Development Audiovisual Health Education Media for Self Management of Hypertension Patients

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Abstract

Complications of hypertension disease can be prevented by health promotion through the health education of hypertension self-management by using audiovisual media adapted to the development of information technology. However, hipertensive self management audiovisual is still very rarely found and used. This research aims to develop audiovisual health educational media for self management of hypertensive patients. This research used R&D (Research and Development) method with ADDIE model. The subject of this study was 3 experts for validation testing and 10 random respondents for a limited trial to determine product eligibility. The analysis of the data used the quantitative descriptive data by calculating the presentation of the media assessment score and qualitative descriptive data by recapitulating suggestions and comments for media revision. The resulting media was a video with a duration of 11 minutes and 28 seconds. The result of study that validated by experts was 80% (proper category) in material aspect, 78.3% (feasible category) in the content aspect and 89.2% (decent category) in display aspect. From the pilot study on 10 respondents found that display aspect was 95.4%, the content of material aspect was 93.5% and the understanding aspect was 95% with the very feasible category. The results showed that the audiovisual media about self-management for hypertension patients got a decent category as a media for health education. This media can be used for health education in hypertension patients but need for further research to test the media in proper hypertension groups.

Keywords: Audiovisual, Health Education, Hypertension, Media Development, Self-management

Abstrak

Komplikasi penyakit hipertensi dapat dicegah dengan promosi kesehatan melalui pendidikan kesehatan *self-management* pada hipertensi dengan menggunakan media audiovisual yang disesuaikan dengan perkembangan teknologi informasi. Namun, media audiovisual *self-management* hipertensi masih sangat jarang ditemukan dan digunakan. Penelitian ini bertujuan untuk mengembangkan media pendidikan kesehatan audiovisual untuk *self-management* pasien hipertensi. Penelitian ini menggunakan metode R&D (*Research and Development*) dengan model ADDIE. Subjek penelitian ini adalah 3 orang ahli untuk uji validasi dan 10 responden random pada uji coba terbatas untuk menentukan kelayakan produk. Analisis data menggunakan analisis deskriptif kuantitatif yaitu dengan menghitung presentasi skore penilaian media dan analisis deskriptif kualitatif dengan merekap saran dan komentar untuk perbaikan media. Media yang dihasilkan berupa video berdurasi 11 menit 28 detik. Hasil penelitian yang divalidasi oleh penilaian ahli didapat 80% (kategori layak) pada aspek materi, 78,3% (kategori layak) pada aspek isi dan 89,2% (kategori layak) pada aspek tampilan. Dari uji coba terhadap 10 responden didapatkan penilaian aspek tampilan 95,4%, aspek isi materi 93,5% dan aspek pemahaman 95% dengan kategori sangat layak. Hasil penelitian menunjukkan bahwa media audiovisual tentang *self-management* pasien hipertensi mendapat kategori layak sebagai media pendidikan kesehatan. Media ini dapat digunakan untuk pendidikan kesehatan pada pasien hipertensi, tetapi perlu adanya penelitian lebih lanjut untuk menguji media pada kelompok hipertensi yang tepat.

Kata kunci : Audiovisual, Pendidikan Kesehatan, Hipertensi, Pengembangan Media, Self-manegement

Introduction

Hypertension, also known as high blood pressure is a public health problem globally, hypertension is also a common health problem that can be called a silent and invisible killer that rarely causes symptoms. High blood pressure or hypertension is a condition in which systolic blood pressure is equal to or above 140 mmHg and diastolic blood pressure is equal to or above 90 mmHg (WHO, 2016) . Hypertension is still a big challenge for Indonesia and other countries in the world. Data from the World Health Organization (WHO) states that cardiovascular disease globally accounts for around 17 million deaths each year, nearly one over three of the total deaths, complications from hypertension reach 9.4 million deaths worldwide each year. Hypertension is responsible for at least 45% of deaths from heart disease and 51% of deaths from stroke (WHO, 2013).

Data from Riskesdas Kemenkes (2018), the prevalence of hypertension cases increased from 25.8% in 2013 to 34.1% in 2018 (RISKESDAS, 2018). Data from Central Java Health Office in 2018 hypertension is the most non-communicable disease suffered by the population with a percentage of 54.10% (DINKES Jateng, 2018). Data from the Semarang City Health Office in 2018, hypertension ranked first in the case of non-communicable disease with the number of 161,283 cases (DINKES Kota Semarang, 2018).

