

## ORIGINAL RESEARCH

# THE UTILIZATION OF VOLUNTARY COUNSELING AND TESTING THROUGH SUPPORT AND FAMILY HEALTH CARE FUNCTIONS

*Pemanfaatan Voluntary Counseling and Test (VCT) melalui Peningkatan Dukungan dan Fungsi Perawatan Kesehatan Keluarga*

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### ABSTRACT

**Background:** The transmission of the Human Immunodeficiency Virus (HIV) from mother to baby is now increasing along with the growing number of HIV-infected women. Approximately 15% of pregnant women living with HIV have accessed antiretroviral (ARV) medicine to prevent transmission of the virus to their babies. **Purpose:** This study aimed to identify the support and healthcare functions available to pregnant women in using the voluntary counseling test (VCT). **Methods:** This research was conducted in the working area of Gianyar District health center. The independent variables in this study are family support and family healthcare functions. The dependent variable is the utilization of VCT health service facilities. This study employed a cross-sectional research design. The samples were 108 respondents recruited using a probability sampling technique, namely multi-stage sampling. Bivariate and multivariate analysis were conducted using the chi-square test and logistic regression test. **Results:** The research variable related to the use of VCT health services with family support showed an odds ratio (OR) = 122, while family healthcare function had an OR = 465. **Conclusion:** Pregnant women with good family support, good healthcare function, increased maternal age, and early gestational age were more likely to use VCT than when they were in opposite situations.

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### ABSTRAK

**Latar Belakang:** Penularan Human Immunodeficiency Virus (HIV)

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*dari ibu ke bayi saat ini bertambah seiring dengan meningkatnya perempuan yang terinfeksi HIV. Sekitar 15% wanita hamil yang hidup dengan HIV mengkasas obat antiretroviral untuk mencegah penularan virus ke bayi mereka. Tujuan: Penelitian ini bertujuan untuk mengidentifikasi dukungan dan fungsi perawatan kesehatan pada ibu hamil dalam memanfaatkan fasilitas pelayanan kesehatan voluntery counseling test (VCT). Metode: Penelitian ini dilakukan di wilayah kerja puskesmas Kabupaten Gianyar. Variabel independen dalam penelitian ini adalah dukungan keluarga dan fungsi perawatan kesehatan keluarga. Variabel dependen adalah pemanfaatan fasilitas pelayanan kesehatan VCT. Rancangan penelitian ini menggunakan desain cross sectional. Sampel yang digunakan sebanyak 108 responden yang diambil dengan teknik probability sampling yaitu multi stage sampling. Analisis data bivariat dan multivariate dilakukan menggunakan uji Chi Square dan regresi logistik. Hasil: Karakteristik responden dalam penelitian ini adalah rata-rata usia 27,60 tahun sebanyak 54,36% (56 orang) dan dengan usia kehamilan rata-rata 11,20 minggu sebanyak 53,70% (58 orang). Variabel yang diteliti memiliki hubungan antara pemanfaatan pelayanan kesehatan VCT dengan dukungan keluarga yang menunjukkan nilai OR = 122, fungsi perawatan kesehatan keluarga dengan menghasilkan OR=465. Kesimpulan: Ibu hamil dengan dukungan keluarga yang baik, fungsi perawatan kesehatan yang baik, usia ibu bertambah dan usia kehamilan awal memiliki peluang lebih besar memanfaatkan fasilitas pelayanan kesehatan VCT dari pada dalam keadaan sebaliknya.*

