



Original Article

Reproductive Health Information from Parents: A Dominant Factor of Voluntary Counselling and Testing (VCT) HIV Intention on Adolescents

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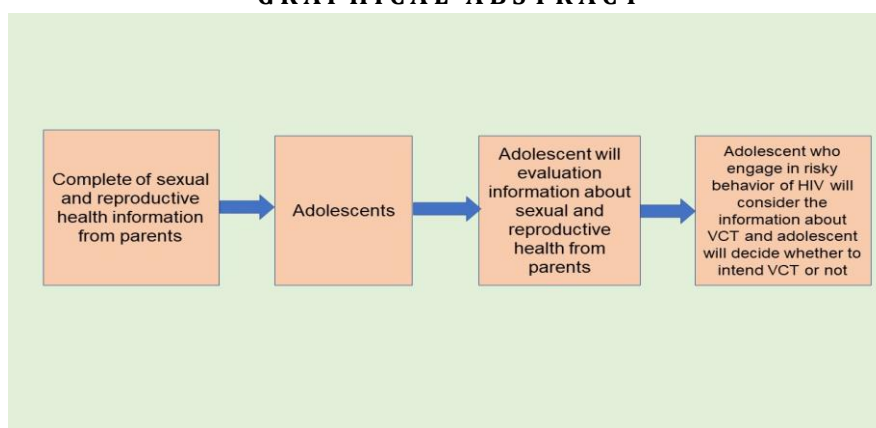
The intention of VCT among adolescent

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ABSTRACT

Voluntary Counselling and Testing (VCT) is a service that is very useful to detect someone's HIV status early. It is hoped that someone who engages in risky sexual behavior can take advantage of VCT services. The purpose of this study was to analyze the relationship of sex, experiences in obtaining reproductive health information from parents, community, community leaders, access to reproductive health information through social media, participation in organizations, experiences of risk behavior with the intention of VCT in adolescents in Surakarta. This research was conducted with a cross-sectional approach in April 2019. The study population was adolescents aged 15-19 years in five sub-districts in Surakarta, Indonesia (Laweyan, Banjarsari, Serengan, Pasar Kliwon, and Jebres). The number of samples in this study was 450 adolescents who were taken with a quota sampling technique. Bivariate analysis was performed using chi-square and Fisher exact and multivariate analysis using logistic regression analysis. The results showed a relationship between getting reproductive health information from parents (p-value 0.003) and community leaders (p-value 0.027) with the intention of VCT in adolescents. The experience of getting reproductive health information from parents is the most influential factor in the intention of VCT in adolescents (OR = 0.565, CI = 0.385-0.830). Efforts are needed to provide information to adolescents about VCT services to understand that VCT is very important for follow-up care if HIV test results are reactive. Adolescents also need to be given information regarding how to increase self-efficacy to utilize VCT.

GRAPHICAL ABSTRACT



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Introduction

For very young adolescents, parents are an important source of sexual and reproductive health (SRH) knowledge and are likely to have a strong impact on the sexual behaviors, values, and risk-related beliefs of adolescents. In shaping what adolescents believe, think, and how to act about their sexual health, parent-child communication about sexual and reproductive health (SRH), particularly at the early stage of puberty, is significant. VCT is a service that can be used for various targets, including for people who are asymptomatic. The person can do VCT on the basis of his own desire to find out his HIV status [1]. VCT is also a form of service that seeks to achieve universal access in terms of prevention, treatment, care, and support related to HIV/AIDS. Another benefit obtained from VCT is that it can reduce HIV transmission and reduce morbidity and mortality due to HIV/AIDS [2]. Based on this understanding, VCT is very beneficial for all communities, as well as for adolescents.

The age group of adolescents is the age group that is quite vulnerable to HIV risk behaviour [3]. When viewed by province, HIV is a problem that must be overcome [4]. The age group of adolescents in addition to being the age vulnerable to risky behaviour due to lack of information about HIV prevention, high curiosity, and peer influence, it is also feared that they will increase the risk of contracting and transmitting HIV [5-9]. The transmission of HIV can be through various ways, both through blood transfusions, mother to child transmission, male sex with men, and also free sex (premarital sex among adolescent) [10]. The risk factors for HIV transmission are also related to adolescent behaviour, especially HIV risk behaviour, while adolescents do not have sufficient knowledge about what HIV/AIDS is, how it is transmitted, and how to prevent it. This condition will affect the number HIV cases in an area. If adolescents do not know information about HIV/AIDS, it is feared that adolescents will carry out risky behaviour so that the number of HIV cases will also increase [11].

