

The Difference of Educational Effectiveness Using Presentation Slide Method with Video About Prevention of Hypertension on Increasing Knowledge and Attitude in People with the Hypertension Risk in Amplas Health Center

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Abstract

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BACKGROUND: The prevalence of prehypertension in the world reaches 20-25% with a figure that is still high in Indonesia (48.4%). The role of health promotion is substantial in an effort of prevention and treatment of hypertension.

AIM: This study aims to determine the difference of effect between health promotion using media slides presentation and with video in increasing knowledge and attitude regarding the prevention of hypertension in patients at risk hypertension at Puskesmas Amplas.

METHODS: his study uses a Quasi-Experimental design which from 48 samples that meet the criteria inclusion will be immediately given health promotion interventions with slides presentation and video. Respondents will be asked to fill out a questionnaire about knowledge and attitudes before and after the intervention. Data processing is done using the SPSS version 20 application.

RESULTS: Distribution level of the knowledge of respondents before the intervention (Pretest) and after the intervention (Posttest) is (9.8, 2.68 vs 13.2, 1.58). Distribution of the pretest vs respondent's attitude level. Post test is (29.7, 2.76 vs 33.2, 3.52). Based on the comparison of effectiveness between video and slide presentation, the significance value of knowledge was 0.072, and the significance value of attitude was 0.000.

CONCLUSION: There was a significant difference in effectiveness between video with a slide presentation on improving attitudes towards hypertension prevention, and there were no significant differences in effectiveness between videos with slides presentation on increasing knowledge about prevention of hypertension.

Introduction

According to The Joint National Committee (JNC-7) on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, prehypertension defined as systolic blood pressure 120-139 mmHg with or without diastolic blood pressure 80-89 mmHg for those who aged over 18 years [1]. Prehypertension affects 25-50% of adult worldwide [2]. Prevalence of prehypertension between young Indonesian adult is as high as 48.4%. Prevalence of prehypertension in Teladan Health Center, Medan Kota district 2018 is

40.8% with the highest distribution according to individual characteristics is 17-25 years (46.4%) and female gender (69.6%) [3].

Individuals with prehypertension have higher risk causing hypertension and increased cardiovascular disease than those who have normal blood pressure [4]. According to the Framingham Heart Study, people with prehypertension have 3.5 times higher developing heart attack than people with normal blood pressure [5]. Any increase in systolic blood pressure (TDS) or diastolic blood pressure (TDD) (20/10 mmHg) is twice the risk for cardiovascular disease[1]. Assuming a 50% risk in 5

years, 10 adults with prehypertension will require intensive lifestyle changes and 4-6 people will need antihypertensive drugs to prevent one case of incident hypertension [2].

Someone who has hypertension risk factors must be more vigilant and earlier in making prevention efforts. One of them is to control blood pressure and improve the understanding of hypertension through health promotion to know and reduce the behavioural risk of hypertension. According to research at the Andalas Health Center clinic in Padang, there was a significant relationship between knowledge and attitudes with efforts to prevent hypertension with $p = 0.0005$ [6].

However, until now the community's knowledge about hypertension management is still lacking [7]. Though good public knowledge about hypertension helps professional healthcare agent on efforts to prevent and cure this disease [8].

Material and Methods

This study used a Quasi-Experimental design where from 48 samples that met the inclusion criteria (age 40-60 years, did not suffer from hypertension, and were willing to become respondents and filled out questionnaires) will be immediately given health promotion interventions about hypertension prevention using counselling media in the form of slides presentation and videos. Respondents will be asked to fill out a questionnaire about knowledge and attitudes about prevention of hypertension before and after the intervention. The grouping of sample members in the experimental group in this study was a non-randomized control group pre-posttest design [9].

Processing data using data analysis with the Wilcoxon test to analyse the relationship between differences in knowledge and attitudes after the intervention was conducted using extension media in the form of powerpoint slides and videos. To see the effect between the independent and dependent variables, an independent t-test was carried out.

Results

Univariate Analysis

From Table 1, mean result and standard deviation (SD) of respondents age in this research are 46.54 ± 5.771 years (video) and 49.50 ± 8.103 years (slide presentation). In this research, the majority of gender, educational status, marital status and job are

female (52.4% with video dan 66.7% with slide presentation), Senior High School (62.5% with video dan 37.5% with slide presentation), married (91.7% with video dan 83.3% with slide presentation), and unemployment (45.8% with video dan 54.2% with slide presentation).

