data distribution was not normal, the Mann-Whitney test was used for independent samples, and the paired sample difference test used the Wilcoxon Signed Ranks test. To determine the effectiveness of the interventions that have been implemented, the N-Gain Score test was carried out. Their socioeconomic status, comorbidities, accsess to health are not include in this research.

This research was carried out after receiving an Ethical Appropriate Statement from the Health Research Ethics Commission of the Jambi Ministry of Health Poltekkes No. LB. 02.06/2/026/ 2021.

RESULTS

Description of Subject Characteristics

The characteristics of the participants are illustrated in Table 1 which shows that most of them were female, with a composition of 23 people (57.5%) in the intervention group and 28 people (70%) in the control group.

Most of the participants were in the age group above 40 years. In the intervention group, there were 10 people (25%) in the age group of 41-50 years, and in the age group of 51-60 years, there were 24 people (60%), while in the control group, in the age group of 41-50 years, there were 17 people (42 .5%) and the age group of 51-60 years as many as 17 people (42.5%).

As in general in rural areas, mothers are generally only housewives. So that most of the participants of this study claimed to be housewives and did not work (especially those aged > 50 years). In the intervention group, there were 18 people (45%) and in the control group, there were 19 people (47.5%). There were 16 farmers in the intervention group (40%) and 20 people (50%) in the control group.

Table 1. The Characteristics of participants (intervention = 40, control = 40)

Variables	Intervention group		Control group	
	n	%	n	%
Gender				
Man	17	42,5	12	30
Woman	23	57,5	28	70
Age				
31 - 40 years	6	15	6	15,0
41 - 50 years	10	25	17	42,5
51 - 60 years	24	60	17	42,5
Work				
Trader	5	12,5	1	2,5
Farmers/ gardeners	16	40	20	50
Fisherman	1	2,5	0	0
Housewife	18	45	19	47,5
Education				
No school	4	10	6	15
SD	22	55	19	47,5
Junior high school	8	20	10	25
High school	5	12,5	5	12,5
College	1	2,5	0	0

Most of the participants had elementary school education, with as many as 22 people (55%) in the intervention group, and 19 people (47.5%) in the control group.

Most of the participants in the intervention group only knew they had hypertension for less than 3 years, namely 62.5%. Meanwhile, in the control group, 60% knew they had hypertension for less than 3 years

In general, the characteristics of the subjects in the intervention group were almost the same as the control group, and all of them were located in rural areas.

Table 2. Family support and compliance in the Control group and Intervention group

Variables	Intervention group		Control group	
	n	%	n	%
Family Support before intervention				
Not enough	34	85	34	85
Good	6	15	6	15
Family Support after the Intervention				
Not enough	13	32,5	30	75
Good	27	67,5	10	25
Compliance before intervention				
Low	24	60	22	55
Currently	16	40	18	45
Tall	0	0	0	0
Compliance after intervention				
Low	6	15	19	47,5
Currently	31	77,5	20	50
Tall	3	7,5	1	2,5

After being categorized as shown in Table 2, family support for hypertensive patients in the intervention group, which was included in the good category before the intervention was only 6 people (15%), then increased to 27 people (67.5%) after the intervention. In the control group, there was an increase in good family support from 6 people (12%) at the initial measurement to 11 people (22%) at the final measurement.

Have been categorized, the level of adherence of participants in the intervention group before the intervention was carried out included only 16 people (40%) in the moderate category and none in the high category. After the intervention was carried out, it increased to 31 people (77.5%) in the medium category and 3 people (7.5%) in the high category. In the control group, there was an increase in the level of adherence of participants who were in the moderate category, from 18 people (45%) at the initial measurement to 20 people (50%) in the medium category and 1 person (2.5%) in the high category at the end of the measurement

Table 3. Differences in family support and adherence between the control group and the intervention group

Variable	Group	Mean-2 rank	Total rank	Asymp. Sig. (2-tailed)
Family Support Before Intervention	Intervention	40,98	1639,00	0,853
	Control	40,03	1601,00	
Compliance Before Intervention	Intervention	39,80	1592,00	0,785
	Control	41,20	1648,00	
Family Support After Intervention	Intervention	51,34	2053,50	0,000
	Control	29,66	1186,50	
Compliance After Intervention	Intervention	50,21	2008,50	0,000
	Control	30,79	1231,50	

As shown in Table 3, based on the Mann-Whitney test, before the intervention there was no significant difference regarding family support between the intervention group and the control group (Asymp. Sig. = 0.853). Likewise, regarding adherence to undergoing the treatment process between the control group and the intervention group, before the intervention was carried out there was no significant difference (Asymp. Sig. = 0.785).

