

## The Role of Pregnant Women's Perception and Social Support on the Utilization of VCT Services

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### Abstract

Voluntary Counseling and Testing (VCT) is an HIV/AIDS prevention program with high effectiveness evidence, especially for individuals who have HIV/AIDS risk behaviors. Using VCT services can be seen from the influence of perceptions and social support. This study aims to analyze the correlation between perceptions and social support of pregnant women with the behavior of using VCT services in Banyuwangi. The method used in this study is an analytical observational with a cross-sectional research design. The population of this study was pregnant women in the Kembiritan, Sobo, Genteng Kulon, Kertosari, Singojuruh, and Singotrunan in the range of May - to November 2018. The sampling technique used was proportional random sampling. Most of the respondents have a terrible perception of 51—6%. The majority of respondents have poor social support, namely 84.1%. The percentage of respondents who have good perceptions and behaviors in utilizing VCT services is 62.4%. Meanwhile, 60.1% of respondents with social support and good behavior use VCT.

**Keywords:** *voluntary counseling test (VCT), perception, social support, pregnant*

Received 3 April 2022/Accepted 30 May 2022 ©Author all rights reserved

### Introduction

*Human Immunodeficiency Virus* (HIV) is the virus that attacks the immune system, where the patient will lose immunity and cause Acquired Immunodeficiency Syndrome (AIDS) (World Health Organization, 2021). Globally, in the world, 37.7 million people are living with HIV, and with an estimated increase of more than 36%, Indonesia is the fastest-growing country in the number of HIV-AIDS cases in Southeast Asia (UNAIDS, 2015). In Asia, Indonesia ranks 5th of the countries most at risk of HIV/AIDS (Ministry of Health RI, 2018). From year to year, the trend of death and

viral infection due to HIV/AIDS in Indonesia has shown a rapid increase since it was first reported (1987). The highest increase in cases was reported in 2016 as many as 10,315 cases. Reports of HIV/AIDS cases based on age mainly were reported at the age of 25-49 years from 2010-to 2017 (Ministry of Health RI, 2018).

HIV/AIDS is a deadly virus and is either infectious disease that causes maternal and child mortality (Ministry of Health RI, 2018). Reports of HIV/AIDS cases in Indonesia in 2013 recorded 29,037 new cases, with 12,279 patients being women. Cases of HIV/AIDS in infants transmitted by mothers increased in 2016, along with the increasing number of positive cases in women (Ministry of Health RI, 2018). Data on HIV/AIDS cases by province shows that the province with the highest HIV/AIDS cases in Java. Until 2017, the highest cause of HIV/AIDS cases in Banyuwangi was housewives, especially pregnant women (Ministry of Health RI, 2018). More than 90% of HIV-infected infants have infected infants of HIV-positive mothers (Ministry of Health RI, 2015). Detection attempts can prevent this risk of transmission; one of them is the Voluntary Counseling and Testing (VCT) program. Concrete evidence that HIV/AIDS is a case that has a significant increase makes the Indonesian government, through the Ministry of Health, seek preventive action by holding a VCT program. The VCT program aims to know the health status related to HIV/AIDS so that the results obtained from this program are useful in the basis of preventing and transmitting HIV/AIDS (UNICEF Indonesia, 2013). The Minister of Health Regulation Number 74 of 2014 explained that to prevent the transmission of HIV to a child from a mother, pregnant women are required to perform VCT (Setiawan et al., 2020).

VCT is an effective HIV/AIDS prevention program, especially for individuals who have risky behavior. Through this program, the individual's status as HIV or not is known through an HIV test, which then, if the individual is declared to have HIV status, they can immediately take treatment actions (Q. Zhang et al., 2020). In the behavioral change theory model, Lawrence Green explains that predisposing factors and reinforcing factors influence behavior and supporting factors in which individual perception factors and social support are part of it (Finegood et al., 2014). The role of perception in behavior change is hard to ignore (Berlyne, 1951). While the meaning of social support is the acceptance of a group of individuals towards other individuals who can create

a positive perception that he has received attention and support. The existence of social support also makes an effective contribution to health behavior change (Karen Glanz, Barbara K Rimer, 2015). Based on the explanation, it is important to examine the correlation between perceptions and social support by using Voluntary Counseling and Testing (VCT) to reduce the number of HIV/AIDS cases.