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## INTRODUCTION

According to UNAIDS (Joint United Nation Program on HIV and AIDS), at the end of 2017, there were more than 36.90 million people in the world living with HIV (35.10 million adults and 1.80 million children), 1.80 million new cases of HIV, and 940,000 deaths globally from HIV and AIDS. In terms of HIV cases in Indonesia, in 2017, 630,000 people were living with HIV, with a number of new cases amounting to 49,000 people, while the number of people who died of AIDS was as high as 39,000 people. Moreover, based on global data for the year 2017, 59% of all people living with HIV are accessing appropriate treatment, 59% of adults aged  $\geq 15$  years living with HIV have access to treatment, while this figure is 52% for children aged 0–14 years. In addition, while 65% of adult women ( $\geq 15$  years old) had access to care, only 53% of adult men ( $\geq 15$  years old) have such access. In 2017, it was also found that 80% of pregnant women living with HIV have access to antiretroviral (ARV) drugs to prevent HIV transmission to their babies (UNAIDS, 2019). Research conducted by Gbadamosi et al. (2019) showed that of the 9,231

women who participated in their study, 5,264 had male partners who received HIV testing, representing a male participation rate of 57%. Mean age  $\pm$  standard deviation was  $27.50 \pm 8.30$ . Most participants were married (99.50%), and more than 60% had attained a secondary level of education or higher. Slightly less than a quarter reported that they had never received an HIV test.

The increasing epidemic of AIDS in Indonesia may be occurring due to the growing proportion of AIDS cases in women, which will undoubtedly lead to an increased number of babies being infected with HIV in the community. Bali province ranks fifth after West Java, East Java, Papua, and Jakarta for the number of people with AIDS. Bali also ranks second after Papua in terms of disease prevalence (the comparison between the number of cases and the number of population). As of the end of August 2019, 21,829 HIV cases had been reported to the Bali Provincial Health Office, with as many as 8,621 of these cases found to be in the AIDS stage. Data were derived from nine districts per city. Of the cases reported by each city district, most were found to be in the age group of 20–29 years (38%) followed by 30–39 years (35%). The highest source of transmission

was through heterosexual contact at 76.4% (Bali Provincial Health Office, 2019).

HIV and AIDS is the main cause of reproductive-age deaths in some developing countries. A pregnant woman with HIV can transmit the virus to her baby through the process of pregnancy, childbirth or breastfeeding; if transmission is not intervened in, this transmission from mother to baby can increase by as much as 14–15%. In Indonesia, it was recently found that the number of women aged  $\geq 15$  living with HIV is 220,000, while the number of children living with HIV is 1,300 (UNAIDS, 2019). This number will continue to increase along with the increasing prevalence of women aged 15–49 years who suffer from HIV, resulting in a risk of increasing the number of children with HIV and AIDS. Therefore, the government is implementing programs to reduce HIV transmission from mothers to children (PPIA); one solution is to reduce transmission of HIV from mother to baby (Ministry of Health RI, 2018).

HIV is transmitted from HIV-positive mothers to their children during pregnancy (5–10%), during childbirth (10–20%), and via breastfeeding (10–15%). Mother-To-Child Transmission (MTCT) contributes to the majority of infections in children. Without intervention, such transmission can increase by between 15–45%. Transmission from mother to baby can be prevented by giving mothers ARVs during pregnancy and breastfeeding (WHO, 2018). In the research of Seenivasan et al (2015), four PCR infants were found to be positive for HIV, and all were infected via breastfeeding. The babies were born to mothers with HIV stage 1 or 2 who did not take antiretroviral therapy (ART) because of a CD4 cell count of  $> 350$  cells / mm<sup>3</sup>. One positive PCR baby was found among mothers with stage 3 or 4 HIV taking antiretroviral therapy because of their CD4 cell count of  $< 200$  cells / mm<sup>3</sup>. Cumulatively, the rate of infants remaining free of HIV up to 18 months is 94%.

Antiretroviral therapy in HIV-positive pregnant women follows ART guidelines for adults. In pregnant women, TB patients and hepatitis therapy can be given immediately regardless of clinical stage and CD4 cell count, but CD4 cell counts also require monitoring. For HIV-positive pregnant women, therapy is recommended using a combination of three drugs (2 NRTI + 1 NNRTI). The use of the "triple nuke" (3 NRTI) should be avoided. It is also possible to use the following fixed-dose combination (FDC) of ARV

drugs. TDF (300mg) + 3TC (300mg) + EFV (600mg) (Ministry of Health RI, 2018).