Surakarta is a city in Central Java with the number of HIV/AIDS cases from 2005-October 2016 was 2,068 cases. These cumulative figures may be of concern. The cause of the number of HIV/AIDS cases in Surakarta is still dominated by heterosexuals, such as unsafe sexual behavior, and the others are caused by needles and others [12]. There are HIV/AIDS cases in Surakarta. Meanwhile, there are still few people who access VCT services either to seek information about HIV/AIDS or for HIV testing. Several factors can be related to a person's intention to use VCT services [13]. In their qualitative study of pregnant women in Canada, they argued that gender is a key factor in accessing HIV testing services. Sexual experience is also a factor associated with HIV testing intentions in people aged 15-59 years in Nonthaburi Province, Thailand [14]. Information-related behaviors such as exposure to information, misuse of information to decide whether to test HIV or not and previous experience related to HIV testing are important predictors that influence a person's intention to carry out health behaviors [15]. The use of VCT services is an important behavior in the HIV/AIDS prevention program. However, there are still many people who do not know and do not use VCT services. Therefore, research is related to the relationship between gender, the experience of getting reproductive health information from parents, community, and community leaders, access information through social media, participation in organizations, experiences in sexual behavior, and drug abuse towards the intention to use VCT services for adolescents in Surakarta, Indonesia.

Material and methods

This study used a cross-sectional approach which aims to analyze relationships and look for dominant factors among gender, experiences in getting information about reproductive health from parents, community, and community leaders, access to information about reproductive health from social media, organizational participation, experiences engaging in sexual behavior, and drug abuse to the intention of using

VCT services on adolescents in Surakarta. The research was conducted for one month, in April 2019, in Surakarta, Indonesia, which includes five sub-districts (Laweyan, Banjarsari, Serengan, Pasar Kliwon, and Jebres Districts). The study population was adolescents aged 15-19 years with a sample size calculated based on the Lemeshow formula, as many 450 adolescents. The inclusion criteria in the study were adolescents who already have boyfriends, have been dating in the last year, live in the same house with their parents, and are not yet married. Samples were taken by quota sampling technique in which the number of samples in each district were 43 adolescents (Serengan), 80 adolescents (Laweyan), 68 adolescents (Pasar Kliwon), 112 adolescents (Jebres), and 147 adolescents (Banjarsari). The instruments of sexual behavior experience in this study include sexual activities that have been done by adolescents, such as kissing, necking, petting, oral sex, and intercourse. Measurement of another independent variable covered experience among adolescents about having or never have reproductive information from the social environment, social media, and organization. Also, drug abuse in this research was measured with an instrument that asking about have or have never used drugs. Meanwhile, instruments of the dependent variable (VCT intention) on adolescents measured by whether adolescents have the intention or not to do VCT. The data analysis in this study was bivariate using the chi-square test and Fisher exact. Meanwhile, to determine the dominant variable that has an effect is to use the logistic regression test.

Result and Dissection

Respondent Characteristics

The results of the distribution of respondent characteristics can be seen in Table 1.

Table 1: Description of Respondent Characteristics

Characteristics	Frequency	Percentage (%)
Age		
15	87	19.3
16	165	36.7
17	103	22.9
18	54	12.0
19	41	9.1
Sex		
Male	200	44.4
Female	250	55.6
District		
Laweyan	80	17.8
Pasar Kliwon	68	15.1
Jebres	112	24.9
Serengan	43	9.6
Banjarsari	147	32.7

The characteristics of adolescents who became respondents were 165 adolescents (36.7%) were 16 years old, and more than half of adolescents were female (250 adolescents) or (55.6%). The highest number of adolescents was in Banjarsari District, with 147 adolescents (32.7%).

Table 2 shows that there are only two variables related to the intention of VCT in adolescents, namely the experience of getting reproductive health information from parents (p-value = 0.003) and community leaders (p-value = 0.027). The majority of adolescents who intend to have VCT have received information related to reproductive health from their parents, with a total of 97 adolescents (51.1%) and from community leaders with a total of 33 adolescents (56.9%). The relationship between the variables of experience in obtaining reproductive health information from parents and community leaders is very weak. The phi coefficient on exposure to information from parents is 0.002, and the phi coefficient on exposure to reproductive health information from community leaders is 0.019.