Behavioral factors such as consumption of foods that consist too much salt and fat, do not eat enough fruits and vegetables, consume high alcohol, less physical activity and exercise, and poor stress management can triggered the occurrence of hypertension. There are also other factors such as living and working conditions that can delay detection and timely treatment due to lack of access to diagnostics and treatment and can also hinder the prevention of complications (WHO, 2013). Hypertension that not monitored for a long time, can be the cause of the risk of damage to the cardiovascular system, kidney and also the brain so that it can cause some complications of diseases such as myocardial infarct, renal failure, stroke and heart failure so there will be higher rates of pain and death caused by hypertension (Smeltzer, 2013). Increased arterial pressure and changes in the vascular system will lead to coronary heart disease, atherosclerosis and kidney damage (Aaronson & Ward, 2010). The risk of hypertension increases with age due to hardening of the arteries, although the aging of blood vessels can be slowed down through healthy living (WHO, 2013).

One way to controlled the increased incidence of pain and death from hypertension is by self management, to control the factors that affect hypertension. Self Management is a disease management to help in lowering and stabilizing blood pressure that can be applied in daily life (Mulyati et al., 2013). Self management for hypertension consists of several ways, by controlling blood pressure, adhering to treatment, changing lifestyle and implementing healthy living behaviors (Mulyati et al., 2013). Lin et al., (2008) argues that self management as a systematic intervention in

chronic disease is to control one's self and be able to make decisions in treatment planning (Akhter, 2010).

From Hidayat's research (2016) regarding the an overview of self-management in hypertensive patients, it shows that most of them fall into the 'enough' category of 73.2% and for the 'less' category of 12.5% (Hidayat, 2016). The research conducted by Lestari & Isnaini (2018) shows that the application of self management has an effect in decreasing blood pressure of systole or diastole in hypertensive clients, at the systolic blood pressure obtained p value = 0.000 (< α = 0.05) While the result of self management with diastolic blood pressure obtained p value = 0.034 (< α = 0.05).

In improving self-management in hypertensive clients, it can be done by increasing knowledge through providing education about self-management to patients with hypertension. From the results of Pardosi's (2018) study, it shows that health education is effective in increasing the level of knowledge of hypertensive clients about hypertension self-management p value of 0.0001 (p <0.05) (Pardosi et al., 2018).

One of the targets of health education for clients can be carried out in health service facilities such as health centers, clinics and hospitals which aims to provide understanding to clients about health problems suffered and empower clients to develop healthy behaviors for health improvement and maintenance (Susilowati, 2016). There are several types of media that are often used to distribute health education, namely printed media such as leaflets, booklets, flip charts and electronic media such as videos (Notoatmodjo, 2012).

In the 21st century, where it has entered the era of the 4.0 industrial revolution, with the increasingly converged boundary between humans and information and communication technology, it is also necessary to update the way of education. Educational media by utilizing information technology and digital that can improve the effectiveness and understanding, such as by using 3D objects, text, images, audio and video (Lase, 2019).

According to Notoatmodjo (2012) providing education using media has an effect on increasing the attitude of the respondents. With the development of various information technology, the best educational method in obtaining various information, one of them can be used audiovisual media. This media provides a stimulus to sight and hearing so that the results obtained are maximized. From Fernalia et. al (2019) research regarding audiovisual education methods, the results of the study concluded that the audiovisual education method had a positive effect on improving self-management of hypertensive patients with p value of 0.000 (p <α) after education using audiovisual media, an increase in the level of self-management occurred hypertensive patients (Fernalia, Busjra & Jumiyah 2019).

According to Edgar Dale about audiovisual *methods in teaching* that from what we see and hear or receive visually such as watching a video or movie and watching a demonstration can funnel knowledge to the brain by 50%, this value is higher than reading, listening to a word or simply viewing a picture (Brissel et al., 2015). According to Maulana (2009), the senses that transmit knowledge to the brain the most are the eyes (75% to 87%), while 13 to 25% of knowledge is obtained through other senses (Fernalia, Busjra & Jumiyah 2019). From Afifah's research, which uses two media in education, audiovisual media gets more effective results in increasing knowledge than using other media with p value of 0.000 ($p < 0.05$) (Afifah, 2019).

The results of research by Rosyimida in RSUP Kariadi Semarang also described that the nurses do health education is mostly using leaflet and flif chart (Rosymida, 2018). The research of health education by Purba on the implementation of Pendidikan Kesehatan Rumah Sakit (PKRS) at Bhayangkara Hospital level II Semarang, the result of research obtained that the health promotion media used is print media like posters, banners and leaflets available in Installation, Ward and waiting room (Purba et al., 2016). Preliminary study conducted by researchers in RSU Muhammadiyah Reomani Semarang with interviews get results that the health education that has been done is still using leaflet media and there is no health education through audiovisual media.

