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EFFECTIVENESS OF AUDIO-VISUAL AIDS (AVA) BASED EDUCATION ON PATIENTS KNOWLEDGE AND ANXIETY PRE CATARACT OPERATION

Purnomo[1)], Suciati[1)], Diana Ani Porwati[1)], Maksum[2)], Dewi Siyamti[2)], Angga Miftakhul Nizar[1)*],
[1]STIKES Hutama abdi Husada Tulungagung
[2]Universitas Ngudi Waluyo Semarang
[1]purnomo@stikestulungagung.ac.id
[1]suciati@stikestulungagung.ac.id
[1]dianaaniporwati@gmail.com
[2]almaalmira10@gmail.com
[2]wwdewiq123@gmail.com
[1]*anggamiftakhulnzar@gmail.com

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ABSTRACT

Background: One of the treatments for cataracts is surgery. Lack of knowledge of precataract surgery patients can cause fear, anxiety and stress, because it can threaten the integrity of the body, soul and can cause pain. The purpose of the study was to determine the effect of audio visual education on the cataract surgery process on the knowledge and anxiety of precataract surgery patients at Tulungagung hospital Method: This study was conducted on July 15-August 10, 2024 using the pre-experimental design method with a one group pretest posttest design approach. population of all pre-cataract surgery patients at RS Tulungagung underwent surgery on July-August 2024, samples were taken using accidental sampling techniques of 40 respondents ***Result:*** *in this study with statistical test showed that there was an effect of audio visual education of the cataract surgery process on the knowledge of pre-cataract surgery patients (0.000 <0.05) and anxiety of pre-cataract surgery patients (0.000<0.05) at Tulungagung Hospital in 2024. Conclusion : Audio-visual-based health education carried out by health workers as people who are proven in the health field is very useful in increasing knowledge and reducing anxiety of pre-cataract surgery patients*

1. INTRODUCTION

The World Health Organization (WHO) stated that the most common cause of blindness in the world in 2020 was cataracts (World Health Organization, 2022). Cataracts are the leading cause of blindness worldwide and are actually preventable (Astari, 2021). Cataracts are an eye disease characterized by cloudiness in the lens of the eye, which interferes with the process of light entering the eye. Cataracts are characterized by the lens of the eye gradually becoming cloudy, causing total blindness (Astari, 2021; Firnando et al., 2023). Cataracts are degenerative diseases, but cataracts are often found at a young age, namely 35-40 years, at a young age cataracts are caused by lack of nutritional intake and nutrients needed by the body (Eka

*** Author Correspondence: Angga Miftakhul Nizar, STIKES Hutama Abdi Husada Tulungagung, anggamiftakhulnzar@gmail.com , 085850252768**

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Damayanti & Christina, 2023; Firnando et al., 2023; World Health Organization, 2022).

Cataracts are the main cause of blindness in Indonesia as much as 0.78%, followed by glaucoma as much as 0.20%, refractive disorders as much as 0.14%, while the rest are corneal diseases, retina and vitamin A deficiency (Xerophthalmia) which is estimated that every minute there is one blindness so that every year it will increase to 500,000 people with blindness, especially in residents who live in poor areas with weak socio-economic (Astari, 2021; Warouw et al., 2021; World Health Organization, 2022).

Data from the World Health Organization (WHO), states that 285 million people have impaired vision in the world, 39 million are blind and 246 million have decreased vision (Low Vision) (Astari, 2021; Firnando et al., 2023; Syarifah et al., 2020; Warouw et al., 2021; World Health Organization, 2022). Data from Riskedas in 2020, stated that the highest prevalence of cataracts was in North Sulawesi (3.7%), Jambi (2.8%), and Bali (2.7%) (Kementrian Kesehatan Republik Indonesia, 2021), while the results of the Rapid Assessment of Avoidable Blindness (RAAB) Survey by the Indonesian Eye Specialist Association (Perdami) and Balitbangkes in 2020 in 15 provinces showed that the blindness rate found reached 30% and of that number, cataracts were the highest cause, namely 81% (Ariyanto, 2019). The highest blindness rate as the largest contributor was the province of East Java, namely 4.4% with an age of> 50 years, while for cataract cases it showed a figure of 81.1%. So that the number of blindness and cataract cases in East Java is the first position in blindness cases in Indonesia (Badan Penelitian dan Pengembangan Kesehatan Kemekes RI, 2021). The large number is significant in several areas in East Java.

Data from Tulungagung Hospital shows that every year the number of cataract sufferers increases by 451 people in 2022, and 504 people in 2023. Most cataract patients are 50 years old with an age range of 60-75 years (67.8%). These data show that one of the management of cataract sufferers is by using surgery.