Table 2: Relationship between Sex, Experiences in Obtaining Reproductive Health Information from Parents, Community and Community Leaders, Access to Information on Reproductive Health through Social Media, Organizational Participation, Experiences in Conducting Sexual Behaviour and Drug Abuse with the intention of Using VCT Services on Adolescents in Surakarta

Variable	Intention to VCT services						p-value	Contingency Coefficient
	No intention		Intention		Total			
	N	%	N	%	Σ	%		
Sex								
Male	124	62	76	38	200	100	0.09	-
Female	134	53.6	116	46.4	250	100		
Information from parent							0.003	0.002
No	165	63.5	95	36.5	260	100		
Yes	93	48.9	97	51.1	190	100		
Information from community							0.153	-
No	220	59	153	41	373	100		
Yes	38	49.4	39	50.6	77	100		
Information from Community Leader							0.027	0.019
No	233	59.4	159	40.6	392	100		
Yes	25	43.1	33	56.9	58	100		
Experience of sexual behavior (kissing, necking, petting, intercourse)							0.544	-
Don't conduct sexual behavior	146	55.9	115	44.1	261	100		
Engaging in sexual behavior	112	59.3	77	40.7	189	100		
Experience Engaging Sexual Activity (Kissing)							0.451	-
No	151	55.7	120	44.3	271	100		
Yes	107	59.8	72	40.2	179	100		
Experience engaging sexual activity (Oral sex)							0.835	-
No	245	57.1	184	42.9	429	100		
Yes	13	61.9	8	38.1	21	100		
Experience of sexual activity (intercourse)							0.566	-
Don't conduct intercourse	246	56.9	186	43.1	432	100		
Intercourse	12	66.7	6	33.3	18	100		
Experience using drug							1.000	-
No	253	57.2	189	42.8	442	100		
Yes	5	62.5	3	37.5	8	100		
Access information through social media							0.210	-
No	186	59.4	127	40.6	313	100		
Yes	72	52.6	65	47.4	137	100		
Participation in organization							0.190	-
No	136	54.4	114	45.6	250	100		
Yes	122	61	78	39	200	100		

Table 3: Results of Multivariate Analysis

Variable	B	Wald	p-value	OR 95%CI
Information about reproductive health from parent	-0.570	8.473	0.004	0.565 (0.385-0.830)
sex	-0.347	3.034	0.082	0.707 (0.479-1.044)
Participation in organization	0.340	2.943	0.086	1.405 (0.953-2.073)
Constant	-0.011	0.003		

-2 log likelihood=599.462

p-value = 0.904

Cox & Snell R Square = 0.032

Negelkerke R Square = 0.043

The multivariate analysis showed that the most dominant variable related to the intention of VCT in adolescents was the experience of obtaining reproductive health information from parents. Adolescents who have received information about reproductive health from their parents are 0.565 times more likely not to intend to use VCT services. The *p*-value obtained is 0.004, which means that the model can explain the data or is feasible. The Negelkerke R Square value is 0.043 (4.3%), which means that this model can explain the intention of VCT in adolescents in Surakarta by 4.3%, while the remaining 95.7% is explained by other variables outside of this study. The study also showed that without intervention on the experience variable getting reproductive health information from parents, the intention to use VCT services for adolescents would decrease by 0.011 times.

The experience of getting reproductive health information from parents [16,17] is a dominant factor in the intention of VCT among adolescents in Surakarta. However, the idea is that adolescents who get reproductive health information from their parents are 0.565 times more likely not to intend to have VCT. This can happen because the reproductive health information provided by parents is only about puberty, fertile period, teenage pregnancy, sexual violence, the impact of risky sexual behavior, abortion, STIs and HIV/AIDS, contraception, and teen relationships. Parents have not provided information about HIV testing, both its benefits and the process of implementing VCT. Although there are many sub-topics regarding reproductive health provided by parents to adolescents, only about 26.7% of adolescents

receive that information from their parents [18]. In his research on student knowledge about the use of VCT services in Ghana, also revealed the same thing, that only a few students received information on HIV/AIDS from their parents than from electronic media [18].