Based on the result of the interviews and research before and not yet avilable of audiovisual health education media about self management in hypertensive patients, researchers are interested to developing audiovisual health education media about self management in hypertensive patients.

Method

This research used R & D (Research and Development) with ADDIE method approach. The stage used in this research are with the analysis of the situation and what products need to be developed (analysis), product design that is suitable to the needs (design), until product making and testing stage (development), to develop an audiovisual health education media self management in hypertensive patients (Jatmika et al., 2019).

In the analysis stage, it is carried out by looking for information related to the potential and problems faced to find what is needed to solve problems in hypertensive patients. In this stage, information are collected by conducting interviews with the Head of Nursing at the Reomani Muhammadiyah Semarang Hospital and also conducting a literature study about the level of knowledge and self-management on hypertension, health education, and health education media used and media that do not exist or have not been used. At this stage was also carried out a study of audiovisual media, such as advantages and benefits, as well as the use of audiovisial media that had been carried out. It the design stage, it is carried out by designing the media product according to the

results of the previous needs analysis. The media designed is a self-management audiovisual health education media for hypertensive patients, which starts from made a video script, contains the information taken from the journal of research literature (Google Schooler, Pubmed, Science Direct, etc.), books and trusted health resources such as WHO and Kemenkes, so that the information provided is credible, trustworthy, actual, relevant, up to date and has been evidenced truthfulness through previous research. Then at the development stage, it was done by making videos according to the script and testing the product internally by experts and externally by respondents on a limited trial.

This study was held in March-May 2020 with the subject are 3 experts for expert validation test from lecturer of Poltekkes Kemenkes Semarang (medical-surgical nursing expert and health promotion expert) and from the nurse of RSU Reomani Muhammadiyah Semarang (Nurse Practitioner) and 10 random respondents with hypertension for a limited trial. Data collection is done with instrument in the form of a questionnaire. The instruments used are expert validation sheets and respondent questionnaire sheets to assess the appropriateness of audiovisual media, this instrument obtained from previous research by Marish (2019) was used to assess audiovisual media about health education of preoperative. In the assessment by experts with expert validation sheets, the assessment consists of 3 aspects, that are material aspects (3 points), content aspects (8 points) and display aspects (8 points), there are also columns for submitting comments, criticisms and suggestions for media development. In the assessment by respondents on the respondent's questionnaire sheet, the assessment consists of 3 aspects, that are display aspect (7 points), the content of material aspect (4 points) and the understanding aspect (4 points).

The judgement in the validation process used a Likert scale with a score of 1 to 5, which is a score of 1: Very less good, 2: Less good, 3: Good enough, 4: Well, and 5: Excellent. Assessment of media carried out once by presenting audiovisual media to the expert and respondent, then the expert and respondent conducts an assessment by filling out a questionnaire using the assessment instrument sheet provided by the researcher. Data analysis used in this study is a analysis of quantitative descriptive data to calculate the score percentage value to determine the feasibility of the media and analysis of qualitative descriptive data that will be analyzed by recapitulating of comments, criticisms and suggestions on the evaluation sheet by the expert, and the results of this data analysis used as a revision material of audiovisual media developed.

The formula for calculating the media percentage:

$$\text{Final Value} = \frac{Number\ of\ score\ aquired}{maximum\ score\ number} \times 100\%$$

To determine media feasibility using the following eligibility categories:

Table 1. Category of Eligibility achievement

Final Value	Category
81 - 100%	Very Decent
61 - 80%	Worth
41 - 60%	Decent Enough
21 – 40%	Less Decent
0 – 20%	Not Worth It

Source : Arikunto 2014 (Nurdiana et al., 2018)

Result

1. **Need Analysis Stage**

At this stage, the need analysis is done by searching for potential and problems as well as the study of literature and information gathering. From these results, a case of hypertension was received as the most sustained case and continued to increase. Hypertension cases from data of RISKESDAS show an increase in cases of hypertension from 2013 to 2018 as much as 8.3%, and in data on cases of hypertension in Central Java and the Semarang City Health Office in 2018, hypertension cases are ranked first and the highest cases in the non-communicable disease cases in health centers and hospitals.

According to WHO, of the 17 million deaths from diseases of the cardiovascular system, hypertension accounted for 9.4 million deaths annually worldwide. In patients with hypertension, many of them still have a self management level in the category quite and less.

Table 2. Percentage level of Self Management hypertension

Category	Percentage (n = 112)
Enough	73,2%
Less	12,5%

Source : (Hidayat, 2016)

Based on table 5. Can be seen categories that have a level of self management hypertension enough 73.2% and category as much as less than 12.5%.

