



## **THE EFFECT OF GIVING HEALTH EDUCATION ABOUT CATARACT ON THE INTENTION TO HAVE CATARACT SURGERY OF CATARACT CLIENT IN PUSKESMAS SEMBORO JEMBER**

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### **ABSTRACT**

**Background:** Cataract is the turbidity of the eye lens that causes impaired vision. This occurred because of the damage on the eye lens so it reduced eye vision. Indonesia is still recorded as the highest number of patients with cataract in South East Asia, Therefore, surgical cataract or cataract surgery becomes the most surgical done by an ophthalmologist. However there is a gap between the incidences of cataract with the number of surgeries in a year. The gap between the number of cataract patients who were operated on and were not operated because it was lack of intention to have surgery from cataract patients themselves. The lack of intention from the patients to have cataract surgery could be caused by several factors, such as the lack of access to information and knowledge. The increasing of knowledge was closely related to the provision of health education, and the health education was provided, patients with cataract can improve his or her intention to have cataract surgery. **Methods:** This research used a pre-experimental research design by using study design One-group pre-post test design. This sampling technique was a non-probability sampling, total sampling (sampling saturated) with a total sample of 25 respondents. **Results:** The result of data analysis used a dependent t-test and p-value was 0,000. P value indicated  $<\alpha (0,05)$  which meant there was the effect of health education about cataract to the intention on having cataract surgery. **Conclusions:** The result was expected to increase information and improve knowledge of cataract that could increase the client's intention to have cataract surgery.

**Keywords:** cataract, intention, health education

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### **INTRODUCTION**

Cataract is the turbidity of the eye lens that causes vision impairment (Djing, 2006). There are 50 million blindness in the world due to cataract and the most are those living in poor and developing countries of Asia and Africa. People who live in developing countries are 10 times riskier to suffer from blindness because of cataract than the population of developed countries

(Prastiyanto, 2011). Nowadays cataract is still being the most dominant eye disease and the main cause of blindness, more than 50% of all blindness caused by cataract, such as those in developing countries, including Indonesia (Firmansyah, 2015). Indonesia which is recorded as the highest country of cataract patients in Southeast Asia requires cataract surgery as the most surgery done by ophthalmologists (Soekardi



& hutauruk, 2004). But there was an imbalance between cataract incidents (recent incidence) of 240,000 people in a year with only 170,000 cataract operations in a year (Depkes RI, 2014).

Based on the data obtained from the Jember District Health Office 2014, Puskesmas Semboro is the health center with the highest cataract case in Jember district, it is 183 cases. Based on visit reports provided by Puskesmas Semboro, a report of a cataract visit that have not been operated until August 2015 were 27 clients of all ages. Based on the data, the client had a visit only for control and got treatment. The results of interview conducted to one of the nurse in Puskesmas Semboro who served in the eye treatment center obtained data that there was no counseling or health education about cataract. The results of interview conducted with 4 clients of cataract, they said that they did not know the cause, could not mention the symptoms and did not know how to heal cataract which is required for surgery. One of the reasons given by clients who did not do cataract surgery is because they feel afraid to have a surgery.

The gap between the number of cataract patients who have been operated and have not been operated was because of lack of intention to have surgery from cataract patients themselves. Intention is a person's tendency that he will show a behavior (Fishbein, 1975). One of the factors causing a lack of intention to have cataract surgery is due to lack of access to get information related to knowledge about the causes and treatment of cataract, and if such information was available, cataract patients did not know the place to get

cataract surgery. It caused cataract patients were late for getting treatment, which made the vision impairment that was actually reversible or could be recovered became late so that it could not be cured (Setiawan, 2013).

The increased of knowledge was closely related to the giving of health education, and by giving health education to cataract patients was expected that cataract patients could increase the intensity to have cataract surgery. Intention is the client's greatest capital in his decision to have medical surgery, because if someone is intentional, then implicitly the person will realize the intensity (Faza, 2012).

