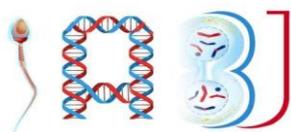


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Original research

Relations of Knowledge with Perceptions of Eligible Men About Vasectomy in Angsau Primary Health Care, Tanah Laut, South Kalimantan

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Abstract

Background: Indonesia's Maternal Mortality Rate (MMR) in 2015 was still high around 305 over 100.000 population. South Kalimantan MMR's in 2018 increase to 108 over 100.000 population. If not handled properly the increasing of MMR, it will not achieve the SDG's by 2030. The high MMR is caused by the large number of pregnancies and deliveries in Indonesia. One of the ways to prevent it, is by reducing the number of pregnancies and one of the most effective way is through the Family Planning (FP) program. Vasectomy is a method of operative contraception in men. Public perception of vasectomy is a complicated operation, so vasectomy is not an option.

Aim: Knowing the relations between knowledge and perceptions of eligible men on vasectomy

Method: This research is an analytical survey with a cross sectional approach. The number of subjects used as many as 80 respondents who meet the feasibility of being included in this study. The chi-square test with a significance level of $p < 0.05$ was used for statistical analysis. Knowledge is considered good if it has a total score of more than 76 percent, and it is considered poor if it is less than equal to 76 percent. Positive perception if the respondent's mean score is less than the T score, and to be negative perception if the respondent's mean score is more than the T score.

Results: A total of 108 respondents were included in this study. There are 89 respondents or 82% who have good knowledge and 19 respondents or 18% who have bad knowledge about vasectomy. Negative perceptions were owned by 81 respondents or 75% while positive perceptions were only found in 27 respondents or 25%. Chi-square analysis showed that there was a significant relation between poor knowledge and negative perceptions with $p < 0.05$.

Conclusion: Poor knowledge of vasectomy is associated with negative perceptions. This study shows lack of public knowledge about vasectomy, causing a negative stigma about vasectomy.

1. Introduction

The Maternal Mortality Rate (MMR) in Indonesia in 2015 was still relatively high at around 305 per 100.000 population. This number is still far from the global target of the Millennium Development Goals (MDG's) in 2015 which is 102 per 100.000 population. The MMR in South Kalimantan Province in 2015 was around 106 per 100.000 population, which indicates that the MDG's target has not been achieved. After 2015 the MDG's were replaced with the Sustainable Development Goals (SDG's) which have a global target of 70 per 100.000 population. South Kalimantan in 2018 experienced an increase in the MMR to 108 per 100.000 population. The increase in MMR if not handled properly will have an impact on not achieving the SDG's by 2030.^{1,2} The high of MMR is caused by the large number of pregnancies and deliveries that occur in Indonesia. One of the ways to prevent maternal mortality is reducing the number of pregnancies. One of the effective way to reduce the number of pregnancies is the Family Planning (FP) program. Indonesia has two family planning programs, short-term and long-term contraceptive methods. The coverage of family planning participants in Indonesia is still low around 63 percent. This number consists of short-term contraceptive methods around 82.19 percent and long-term around 17.81 percent. South Kalimantan actually already has a high coverage of family planning participants by being ranked 3rd in Indonesia, which is around 70.14 percent, but the use of long-term family planning is still very low and even in the last rank, which is around 6.41 percent.^{1,2} Long-term family planning methods, such as the Female Operative Method, namely tubectomy and the Male Operative Method, namely vasectomy, have a high level of effectiveness in suppressing pregnancy compared to short-term family planning. Vasectomy family planning acceptors are much lower (0.5 percent) compared to tubectomy (2.76 percent), even though vasectomy has a simpler surgical procedure and lower side effects than tubectomy. The low number of acceptors for long-term male family planning (vasectomy) is due to the lack of knowledge of the Indonesian people, especially men, about vasectomy.¹ The main targets of male contraception are the testes, epididymis and vas deferens. Vasectomy is an operative contraceptive method in men with the target of the vas deferens. This operation is performed by cutting both the

right and left vas deferens channels for approximately 15 mm, so the sperm cannot be ejaculated. This surgical procedure is simple and has a short time. The effectiveness and safety of vasectomy is also quite good because the surgical procedure only uses local anesthesia and uses a no scalpel approach. The testes will produce spermatozoa which will then be emptied and matured in the epididymis. Mature spermatozoa are transported to the prostate by the vas deferens. Spermatozoa will mix with the media produced by the prostate, namely seminal fluid and prostate sap. The composition of spermatozoa is 5 percent while 95 percent consists of prostate juice and seminal fluid. Normal ejaculation will release as much as 5 cc of seminal fluid and only about 0.15 cc of spermatozoa content. Cutting the vas deferens in vasectomy family planning will prevent the release of spermatozoa from the testes and epididymis to the ejaculatory ducts and urethra. The ability to experience sexual desire, erection, ejaculation and recovery phases of the sexual response cycle is called male sexual function. Vasectomy will not affect men's sexual function, so after a vasectomy there is no decrease in sexual function.³⁻⁵