Table 1: Distribution of respondent characteristics

Variable	Video (24)	Slides Presentation (24)
Age	46.54 ± 5.771	49.50 ± 8.103
Gender		
Male	11 (45.8)	8 (33.3)
Female	13 (54.2)	16 (66.7)
Marital Status		
Married	22 (91.7)	20 (83.3)
Unmarried	2 (8.3)	0 (0)
Widow	0	4 (16.7)
Educational Status		
Elementary	4 (16.7)	6 (25.0)
Junior High School	0 (0)	5 (20.8)
Senior High School	15 (62.5)	9 (37.5)
D3/S1	3 (11.1)	4 (16.7)
Job		
Entrepreneur	10 (41.7)	11 (45.8)
Worker	3 (12.5)	0 (0)
Not Working	11 (45.8)	13 (54.2)

From Table 2, the level of knowledge before the most intervention was the level of good knowledge of 20 people (41.7%), while the post-intervention increased to a good level of knowledge of 45 people (93.8%). The highest percentage of pre-intervention attitudes is the level of knowledge of 23 people (52.1%), while the post-intervention level of respondent attitudes increases, namely the level of good knowledge of 40 people (83.3%).

Table 2: Distribution between respondents according to knowledge and attitude

Variable	Pre Intervention, n (%)	Post Intervention, n (%)
Knowledge		
Mean \pm SD	9.8 ± 2.68	13.2 ± 1.58
Below (B < 6)	5 (10.4)	0 (0)
Sufficient (S = 6-10)	23 (47.9)	3 (6.2)
Good (G = 11-15)	20 (41.7)	45 (93.8)
Attitude		
Mean \pm SD	29.7 ± 2.76	33.2 ± 3.52
Below (B < 16)	0 (0)	0 (0)
Sufficient (S = 16-29)	23 (52.1)	8 (16.7)
Good (G = 30-40)	20 (47.9)	40 (83.3)

Bivariate Analysis

Based on Table 3, the Wilcoxon test analysis showed a comparison of the value of pre-test and post-test knowledge with video media related significantly, namely ($p = 0.000$). Data on respondents who experienced an increase in knowledge with a median difference value (4.5). Comparison of the value of the pre-test and post-test attitude with video media was significantly related ($p = 0.000$). Increased knowledge with a median difference (6.00).

Based on the Wilcoxon test analysis showed a comparison of the value of pre-test and post-test knowledge with slide media percentage associated significantly ($p = 0.001$). Data found that respondents experienced an increase in knowledge with a difference in the median value (2.00). Comparison of the value of the pre-test and post-test attitudes with slide media percentage was significantly related ($p = 0.001$). Data found that respondents experienced an

increase in knowledge with a difference in the median value (2.00).

Table 3: Wilcoxon Test for knowledge and attitude video and slide

	Median	Min-Max	Sig. 2 tailed
Video			
Knowledge			
Pre-test	9.50	4-13	0.000*
Post-test	14.00	8-15	
Attitude			
Pre-test	29.00	25-37	0.000
Post-test	35.00	28-40	
Slide Presentation			
Knowledge			
Pre-test	29.00	25-37	0.000
Post-test	35.00	28-40	
Attitude			
Pre-test	30.00	25-35	0.001*
Post-test	32.00	26-39	

Based on the comparison of the results of video and slide presentation, the significance value of knowledge was 0.000 (there were significant differences in effectiveness between video and slide presentation on improving knowledge towards hypertension prevention in people at risk of hypertension) and attitude significance values of 0.072 (There was no significant difference in effectiveness between video and slide presentation on increasing knowledge about the prevention of hypertension in people at risk of hypertension).

Table 4: Comparisons between pretest -post-test results media video dan slide presentation

Intervention	Knowledge		Attitude	
	Median	Min-Max	Median	Min-Max
Video	4.00	-3-9	5.50	0-11
Slide Presentation	2.00	-3-9	2.50	-1-7
Sig. 2 tailed	0.072		0.000	

*P < 0.05.