Previous research is an attempt by researchers to find comparisons and then find new inspiration for further research. In addition, previous studies help researchers position to research and show the originality of the research. The study conducted by Siti Ni'amah (2017) entitled "Descriptive Study of Pregnant Women's Knowledge of HIV/AIDS and VCT with Willingness to Participate in VCT in Pati Regency" is a descriptive study using a survey method with a cross-sectional approach. This study used univariate analysis. Nurhayati's research (2016), entitled "Factors Relating to Participation of Pregnant Women in VCT Examination at the Puskesmas," was carried out in one Puskesmas area with the sampling method using accidental sampling. The difference between the previous research and ours is that our research was conducted in Banyuwangi Regency, covering four Puskesmas areas, so the number of respondents interviewed was more than the previous study, which only covered one Puskesmas area. The sampling method used is simple random sampling. Our study used statistical inference (bivariate analysis) and has been tested for ethical feasibility.

## **Methods**

### *Design*

This study used analytic observational research with a cross-sectional design. The study examined the correlation between perceptions and social support with the behavior of pregnant women in using VCT services in three sub-districts in Banyuwangi Regency, in the working area of the related Primary Health Care, namely Kembiritan, Sobro, Genteng Kulon, Kertosari, Singojuruh, and Singotrunan in May - November 2018. Analytical observational research was conducted by observing or measuring variables. However, the researcher did not intervene in these variables so

that information about the phenomena that occurred, then analyzed how far the correlation and interaction between risk factors with certain effects or occurrences (Notoatmodjo, 2012).

### *Sampling*

This research was conducted with a population of all pregnant women in 2018 who live in the working area of Primary Health Care in Kembiritan, Sobo, Genteng Kulon, Kertosari, Singojuruh, and Singotrunan. In this study, the researchers narrowed the population of pregnant women into samples with inclusion criteria, namely pregnant women in good health (not sick), willingness becomes respondents, and did pregnancy tests during pregnancy in the working area of Primary Health Care in Kembiritan, Sobo, Genteng Kulon, Kertosari, Singojuruh, and Singotrunan.

Definition of the minimum quantity of samples in cross-sectional research is projected from this formula :

$$n = \frac{(Z^2 \cdot 1 - \alpha / 2) \cdot (P) \cdot (Q)}{(d)^2}$$

Explanation:

- n : sample size of cross sectional study
- Z<sub>1- $\alpha$ /2</sub> : Z statistic on standard normal distribution at level 0.05 = 1.96
- P : 0.5
- Q : 0.5
- D : the size of the error that can be admitted usually uses 0.05

Based on this formula, the results of the calculation are:

$$\begin{aligned} n &= \frac{(1.96^2) \cdot (0,5) \cdot (0,5)}{(0,05)^2} \\ &= \frac{(3.8416) \cdot (0,25)}{(0,0025)} \\ &= \frac{0.9604}{0.0025} \\ &= 384.16 \rightarrow 384 \text{ people} \end{aligned}$$

The calculation results show that the minimum sample size for this study is 384 people. This study uses proportional random sampling. Proportional sampling is carried out by picking samples from every stratum determined according to the number of samples in every stratum/region (Arikunto, 2013). The next step is to do a sampling technique, namely, simple random sampling, divisible into two methods: drawing lots (lottery technique) or utilizing a table of numbers and random numbers (Notoatmodjo, 2012). Utilizing the proportional random sampling technique, the sample size in every Primary Health Center can be determined according to Sugiyono (2007), Sobo and Singojuruh 72 people, Singotrunan 60 people, Kertosari 41 people, Genteng Kulon 70 people and 69 people in Kembiritan.

#### *Data collection*

In this research, data sources were used as primary data and secondary data. Primary data is data get directly from research subjects collected directly by researchers using instruments that have been prepared by the researchers (Arikunto, 2013). The primary data in this study came from direct interviews with respondents (pregnant women) based on a questionnaire instrument that the researcher had prepared. Data collection was carried out in one month, namely in October 2018. Every respondent has 10-20 minutes to answer the questionnaire.