Low knowledge about vasectomy causes a wrong perception of vasectomy, especially in the function of male sexuality, so that vasectomy is the last choice of society, especially men in family planning. Public perception about vasectomy is like a complicated operation, vasectomy is the same as castration, lowering the libido, causes impotence, makes men unable to ejaculate and husbands can easily cheat, so that vasectomy is not an option. Lack of the socialization to the community, especially men, causes a misunderstanding about vasectomy so that the percentage of Male Operative Method or vasectomy contraception is very low in Indonesia, especially in South Kalimantan. Based on the description above, researchers are interested in knowing public knowledge about vasectomy. The purpose of this study was to determine the relation between knowledge and public perception in the choice of vasectomy contraception.^{2,5}

2. Method

This research is an analytical survey with a cross sectional approach. The research was conducted at the Angsau Public Health Center, Tanah Laut Regency, South Kalimantan. The

target population is eligible men in the working area of the Angsau Public Health Center, Tanah Laut Regency, South Kalimantan. The subject of this research was taken by random sampling at the research site. The number of subjects used is calculated by the subjects calculation formula, obtained as many as 73 respondents and an addition of 10 percent of reserve respondents was made to 80 respondents. The inclusion criteria in this study were eligible men who were 15-49 years old and had a wife and were willing to be research subjects while the exclusion criteria were subjects who cannot read, write and hear.

The independent variable is the husband's knowledge of vasectomy and the dependent variable is the husband's perception of vasectomy. A person's knowledge can be interpreted on a nominal scale. Knowledge is considered good if it has a total score of more than 76 percent, while it is considered poor if it gets a score less than equal to 76 percent. A person's perception can be interpreted with a nominal scale. Positive perception if the respondent's mean score is less than the T score, while it is said to be negative perception if the respondent's mean score is more than the T score.

The data obtained in this study are primary data obtained by distributing questionnaires to respondents. The data collection technique was by determining the research subjects who had met the inclusion and exclusion criteria and then distributing questionnaires to be filled out. The data collection instrument used in this study was a closed questionnaire which was filled in by the respondents themselves directly. The questionnaire used has been validated with calculations using internal consistency. The reliability of the questionnaire has also been tested using computer software, namely SPSS 23 using the Cronbach Alpha model and has been declared reliable. The data collection methods used in this study were questionnaires and literature study, reference and a literature as a theoretical basis and complement of the problem.

Data analysis in this study was carried out in two stages including univariate analysis and bivariate analysis. Univariate analysis to describe the independent variable vasectomy knowledge on husband's perception of vasectomy as measured using a Likert scale. Bivariate analysis was conducted to find the relation between the independent variable, namely husband's knowledge of vasectomy and the dependent variable, namely

the husband's perception of vasectomy, which was carried out statistical tests using Chi Square analysis. The two variables are considered to have a significant relation if the confidence level of 95 percent the p-value is less than 0.05.

3. Result

The study was conducted on eligible men who has wives with a total of 108 respondents, which have been processed and arranged in the following table:

Table 1. Characteristics on Research Respondents Based on Age, Religion and Level of Education

No.	Variable	Amount	Percentage
1	Age		
	Age < 40 years old	32	30%
	Age ≥ 40 years old	76	70%
	Total	108	100%
2	Religion		
	Islam	89	82%
	Protestantism	11	10%
	Catholicism (Roman Catholic)	5	4%
	Hinduism	1	1%
	Buddhism	2	3%
Total	108	100%	
3	Education		
	Elementary school	3	3%
	Junior high school	11	10%
	Senior high school	65	60%
	Bachelor	27	25%
	Master	2	2%
Total	108	100%	

Based on **table 1** of 108 eligible men respondents, 32 respondents (30%) were less than 40 years old and 76 respondents (70%) were 40 years old and more than 40 years old. The largest religion is Moslem with 89 respondents (82%) while the least is Hindu with only 1 respondent (1%). The most recent eligible men education that participated in this study was senior high school with 65 respondents (60%) and the least is master with 2 respondents (2%). The levels of education will be divided to two groups, Low level of education from elementary school to junior high school and High level of education from junior high school to master degree.⁶

Table 2 shows the results of the knowledge and perception of the respondents. Respondents who have good knowledge are only 19 respondents (18%) while 89 respondents (82%) have poor knowledge. Respondents who have negative perceptions are 81 respondents (75%)

while those who have positive perceptions are only 27 respondents (25%).