The management of cataract disease is by surgery to remove the cloudy lens and replace it with an intraocular lens implant. Cataract surgery can be performed using several techniques, one of which is phacoemulsification (Badan Penelitian dan Pengembangan Kesehatan Kemekes RI, 2021; Kementrian Kesehatan Republik Indonesia, 2021). Cataract surgery procedures are stressors that can cause anxiety in pre-operative patients 10. Research conducted by Bagas Aji, et al., 2019 found that in the pre-operative stage, patients experience the most anxiety due to the surgical procedure and the results of the surgery, and some patients are worried about going blind, complications during surgery, vision not fully recovering, and anesthesia (Obuchowska & Konopinska, 2021; Prasetyo & Yusran, 2019).

In patients before surgery is usually filled with feelings of anxiety, tension, restlessness, fear, and often ask the nurse whether the operation process will take a long time. The level of anxiety and patient response varies from one to another. Physiological responses are generally associated with increased pulse, increased reflexes, sleep disturbances, tense face, palpitations, weakness, frequent urination, shortness of breath, and increased blood pressure (Arihariyani A, 2020). Patients who will undergo surgery need education before carrying out the surgical procedure.

Patient knowledge before cataract surgery can cause fear, anxiety and stress, because it can threaten the integrity of the body, soul and can cause pain. Anxiety is an emotion, a feeling that arises as an initial response to psychological stress and threats

* Author Correspondence: Angga Miftakhul Nizar, STIKES Hutama Abdi Husada Tulungagung,
anggamiftakhulnzar@gmail.com , 085850252768

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to values that are meaningful to the individual (Prasetyo & Yusran, 2019). Research by Ramirez et, al 2020, states that anxiety that arises in pre-cataract surgery patients is caused by concerns about the knowledge that vision cannot be fully restored after surgery, concerns about complications during surgery and concerns about going blind after surgery at an advanced age, as well as family support that is greatly needed by the elderly when undergoing cataract surgery (Ramirez et al., 2020).

The impact caused by anxiety before surgery such as changes in body hemodynamics such as blood pressure, pulse and respiratory rate which can confuse the medical team to continue the surgery. Anxiety in pre-operative patients if not addressed can interfere with the surgery process and patient healing. Efforts to maintain the psychological condition of patients who will undergo surgery, so as not to hinder or interfere with the surgery process and patient treatment (Ariyanto, 2019).

Education is an effort to make the community or individual independent so that they are able to maintain, protect and improve their health. In carrying out Health Education, health education media are needed which aim to increase the attention of the target, arouse interest, provide motivation so that they can increase the understanding and knowledge of the target (Eka Damayanti & Christina, 2023). Health education media can be in the form of electronic media, print and other media. Electronic media is a media that moves and prioritizes audio, visual, or audio visual messages. Audiovisual learning media in the form of video is a media that has elements of sound and images, which are expected to provide clear information on the message conveyed. This media provides stimulus to hearing and sight so that the learning outcomes obtained are more optimal (Bhanu & Ramaswamy, 2020; Suryawantie et al., 2020)

2. METHODE

The research design used Quasy-Experimental with One Group Pre Test Post Test Design Approach with the number of research respondents all patients who will undergo pre-cataract surgery at the Hospital in Tulungagung with inclusion and exclusion criteria. Using the Accidental Sampling Technique. The independent variables of the study are Knowledge and anxiety and the Dependent Variable is audio-visual education. The study was conducted in July - August 2024.

3. RESULTS AND DISCUSSION

The results of the study on the effect of audio-visual education on the cataract surgery process on the knowledge and anxiety of pre-cataract surgery patients at Tulungagung Hospital which was carried out on July 15 - August 10, 2024 with a sample of 40 people who met the inclusion criteria and data collection using a measuring instrument in the form of a knowledge questionnaire that had been tested for validity and reliability and a HARS scale anxiety questionnaire. Knowledge and anxiety before and after the educational video on cataract surgery procedures at Tulungagung Hospital. The data is presented in table form.

Table 1 Knowledge of pre-cataract surgery patients before audio-visual education on the cataract surgery process at Tulungagung Hospital

Knowledge	Frequency	Percentage (%)
Less	5	12,5
Adequate	29	72,5
Good	6	15
Total	40	100

* Author Correspondence: Angga Miftakhul Nizar, STIKES Hutama Abdi Husada Tulungagung, anggamiftakhulnzar@gmail.com , 085850252768

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Based on table 1, it can be explained that from a total of 40 respondents at Tulungagung Hospital, most respondents, namely 29 respondents (72.5%) have knowledge about cataract surgery in the sufficient category.