Secondary data is data obtained by researchers from various sources, which are then processed to be used as additional information (Arikunto, 2013). The secondary data get from related agencies with needed data, namely the list of names of pregnant women who live in the related kelurahan, health profiles of the Primary Health Center, and morbidity data at the related Primary Health Center.

#### *Measurement*

##### *Validity test*

If the data from the researcher and the data in the research object are "no different," then it can be stated that the instrument is valid (Ghozali, 2012). This research makes a questionnaire for getting data. The contents of the questionnaire used to measure respondents' perceptions are about the respondents' views on receiving the stimulus for the treatment/object given by their

husbands, parents or relatives, neighbors, and medical personnel in the utilize of VCT. Whereas the questionnaire contents used to measure respondents' social support are about family and community care for respondents in checking pregnancy VCT services. The questionnaire that has been prepared must be checked to confirm its validity. Each variable consists of 10 questions. The instrument was verified on selected samples whose characteristics were the same as the population. The instrument is declared valid if  $r_{\text{arithmetic}} > r_{\text{table}}$  at  $df = n-2$  and  $\alpha = 0.05$ .

**Table 1**  
*Results of the Validity Test of the Perception Variable Question*

Variables	$r_{\text{count}}$	$r_{\text{table}}$	Results	Variables	$r_{\text{count}}$	$r_{\text{table}}$	Results
Item 1	0.615	0.098	Valid	Item 6	0.566	0.098	Valid
Item 2	0.638	0.098	Valid	Item 7	0.652	0.098	Valid
Item 3	0.634	0.098	Valid	Item 8	0.642	0.098	Valid
Item 4	0.675	0.098	Valid	Item 9	0.507	0.098	Valid
Item 5	0.504	0.098	Valid	Item 10	0.488	0.098	Valid

Based on table 1, it can be seen that the calculated R-value of all question items in the perception variable is greater than the R table value. If  $R_{\text{count}} > R_{\text{table}}$ , then the question item is declared valid. So, it can be concluded that all questions in the perception variable are valid.

**Table 2**  
*Results of the Validity Test of the Social Support Variable Question*

Variables	$r_{\text{count}}$	$r_{\text{table}}$	Results	Variables	$r_{\text{count}}$	$r_{\text{table}}$	Results
Item 1	0.378	0.098	Valid	Item 6	0.274	0.098	Valid
Item 2	0.352	0.098	Valid	Item 7	0.648	0.098	Valid
Item 3	0.621	0.098	Valid	Item 8	0.679	0.098	Valid
Item 4	0.257	0.098	Valid	Item 9	0.668	0.098	Valid
Item 5	0.619	0.098	Valid	Item 10	0.341	0.098	Valid

Based on table 2, it can be seen that the calculated R-value of all question items in the social support variable is greater than the R table value. If  $R_{\text{count}} > R_{\text{table}}$ , then the question item is declared valid. So, it can be concluded that all questions in the social support variable are valid.

### *Reliability test*

Reliability is an index that indicates the level instrument/questionnaire is declared reliable (index the instrument trusted as a data collection tool). The reliability coefficient in this study was tested using Cronbach's alpha formula. Cronbach's alpha was used for the reliability test with the condition that if the alpha value is more than 0.6, then the instrument is declared reliable.

**Tabel 3**

*Reliability Test Results of Questions on Variable Perception and Social Support*

Variable	Cronbach's Alpha	N of Items
Perception	0.790	10
Social Support	0.610	10

Based on table 3, it can be seen that the Cronbach's Alpha value is more than 0.60; namely, the perception variable  $0.790 > 0.60$  and the social support variable  $0.610 > 0.60$ . If the Cronbach's Alpha value is more than 0.60, then the question item on that variable is declared reliable. So, it can be concluded that the questions on the two variables are declared reliable or constant.