According to Riasmini et.al (2017) in (Haris et al., 2019), health promotion through health education is part of an intervention strategy in nursing aimed at disseminating information, encouraging someone to lead a healthy life or reducing risk factors, making behavior changes

that can improve the quality of life. Based on this, need to do health education in order to increase knowledge and self management in hypertensive patients to reduce the number of complications due to hypertension. Advances in information technology and communication, so educational media using image objects, audio and video will be very useful and can improve understanding (Lase, 2019).

In an interview on 8 October 2019 with Head of nursing section Reomani Muhammadiyah Semarang was obtained that the process of health education conducted in hospitals by nurses to patients was conducted using media in the form of leafleat and flif chart. The health education conducted by the nurses in RSU Reomani Muhammadiyah Semarang is also not yet who uses electronic media such as audiovisual to the patient. The research conducted by Rosyimida was obtained that the health education conducted by nurses to patient in RSUP Dr. Kariadi Semarang is mostly using by print media such as leaflets and flif chart (Rosymida, 2018). The research was also conducted by Purba on the Promosi Kesehatan Rumah Sakit (PKRS) at Bhayangkara Hospital Tingkat II Semarang, the result of research obtained that the health promotion media used is print media in the form like posters, banners and leaflets available in installation, ward and waiting room (Purba et al., 2016).

The results of previous research, health education using audivisual media has a higher level of effectiveness in increasing knowledge than using print media with p value 0.000 ($p < 0.05$) (Afifah, 2019). Therefore, it is necessary to develop health education media in the form of audiovisual media about self management in hypertensive patients.

2. Model Design

a. Collection of Materials

The step taken at this stage is to determine what materials are needed by patients with hypertension in order to understand what is the purpose of self management in hypertension and how self management in hypertensive patients is applied. The material is collected from the journal of research literature (Google Schooler, Pubmed, Science Direct, etc.), books and trusted health resources such as WHO and Kemenkes, so that the information provided is credible, trustworthy, actual, relevant, up to date and has been evidenced truthfulness through previous research according to the info needed to created self-management audiovisual media on hypertension.

b. Creating Audiovisual Media Scripts

The creation of audiovisual media scripts aims to make audiovisual media created easy to understand the plot and continuity according to the materials needed. In the script contains

material that is displayed in visually and audiocally (dubbing). Material arrangement or info created in the audiovisual media script self management in hypertension as in the following table:

Table 3. Table of material on self management Audiovisual script in hypertension

No.	Material
1.	Logo of Poltekkes Kemenkes Semarang, the title of Audiovisual media "Pendidikan Kesehatan Self Management Hipertensi" the name of students, majors and institutions
2.	Delivery of health education objectives
3.	The sense of Hypertension
4.	Symptomatic of hypertension
5.	Risk factor that can affect hypertension
6.	Possible complication in hypertension
7.	Self management and the purpose
8.	Five component in self management hypertension
9.	Component self-integration that includes reduce salt consumption, healthy diet patterns, physical activity/exercise, weight loss, smoking quit, not consuming alcohol and is recommended to consume water and stress management
10.	Self-regulatory component
11.	Interaction with health and other personnel component
12.	Blood pressure compliance component
13.	Adherence to recommended rules
14.	Cover greetings and motivation to do
15.	Logo of Poltekkes Kemenkes Semarang, student name, majors and institutions

3. Media Development

a. Creating Audiovisual Media

Audiovisual Media made according to the script with expert help in the creating of animations, making video and voice (dubbing) with the aim of being able to produce good quality media. The media is created using the after effect application. The media produced a video with a duration of 10 minutes and 52 seconds that was opened with the title "Pendidikan Kesehatan Self Management Pada Hipertensi (Health Education of Self Management in Hypertension)".

b. Expert validation

Expert validation test for audiovisual media feasibility is conducted with 3 experts, medical-surgical nursing expert, health promotion expert and nursing practitioner. The assessed aspect of audiovisual media is the material aspect, the content aspect and the display aspect. The results of an expert judgement can be seen from the following table.

Table 4. The Result of Expert validation test recapitulation

No.	Aspects assessed by expert	Percentage and the Validation Category		
		Validation I	**Validation II**	**Validation III**
1.	Material	90% (Very Decent)	75% (Worth)	75% (Worth)
2.	Content	85% (Very Decent)	72,5% (Worth)	77,5% (Worth)
3.	Display	100% (Very Decent)	87,5% (Very Decent)	80% (Worth)

According to the table 7. can be seen the result of the validation recapitulation of 3 experts, on the material aspect on the validation I obtained 90% with a very decent category, validation II obtained a result of 75% with worth categories and on validation III obtained results 75% with worth categories. In the content aspect on validation I obtained 85% with very decent category, validation II obtained result 72.5% with worth category and on validation III obtained result 77.5% with worth category. On the aspect of the display on validation I obtained the result of 100% with very decent category, validation II obtained results 87.5% with very decent category and on validation III obtained result 80% with worth categories.