Discussion

Most distribution of respondents according to marital status was married, as many as 22 people (91.7%) with video and 20 people (83.3%) with slide presentation. This result is not much different from the previous research explained that the highest proportion of respondents based on marital status was married (58.7%) [10]. Marital status has an indirect relationship with health status, including hypertension through behavioural risk factors (lifestyle) and stress. Besides, it is also directly related to the cardiovascular, endocrine, immune system, sensory nerves, and other physiological mechanisms. Hypertension is riskier for those who are widows or widowers because of the loss of a spouse or loved one is the most stressful life and can be accompanied by the possibility of illness and death [11].

The mean result and standard deviation (SD) of respondents age in this research is 46.54 ± 5.771 year (video) and 49.50 ± 8.103 years (slide

presentation). In another study conducted in Zhengzhou, Central China, the mean results and standard deviation of patients with prehypertension were 45.5 ± 12.2 years [12]. Whereas in prehypertension studies and the factors associated with adult outpatients in Northeast Malaysia, prehypertensive patients from the respondents studied had a mean and standard deviation of 35.7 ± 12.91 years [13].

The highest sex prevalence was women (52.4% with video dan 66.7% with slide presentation). This is different from the study in Bangladesh, where the prevalence of prehypertension was higher in men (33.6%) compared to women (30.3%) [14]. Other studies in China showed that the prevalence of prehypertension was higher in men (41.1%) than women (33.2%) [5].

Most educational status of the respondents was senior high school (62.5% with video dan 37.5% with slide presentation). In studies conducted in China, the prevalence of prehypertension patients was higher in patients with secondary education (50%) compared to higher education levels (30.3%) [12]. In studies in China, the prevalence of prehypertension was mostly in senior secondary education (37.9%), university-level (36.2%) and primary or non-school education (33.3%) [5].

The highest employment status of respondents is not working (45.8% with video dan 54.2% with slide presentation). Jobs are related to income which is also one of the causes of hypertension. Low income is known to be a greater cause of the incidence of hypertension when compared to other risk factors. Work is also related to one's eating habits. Those who work generally have higher physical activity than those who do not work. High physical activity can reduce the risk of obesity. Conversely, if low physical activity can increase the risk of obesity, thus increasing the incidence of hypertension [11].

In this study, based on the Wilcoxon, test analysis showed a comparison of the value of the pre-test and post-test attitude with video media associated significantly (p = 0.000). Increased knowledge with differences in medical (10.00). This is supported by research on the effect of health education with audio-visual media on hypertensive care behaviours in the elderly, where there is a positive influence on older adults with hypertension [15].

Distribution of the level of knowledge of respondents observed based on the pre-intervention (video and slide slides) on prevention of hypertension increased, with a mean, standard increase (9.8, 2.68 vs 13.2, 1.58). This is following previous research studies that showed an increase in knowledge of hypertensive patients after being given health education with community-based interventions [15]. The results of this study are also supported by the theory that health education is an activity to help

individuals, groups or communities to improve their behaviour to achieve optimal health. Health education can provide direct knowledge changes [16].

Distribution of respondent's attitude level was observed based on pre-intervention (video and slide slides) about prevention of hypertension increased, with a mean, standard deviation that increased pre-intervention compared to post-intervention (29.7, 2.76 vs 33.2, 3.52). This is consistent with previous studies which showed that health counselling had an important influence in improving knowledge, attitudes, and practices in patients with hypertension [17]. According to the theory of health education is a business or activity to help individuals, groups or communities to improve their abilities (behaviours), to achieve their health optimally. Health education is a learning process. Counselling is a method in health education that can change one's attitude for the better [18].

From the results of this study, it was found that improved knowledge of prevention of hypertension was obtained by respondents after getting intervention through video media. Data analysis also showed a significant improvement in attitudes towards the attitude of prevention of hypertension which was the best after the respondents received intervention through video media. This is supported by one systematic review study which states that often journals that showed significant differences, seven of them showed a significant change in attitude and knowledge of the video method [19]. This result is also supported by previous research which states that there is an effect of health education with audiovisual media on hypertensive care behaviours in the elderly, where there is a positive influence on older adults with hypertension [20]. The results of this study are also following previous research which states that there is an effect of health education using audiovisual media on hypertension control knowledge in the elderly in Tumut Village, Sari-Sari, Yogyakarta with p-value 0.014 ($p < 0.05$) [21].