After intervention with counselling and providing videos, family support in the control group was significantly different from family support in the intervention group (Asymp. Sig. = 0.000). Likewise regarding adherence to undergoing the treatment process between the control group and the intervention group, after the intervention, there was a significant difference (Asymp. Sig. = 0.000).

After intervention with counselling and providing videos, family support in the control group was significantly different from family support in the intervention group (Asymp. Sig. = 0.000). Likewise regarding adherence to undergoing the treatment process between the control group and the intervention group, after the intervention, there was a significant difference (Asymp. Sig. = 0.000).

To examine differences in family support and adherence levels in each group, the Wilcoxon Signed Ranks test was used. Based

on the Wilcoxon Signed Ranks test in Table 4, shows that there were significant differences regarding family support and adherence, before and after the intervention, both in the control group and the intervention group (Asymp. Sig. = 0.000).

Table 4. Differences in family support and adherence between before and after the intervention in the control group and the intervention group

Variable	Change			Asymp. Sig. (2-tailed)
	Negative	Positive	fixed	
Family Support in the Intervention Group	2	34	4	0,000
Compliance with the Intervention Group	0	36	4	0,000
Family support in Control Group	6	25	9	0,000
Compliance with the Control Group	0	22	18	0,000

Table 4 also shows that after the family support intervention in the intervention group, 34 participants turned positive, while only 25 participants were in the control group. Regarding the level of compliance in the intervention group, 36 participants changed positively, while only 22 participants were in the control group.

To determine the effectiveness of the interventions that have been implemented, the N-Gain Score test was carried out. According to (Corcoran, 2005), the Gain score is categorized into 3, namely: low effectiveness if ≤ 0.3, moderate if the value is 0.3 - 0.7, and high if > 0.7. Table 5 showed the effectiveness of the intervention in the form of lectures in the control group and providing videos in the intervention group.

Table 5. Intervention Effectiveness in the Control Group and Intervention Group

Variable	Percentage N-Gain		
	Minimum	Maximum	Average
Family support			
Control Group	- 200,00	66,67	11,98
Intervention Group	- 33,33	100	47,23
Compliance			
Control Group	0,00	100	17,21
Intervention Group	0,00	100	53,07

Based on the results of the N-Gain Score test above, regarding family support, the average N-Gain Score for the Intervention Group of 47.23% is included in the "medium" category and the N-Gain Score for Control Group of 11.98% is included in the "low" category.

The results of the N-Gain Score test on the level of compliance obtained the average N-Gain Score for Intervention Group of 53.07% is included in the "medium" category. Meanwhile the average N-Gain Score for Control Group of 17.21% is included in the "low" category.

DISCUSSION

Family support

The results of the statistical analysis showed that there was no significant difference between the control group and the intervention group when the initial measurement was in the state of family support and adherence to undergoing the treatment process.

Family support plays an important role in increasing compliance with hypertension. Many factors affect family support. Firmansyah et al. (2017) in their research in the working area of the Windusengkah Health Center, Kuningan Regency, showed that family support for people with hypertension is influenced by the level of knowledge, spiritual factors, emotional factors, economic level, cultural background, and family practices. [15]

Interventions carried out on the subjects of the intervention group succeeded in increasing good family support from 15% to 67.5% with an average score of 3.68 to 8.90 (maximum score of 14). So it can be said that counselling accompanied by providing videos

is effective in increasing family support for people with hypertension. However, judging from the average N-Gain Score which is only 47.23%, this means that the effectiveness of the video achieved is in the medium category.

The video provided is a learning medium for conveying messages to those who see and listen. People who see and listen to this video will increase their knowledge and understanding of hypertension. Research by Nyoman et al., (2021) shows that videos can increase mothers' knowledge. [16]

Rural communities with relatively low levels of education tend to prefer videos to lectures or printed media. Through videos they can see and listen and can be repeated, thereby increasing their understanding of hypertension. If people who see and listen understand the content of the video, they will be encouraged to behave as expected in the video. Knowledge has an important role in influencing a person's behavior. [17]

The video that is given to sufferers of hypertension is likely to be seen by the sufferer's family. By watching the video, the patient's family will also understand the things that should be done by people with hypertension. This is what encourages families to do something for family members who suffer from hypertension, either in the form of reminding, admonishing, motivating, to taking action to help sufferers undergo the hypertension treatment process. In this study, there were 34 participants (85%) who stated that family behavior had changed positively regarding their support for hypertension sufferers.

In the control group, there was also an increase in family support after the intervention, but from the results of the statistical tests as shown in Table 3 there were significant differences regarding family support between the intervention group and the control group. This means that the use of video is more capable of increasing family support compared to giving lectures alone. Information conveyed through lectures given to the subject does not fully reach the subject's family. This situation is certainly different from the family who also saw the video given to the subject.