Prevention of Mother-To-Child Transmission (PMTCT), a program aimed at preventing mother-to-child transmission of HIV, is rarely implemented, even though the Ministry of Health issued the handbook for this program in 2005. When participating in this program, parents will receive a variety of directions regarding pregnancy planning, examinations and medical care for mothers and babies (Indonesia Population and Family Planning Agency, 2019). Provider Initiated Testing and Counseling (PITC) is a government health services policy according to which all health personnel should recommend special HIV tests for pregnant women. PITC activities include giving advice and diagnosis activities related to HIV with the goal of ensuring that the patient receives sufficient information about HIV and agrees to have an HIV test (Ernawati, Suryoputro, & Mustofa, 2016).

The results of research conducted by Marleni, Marsofely, & Yuniarti (2016) on implementing the PMTCT in hospitals neglect several aspects, such as providing HIV information to women of childbearing age and delivering comprehensive information related to pregnancy planning for women with HIV and their partners. Options for contraception, labor options, infant feeding and psychological support for women with HIV, their husbands or partners and their families should be included. Resources in the PMTCT program are important factors that can determine the success of the program; therefore, the availability of reliable and sufficient resources is not only limited to personnel but also extends to other sources, including finance. Voluntary Counseling and Testing (VCT) services are an important component in efforts to prevent HIV transmission generally and from mother to baby. The way to determine someone's HIV status is through a blood test. The procedure for conducting blood tests is preceded by counseling before and after the test, maintaining confidentiality and obtaining written (informed) consent.

The results of the preliminary study showed that 40 pregnant women visited the public health center monthly, and 13 of them were willing to do the VCT. This study was conducted directly in the community by the researchers and was not limited to specific healthcare centers such as public health centers. The study aimed to identify support and functions of family healthcare in the utilization of VCT health care facilities.

## METHODS

This research used a type of analytical observational study with a cross-sectional design. This research was conducted in Gianyar district from March to September 2019. In this study, the population was families with pregnant women living in the area of Gianyar district. The samples were 108 respondents recruited using a probability sampling technique, i.e., multi-stage sampling. The inclusion criteria were families with pregnant women in the first to the third trimester. The families with pregnant women signed informed consent to provide their agreement to participate in the study.

The data were collected from respondents via questionnaire. Respondents completed the questionnaire during their ante-natal checkup (ANC) in the healthcare facilities. The researchers also conducted home visits to families with pregnant women in Gianyar district for data collection purposes. A bivariate analysis was performed on two variables that were assumed to be related. The independent variables in this study are Family Support and Family Healthcare Functions. The dependent variable in the study was the Utilization of VCT Health Service Facilities. The operational definition of the dependent variable, family support, can be seen from the emotional support, information, instruments and rewards that the family gives to pregnant women. The family healthcare function variable is determined from the function of five family duties carried out by the family: the family's ability to recognize problems, the ability of the family to make decisions, the ability of the family to care for the mother, the ability of the family to modify the environment and the ability of the family to use health service facilities. In

terms of operational definition, family support is categorized as “less” if the Cut-Off Point (COP) < the mean and “good” if  $COP \geq \text{mean}$ . Family healthcare function is categorized as “less” if  $COP < \text{mean}$  and “good” if  $COP \geq \text{mean}$ . The use of cut-off points based on the mean value is based on the results of the data normality test from the independent variables, namely family support and family health care functions that have a normal data distribution; the mean value is used to determine the category of the variable.

An unpaired chi-square test with a 95% confidence level was used to analyze the categorical data of the independent and dependent variables. Multivariate analysis involving several confounding variables was performed using the multiple logistic regression test. This research has passed the ethical clearance of the Faculty of Medicine of Udayana University Sanglah Central Hospital, number 2921/UN14.2.2.VII.14/LP/2019.