Table 2. Distribution of Respondents' Knowledge and Perception of Vasectomy

Knowledge	Amount	Percentage
Good	19	18%
Bad	89	82%
Total	108	100%
Perception	Amount	Percentage
Positive	27	25%
Negative	81	75%
Total	108	100%

Table 3. Knowledge and Perception Distribution of 108 Respondents⁷

No.	Knowledge	Correct Amount	Percentage (%)
1.	Vasectomy is the only male family planning program	52	48%
2.	Vasectomy can be done through a surgical procedure	94	87%
3.	The impact of vasectomy causes fat and lazy	78	72%
4.	Vasectomy is more effective than condoms	81	75%
5.	Erection remains normal when performing a vasectomy	35	32%
6.	Vasectomy does not reduce male sexual desire	30	27%
7.	Family Planning Program (FP) is only the responsibility of wife	85	78%
8.	To reduce the vasectomy failure rate, it is recommended to use condoms for ± 3 months so that the failure rate is minimal	56	51%
9.	The implementation of vasectomy contraception is carried out under local anesthesia (only in the pubic area)	62	57%
10.	Surgical vasectomy does not cause difficulty in urinating	43	39%
11.	Wounds after vasectomy have no chance of infection in the genitals	21	19%
12.	A person who has a	72	66%

	vasectomy will cut the channel that carries sperm, so that it becomes infertile		
13.	Vasectomy can cause cancer	32	29%
14.	Side effects of having a vasectomy do not increase stomach acid (ulcer)	75	70%
15.	A person who has a vasectomy can cause blindness in the eye	87	80%
16.	The requirement for a vasectomy is to have at least 2 children because it is a sign of family harmony	64	60%
17.	A person who has a vasectomy can cause pubic hair loss	46	43%

No.	Perception Negative Perception Statement	Amount	Percentage (%)
1.	People say castration is the same as a vasectomy	99	92
2.	I think vasectomy is more severe than male circumcision or circumcision	88	81
3.	I think vasectomy costs around 3 million	63	58
4.	I think there is no need for a vasectomy training certificate for health workers	37	33
5.	In my opinion, if you want to have a vasectomy, you don't have to be happy in your marriage	66	61
6.	I think many children will bring a lot of sustenance	79	73
7.	I assume that a surgical wound healing in a vasectomy takes more than 1 month	87	81
8.	I think vasectomy can disrupt harmony with my wife	89	82
9.	I think vasectomy doesn't make me feel inferior because I'm not male anymore	93	86
Positive Perception Statement			
1.	I think vasectomy is a surgery that is not scary because it is not under general	75	70

	anesthesia		
2.	I think vasectomy and interrupted intercourse are male family planning	95	88
3.	I think the cost of a vasectomy is cheaper because it only takes 1 procedure	56	48
4.	I think the advantages of vasectomy are only done once in a lifetime	56	51
5.	The safe and simple procedure made me interested in vasectomy	42	38
6.	I think vasectomy doesn't make men sluggish	45	41
7.	I think that having a vasectomy increases male participation in family planning	86	80

Table 4. The Relation Between Levels of Education with Perception and Knowledge

Knowledge	Levels Of Education				Amount		P-Value
	High		Low		n	%	
	N	%	n	%			
Good	18	19	1	7	19	18	0.00
Poor	76	81	13	93	89	82	
Perception							
Positive	27	28	0	0	27	25	0.00
Negative	67	72	14	100	81	75	

Table 4 described the relations between levels of education with perception and knowledge. There is a significant relation between subjects levels of education and knowledge where the p-value is <0.05 . Subjects with High Level of education and good knowledge are 18 respondents (19%), high level of education but poor knowledge are 76 respondents (81%). Subject with low level of education and poor knowledge are 13 respondents (93%), low education but good knowledge is 1 respondent (7%).

There is also a significant relation between levels of education and perceptions where the p-value is also <0.05 . Subjects with high level of education and have a positive perceptions are 27 respondents (28%), but subjects with high level education and have a negative perceptions are 67 respondents (72%). All subjects with low level of education have a negative perception about vasectomy (100%).