## METHODS

Pre-experimental research design with One-group pre-post test design was used in this research. One-group pre-post test design was a research design involving a group of subjects (Nursalam, 2014). This sampling technique was non probability sampling that consisted of 27 people of total sampling (saturated sampling) with 2 dropped out respondents because they were incompatible with inclusion criteria, so that the number of samples were 25 respondents with inclusion criteria of cataract patients, healthy, and could follow all activities, senile age (> 55 years), had at least 1 sense of vision that worked properly, had a good hearing function, had no contraindications of surgery. Exclusion criteria clients who resigned for example due to the illness until unconscious, died. Research data were collected by using informed consent, confidentiality, justice, and benefits.



**RESULTS**

**The Characteristics of Cataract Clients**

Table 1. Cataract Client Distribution by gender, Education Level, and Occupation at Puskesmas Semboro Jembe in November 2015 (n = 25)

No	The Characteristics of Cataract Clients	Frequency	%
1	Gender		
	a. Male	17	68
	b. Female	8	32
	<b>Total</b>	<b>25</b>	<b>100</b>
2	Education		
	Background	4	16
	a. No school	10	40
	b. Elementary School	5	20
	c. Junior High School	6	24
	d. Senior High School		
	<b>Total</b>	<b>25</b>	<b>100</b>
3	Occupation		
	a. Unemployment	5	20
	b. Farmer/ farm worker	10	40
	c. bussiness	1	4
	d. entrepreneur	2	8
	e. retired of civil servant	7	28
	<b>Total</b>	<b>25</b>	<b>100</b>

The results were presented in the form of tables and narratives, the data presented in the form of general data and special data. The data were analyzed by univariat and bivariate. Univariate analysis includes characteristics of cataract clients consisting of age, gender, education level, and occupation. Bivariate analysis was done to know the intention of cataract patients to have cataract surgery before and after health education given and to analyze the effect of giving health education about cataract to the

intension of cataract surgery.

Table 1 showed that the highest percentage of respondents was male as much as 68%, the highest level of education was at the elementary level of 40% and most worked as farmers / laborers as much as 40%.

Table 2. The distribution of Cataract Client based on Cataract Client's Age in Puskesmas Semboro working area Jember regency in November 2015 (n = 25)

Variabel	Mean	Mediann	SD	Min-Max
Age	67,2	69	8,822	56-86

Table 2 showed that the average age of clients of cataract was 67.2 years with the youngest was 56 years and the oldest was 86 years, and the standard deviation was 8,822.

**The Intention of Cataract clients to have Cataract Surgery Before and After Health Education Given**

Table 3. The Intention Before Health Education Given to Cataract Client in Puskesmas Semboro working area Jember regency in November 2015 (n = 25)

Variable	Mean	Median	SD	Min-Max
Intensi Pretest	7,88	8,00	0,927	6-9

Table 3 showed that before giving health education to have cataract surgery, the clients' intention was obtained 7,88 as avarage value with 6 as the lowest and 9 as the highest, and the deviation standart was 0,927. It showed that the average value was below the median value which meant there were still many intentions that were not



owned by clients before health education given.

Table 4. The intention Before Health Education given on Indicators of Attitudes to Cataract Surgery, Subjective Norms on Cataract Surgery and Behavior Control on Cataract Surgery in Puskesmas Semboro Working Area of Jember Regency in November 2015 (n = 25)

Indicator	Mean	Median	SD	Min-Max
Attitude on Cataract Surgery	3,00	3,00	1,472	1-6
Norms on Cataract Surgery	2,00	2,00	1,155	1-5
Behavior Control on Cataract Surgery	2,88	3,00	0,927	1-5

Table 4 in the attitude indicator on cataract surgery consisting of 7 questions showed 3.00 as average score, 3.00 as median with the lowest score was 1 and the highest score was 6. It indicated that the mean value in this indicator was located in the middle of the optimal value.