Experts also provide commentary, criticism and suggestions from audiovisual media validation tests.

Table 5. Comments, criticism and Suggestions by Experts

No.	Validator	Comment, Criticism And Suggestions
1.	Medical-Surgical Nursing Expert	There is a missed material that is about the need for habits in patients with hypertension consuming water or minerals.
2.	Health Promotion Expert	The consistency of language usage, the duration of the section is not very fast, adding images to the video and adding captions to the image.
3.	Nursing Practitioner	The addition of images at the beginning of the video.

c. Limited trial

The limited trial was conducted with 10 respondents randomly, to assess the feasibility of medium in the field in small scale. The audiovisual media aspects assessed by respondents are the aspect of display, the aspect of the material, and the aspect of understanding. The average rating of respondents is in the following table.

Table 6. Recapitulation of the respondent's judgement aspect score

Aspect	No.	Aspect assessed	Final score	Percentage	Category
Display	**1**	The text reads clearly	50	100%	Very decent
	2	Music Sound suitability	45	90%	Very decent
	3	Video's Clarity	48	96%	Very decent
	4	Clarity of images	48	96%	Very decent
	5	Clarity of voice	49	98%	Very decent
	6	Clarity of Image Color	46	92%	Very decent
	7	Attractio of animation	48	96%	Very decent
Number of score/ Percentage			**334**	**95,4%**	**Very decent**
Content of Material	**1**	Clarity of Material	45	90%	Very decent
	2	Language's clarity	49	98%	Very decent
	3	Video clarifies material	45	90%	Very decent
	4	Images clarifies material	48	96%	Very decent
Number of			**187**	**93,5%**	Very decent

score/ Percentage					
Understanding	**1**	Easy-to-understand the material	48	96%	Very decent
	2	The material given improve the understanding about self management of hypertension	48	96%	Very decent
	3	Audiovisual media makes it easy to remember about the material of self management hypertension	44	88%	Very decent
	4	Self management of hypertension material is more interesting delivered using audiovisual media	50	100%	Very decent
Number of score/ Percentage			**190**	**95%**	Very decent

Table 7. Percentage results of trial limited by Respondens

Aspect	Percentage	Category
Display	95,4%	Very decent
Content	93,5%	Very decent
Understanding	95%	Very decent

Based on table 9. and 10. can be seen results from the limited trial of audiovisual media that is in the display aspect acquired 95.4% percent with very decent categories, the content aspect is obtained 93.5% with categories very decent, and on the aspect of understanding gained 95% with very decent categories.

Picture 1. Audiovisual Media Display

Discussion

Media Audiovisual health education about self management in hypertensive patients developed with the method of Research and Development (R&D) with the ADDIE model. Media are developed with 3 stages, analysis of needs (analysis), design of concepts (design), and product development (development).

The results of the analysis of developing non-communicable diseases can be seen that the number of cases of hypertension is still increasing and occupying the first position. The increasing cases of hypertension was followed by the results of research Hidayat (2016) which showed that control through self-management of hypertension was not yet good, that will drive the increase in complications and mortality rates.

Various ways have been done before to carry out health education regarding hypertension control, during this time of technology and information development as well as cases of hypertension which can be suffered by young to elderly people, it is necessary to update health education methods compatible with developments in technology and information such as audiovisual media, in line with the theory Lase (2019) if educational media using image objects, audio and video will be very useful and can improve understanding.

The research from Lestari & Isnaini (2018) showed that self management in hypertension has an influence in lowering the blood pressure of systole and diastol with p value = 0.000 (< α = 0.05)

while the results in diastolic blood pressure are obtained p value = 0.034 (< α = 0.05). Research from Pardosi et al. (2018) on self management hypertension shows that through health education is effective to increase the knowledge of self management in hypertensive patients with p value 0.0001 (p < 0.05). A study also conducted by Fernalia et al. (2019) on health education using audiovisual media, the result shows that audiovisual education methods have a positive influence on improving self management of hypertension patient with p value 0.000 (p < α). In the research of Mawan et al. (2017) on the development of video counseling Perilaku Hidup Bersih Dan Sehat (PHBS) (Clean and Healthy Lifestyle) charged character value to the increase of public knowledge in tackling diarrheal disease by using the ADDIE model resulted in a judgement with the score of the material experts (100%), media experts (97.36%), and Community response (95.62%). From several research above, it can be concluded that the method of health education self management needs to be done by using audiovisual media because it has influence and positive impact on the improvement of self management of hypertension patients. Health education with audiovisual media using various visual objects such as images, animations, video or audio will be an effective new method, supported by the use of technology and information, and digital technologies. So the use of audiovisual media in health education has a higher level of understanding and increased knowledge than other media because it has more advantages in some aspects.