## RESULTS

The analysis in this study explains the relationship between family support and healthcare function when using VCT in Gianyar district. Utilization of good healthcare facilities has a significant p-value (0.01) relationship to family support; this can be seen from the 86% of pregnant women who use health services and reported good family support. The results of the family healthcare function showed a significant relationship of the p-value (0.01) to the utilization of VCT health services; this was indicated by 79% of pregnant women who had good healthcare functions utilizing VCT healthcare facilities (Table 1).

**Table 1**  
Family Support and Family Health Care Function in Using VCT in Gianyar District in June 2019 (n=108)

Variable	Use of VCT				Total		<i>p-value</i>
	No		Yes		n	%	
	n	%	n	%			
<b>Family Support</b>							
Less	5	22.72	17	77.28	22	20.37	0.01
Good	0	0.00	86	100.00	86	79.63	
<b>Family Health Care Function</b>							
Less	5	17.24	24	82.76	29	26.85	0.01
Good	0	0.00	79	100.00	79	73.15	
Total	5	4.63	103	95.37	108	100.00	

Multivariate results indicate that the age of pregnant women has an odds ratio (OR) value of 1.04, such that every increase of 1.04 years in maternal age will increase the utilization of VCT health services. Moreover, family support has an OR of 122.00, indicating that pregnant women who have good family support will demonstrate a 122-fold increase in utilization of VCT health services (Table 2).

## DISCUSSION

### Family Support and Family Healthcare Function in Using VCT

The results of the bivariate analysis showed a significant relationship between family support and the use of VCT in Gianyar district. According to Kaakinen, Gedaly-Duff, Coehlo, & Hanson (2010), the function of family healthcare is the art, science, philosophy and ways in which these interact in providing care for families. The results of this study are in line with a study by Kridawati, Sriwitati, & Cicilia (2015), which reported that there was a relationship between family or husband support and the use of HIV testing with  $p = 0.00$ . Family support is a reinforcing factor of good health behavior. Furthermore, pregnant women are still dependent on their husband's approval in deciding to use the VCT service. The results of research conducted by Giri, Nopiyani, & Merati (2017) show that husbands' support influences pregnant women to undergo ANC examinations. ANC examinations are mostly conducted at midwife practices rather than healthcare centers because it is considered that the medicine provided is less effective. Many pregnant women have never had an HIV test because they have never heard of it. The level of education of pregnant women about HIV testing is very low. Only a few pregnant women hear about HIV testing during pregnancy. According to Makoni et al (2016), increased involvement of male partners in the prevention of HIV transmission has several factors, including routine education for couples about PMTCT, community-based campaigns in the workplace, and accommodating the working class over the weekend. It is very important to encourage partner involvement in PMTCT, as this will reduce HIV transmission to infants. According to Kanyangarara, Sakyi, & Laar (2019), the application of family planning in HIV care and treatment programs is a strategy that can be developed to support the provision of PMTCT services for pregnant women.

The results of the present study also showed a significant relationship between healthcare function and use of VCT. The results indicated that pregnant women who had good healthcare function ( $n = 79$ ; 73.10%) used the VCT service. This shows that families contribute to the efforts of pregnant women in identifying and preventing disease. According to Onono et al (2015) barriers to the utilization of PMTCT services for women include social-ecological, individual, family, community and structural determinations. The majority of pregnant women who have been diagnosed with HIV for the first time will struggle with the fear of losing a partner, possibly including separation. Some respondents received different responses from families, especially couples, ranging from violence to rejection, which resulted in pregnant women withdrawing from routine antenatal care. However, some also received positive responses and good support from their partners. Pregnant women who already know their HIV status report experiencing a lack of family support.