Positive family support in synergy with changes in knowledge that occur in people with hypertension will further encourage an increase in compliance with hypertension in undergoing the treatment process. As Kurniawati's research (2019) showed, there was a relationship between family support and adherence to taking antihypertensive medication.[18] Wahyudi (2020), in his research in the working area of the Panjang Health Center, Bandar Lampung City, showed that there was a relationship between family support and efforts to control hypertension. [19] Likewise, the research of Sukartini et al. (2020), revealed that there was a strong relationship between family support and adherence to hypertension treatment.[20]

Compliance

As with family support, the results of the interventions increased compliance in both the control and intervention groups, but the increase in compliance in the intervention group was higher than in the control group. One of the functions of educational media in the form of videos is to increase the knowledge of those who see them. Increasing knowledge will affect behavior. Hanum's research (2019) shows that knowledge has a relationship with adherence to taking medication for hypertension.[21]

Carey et al. (2018) state that to control hypertension, the strategy applied should involve interventions to increase awareness, treatment, and control in individuals. Michel Burnier and Egan (2019) further stated that the lack of knowledge about hypertension and its consequences is logically related to the lack of adherence of hypertension sufferers.[22]

Novitri et al. (2021) in their research stated that several intervention methods were able to increase adherence to taking anti-hypertensive medication, including counselling, home care, focus group discussions (FGD), videos, provision of educational leaflets or brochures, provision of short messages (SMS), digital medicine boxes, pill cards (pill box), mobile health and a combination of several methods.

In this regard, increasing knowledge and understanding of hypertension is very important to increase compliance with hypertension.[23]

Based on the N-Gain Score test, an average value of 53.07% was obtained, this means that the effectiveness achieved by video educational media is in the medium category. So it can be said that media counselling using video is effective in increasing compliance with hypertension.

This result is in line with the research of Azhimah et al (2022) who obtained the result

that intervention through educational videos had a significant effect on increasing adherence to treatment of hypertension sufferers.[24]

Annashr & Amalia's research (2018) shows that health promotion by adding audiovisual media is more effective than just using the lecture method, in increasing community compliance. Several other studies also show that counselling using audio-visual media increases compliance compared to just being given counselling without using media. [25]

The effectiveness of video media, which only reached 53.07% (medium category), was probably because the evaluation period (final measurement) was only approximately 2 months apart, not giving enough time to understand more about hypertension and its management. Especially with the background of the livelihood of the sufferers, most of whom are housewives and farmers, and the level of education of most elementary school students, of course, this understanding is rather difficult to achieve optimally. Besides that, achieving positive behavior change requires quite a long time. Therefore, other communication media are needed to encourage and motivate hypertension sufferers to be more obedient in undergoing the treatment process.

Most patients have known that they have hypertension for less than 3 years and the length of treatment for hypertension is also less than 3 years. This indicates that people with hypertension know their disease from the results of examinations at healthcare facilities. They come to healthcare facilities because of the complaints they feel. Therefore, early detection through home visits is very important. Thus, people with hypertension can be known before their condition gets worse. Although access to health care facilities (Puskesmas) is not difficult, most of them do not undergo the proper treatment process.

Adherence to undergoing the treatment process is a "behavior". It is not easy to change it and to change it requires a process and enough time. Some literature states that efforts that can be made to increase adherence include: simplification of drug regimens, effective communication between staff and patients, involvement of supporters/companions, provision of health education/ counseling, social encouragement/ support, provision of compliance incentives, and increasing service hours. Therefore, to increase compliance, it is necessary to combine various strategies according to regional conditions and the socio-cultural community.

Taking into account the results of this study, in the future, it is necessary to evaluate the development of compliance with hypertension sufferers in undergoing the treatment process, and other approaches are needed to make better use of existing videos to increase adherence.

CONCLUSION

Education using the lecture method and the lecture method accompanied by the provision of videos can increase family support and compliance with hypertension sufferers in undergoing the treatment process.

Acknowledgments: Education with lectures alone has low effectiveness, while lectures accompanied by videos have moderate effectiveness. Even though this effectiveness category is still in the moderate category, it is hoped that it will increase after a longer period. In this regard, Puskesmas officers need to always monitor the development of compliance with hypertension sufferers and seek other approaches that are synergized with the efforts that have been made.

In the future, it is necessary to research combining several media or educational methods and the development of behavior within a certain time frame, so that it can be known within how long the optimal behavior can be achieved.

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CONFLICTS OF INTEREST

The authors declare no potential conflict of interest.

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