In the process of designing, it is done by gathering the material and then made a video script, contains the information taken from the journal of research literature, books and trusted health resources such as WHO and Kemenkes, so that the information provided is credible, trustworthy, actual, relevant, up to date and has been evidenced truthfulness through previous research. Media production was done using the *after effect* application and resulted in a video with a duration of 10 minutes 52 second, after the revision of the video duration increased to 11 minutes 28 seconds. The Video was opened under the title "Pendidikan Kesehatan *Self Management* pada Hipertensi Hipertensi (Health Education of Self Management in Hypertension)". In some material video not only presented in the form of text but also presented in the form of animations and images, the media is also equipped with voice over (dubbing) describing the material that is being displayed in the video, and also equipped with a music backgroud used as a backdrop to give visual support in the video, in Nursalam & Efendy (2008) that the video as a learning medium becomes more effective because the image on the video can facilitate the acceptance of information so as to improve knowledge.

Expert testing was conducted to determine the feasibility of media in the material, content and display aspects and of all the judgement of audiovisual media by experts, get the average on the material aspect the results were 80% with the proper category, in the content aspect the results were 78.3% with the feasible category and in the display aspect the results were 89.2% with the decent

category. In the feasibility judgement although from all the experts got a decent category, there are several aspects that need to be considered with the lowest score, this aspect score can be used as a benchmark for improvements to improve the media quality. On the aspect of the material the score 'accuracy of language selection in material' and 'clarity of learning objectives' has the lowest scorecard, it needs to be repaired and the selection in the use of language that can be more understandable and easily captured by the general public especially patients with hypertension, so the clarity of learning objectives can also be achieved better. In the aspect of content in the 'clarity of the material', the 'material actualization' and the 'accuracy of image selection' that related with the material having the lowest score, of the result it can be done improvement in visualizing the material into image or animation so the material are more clearly understood, and also need to be added research source or other information to clarify the material. On the aspect of the display is the aspect that has the highest score, some things that can be used to improve the visual appearance of the media is like by adding an image or animation more interesting or the selection of font type and size is more interesting and easy to read.

A limited trial is conducted to determine the feasibility of audiovisual media in the respondent in a limited and from the average judgement results of the audiovisual media get a very decent category. Results obtained in the limited trial of the average percentage on the display aspect was 95.4%, in the aspect of the content of material was 93.5% and in the aspect of understanding was 95% with the very feasible category. In the assessed aspect of ' the material of self management hypertension is more interesting delivered using audiovisual media ' got the maximum value of 50, it is in line with Maulana of the benefit of audiovisual media that with this media can better capture or attract the attention of respondents (Maulana, 2009). On the aspect of the display and the understanding of the material presented in the limited trial got an average of the most highly score of 95.4% and 95%. This is in line with Maulana's theory if the message presented in audiovisual media is easier to capture because it is through a few senses than that of just one senses (Maulana, 2009). The aspect assessed in the aspect of the display is the clarity of writing, video, sound, music and images, on the aspect of understanding covering the capabilities of audiovisual media provide an understanding of self management hypertension, that means the audiovisual media is able to provide a good understanding of the respondents about self management of hypertension through the display of video visualization in the form of text, images and animations as well.

Limited testing in the field, there are several point aspects that need to be considered with the lowest score even if the category is very decent, the score of aspect can be used as a push to improve the media quality. In the display aspect of the score 'music sound suitability' gets the lowest score of 45 and the percentage of 90% (maximum scorecard 50), from the score, can be caused because the respondent does not understand how the musical suitability or because the music sounds

monotonous or other, from this aspect can be improved music quality to be more interesting to hear. On the aspect of material content in score 'clarity of material' and 'video clarifies material' has the lowest score of 45 and a percentage of 90% (maximum scorecard 50), this is due to the visualization of images or animations that are inexact or related to the selection of the language that is inexact, so that the respondent little difficult to capture material, it is necessary to improve the selection of languages and visualizations for the media to presenting the material more easily understandable. On the aspect of understanding in the score Audiovisual media makes it easy to remember about the material of self management hypertension' obtaining the lowest score of 44 and a percentage of 88% (maximum scorecard 50), this can be due to the frequency or time of the respondent in receiving information, then can be done multiple views so that the respondent can more remember the information submitted.