### *Data analysis*

The data get processed through the computer program SPSS Statistics 23 through several stages such as data editing, coding tabulation, and data entry. Data were analyzed using two types: univariate analysis and bivariate analysis. Univariate analysis was performed by displaying a frequency table. Univariate analysis was held to depict the sample from the characteristics term. The sample is selected from a broader population so that the results of the univariate analysis can represent the characteristics of the population. Clarify the correlation of one variable with another variable using the bivariate statistical analysis. At the start of the test, the data need a normality test using Kolmogorov Smirnov, which aims to know the type of data that get are normal or abnormal. The chi-square test is used for data that are not normally distributed.

### *Ethical Considerations*

Ethical was got approval from the Health Research Ethics Committee, Faculty of Public Health, Universitas Airlangga with ethical approval number: 524-KEPK. In addition, the research has also obtained a data collection permit at the Puskesmas from Universitas Airlangga Kampus Banyuwangi with the number: 1338/UN.3.1.16/LT/2018. All informants who agreed to participate in this research fill in and sign a voluntary informed consent statement, in which informed consent guarantees anonymity and confidentiality of every informant.

### **Result**

Respondents' perceptions were divisible into two types, namely bad and good. Most of the respondents' perceptions are bad. The details are in table 1.

Table 1  
*Distribution of Respondents by Perception*

Perception	Frequency	Percentage (%)
Bad	198	51.6
Good	186	48.4
Total	384	100.00

Based on table 1, it is found that among 384 people, most of the 198 (51.6%) respondents have negative perceptions, and 186 (48.4%) respondents have good perceptions. Respondent's social support was divisible into two types, namely bad and good. The social support of most of the respondents is classified as poor. The details are in table 2.



Table 2

*Distribution of Respondents by Social Support*

Social support	Frequency	Percentage (%)
Bad	61	15.9
Good	323	84.1
Total	384	100.00

Based on table 2, it is found that 323 (84.1%) of 384 respondents have good social support and 61 (15.9%) have poor social support. The data analysis discovered that 50% of respondents have negative perceptions and behaviors using VCT, and 50% do not use VCT. At the same time, respondents who have good perception and behavior use VCT as much as 62.4%, while those who do not use VCT as much as 37.6%. Chi-square was applied to analyze the correlation between perception and behavior of VCT utilization; the details are in table 3.

Table 3

*Correlation between Perception and Behavior in Utilizing VCT*

Perception	Behavior in Utilizing VCT				Total	
	Not Utilizing		Utilize		Frequency	Percentage (%)
	Frequency	Percentage (%)	Frequency	Percentage (%)		
Bad	99	50.0	99	50.0	198	100.00
Good	70	37.6	116	62.4	173	100.00
Total	169	44.0	215	56.0	384	100.00

After being analyzed and applied to the chi-square test, the outcome gets a p-value = 0.015 < 0.05, indicating the correlation between perception and behavior in using VCT. Kendall's tau-b correlation test shows that the correlation coefficient between the perception variable and the behavior of VCT utilization is 0.124\* with a significance value of 0.05. Thus, it can be concluded that the relationship between the perception variable and the behavior of using VCT is "very

weak." Based on the value of the correlation coefficient between the perception variable and the behavior of using VCT, it has a positive value of 0.124. So it can be concluded that there is a "positive" relationship between the perception variable and the behavior of using VCT. A positive or unidirectional relationship means that the better the perception of pregnant women, the greater the use of VCT by pregnant women.

The data analysis discovered that respondents with social support and negative behavior use VCT as much as 34.4%, and 65.6% do not use VCT. Meanwhile, 60.1% of respondents who have social support and good behavior use VCT, while those who do not use VCT are 39.9%. Chi-square was used to analyze the correlation between perception and behavior of VCT utilization; the details are in table 4.

**Table 4**  
*Correlation of Social Support with VCT Utilization Behavior*

Social support	Behavior in Utilizing VCT				Total	
	Not Utilizing		Utilize			
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Bad	40	65.6	21	34.4	61	100.00
Good	129	39.9	194	60.1	215	100.00
Total	169	44.0	215	56.0	384	100.00

After being analyzed and applied to the chi-square test, the outcome gets a p-value = 0.000 < 0.05, which indicates that correlation between social support and VCT utilization behavior. From Kendall's tau-b correlation test, it is known that the correlation coefficient between the perception variable and the behavior of VCT utilization is 0.189\*\* with a significance value of 0,01. Thus, it can be concluded that the relationship between the perception variable and the behavior of using VCT is "very weak." Based on the value of the correlation coefficient between the perception variable and the behavior of using VCT, it has a positive value of 0.124. So it can be concluded that there is a "positive" relationship between the perception variable and the behavior

of using VCT. A positive or unidirectional relationship means that the better the perception of pregnant women, the greater the use of VCT by pregnant women.