Information about HIV/AIDS and VCT provided by parents to adolescents can be a source of information and knowledge for adolescents about HIV. Research conducted on migrants in Sub-Saharan Africa has also shown that good knowledge increases the desire for VCT [19]. However, if the information received by adolescents is incomplete, it will be difficult for adolescents to decide what actions should be taken to reduce the risk of HIV/AIDS because adolescents do not have good knowledge about HIV/AIDS [20]. In their research on the attitudes of students and parents regarding education related to HIV/AIDS in children, it was also suggested that the attitudes of parents were significantly related to their knowledge of non-transmission pathways of HIV and children's attitudes related to that. However, the parents' attitudes were not related to their knowledge of HIV transmission, HIV prevention, and children's knowledge of HIV/AIDS. A person's knowledge of HIV/AIDS will be good if the information received by the target is also complete [21]. In his research on the factors that influence VCT in people aged 15-59 years in Ethiopia, it was also found that someone who has comprehensive knowledge tends to do VCT. Therefore, if adolescents do not get complete information about what VCT is, what is the procedure for implementing VCT, adolescents are reluctant to do VCT. Parents need to be provided with reliable information about

sexuality, HIV/AIDS, and VCT so that parents who are basically the best educators for their children can provide clear information regarding HIV/AIDS and VCT to adolescents.

Meanwhile, based on the results of the bivariate test, only information from community leaders has related to the intention of VCT on adolescents in Surakarta apart from information from their parents. The topics of information provided by community leaders to adolescents were the same as those provided by parents, and only 8.7% of adolescents had received information about HIV/AIDS from community leaders. The information provided by the community leaders also did not yet mention VCT. Overall, the percentage of adolescents who received information on reproductive health and HIV/AIDS from community leaders was lower than from their parents [22]. Stated that the views of important figures such as community leaders could relate to one's intentions for VCT. The information provided by community leaders will be digested by adolescents who will later be used as material for consideration whether to do VCT or not.

This research also analyses reproductive health information obtained from the community. The results of the bivariate analysis showed that reproductive health information from the community did not correlate with the intention of VCT in adolescents. This can mean that society is not the main source of information for adolescents. Adolescents need credible information for them so that they look for other sources that they think are the easiest to get and are considered valid. This is similar to [23], which states that the most sources of information for adolescents about VCT are the media (31%), friends (27%), brothers or sisters (13%), and others such as conference/workshops/posters/places of worship (10%). However, in this study, it turned out that access to reproductive health information through social media by adolescents was not related to VCT intention (p -value= 0.210) [24]. Stated that social media is a form of

approach that can increase a person's involvement in HIV prevention and treatment. Information provided through social media is in the form of general information about HIV/AIDS, while information about the steps, procedures, and benefits of VCT in detail is rarely presented through social media. Usually, information from social media is in the form of trigger information that can arouse someone's curiosity to seek further information on a topic. If someone has a high curiosity about social media information, then the individual can look for other credible sources of information that can be consulted or shared comfortably. Based on the sources of information received by adolescents in the study, it can be concluded that only parents and community leaders are sources of information that are considered credible by adolescents so that they can influence adolescents' desire for VCT. It is just that because the topic of information provided by parents and community leaders is incomplete or not accompanied by information about VCT and added to the fear of adolescents being stigmatized if they go to VCT, it will reduce adolescents' desire for VCT.

Stigma is still an obstacle in implementing VCT on someone [25]. Their research on housewives in Surakarta also revealed that stigma is an obstacle for housewives to do VCT. The stigma is in the form of the assumption that those who visit VCT are definitely HIV people. A systematic review conducted by [26] reinforces that stigma is an obstacle to HIV testing and disclosure of HIV test results. Social pressure in the form of stigma will predispose a person to VCT. If a person does not get social pressure, a person's intention for VCT comes from within himself [27]. So that efforts are needed to reduce the stigma in society regarding HIV/AIDS, and the community also needs to be given an understanding that those who visit VCT services do not necessarily suffer from HIV/AIDS.

Another factor that was not related to the intention of VCT in adolescents was gender, with a p -value of 0.09. In this study, the majority of adolescents who did not intend to have VCT were

male, namely 124 adolescents (62%), while those who intended VCT were 116 adolescents (46.4%). It is different from the research [21], which revealed that male adolescents are more likely to test for VCT than female. In this study, the results showed that female adolescents received more information on reproductive health from their parents, as much 117 adolescents (46.8%) compared to 73 adolescents (36.5%). Meanwhile, in the active aspect of seeking reproductive health information through social media, data was obtained that female and male have the same level of activity in seeking information about reproductive health through social media, as much 30.4% for female and 30.5% for male. However, the exposure to information received by these adolescents did not directly increase the intention of VCT in males and females. Another study conducted by [28] revealed that the factors affecting the use of VCT services for young girls were more about the lack of knowledge about HIV, while for boys, the factors were low education and the increase in adolescents who had partners whom they considered as lifelong partners. Other factors such as the perception that they are not susceptible to HIV and the stigma of HIV/AIDS also VCT have become a consideration for adolescents to intend VCT.