Stage design tested that is the stage of media audiovisual health education has been done internally and externally testing. Internal testing conducted by 3 experts, surgical-medical nursing experts, health promotion experts and nursing practitioners and external testing conducted to 10 respondents in limited trial. Based on the validation test by 3 experts and limited trials, in accordance with the eligibility categories of Arikunto (2014) in (Nurdiana et al., 2018) the results showed that the media of audiovisual health education self management got a decent category as a media for health education. In this research, researchers only do research and development on level 1, in the stage of knowing the potential and problems, information collection and literature study, design of product and conduct design validation to the experts and trials limited to the design tested to know whether the media is feasible production or not, so it is necessary to research on the further level of the field to know the effectiveness of media

Conslusion

As a result of all the abovementioned, it can be concluded that the development of health education using audiovisual media in self management of hypertensive patients and produce a video with duration of 11 minutes 28 seconds with the title "Pendidikan Kesehatan *Self Management* pada Hipertensi (Health Education of Self Management in Hypertension)". Based on the results of expert validation tests by 3 experts and limited field test results with 10 respondents, it can be concluded that the audiovisual self-management health education media on hypertension is declared appropriate as a health education media. This media can contributes to increase in understanding of self management hypertensive patients, as well as helps in increasing the compliance with the control criteria. Beside that, audiovisual health education is easy to understand from the content, material, and performance aspects based on expert judgements and respondents. To solve the problem of recurrence of hypertensive patients, patients need to be given media to learn independently how to manage their hypertension. Need audiovisual self-management health

education in hypertensive patients to increase awareness of the seriousness of hypertension, its risk factors, and strategies for preventing hypertension and its complications among groups at risk. Also we recommend that this media need for further research to test the media in proper hypertension groups and larger field to determine the effectiveness of the media.

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Reference

Aaronson, P. I., & Ward, J. P. (2010). *Sistem Kardiovaskuler*. Jakarta: Erlangga.

Afifah, A. (2019). *Efektivitas Antara Booklet dan Audiovisual Terhadap Pengetahuan Ibu Hamil Tentang 1000 Hari Pertama Kehidupan (HPK)*. *Skripsi*, Jurusan Keperawatan. Semarang: Poltekkes Kemenkes Semarang. http://repository.poltekkes-smg.ac.id/

Akhter, N. (2010). *Self management among patients with hypertension in bangladesh. Prince of Songkla University. Thesis*, Master of Nursing Science (International Program). Songkhla: Prince of Songkla University. http://kb.psu.ac.th/psukb/bitstream/2010/8492/1/340992.pdf

Brissel, L., Morel, L., & Dupont, L. (2015). Contribution to setting up a sustainable learning in an eco-neighborhood development plan based on Serious game. *2013 International Conference on Engineering, Technology and Innovation, ICE 2013 and IEEE International Technology Management Conference, ITMC 2013*, May 2019. https://doi.org/10.1109/ITMC.2013.7352607

Dinas Kesehatan Kota Semarang. (2018). *Profil Kesehatan Kota Semarang 2018*. In www.dinkes.semarangkota.go.id. Dinas Diakses tanggal 18 September 2019.

Dinas Kesehatan Jawa Tengah. (2018). *Profil Kesehatan Provinsi Jawa Tengah Tahun 2018*. https://dinkesjatengprov.go.id/v2018/profil-kesehatan-2/. Diakses tanggal 18 September 2019.

Fernalia, Busjra, & Jumaiah, W. (2019). Efektifitas Metode Edukasi Audiovisual Terhadap Self Management Pada Pasien Hipertensi. J*urnal Keperawatan Silampari. 3*, 1–19. 106 https://doi.org/doi: https://doi.org/10.31539/jks.v3i1.770

Haris, H., Aris, M., & Muliyadi, M. (2019). Peningkatan Pengetahuan Lanjut Usia melalui Pendidikan Kesehatan dengan Menggunakan Media Power Point. *Media Karya Kesehatan*, *2*(2), 164–177. https://doi.org/10.24198/mkk.v2i2.22472 .

Hidayat, I. R. A. (2016). Gambaran Self Care Management Klien Hipertensi Di Kelurahan Pudak Payung Semarang. *Skripsi*, Departemen Ilmu Keperawatan Fakultas Kedokteran. Semarang: Universitas Diponegoro.

Lase, D. (2019). Pendidikan Di Era Revolusi Industri 4.0. August. *Seminar On Curriculum Developmen*t. https://doi.org/10.13140/RG.2.2.30831.59043.