The results showed that the majority of pregnant women respondents had a negative perception of VCT services. Perception is one of the factors within the individual that have an important role in shaping behavior related to individual health (Yue et al., 2021). Several factors can affect the perception of pregnant women so that it can result in an increase or decrease in the impression of a difficulty in behavior for pregnant women. Perceptions of pregnant women are influenced by knowledge and beliefs that have an impact on the behavior of pregnant women in utilizing VCT services. Perception is a certain attitude, situational, and can change (Tugiyarti et al., 2020). Therefore, the initial negative perception is important to change little by little. Other research shows that the negative perception of pregnant women, the higher the extent of anxiety experienced by pregnant women (Bayrampour et al., 2013).

The results also show that most of the pregnant women respondents have good support. This support comes from several factors: husbands, parents/relatives, neighbors, and health workers. Social support is the behavior of providing material and spiritual support to individuals. In addition, social support can be exchanging material and spiritual resources between individuals and other individuals so that each individual can satisfy their individual social needs (Zhang et al., 2020). Social support consists of subjective support and objective support. Previous research has suggested that high social support is protective against anxiety in pregnant women (Kiataphiwasu & Kaewkiattikun, 2018) (Handini et al., 2020; Gümüşsoy et al., 2021).

## **Discussion**

The results showed that most pregnant women respondents negatively perceived VCT services. Perception is one of the factors within the individual that have an important role in shaping behavior related to individual health (Yue et al., 2021). Several factors can affect the perception of pregnant women so that it can result in an increase or decrease in the impression of a difficulty in behavior for pregnant women (Leahy-Warren et al., 2021). Perceptions of pregnant women are

influenced by knowledge and beliefs that have an impact on the behavior of pregnant women in utilizing VCT services (Olowokere et al., 2018). Perception is a certain attitude, situational, and can change (Tugiyarti et al., 2020). Therefore, the initial bad perception is important to change little by little. Other research shows that the negative perception of pregnant women, the higher the extent of anxiety experienced by pregnant women (Bayrampour et al., 2013).

The results also show that most of the pregnant women respondents have good support. This support comes from several factors: husbands, parents/relatives, neighbors, and health workers (Nurmawati, 2020). Social support provides material and spiritual support to individuals (Wang et al., 2015). In addition, social support can be exchanging material and spiritual resources between individuals and other individuals so that each individual can satisfy their individual social needs (Zhang et al., 2020). Social support consists of subjective and objective support (Solomon et al., 1987). Previous research has suggested that high social support is protective against anxiety in pregnant women (Kiataphiwasu & Kaewkiattikun, 2018) (Handini et al., 2020; Gümüşsoy et al., 2021).

The following are the research findings regarding the correlation between perceptions and behavior in using VCT services. The data from this study stated that respondents who behaved using VCT services mostly had good perceptions (62.4%). This means that respondents have the will to behave using VCT services because good perceptions support them. Most respondents thought that using VCT services would reduce the risk of contracting HIV/AIDS. Another opinion says that if going to VCT services can protect themselves and their pregnancy, some said getting VCT services can reduce the risk of contracting HIV/AIDS. Another opinion also states that they can protect their families and those from HIV/AIDS transmission.

Those who feel that they are vulnerable to HIV/AIDS are a motivating factor in carrying out HIV tests because they need to be tested. The respondent's sense of vulnerability is that the transmission of HIV/AIDS will lower the body's resistance. When infected with HIV/AIDS, the individual is easily attacked by various diseases. Meanwhile, the feeling of vulnerability felt by pregnant women is the risk of transmitting HIV/AIDS to the unborn baby, family history of dying

from HIV, the risk of contracting HIV/AIDS by anyone, and the risk of having a job related to a hospital that has various sources of infectious diseases. Vulnerability is a significant perception to encourage individuals to carry out healthy behavior (González-Castro et al., 2021). The perceived risk is directly proportional to the likelihood of risk reduction behavior (Brewer et al., 2007).