The next data was related to subjective norm indicator on cataract surgery, from 5 questions was got the average value 2.00, the middle value was 2.00 with 1 as the lowest value and the highest value was 5. This indicated that the average value was in the middle the optimal value on this indicator.

The last indicator was the behavior control of cataract surgery, from 7 questions was got the average value 2,88, the middle value was 3,00 with 1 as the lowest value and the highest value was 5. This indicated that the behavior control

indicator to cataract surgery the average value was far below the optimal value.

Table 5. The Intention After Health Education Given at Cataract Client in Puskesmas Semboro Working Area of Jember Regency in November 2015 (n = 25)

Variable	Mean	Median	SD	Min-Max
Intention <i>Posttest</i>	14,56	14,00	2,162	10-19

Table 5 showed that after health education given, the client intention to have cataract surgery got 14.56 as the average score with the lowest score was 10 and the highest score was 19, and the standard deviation was 2,162. This indicated that the average value was above the median value, and the minimum range of values with the optimal value for the intention score did not have a very big difference, which meant that the intentions of cataract clients were close with the optimal score for the intention score.

Table 6 on the attitude indicator of cataract surgery which had 7 questions got 5.24 as the average value, the middle value was 6.00 with 1 as the lowest value and the highest score was 7. This indicated that the average value on the attitude indicator to the operation cataract were almost close to the optimal value for the indicator.

The next data was subjective norm indicator of cataract surgery with 5 questions got the average value 4.12, the middle value was 5,00 with 2 as the lowest value and the highest value was 5. This indicated that the average value on the indicator the norm for cataract surgery was very close to the optimal value.



Table 6. The Intention After Health Education Given on Attitudes Indicators of Cataract Surgery, Subjective Norms to Cataract Surgery and Behavioral Control to Cataract Surgery in Puskesmas Semboro Working Area of Jember Regency in November 2015 (n = 25)

Indicator	Mean	Median	SD	Min-Max
Attitude on Cataract Surgery	5,24	6,00	1,535	1-7
Norms on Cataract Surgery	4,12	5,00	1,130	2-5
Behavior Control on Cataract Surgery	5,20	5,00	0,957	3-7

The last indicator was of the behavior control of cataract surgery with 7 questions obtained an average value of 5.20, the middle value was 5,00 with 3 as the lowest value and the highest value was 7. This indicated that the average value of the behaviour control indicator on cataract surgery was close with optimal value.

**The Influence of Giving Health Education about Cataract on Intentions to Have Cataract Surgery**

Table 7. The Influence of Giving Health Education about Cataract on the Intention to Have Cataract Surgery in Puskesmas Semboro Working Area of Jember Regency in November 2015 (n = 25)

Variable	Mean	SD	p
Intention Pretest	-6,680	2,428	0,000
Posttest			

Table 7 showed that the mean value at posttest was higher than the mean value at pretest with difference between them was 6,680. The average deviation difference between pretest and posttest was 2,428. The results of the test with the dependent t-test obtained p value 0.000. Decision-making was done by looking at the degree of error ( $\alpha = 0.05$ ). The p value got from statistical test result was  $\leq 0,05$  so  $H_a$  was accepted, it meant that there was an effect of giving health education about cataract on the intention to Have Cataract Surgery in Puskesmas Semboro Working Area of Jember Regency.

**DISCUSSION**

**Characteristics of Cataract Clients**

Based on the table 1 characteristics of cataract clients based on the gender, most clients were male as many as 17 cataract clients (68%). It was because most men worked outside the house without using sunglasses that could keep the eye lens exposed to ultraviolet (UV) rays continuously. Cataract is closely related to outdoor work, which ultraviolet light was a risk factor why cataract happened (Sinha, Kumar & Titiyal, 2009).

The next characteristics of cataract clients based on table 1 was the last education. The last education of cataract clients was mostly at the elementary level. They were 10 cataract clients (40%). Educational factors greatly affected cataract, which low education affected 4 times more than those with high education (Ulandari, 2014). The level of education could improve one's knowledge of health (Potter & Perry, 2005), so the lack of



knowledge about cataract made someone at risk for getting cataract.