Knowledge is result on human sense, or result of a person's knowledge an object from their senses (Notoatmodjo, 2020). Knowledge is something that is known related to the learning process. This learning process influenced various internal factors, such as motivation and external factors form information facilities available audio-visual based education (Safirah, 2021). One factor could be behind respondent's knowledge is age. The results on this research cross tabulation show that characteristics respondents based on age at Hospital in Tulungagung, found that 15 respondents (37.5%) were aged 50-60 years and had sufficient knowledge. According to Nursalam, 2020. the older person gets, more knowledge they have (Nursalam, 2020).

Respondents aged 50-60 years are vulnerable to elderly who usually have good life experience will have better knowledge compared to respondents of a younger age. With this adult age, respondents will gain more knowledge and life experience, including about cataract surgery. However, in reality, many respondents' knowledge is in the sufficient category. This condition shows that there are still many respondents who have less detailed or less in-depth knowledge of cataract surgery, so it is necessary to provide more in-depth health education about cataract surgery.

The results of this research are relevant to this research by Murniasari, 2022, before giving the educational video, the majority of respondents in the intervention group, 22 respondents (56.4%) had sufficient knowledge and 17 respondents (43.6%) had good knowledge, while in the control group 33 respondents (86.4%) had sufficient knowledge and 6 respondents (15.4%) had less knowledge (Murniasari, 2022).

Table 2 pre-cataract surgery patients after audio-visual education on the cataract surgery process at Tulungagung Hospital

Knowledge	Frquency	Percentage (%)
Less	0	0
Adequate	3	7,5
Good	37	92,5
Jumlah	40	100

Based on table 2, it can be explained that from a total of 40 respondents at Tulungagung Hospital, almost all respondents, namely 37 respondents (92.5%) have knowledge about cataract surgery in the good category.

According to Sulfemi and Nurhasanah (2021), audio visual media is media in which there are several components, namely images and sound. This type of media has capabilities that are not the same as other media. Because it has a type of auditive media that functions to be heard and visual to be seen. Apart from that, audio visual media is a type of learning tool that displays images and sound so it requires the ear to hear and the eye to see (Sulfemi & Nurhasanah, 2021).

This fact shows that after conducting audio-visual based education about cataract surgery, all respondents experienced an increase in knowledge so that almost all respondents had good knowledge about cataract surgery. This shows that audio-visual-based health education carried out by health workers as people who are trusted in the health sector is very useful in increasing respondents' knowledge about cataract surgery. This good knowledge will foster good attitudes and will support the respondent's behavior in undergoing cataract surgery.

* Author Correspondence: Angga Miftakhul Nizar, STIKES Hutama Abdi Husada Tulungagung, anggamiftakhulnzar@gmail.com , 085850252768

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Results of this research are relevant to the research by Murniasari, 2022. all respondents in the intervention group were 39 respondents (100.0%) who had good knowledge, while in the control group as many as 35 respondents (89.7%) had sufficient knowledge and 4 respondents (10.3%) had insufficient knowledge (Murniasari, 2022).

Table 3 Audio-visual-based education of the cataract surgery process on the knowledge of pre-cataract surgery patients at Tulungagung Hospital

Variable	Knowledge							
	Less		Adequate		Good		Total	
	f	%	f	%	f	%	f	%
Knowledge Before Cataract surgery	5	12	29	72,5	6	15	40	100
Knowledge After Cataract Surgery	0	0	3	7,5	37	93,5	40	100
Wilcoxon Paired Test P Value = <0,001 α =0,05								

Based on table 3 above, it can be described the influence before being given audio-visual education on the cataract surgery process, 5 (12.5%) respondents had poor knowledge, 6 (15%) respondents had good knowledge and 29 (72.5%) respondents had sufficient knowledge. While after being given audio-visual education on the cataract surgery process, 3 (7.5%) had sufficient knowledge, 37 (92.5%) respondents had good knowledge and no respondents had poor knowledge. The results of quantitative data analysis of the Wilcoxon Signed Ranks Test analysis with the help of the SPSS 27.0 computer program with a significance of 0.05 obtained a P Value = <0.001 smaller than the value of alpha = 0.05 (0.000 <0.05), so H0 is rejected and H1 is accepted, which means that there is an effect of audio-visual education on the cataract surgery process on the knowledge of pre-cataract surgery patients at Tulungagung Hospital in 2024.