According to research conducted by Wilda (2019), husband or family support doubles the chance of pregnant women utilizing VCT services compared to those who do not receive family support. The behavior of mothers in utilizing health services is shaped by the support of families in this case, especially the husband; this is because pregnant women tend to obey the suggestions of their husband or family. The results of research conducted by Ahmad, Mulyanti, & Nuraeni (2019) show that 56.70% of pregnant women who received support from their husbands used VCT services, while less family support caused 95% of pregnant women to not use VCT health services.

Another study conducted by Maku, Mokalulu, & Purwanto (2016) shows that emotional support, appreciative support, instrumental support and informative support are inadequate in many families. The prevention of HIV and AIDS currently in place is less than the maximum that can be done. According to the results of research conducted by Wanyenze et al (2018), of the 299 women in the study sample, 42.50% reported at least one pregnancy within 24 months. Of these, sixty-one women (48.00%) delivered a live child. Of the 55 who delivered a live child at their first pregnancy, 54 (98.20%) used antenatal care, starting at 15.5 weeks of gestation on average, and 47 out of 49 (95.90%) delivered at the health facility.

**Table 2**

Results of Multivariate Analysis of the Variables and Use of VCT in Gianyar District in June 2019

Variable	B	Wald	p-value	Exp (B) OR
Constanta : - 0.01				
Maternal age	0.04	0.11	0.74	1.04
Gestational age	-0.07	0.97	0.33	0.93
Family support	18.62	0.01	0.99	122.00
Health care function	17.66	0.01	0.99	465.00

According to the Ministry of Health RI (2018), as much as 70% of the community has poor knowledge about HIV. This can be seen from the results of a survey, where only 7 out of 20 questions were answered correctly on average. The results of another study conducted by Halim, BM, & Kusumawati (2016) showed that 61.10% of pregnant women had had an HIV examination, while 38.90% had not. Factors related to the behavior of pregnant women related to HIV testing include attitudes, infrastructure, husband support and the support of health workers.

The results of the study showed that the majority (57.40%) of respondents received support. The proportion who did not undergo an examination (39.10%) was greater than those who did not receive support (16.10%). The results of this study indicate that the husband's support did not show a relationship with HIV testing behavior (p-value 0.11). To assess the husband's support in this study, one of the indicators is receiving ANC services at the nearest health center, and whether the husband accompanied the wife to get an HIV test. The results of research conducted by Nurjanah & Wahyono (2019) showed that the challenges in implementing the PMTCT program include lack of information on ART treatment, lack of family support, heavy workload experienced by health workers and limited HIV testing kits and drug stocks.

According to research by Nasution, Simanullang, & Angkat (2019), the majority (64.60%) of pregnant women were good at using VCT, while 35.40% were lacking in their use of VCT. The use of VCT can aid in reducing the transmission and improving prevention of HIV infection. This under-utilization of VCT by pregnant women occurs when respondents have been contacted by health workers, but the pregnant women ignore instructions from health workers and do not make VCT visits. Wiraharja, Trisnantoro, Mahendradhata, & Praptoharjo (2019) showed that integration has no direct impact on the results and is not a sole solution to the PMTCT issue. Influencing factors include resource factors,

inclusion of patients' needs and perspectives in the service, network and communications factors, external policy and incentives, leadership engagement and access to knowledge and information. Since the level of integration is not always related to the results of PMTCT, governmental efforts must focus on resources, the inclusion of patients' needs and perspective, building formal and informal networks and communications inside and outside public PHC, external policies and incentives, leadership engagement and access to knowledge and information.

The results of multivariate analysis showed that maternal age and gestational age were proven to be confounding variables that affected support and family healthcare function in using VCT. The maternal age variable showed that each increase in age of 1.04 years for pregnant women provides a 1.04 times greater chance of utilizing VCT health care facilities. The gestational age variable emerged as 0.93; this indicates that an additional one month of gestation will cause 0.93 times the chance of not using VCT. Research conducted by Rini (2019) shows that 78.50% of pregnant women aged between 20–35 years underwent examinations in VCT services. Pregnant women who made a trimester 1 visit to VCT health services represented 93.80% of the total. Pregnant women who made more visits tended to be primipara or grand multipara (61.50%). The results of research conducted by Negash & Ehlers (2018) further show that PMTCT utilization is not limited by socio-demographic characteristics. PMTCT services have a high level of satisfaction because there is no stigma or disclosure of patients' HIV status.