Table 5. The Relation Between Respondents' Knowledge and Perception of Vasectomy

Knowledge	Perception				Amount		P-Value
	Positive		Negative		n	%	
	N	%	n	%			
Good	17	90	2	10	19	18	0.00
Poor	10	11	79	89	89	82	

The relations between knowledge and perception can be seen from the results of **table 5**, where p-value <0.05 which indicates a significant relation between respondents' knowledge and perception. In table 6, respondents with good knowledge and positive perceptions are 17 respondents (90%), good knowledge but have negative perceptions as many as 2 respondents (10%). While respondents with poor knowledge who have positive perceptions are 10 respondents (11%) and negative perceptions are 79 respondents (89%).

4. Discussion

This study discusses the knowledge and perceptions of eligible men who already have a wife about vasectomy as a family planning choice with male operative method. In the study, the results of the respondents' poor knowledge were 82%, while the good respondents' knowledge was 18%. This research is supported by research conducted by White et al. (2020) showed that poor respondent knowledge is more than good respondent knowledge. The respondents' poor knowledge is due to the fact that many people do not know about contraceptives for men other than condoms. Most of the respondents in this study answered incorrectly on the question of knowledge about vasectomy causing sexual dysfunction. Respondents mostly answered that vasectomy causes sexual dysfunction as much as 92%. This bad respondent's knowledge is because the respondent never gets information and explanation about it.⁸

Respondents' perceptions in this study were 75% had a negative perceptions while respondents with positive perceptions were only 15%. Research conducted by Shongwe et al. (2019) supports this research with the results of the study being that the perception of respondents in the study who had a bad perspective was higher than a good perception. This is because vasectomy is a permanent operative contraceptive method, so respondents are afraid of side effects that will

occur after vasectomy. Respondents' fear of vasectomy side effects can be seen from the statement that vasectomy perception causes a decrease in sexual desire to impotence. Most of the respondents answered that vasectomy causes a decrease in sexual desire to impotence, which is 86%. The most negative perceptions of respondents and the value reaches 92% is castration the same as a vasectomy. This is due to the lack of public knowledge about the vasectomy procedure. This is in contrast to Hatesh et al. (2020) in Pakistan, respondents have a good perception because of the many seminars and education about vasectomy in Pakistani society.^{9, 10}

Local customs and culture can also influence respondents' perceptions. This effect can be seen in the statement of the perception of many children, a lot of fortune, some of the respondents answered agree with the statement, namely as much as 73%. This research is supported by research conducted by Shongwe et al. (2019) in Eswatini, Africa which found that perceptions can also be influenced by culture and local culture. Perception can also be influenced by a wife. This is in accordance with Sumbiah et al. (2018) states that the wife's perception of vasectomy and its side effects will have a significant impact on husbands using vasectomy contraception.^{9, 11}

This study also discuss about relation between levels of education with knowledge and perception of eligible men about vasectomy. This study shows there are significant relations between levels of education and knowledge also between levels of education and perception, with both of p value <0.05. Low level of education will led to a poor knowledge of vasectomy and will also led to a negative perception about vasectomy. These results are supported by Otovwe et al. (2018) which stated education has a signification relation to knowledge. This study contradicts the research of Shongwe et al. (2019) that stated regardless of the level of education, the knowledge, perception and acceptance of vasectomy are low.^{9, 12}

Respondent's perception is also influenced by the respondent's level of knowledge. The results of this study indicate that there is a relation between poor knowledge and the respondent's negative perception of vasectomy. This can be seen in the statistical analysis carried out, namely $p < 0.05$, which means that there is a significant relation between poor knowledge and negative perceptions of respondents. This research is supported by Ernestin et al. (2019) in Kupang which stated that

there was a significant relation between poor knowledge and negative perceptions of eligible men with the use of vasectomy. This study contradicts the research conducted by Otovwe et al. (2018) showed that there was no relation between knowledge and perception. Respondents in the research conducted had a fairly good knowledge but the perception was still negative. This happens because there are several other factors that influence the results. This stigma and misunderstanding of the community is what makes the coverage of vasectomy in Indonesia is still very low because people are not willing to participate.^{12, 13}

5. Conclusion

Low levels of education will led to poor knowledge and also will led to a negative perception about vasectomy becoming a choice for family planning. Poor knowledge of vasectomy is associated with negative perceptions. This study shows that there is still a lack of public knowledge about vasectomy, causing a negative stigma in the community about vasectomy. Based on this research, Indonesian people need more comprehensive information about vasectomy in order to achieve better understanding.

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