According to theory, it is explained that audio-visual media is used as an effort to improve the quality of education. In optimizing the role of learning media, it is necessary to pay attention to a number of certain principles in order to achieve good learning objectives (Kompri, 2020; Zakwan, 2020). Audiovisual learning media in the form of video is media that has elements of sound and images, which are expected to provide clear information to students

The facts and theories above are in accordance with the fact that after providing audio-visual based education about cataract surgery to pre-cataract surgery patients, almost all respondents had good knowledge about cataract surgery. This shows that audio-visual-based education carried out by health workers as people who are trusted in the health sector is very useful in increasing respondents' knowledge about cataract surgery. This good knowledge will foster a good attitude and will support the implementation of cataract surgery smoothly (Zakwan, 2020).

The results of this research are relevant to the research by Murniasari, 2022, that the pretest knowledge of the intervention group was mostly in the sufficient category and the posttest was all in the good category. The pretest and posttest knowledge categories of the control group were mostly sufficient (Murniasari, 2022). The results of the pretest-posttest knowledge test of the intervention group with Wilcoxon obtained a value of p=0.000. The results of the control group's pretest-posttest knowledge using Wilcoxon showed a value of p=0.066. The results of the analysis of differences in influence using the Mann Whitney test have a value of p = 0.000. the message conveyed. This media provides stimulation for hearing and vision so that the learning results obtained are maximized (Suryawantie et al., 2020).

*** Author Correspondence: Angga Miftakhul Nizar, STIKES Hutama Abdi Husada Tulungagung, anggamiftakhulnzar@gmail.com , 085850252768**

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Table 4 Anxiety of pre-cataract surgery patients before audio-visual education on the cataract surgery process at Tulungagung Hospital.

Anxiety	Frequency	Percentage (%)
No Anxiety	0	0
Mild Anxiety	5	12,5
Moderate Anxiety	27	67,5
Severe Anxiety	8	20
Total	40	100

Based on table 4, it can be explained that from a total of 40 pre-cataract surgery respondents at Tulungagung Hospital after audio-visual-based education, almost half of the respondents, namely 16 respondents (40%) did not experience anxiety and there were 15 respondents (37.5%) who experienced mild anxiety.

Anxiety is an emotional response without a specific object that is subjectively experienced and communicated interpersonally. Anxiety is confusion, worry about something that will happen with unclear causes and is associated with feelings of uncertainty and helplessness (Sulistyawati, 2019).

One factor that influences anxiety is the level of education. The results of the cross-tabulation research showed that 13 respondents (32.5%) had junior high school education and had moderate anxiety. According by research Muflihah 2022, increasing education can also reduce feelings of inability to deal with stress. The higher a person's education, the easier it will be and the more able they will be to deal with existing stress (Muflihah et al., 2022).

Based on the data obtained, respondents who experienced anxiety were elderly people with secondary school (SMP) education. The lower a person's level of education in obtaining information, the more it will affect a person's absorption capacity for the information received. Researchers are of the opinion that respondents who experience moderate anxiety are also influenced by educational factors which are still relatively low, where low education can slow down a person's ability to understand what a healthy way of life is like, which will cause respondents to experience moderate anxiety.

The results of this research are relevant to the research of Warouw, et al. (2021) that before education about cataracts was carried out, some of the patients were moderately anxious, namely 88.9%, had anxiety. This shows the need for health practitioners to provide better and clearer education to patients, to reassure and give patients confidence that cataract surgery is safe and does not carry major risks (Warouw et al., 2021). And Than According by research Sulfemi and Nurhasanah (2021), audio-visual media is media in which there are several components, namely images and images voices, this type of media has capabilities that are not the same as other media. Because it has a type of auditive media that functions to be heard and visual to be seen. Apart from that, audio visual media is a type of learning tool that displays images and sound so it requires the ear to hear and the eye to see (Sulfemi & Nurhasanah, 2021).

This fact shows that after conducting audio-visual based education about cataract surgery, all respondents experienced a decrease in pre-cataract surgery anxiety so that many patients did not experience anxiety and some experienced mild anxiety. This shows that audio-visual-based health education carried out by health workers as people who are trusted in the health sector is very useful in reducing anxiety in patients before cataract surgery. Patients do not experience anxiety and will be calm during

* Author Correspondence: Angga Miftakhul Nizar, STIKES Hutama Abdi Husada Tulungagung, anggamiftakhulnzar@gmail.com , 085850252768

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surgery so that it will support the cataract surgery to run smoothly.