Based on table 1 the characteristics of the next cataract client was the job. Most cataract clients worked as farmers / farm laborers. They were 10 clients cataract (40%). Cataract were closely related to outdoor work, where ultraviolet (UV) rays was a risk factor for cataract. Ultraviolet rays derived from sunlight would be absorbed by the lens protein and then caused photochemical reactions or induced reaction by light to form free radicals or oxygen species that were highly reactive. Free radical was molecules or parts of molecules that were not intact anymore because some electrons have been broken or disengaged (Tambayong, 2000) which then the reaction would affect the protein structure of the lens, further causing the turbidity of the lens called cataract.

Based on table 2 the average age of cataract clients was 67.2 years, the youngest was 56 years and the oldest was 86 years. Based on these data it could be concluded that the cataract was from the elderly group. Based on the theory the common aging process caused the lens becomes hard and turbid, by getting older the lens size would increase with the emergence of new lens fibers, this condition was often found when someone was above 40 years. , The len would diminish its clarity when we got older (Arimbi, 2012).

### **The intention to have cataract surgery before the healthy education given**

The result of the research in table 3 showed that the average value of intention

before the health education given was 7.88 from the range of 0-19, so it could be concluded that the intention value was still far below the optimal intention score. This could be influenced by the three indicators of intentions that score far below the optimal intention score before the health given on each indicator, the attitude to cataract surgery, subjective norms of cataract surgery and behavior control of cataract surgery.

### **The attitude on cataract surgery (Pretest)**

Table 4 showed that the pretest score for the attitude indicator on cataract surgery had an average value of 3.00. In this indicator, 16 clients of cataract stated that by having cataract surgery would make them better in the work. Otherwise at least only 4 cataract clients that stated that cataract surgery was not too much improve the function of vision. After having surgery, cataract clients who had recovered would be able to do daily activity much better than when they got cataract, but not as maximal as when they were in productive age (Khalilullah, 2010). It was related to the aging process of the eye lens resulting the loss of transparency and obscured the view by inhibiting the course of light to retina. It could be avoided by minimizing risk factors from cataract events. The role of nurse was as an educator who provided information related to prevention of cataract, so hopefully when they are in old age, they could avoid cataract disease.



### **Subjective norm on cataract surgery (Pretest)**

The results of the research in table 4 obtained an average value 2.00 on subjective norms indicators on cataract surgery. There were 3 clients of cataract stating that they would have cataract surgery if the person whom they knew doing cataract surgery first. It was in accordance with previous research that if an individual felt it was his right to determine what he did, was not determined by others around him, then he would ignore the others' opinion about what he did (Angelina, 2014). Cataract clients did not follow what the people around them did because it was possible that they thought that when having cataract surgery, the cataract client was only as an object for surgery, was not a subject in the surgery. The success or failure that had not been known by the cataract clients was what caused the cataract clients preferred not to follow what the people around did. Based on this it was necessary to ask the client regarding the desire of the cataract client where the place to do the surgery, the type of surgery to be done, the service the client wanted, as well as the treatment that would be received after having cataract surgery so the client could determine something that the client would receive during surgery cataract.

### **Attitude control on cataract surgery (pretest)**

Based on table 4, the result of pretest average value of behavioral control indicator on cataract surgery was 2.88 which was still relatively low if the we

looked the optimal score 7. It was seen in statement "if having cataract surgery the eye will be like stabbed when it was exposed by sunlight ", only 1 client who disagreed with the statement. The behaviour that was felt by the client indicated that the individual's motivation was influenced by the perception of how difficult a behavior could be done, including the individual's success that could be achieved when doing the behavior (Angelina, 2014).

The role of nurse that could be done here was as an educator by providing information related to cataract surgery, especially the things that would be experienced after having surgery and how to do treatment after having cataract surgery so that they would be wrong in receiving information obtained.