Video can improve knowledge and attitude because respondents get the new experience they get in the video because the video relies on hearing and vision of the target, where the use of audiovisuals involves all sensory devices so that more and more sensory tools are involved in receiving and processing information. The possibility of the contents of the information can be understood and maintained in memory effectively moving images, and sound effects can facilitate the goal of understanding the content of information so that it can increase knowledge [22]. Computer Technology Research (CTR) states that humans are only able to remember 20% of what is seen, and 30% of those heard. But humans can remember 50% of what is seen and heard, and 80% of what is seen, heard and done all at once [23].

In this study, it was found that there were

significant differences in the improvement of attitudes using video, and there were no significant differences in the increase in knowledge using video. This may be caused by social support factors that have influenced the attitude of respondents from before. This is by the theory which states that attitudes can be formed through various ways, including through imitation of others, and through suggestions that result from the influence of others or something that has authority in his view [24]. This may also be caused by the age factor in this study which is mature enough to affect one's perception and mindset. The more of the age increases, the more their capture power and mindset will develop. Also, the more of the age, a person will be more mature and easy to believe so that information is more easily accepted. Information is the first condition for an attitude. If based on the information arises positive or negative feelings towards the object and raises the tendency to behave in a certain manner, then there is an attitude [16].

References

1. Chumiawati U. Artikel Penelitian: Prehypertension pada Obesitas Abdominal. *Journal Kesehatan Masyarakat Nasional*. 2015; 9(4):293-9. <https://doi.org/10.21109/kesmas.v9i4.732>
2. Egan BM, Stevens-Fabry S. Prehypertension-prevalence, health risks, and management strategies. *Nature Reviews Cardiology*. 2015 May;12(5):289-300. <https://doi.org/10.1038/nrcardio.2015.17> PMID:25687779
3. Ginting DR. Skripsi: Epidemiology Pre-Hipertensi pada Usia 17-45 Tahun di Wilayah Kerja Puskesmas Teladan Kecamatan Medan Kota Tahun. Medan: Universitas Sumatera Utara, 2018.
4. Yang G, Ma Y, Wang S, Su Y, Rao W, Fu Y, Yu Y, Kou C. Prevalence and correlates of prehypertension and hypertension among adults in northeastern China: a cross-sectional study. *International journal of environmental research and public health*. 2016; 13(1):1-12. <https://doi.org/10.3390/ijerph13010082> PMID:26712776 PMCID:PMC4730473
5. Xu T, Liu T, Zhu G, Liu J, Han S. Prevalence of prehypertension and associated risk factors among Chinese adults from a large-scale multi-ethnic population survey. *BMC Public Health*. 2016; 16(775):1-8. <https://doi.org/10.1186/s12889-016-3411-4> PMID:27515034 PMCID:PMC4982422
6. Uryani V. Skripsi: Hubungan Pengetahuan dan Sikap dengan Upaya Pencegahan Hipertensi di Balai Pengobatan Umum Puskesmas Andalas Padang. Padang: Universitas Andalas, 2016.
7. Eshah NF, Al-daken LI. Assessing publics' knowledge about hypertension in a community-dwelling sample. *Journal of Cardiovascular Nursing*. 2016; 31(2):158-65. <https://doi.org/10.1097/JCN.0000000000000227> PMID:25658184
8. Ulya Z, Iskandar A, Triasih F. Pengaruh Pendidikan Kesehatan dengan Media Poster terhadap Pengetahuan Manajemen Hipertensi pada Penderita Hipertensi. *Jurnal Keperawatan Soedirman*. 2018; 12(1):38-46. <https://doi.org/10.20884/1.jks.2017.12.1.715>
9. Wibawa C. Perbedaan efektifitas metode demonstrasi dengan pemutaran video Tentang pemberantasan dbd terhadap peningkatan pengetahuan dan Sikap anak sd di kecamatan wedarijaksa kabupaten pati. *Jurnal Promosi Kesehatan Indonesia*. 2012; 2(2):115-29.
10. Ariyanto OL. Hubungan Tingkat Pendidikan Dan Dukungan