The respondent's perception of seriousness is that HIV/AIDS is a serious problem and risks transmitting to the closest people if it is declared positive for HIV. Health services are established to gain access to adequate public health services so that when people visit the Puskesmas, they do not have to be sick; it can mean counseling or control or testing. Instilling an understanding about each individual having a high risk of contracting HIV/AIDS needs to be carried out optimally to encourage pregnant women's behavior to carrying out HIV tests (Kemenkes, 2017). This perception is owned by each respondent so that respondents feel that HIV/AIDS is a serious disease and can have a negative impact on their lives.

The analysis in the research stated that the majority of respondents had poor social support, so they did not take advantage of VCT services as many as 40 people (65.6%), with a  $p$ -value = 0.000, which means social support is correlated with the use of VCT services. Legiati's research (2012) explained that of 193 pregnant women using ANC services, as many as 76 people (51.1%) took an HIV test, with the most influential factor in the behavior of pregnant women to undergo HIV testing, namely husband's support (Ps et al., 2012). Arniti's study (2014) with the title of factors related to pregnant women who do HIV tests shows that husband and family support intended for pregnant women who do HIV tests is OR 8.71 (Arniti et al., 2014). Witari (2013) explained that there is a correlation between the family acceptability variable with the use of reproductive health services at the Tegalalang Gianyar Health Center with  $p=0.042$ , OR=3.481 (95%CI:1.21-10.24) (Witari et al., 2014).

One of family support is the husband's support. This support is a reinforcing factor that motivates pregnant women to use VCT services (Ps et al., 2012). Play role of husband and family has significant meaning for pregnant women in decision-making. Another fact shows that this condition can still be felt in the community. In this study, the husband's role in question is to

support pregnant women in undergoing HIV testing, one of which is to bring them to ANC services at the nearest Primary Health Care. That also includes assisting during HIV testing at ANC services. Other studies have shown that husband and family support's emotional and practical assistance in accessing services significantly influences pregnant women (Mamo et al., 2022).

The bivariate data analysis stated a p-value of 0.000 which family support correlated with the using VCT's behavior services. These analyses are in stripe with Sumarlin's research (2013) on Banyumas (Sumarlin 2013).

In this case, social support includes health workers. In this study, the support of health workers was aimed at supporting pregnant women to take an HIV test, providing explanations about HIV, recommending examinations, and providing post-examination referrals. Health workers have a significant role influence because it is the officers who often interact, so health workers who know the physical and psychological conditions well and interactions that have been built for a long time will have a significant influence on trust and acceptance of the existence of officers towards themselves. Officers' education and counseling have significant meaning for pregnant women to take ANC services.

If through the view of WHO by analyzing and adding to Green's argument that the cause of a person's particular behavior is due to four main factors, one of them is that every individual needs a reference (Green, 1980). If an individual feels that another individual is important to him, as a result, whatever the words or behavior of the individual referenced tends to be imitated, such as by clerics, parents, doctors, and midwives (Mahendra, 2019). To optimally utilize VCT services, midwives have a role in providing references so that what is said by the midwife is expected to be carried out by pregnant women (Fitri & Kurniawati, 2018). Respondents will behave utilizing the VCT program if they receive high support.

## Conclusion

Based on the study, most respondents' distribution is according to negative perceptions. The negative perception of women whom pregnant respondents in Banyuwangi correlates with the use VCT program. The results of the research show that perception correlated with behavior in utilizing the VCT program. That means that if pregnant women in Banyuwangi have a positive perception, they can influence the behavior of women who are pregnant in Banyuwangi to take advantage of the VCT program. In addition, the study results also showed that the distribution of most of the respondents according to social support was good. Based on the research, it is known that social support correlated with behavior in utilizing the VCT program. That means that if the social support of pregnant women is good, it can affect behavior in using VCT services.

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