When viewed based on the results of this study, there are actually 115 male adolescents (57.5%) who have engaged in premarital sexual behavior such as kissing, necking, petting, and intercourse, while there are 74 females (29.6%). However, the large number of male adolescents who have engaged in premarital sexual behavior is not accompanied by the desire of male adolescents for VCT, as evidenced by 62% of male adolescents who do not intend VCT even though premarital sex behavior is one of the risky behaviors of HIV/AIDS. These males tend to be permissive to premarital sexual behavior. Based on research results from [29] regarding premarital permissiveness based on sex in three cities in Asia, it was found that men tended to be more permissive to premarital sexual behavior than

women. Similar research on the initiation of premarital sexual behavior in Indonesia has also been conducted by [30,31] with the result that male adolescents aged 15-24 years are more permissive to premarital sexual behavior than adolescent girls. While other studies are similar, such as research from [32] conducted in Jakarta using secondary data from the Greater Jakarta Transition to Adulthood Survey (GJTAS), it was found that there was an increase in the proportion of young women who were likely to engage in premarital sexual behavior from 3.5% to 18%. The increase in this proportion is a concern, considering that previously HIV/AIDS risk behavior has not necessarily been able to increase the intention of VCT in adolescents.

Based on the experience of doing HIV/AIDS risk behavior, it was found that the experience of doing risky behavior before by adolescents was also not related to VCT intention. The risky behavior in this study, such as risky sexual experiences, both kissing, oral sex, and intercourse, were not related to the intention of VCT in adolescents. Adolescents have no intention of VCT because adolescents do not feel at risk and do not get sick. Research that has been conducted by [33] on female HIV patients also showed that feeling sick, considered that it was impossible to be infected with HIV, and having casual sex partners made them not intend to test for HIV. Therefore, efforts are needed to provide education about sexuality and reproductive health to adolescents. The provision of education can be carried out by parents by first providing education to parents about reproductive health and sexuality. Education for adolescents can also be done through the school curriculum. Adolescents also need to be provided with information about VCT and HIV/AIDS in detail, both the benefits and stages of the test, so that adolescents can make decisions about whether to test for HIV or not by considering HIV risk behaviors that have been done before. Information on sexuality, reproductive health, and VCT can also be considered by adolescents in

sexual abstinence or HIV/AIDS prevention efforts.

Previous experiences of drug abuse were also not related to the intention of VCT in adolescents in Surakarta, with a p-value of 1.000. The majority of adolescents in this research have used dextro-type drugs, as many as five adolescents (1.1%). Meanwhile, there were also adolescents who claimed to have used other types of a drug such as marijuana as much one adolescent (0.2%), shabu-shabu as much one adolescent (0.2%), and one adolescent (0.2%) used dog pills. Based on [34,35], marijuana is included in the category of Cannabinoids whose use is inhaled or swallowed. In contrast, shabu-shabu is included in the category of the stimulant by its use by being swallowed, smoked, or injected. In addition, dextromethorphan (DXM) is a category of dissociative drugs that can be used orally. The side effects of using these drugs vary. Cannabinoids have side effects in the form of euphoria, impaired balance and coordination, increased heart rate and appetite, anxiety, panic attacks, and addiction. While drugs in the category of stimulants have side effects in the form of increased heart rate, increased blood pressure, increased metabolism, panic, insomnia, cardiac complications, and addiction. In addition, the use of DXM can cause euphoric effects, dizziness, confusion, and visual distortion.