- Keluarga Dengan Tingkat Kecemasan Penderita Hipertensi, 2018. <http://eprints.ums.ac.id/60156/25/NASKAH%20PUBLIKASI%20UPLOD%20BENAR%20BANGGET.pdf> diakses 07 Maret 2018, 2018
11. Purnama DS, Prihartono NA. Prevalence Hipertensi dan Faktor-Faktor yang Berhubungan dengan Kejadian Hipertensi pada Lansia di Posyandu Lansia Wilayah Kecamatan Johar Baru Jakarta Pusat Tahun, 2015. <http://lib.ui.ac.id/naskahringkas/2015-09/S45761-Dwi%20Suciaty> diakses Tanggal 24 April 2019
 12. Ding Y, Wu L, Geng G, et al. Prevalence of prehypertension and associated risk factors in Zhengzhou, middle China: A cross-sectional study. *Biomedical Research*. 2017; 28(7):3022-3029.
 13. Rafan SNH, Zalaria R, Ismail SB, Muhamad R. Prevalence of prehypertension and its associated factors among adults visiting an outpatient clinic in Northeast Malaysia. *Journal of Taibah University Medical Sciences*. 2018; 13(5):459-464. <https://doi.org/10.1016/j.jtumed.2018.06.005> PMID:31435362 PMCID:PMC6695013
 14. Khanam MK, Lindeboom W, Razzaque A, et al. Prevalence and determinants of pre-hypertension and hypertension among the adults in rural Bangladesh: findings from a community-based study. *BMC Public Health*. 2015; 15(1):203. <https://doi.org/10.1186/s12889-015-1520-0> PMID:25880433 PMCID:PMC4355126
 15. Lu CH, Tang ST, Lei YX, et al. Community-based interventions in hypertensive patients: a comparison of three health education strategies. *BMC Public Health*. 2015; 15(1):33. <https://doi.org/10.1186/s12889-015-1401-6> PMID:25631224 PMCID:PMC4314804
 16. Notoatmodjo S. Promosi kesehatan dan ilmu perilaku. Jakarta: Rineka Cipta. 2007; 20:1-247.
 17. Thomas JA, Snigdha KS, KARANATH PM, Swaroop AM. Impact of patient counselling on knowledge, attitude, and practice of hypertensive patients in a tertiary care hospital. *Int J Pharm Pharm Sci*. 2017; 9:122-5. <https://doi.org/10.22159/ijpps.2017v9i9.19881>
 18. Notoatmodjo S. Pendidikan dan perilaku kesehatan. Jakarta: rineka cipta. 2003.
 19. Abed MA, Himmel W, Vormfelde S, Koschack J. Video-assisted patient education to modify behavior: a systematic review. *Patient education and counseling*. 2014; 97(1):16-22. <https://doi.org/10.1016/j.pec.2014.06.015> PMID:25043785
 20. Nurmayunita M. Pengaruh Pendidikan kesehatan dengan media audiovisual terhadap perilaku perawatan hypertension pada Lansia di Dusun Beji Wetan Sendangsari Pajangan Bantul Yogyakarta. Skripsi. Yogyakarta: Universitas Aisyiyah, 2019.
 21. Setiawan G. Pengaruh Pendidikan Kesehatan dengan Metode Audio Visual terhadap Pengetahuan Pengendalian Hipertensi pada Lansia di Desa Tumut Sumbersarui Moyudan Selaman. Thesis. Yogyakarta: STIKES Jendral Ahmad Yani, 2016.
 22. Ristin TE. Efektivitas Promosi Kesehatan dengan Media Leaflet dan Media Video terhadap Pengetahuan dan Sikap Remaja tentang HIV/AIDS di SMA Negeri 1 Berastagi Tahun 2016. Skripsi. Medan: Universitas Sumatera Utara, 2016.
 23. Suyanto M. Analisis & desain aplikasi multimedia untuk pemasaran. Penerbit Andi; 2004.
 24. Nurseto T. Membuat media pembelajaran yang menarik. *Jurnal Ekonomi dan Pendidikan*. 2011; 8(1):19-34. <https://doi.org/10.21831/jep.v8i1.706>