Lestari, I. G., & Isnaini, N. (2018). *P*engaruh Self Management Terhadap Tekanan. I*ndonesian Journal for Health Sciences. 02*(11), 7–18. DOI : 10.24269/ijhs.v2i1.725.

Lin, C. C., Anderson, R. M., Hagerty, B. M., & Lee, B. O. (2008). Diabetes Self-Management

Experience: A Focus Group Study Of Taiwanese Patients With Type 2 Diabetes. *Journal of Clinical Nursing*. https://doi.org/10.1111/j.1365-2702.2007.01962.x

Marish, U. K. (2019). Pengaruh Pendidikan Kesehatan Dengan Media Audiovisual Terhadap Tingkat Kecemasan Terhadap Pasien Pre Operasi Di RSU Reomani Muhammadiyah Semarang. *Skripsi*, Jurusan Keperawatan. Semarang: Poltekkes Kemenkes Semarang. http://repository.poltekkes-smg.ac.id/

Maulana, H. (2009). *Promosi Kesehatan*. Yogyakarta: Penerbit Buku Kedokteran ECG.

Mawan, A. R., Indriawati, S. E., & Suhadi. (2017). Pengembangan Video Penyuluhan PHBS Bermuatan Nilai Karakter terhadap Peningkatan Pengetahuan Masyarakat dalam Menanggulangi Diare. *Jurnal Pendidikan : Teori Penelitian dan Pengembangan*, 883–888. journal.um.ac.id/index.php/jptpp/article/view/9606

Mulyati, L., Yetti, K., & Sukmarini, L. (2013). Analisis faktor yang memengaruhi self management behaviour pada pasien hipertensi. *Jurnal keperawatan padjadjaran*, *1*(2), 112–123. https://doi.org/10.24198/jkp.v1n2.7

Notoatmodjo, S. (2012). *Promosi Kesehatan dan Perilaku Kesehatan*. Yogyakarta: Rineka Cipta.

Nurdiana, M., Kholisho, Y. N., & Fathoni, A. (2018). Pengembangan Media Pembelajaran Berbasis CD Interaktif Pada Materi Simulasi Digital Menggunakan Adobe Flash. *EDUMATIC: Jurnal Pendidikan Informatika*, *2*(2), 84. https://doi.org/10.29408/edumatic.v2i2.925

Nursalam, & Efendi, F. (2008). *Pendidikan dalam Keperawatan*. Jakarta: Salemba Medika.

Pardosi, S., Sahran, & Sari, F. P. (2018). The Effect Of Hypertension Education On Self Management In Elderly In The Working Area Of Puskesmas Lingkar Barat Kota Bengkulu 2018. *ICIHC*, 58–61. https://doi.org/10.2991/icihc-18.2019.15

Purba, A., Syamsulhuda., & Shaluhiyah, Z. (2016). Pelaksanaan Kegiatan Promosi Kesehatan Rumah Sakit (PKRS) Di Rumah Sakit Bhayangkara Tingkat II Semarang. *Jurnal Kesehatan Masyarakat (e-Journal)*, *4*(5), 259–267. https://ejournal3.undip.ac.id/index.php/jkm/article/view/14576

RISKESDAS. (2018). Hasil Utama Riset Kesehatan Dasar. https://kesmas.kemkes.go.id/assets/upload/dir_519d41d8cd98f00/files/Hasil-riskesdas 2018_1274.pdf. Diakses tanggal 18 September 2019.

Rosymida, I. (2018). Gambaran Pendidikan Kesehatan yang Dilakukan Perawat Di Poliklinik RSUP Dr. Kariadi Semarang. *Skripsi*, Fakultas Ilmu Keperawatan dan Kesehatan. Semarang : Universitas Muhammadiyah Semarang. http://repository.unimus.ac.id

Susilowati, D. (2016). *Buku Bahan Ajar Cetak Keperawatan Promosi Kesehatan*. Jakarta: Pusdik SDM Kesehatan Kementrian Kesehatan Republik Indonesia.

Smeltzer, S., C. (2013). *Buku Ajar Keperawatan Medikal Bedah Brunner & Suddarth Edisi 8 Volume 2*. Yogyakarta: Penerbit Buku Kedokteran ECG.

WHO. (2016). *Global NCD Target Reduce High Blood Pressure Background*. 2. http://apps.who.int/iris/bitstream/10665/79059/1/WHO_DCO_WHD_2013.2_eng.pdf. Diakses 18 September 2019.

World Health Organization. (2013). *A Global Brief Oh Hypertension*. http://www.who.int/iris/handle/10665/79059. Diakses tanggal 18 September 2019.