Based on the results of research conducted by Kridawati, Sriwitati, & Cicilia (2015), 73% of pregnant women did not utilize HIV testing services. The most dominant variable related to the utilization of HIV testing services is husband or family support (OR 15.42). The results showed that respondents who received family support but did not utilize HIV testing services numbered 27



people (42.40%), while respondents who reported that they did not get family support and did not use HIV testing services numbered 83 people (96.50%). According to research conducted by Hikmah, Novitasari, & Aniroh (2015), another factor that was most dominant in influencing screening for HIV and AIDS among pregnant women was occupation, with an OR value of 9.28. Another study conducted by Ngoma-Hazemba & Ncama (2018) shows that partner support is key to preventing mother-to-child transmission of HIV. The results of this study indicate that couples are rarely involved in ANC. The involvement of partners during ANC and assistance during the use of health services is a shared responsibility.

According to Onono et al (2015), barriers to the utilization of PMTCT services for women include social-ecological, individual, family, community and structural determinations. The majority of pregnant women who have been diagnosed with HIV for the first time will struggle with the fear of losing their partner, including separation. Some respondents received different responses from families, particularly couples, ranging from violence to rejection, which resulted in pregnant women withdrawing from routine antenatal care. However, some also received positive responses and good support from their partners. Pregnant women who already know their HIV status report experiencing a lack of family support. There were 1,512 HIV-positive pregnant women identified with an average age of 28 years. HIV-positive pregnant women tended to be older than HIV-negative pregnant women. Unplanned pregnancy is a challenge for pregnant women who suffer from HIV, as is the selection of appropriate contraceptives to prevent an unplanned pregnancy (Iyun et al., 2018).

This study indicated that maternal age and gestational age both contribute to healthcare facility utilization. The varied age of respondents in this study also yielded varied descriptions of the use of health service facilities. Research conducted by Sitopu & Nduru (2018) reveals a significant relationship between knowledge and the use of VCT services. The higher the level of knowledge among pregnant women, the better their utilization of VCT services. Moreover, some pregnant women did not engage with VCT as they did not have good support from their husband or family. This is in line with research conducted by Sari, Sulistyono, & Notobroto (2017), reporting that ANC visits influenced the willingness of mothers to take an HIV test. The more often the women

checked themselves for pregnancy, the higher their chance of taking an HIV test.

### **Research Limitations**

The limitation of this study was the fact that the houses of the respondents were far apart from each other; therefore, the researchers took a long time to collect the data.

### **CONCLUSION**

Family support and healthcare function was found to have an effect on increasing the use of VCT among pregnant women. The results of this study showed that family support and family healthcare function could encourage pregnant women to use VCT health care facilities.

### **CONFLICT OF INTEREST**

This research shows that, so far, the utilization of health services for VCT has been carried out in the community. The policy of providing free services for pregnant women in conducting HIV and AIDS screening remains an obstacle in some places, because they are afraid to undergo the examination until they know that it can be done free of charge. As a result, VCT utilization rates in the community has not met the target. The results of this study can identify the support and function of family healthcare in the utilization of VCT health services.

### **AUTHOR CONTRIBUTIONS**

Conceptualization, Methodology: NPWO, NLPD, IMSA, NWT. Data curation: NPWO, NLPD, IMSA, NWT. Formal analysis: IMSA, NPWO. Project administration: NLPD, NWT. Resources: NPWO, NLPD, IMSA, NWT. Supervision: NPWO, NLPD. Writing—Original draft: NPWO. Writing—Review and editing: NPWO, NLPD, IMSA, NWT.

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