### **The intention to have cataract surgery after health education given**

The results of the research in table 5 obtained the average value was 14.56 from the range 0-19, so it could be concluded that the score of intention obtained after health education given had increased, it closed to the optimal intention score. It was influenced because the score of all indicators from the existing intentions increased.

### **The attitude on cataract surgery (posttest)**

Based on table 6, the posttest average score of attitude indicator on cataract operation was 5.24. The increased change in the statement points "cataract surgery could improve the acuity of vision



function", 22 clients agreed with the statement. Most of the results from cataract surgery was the return of eye vision function after cataract surgery (Nithasari, 2014).

The thing that could change the attitude of the cataract clients was that they understood when the lens of the turbid eye caused the decreasing of visual function, and when the cataract surgery was done, the eye lens replaced by a new lens, so it would restore the function of client's vision from turbid became clearer. This showed that by giving the health education, cataract clients knew the process and the benefits of cataract surgery. The turbid lens eye would be replaced with a new crop lens so that the cataract clients would be able to see clearly again.

#### **Subjective norm on cataract surgery (posttest)**

Table 6 showed the result that the mean score of the posttest score on the subjective norm indicator of cataract surgery was 4.12. The increased change was seen in statements that they would have cataract surgery if the person they knew had cataract surgery and 20 clients agreed with the statement. The expectations from others who had stronger influence would motivate the person to fulfill that expectation and would behave based on the expectations (Baron, 2003). The expectation here was to have cataract surgery. This expectation came after the giving of health education. Cataract clients knew that the decision to have cataract surgery is the right decision, it would make the vision function better, and it was not

just follow someone else. Because cataract clients had already known the benefit after having cataract surgery. it was the return of vision function.

#### **Attitude control on cataract surgery (posttest)**

The results of the research in Table 6 showed the average score on the behavior control indicator on cataract surgery was 5.20. It could be seen the difference in the statement " if having cataract surgery the eye will be like stabbed when it was exposed by sunlight ", there were 17 clients who disagreed with the statement.

After health education given, cataract clients understood that cataract surgery did not cause the eyes feels like being stabbed, but there were many benefits such as to avoid and reduce intraocular inflammation (Septiani et al., 2012).

#### **The Influence of Giving Health Education Education about Cataracts on the Intentions to Have Cataract Surgery**

The result of t-test dependent based on table 5.7 got p value 0.000, it meant that there was influence of giving health education about cataract on intention to have cataract surgery at client of cataract in Puskesmas Semboro working area Jember Regency. it could be shown by the data from the measurement results by using questionnaires on the attitude on cataract surgery, subjective norms on cataract surgery and behavior control on cataract surgery.

The researchers analyzed that the increasing of clients' intentions to have cataract surgery was not only due to health





education, but also influenced by the learning process itself, the health education method and the media used during the implementation of health education. The learning process was the part of basic principles in education. Learning activities consist of three main issues, namely the problem of input (input), process and output (output) (Notoatmodjo, 2007). The health education method used in this study was individual methods that had some advantages such as contact with clients more effectively, and problems faced by clients could be explored more deeply (Fitriani, 2011). The implementation of health education in this research was by using print media in the form of flipchart and leaflet. The flipchart media used by researchers could connect the sight sense and the hearing senses of cataract clients. When the sight sense and hearing sense were connected each other, the brain responded strongly if it was only compared to one of the active sense, it affected the natural ability of remembering (Hagwood, 2015).

## CONCLUSION

The intention of cataract patients to have cataract surgery increased after health education given. The result of this research showed that there was influence of giving health education about cataract to the intention to have cataract surgery on cataracts' client in Puskesmas Semboro working area Jember Regency, it was proved with p value  $(0,000) < \alpha (0,05)$ .

The suggestion that could be given by the researcher was the nurse could make health education as an alternative in having

nursing care on cataract clients, especially on clients who have no intention so it could increase the intention to have cataract surgery. The suggestions for further research is to use variables of factors that caused the lack of intention to have cataract surgery.

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