Drug use is one of the behaviors that can increase the risk of HIV/AIDS [36]. In their research on drug use as a risk for HIV, it was revealed that injecting and non-injecting drug use is at risk of causing HIV epidemics in Asia, Eastern Europe, Southeast Asia, and parts of Africa. Drug abuse can be a factor in HIV transmission, especially through the use of syringes and unsafe sex behavior that occurs under the influence of the drugs consumed. However, in this study, it was found that drug use by adolescents did not guarantee that adolescents would intend VCT; as many as five adolescents (62.5%) who had ever consumed drugs did not intend VCT. The results of this study are different from the results of research in China conducted by [37], with the

results that drug use, especially injecting drugs, is one of the reasons for someone to do HIV test counseling. There are other factors that make adolescents in the study not intending to have VCT, such as adolescent ignorance of VCT completely, as evidenced by adolescents who have never received this information from their parents, community leader, or other media. [38] In their research on individuals at risk of HIV in Kupang, Indonesia, it was found that compared to support from family and community, support from religious leaders contributed more to the intention of people at risk of HIV to do VCT. Religious leaders are among those who are considered community leaders, but information about VCT has never been conveyed by these community leaders to adolescents, so that adolescents do not have sufficient knowledge to strengthen their intention to do VCT. Therefore, further efforts are needed to strengthen the intention of adolescents at risk to be able to do VCT. Research conducted [39] by providing behavioral interventions in the form of discussions and skills training related to responsibility, sexual relations, communication skills, alcohol and addictive substance use to men aged 18-35 years, the results show that the interventions cannot increase a person's desire to do VCT. This happened because of the distrust of the confidentiality of their HIV status. Another reason is that the provision of behavioural interventions is not accompanied by efforts to strengthen self-efficacy for HIV testing. Behavioural interventions are also not accompanied by efforts to reduce the stigma associated with HIV testing. Therefore, efforts to reduce stigma in society related to HIV/AIDS and VCT need to be made. The results of research confirm this by [40] it was found that the stigma and discrimination against HIV prevented someone from using VCT services. So that to strengthen the intention of VCT in adolescents, efforts to reduce stigma related to HIV and HIV testing and providing education about HIV and VCT in which there is an emphasis on the aspect

of increasing self-efficacy for conducting HIV testing.

Another variable in the study that was not related to VCT intentions in adolescents was participation in organizations. The participation of adolescents in organizations in the health sector was not related to the intention of using VCT service among 122 adolescents (61%) who joined organizations in the health sector but did not intend to use VCT service. The health organization attended by youth is the Palang Merah Remaja (PMR). Revealed that the activities contained in PMR such as social activities, school health activities, first aid activities in handling accidents [41]. No adolescent have yet joined an organization that specifically discusses the detail of VCT. Information about VCT, especially from VCT services, is related to the use of VCT services to students in Tanzania [42]. Based on these findings, it indicates that exposure to information from credible information sources such as health services can be related to VCT intentions in a person. The organization is a source of information for adolescents that can increase adolescent knowledge about HIV and VCT. However, if adolescents join an organization that has never been given information about VCT, they will not intend to do VCT either. Other research stated that someone who has low knowledge about VCT would result in a less good attitude about VCT [43]. If someone's attitude about VCT is not good enough, it will affect their intention to do VCT. Therefore, it is necessary to provide information to adolescents about VCT from information sources that are easily accessible and reliable for adolescents, such as parents and the mass media. This is reinforced by research results from [44,45]; it was found that the mass media is a strong source of information as a form of mass communication.

Conclusion

The majority of adolescents in Surakarta do not intend to do VCT. Adolescents who have had HIV risk behavior also have no intention of using VCT services. Reproductive health information is the

factor that most influences the intention to do VCT. However, it is necessary to provide complete information about VCT to adolescents so that adolescents can understand the flow of VCT services, as well as the confidentiality of their HIV status when doing VCT. Another factor that can reduce the intention of VCT in adolescents is the existence of stigma in society regarding HIV and HIV testing, so that efforts are needed to provide information to the public about HIV/AIDS and VCT. Providing information to the public can use media that the community likes, which of course needs to be done first in order to provide information on HIV/AIDS and VCT to be effective. This research's weakness was that researchers did not examine the type of sexual intercourse through anal sex. So that an analysis of VCT intention based on risky sexual behavior based on anal sex cannot be done, future research can analyze the intention of VCT based on level risk behavior in adolescents such as oral, vaginal, and anal sex. Make an approach model to adolescent's parents could be done until they can give sexual and reproductive health information to adolescents.

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Authors' contributions

All authors contributed toward data analysis, drafting and revising the paper and agreed to be responsible for all the aspects of this work.

Conflict of Interest

We have no conflicts of interest to disclose.

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