The results of this research are relevant to the research of Warouw, et al. 2021 that respondents had a moderate level of anxiety before being given education and a mild level of anxiety after being given education with a percentage of 16 respondents (59.2%) and the average value rose from 23.4074 to 14.6296, this states that education be more effective in reducing patient anxiety level (Warouw et al., 2021)

Table 5 Anxiety of pre-cataract surgery patients after audio-visual-based education of the cataract surgery process at Tulungagung Hospital

Anxiety	Frequency	Percentaege (%)
No Anxiety	16	40
Mild Anxiety	15	37,5
Moderate Anxiety	9	22,5
Severe Anxiety	0	20
Total	40	100

Based on table 5, it can be explained that from a total of 40 pre-cataract surgery respondents at Tulungagung Hospital before audio-visual-based education, most respondents, namely 27 respondents (67.5%), experienced moderate anxiety.

Table 6 The effect of audio-visual education on the cataract surgery process on anxiety in pre-cataract surgery patients at Tulungagung Hospital

	Anxiety Level								Total	
	No Anxiety		Anxiety		Moderate Anxiety		Severe Anxiety			
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Before surgery	0	0	5	12,5	27	67,5	8	20	40	100
After surgery	16	40	15	37,5	9	22,5	0	0	40	100
Wilcoxon Paired Test P Value = <0,001 a =0,05										

Based on table 6 above, it can be described that before being given audio-visual-based education, 5 (12.5%) respondents experienced mild anxiety, 8 (20%) respondents experienced severe anxiety and 27 (67.5%) respondents experienced moderate anxiety. Meanwhile, after being given audio-visual-based education, 16 (40%) respondents experienced no anxiety, 15 (37.5%) experienced mild anxiety, 9 (22.5%) experienced moderate anxiety and no respondents experienced severe anxiety and very severe anxiety (panic).

From the results of the quantitative data analysis of the Wilcoxon Signed Ranks Test analysis using the SPSS 27.0 computer program with a significance of 0.05, the P Value = <0.001 was obtained, which was smaller than the p value = 0.05 (0.000 <0.05), so Ho was rejected and H1 was accepted, which means that there is an effect of audio-visual education on the cataract surgery process on the anxiety of pre-cataract surgery patients at Tulungagung Hospital in 2024.

Audio-visual media consists of two domains, namely hearing and vision. This media is divided into several parts according to type and condition. In this case, researchers use motion-type audio-visual media, namely video, to provide education. By using this video media, it is hoped that the audience will be able to capture the material presented and the educational process will become enjoyable (Iqbal et al., 2024).

This fact shows that after conducting audio-visual based education about cataract surgery, all respondents experienced a decrease in pre-cataract surgery anxiety so that many patients did not experience anxiety and some experienced mild anxiety. This shows that audio-visual-based health education carried out by health workers as people who are trusted in the health sector is very useful in reducing anxiety in patients before cataract surgery. Patient do not experience anxiety and will be calm during surgery so that it will support the

* Author Correspondence: Angga Miftakhul Nizar, STIKES Hutama Abdi Husada Tulungagung,
anggamiftakhulnzar@gmail.com , 085850252768

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implementation of cataract surgery to run smoothly.

Results on this research are in line with research by Warouw, et al. 2021 that there is an effect of education on patient anxiety in preparation for cataract surgery at the Eye Hospital of North Sulawesi Province with a P-value = 0.000 (α<0.05). Educational activities about cataracts provide new knowledge. In this study, it was proven that there was a decrease in anxiety levels in patients in preparation for cataract surgery, as many as 59.2% of respondents experienced a decrease in anxiety levels (Warouw et al., 2021).

4. CONCLUSION

The Knowledge Pre-Cataract surgery patients before audio-visual based education process of surgery cataract at Tulungagung Hospital, majority respondent is insufficient knowledge category is 72,5% respondent, knowledge Pre-Cataract surgery patients after audio-visual based education process of surgery cataract at Tulungagung Hospital almost all respondent is 92,5% respondent had to knowledge about cataract surgery about is good category. And than Anxiety respondent pre-cataract surgery patients before audio-visual based education cataract surgery process at Tulungagung Hospital before audio visual based education experienced moderate anxiety is 67.5% respondent. Anxiety of pre-cataract surgery patients after audio-visual based education on the cataract surgery process at Tulungagung Hospital, almost half respondentsis 40% respondents, didn't experience anxiety. The Conluded an knowledge and anxiety respondents undergoing cataract surgery before and after being given audio-visual intervention has increased significantly.

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Zak

*** Author Correspondence: Angga Miftakhul Nizar, STIKES Hutama Abdi Husada Tulungagung,**
anggamiftakhulnzar@gmail.com , 085850252768

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* Author Correspondence: Angga Miftakhul Nizar, STIKES Hutama Abdi Husada Tulungagung,
anggamiftakhulnzar@gmail.com , 085850252768