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The analysis of factors affecting the use of VCT service for high-risk group infected with HIV/AIDS in Makassar

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Abstract:

The number of cases of HIV-AIDS in Makassar has increased from year to year, but the utilization of VCT services, especially high-risk groups remains low. This study aims to analyze the factors affecting the utilization of VCT services in the high-risk group of contracting HIV-AIDS in Makassar. This research was conducted in Makassar. It applied a quantitative study with cross sectional study. The population was 3,855 people for four risk groups (Injection Druge User, Female Sex Worker, Transsexual and Man Sex with Man) and a sample of 133 people with a sampling technique stratified random sampling. The data was collected using a questionnaire interview. Data were analyzed using Chi-square test and multiple logistic regressions. The results showed the majority of respondents aged 21-30 at (66.2%), male sex (76.7%), unmarried status (58.6%), had high school/equivalent (72.9%) and worked as private employees (30.8%). The results of the analysis indicate that there is a correlation relationship between knowledge (p=0.035), perceived threat (p=0.010), perceived benefits (p=0.000), perceived barriers (p=0.000), family support (p=0.000) and support health workers (p=0.000) with VCT utilization. The analysis showed that there is an influence between knowledge (p=0.023), perceived threat (p=0.021), perceived benefits (p=0.000), perceived barriers (p=0.000), family support (p=0.000) and support health workers (p=0.000) on the utilization of VCT. The results of the analysis of the effects together indicate that the perceived benefits (p=0.000), perceived barriers (p=0.000), family support (p=0.013) and support health workers (p=0.010) effect on the utilization of VCT. The variables that most influence the utilization of VCT is perceived benefit (Exp B=15.546). In conclusion, the variables affect the Health Belief Model of VCT uptake.

Key words: utilization of VCT, high-risk, HIV/AIDS.

Introduction

The biggest cases of HIV-AIDS occurred in Makassar, the capital city of South Sulawesi. The development of these cases has been fluctuated. It can be proved from the data in 2011 when it was found 660 cases of HIV-AIDS and 986 cases in 2011. Then, it decreased until 742 cases in 2012. The increasing trend happened in 2013 which was found 1,146 HIV-AIDS cases [1]. Considering that HIV-aids has increased and spread rapidly, a long term program will be beneficial in decreasing the cases of HIV-AIDS. The use of VCT became an effective strategy to facilitate HIV prevention and to decrease the spreading behavior.

VCT is available for those who want to check their health status, whether for healthy people without any syndrom of HIV or people who are infected. However, the use of VCT is highly recommended for high-risk people to be infected of HIV-AIDS virus. (Health Department of Indonesia Republic, 2005). The increasing of HIV-AIDS was caused by lack of awareness in utilizing VTC service particularly for high-risk people. There were so many factors affecting high-risk people in using VCT. A research [2] entitled Determinants of Using Voluntary Counseling and Testing for HIV-AIDS in Kenya" reveals that women used VCT in Kenya was low. The main obstacle in using VCT faced by the woman was due to the limitation of the role of gender, inadequate of village access, infrastructure, and training of health worker that must be handled as well as any stigma that related to HIV-AIDS. Besides, it was also caused by the lack of understanding about HIV-AIDS and VCT especially for high-risk people [3].

Based on the data obtained from the Department of Health in 2013, there were only 1820 people of all 2036 FMS, 91 of all 250 transsexual, and only 276 of all 400 IDU involving in the data service (Health Department of Makassar, 2013). It indicates that service for high-risk group remains low. A study about factors affecting the utilization of VCT services in the high-risk group of HIV-AIDS is required to get in depth analysis in order to formulate strategy framework in improving VCT service and the utilization in risked society. Based on the background above, the researcher has attempted to analyze factors affecting the utilization of VCT services in the high-risk group of HIV-AIDS in Makassar.

Materials and Methods:

Research Site and Plan

This research was conducted in Makassar, and it applied a quantitative research that focus on cross sectional study design.

Population and Sample

The population of this research was high-risk people to be infected by HIV-AIDS in the group of Injection Drig User (IDU), Female Sex Worker (FSW), Man Sex with Men (MSM/Gay), and transsexual in Makassar. The estimation of high-risk group in Makassar in 2012 was divided into IDU group (951), FSW (738), transsexual (232), and MSM (1.934). The population of this research was 3.855 people. After selecting sample using stratified random sampling, then it was found about 133 people which divided into 33 people of IDU, 25 FSW, 8 trans sexual, and 67 MSM.

Procedure of Collecting the Data

Procedure of collecting the data was an interview based on the list of questionnaire which comprises of characteristic of respondent and research variable. While the secondary data was the data derived from health department in Makassar, KPA, and the other references related to high-risk group of HIV-AIDS and VCT utilization.

Data Analysis

Technique of data analysis applied Univariate analysis which is aimed at describing population characteristic and presentation of descriptive results through frequency and distribution of dependent and independent variable. Bivariate analysis was used to find out the correlation and effect for each of dependent and independent variable using Chi-Square test and partial logistic regression test with 18 version SPSS. Multivariate analysis was conducted to identify the dependent variable which has an effect on independent variable as well as the most influential variable using logistic regression test.

Results

Characteristic of respondent

Table 1 shows the majority of respondents aged 21-30 years old (66.2%), male sex (76.7%), unmarried status (58.6%), had high school/equivalent (72.9%) and worked as private employees (30.8%).

Table 1: Respondent characteristic

Respondent characteristic		n	%
Age	< 21 years old	10	7,5
	21--30 years old	88	66,2
	31-40 years old	30	22,6
	41-50 years old	5	3,8
Gender	Male	102	76,7
	Female	31	23,3
Marital status	Married	40	30,1
	Unmarried	78	58,6
	Widower/Widow	15	11,3
Education	Elementary School	6	4,5
	Junior High School	10	7,5
	Senior High School	97	72,9
	Diploma	8	6,0
	University	12	9,0
Job	Unemployed	21	15,8
	College students/students	2	1,5
	Civil servant	3	2,3
	Entrepreneur	23	17,3
	Private employee	41	30,8
	Housewife	7	5,3
	Female sex Worker	10	7,5
	Beauty clinic worker	6	4,5
	Café/ Karaoke/Store worker	17	12,8
	Clerk	3	2,3
	Etc.		

Univariate Analysis

Table 2 describes that there are 69.2% have a good knowledge, perceived threat (85%), perceived benefits (77.4%), perceived barriers (59.4%), family support (60.2%), counselor support (75.2%), and about 67.7% respondents of all 133 respondents used VCT service.

Table 2: Univariate Analysis

Variable	Category	N	%
Knowledge	Good	92	69,2
	Less	41	30,8
		133	100
Perceived Threat	Severe	113	85
	Less	20	15
		133	100
Perceived Benefits	Good	103	77,4
	Less	30	22,6
		133	100

Perceived Barriers	High	54	40,6
	Low	79	59,4
		133	100
Family support	Good	53	39,8
	Less	80	60,2
		133	100
Health worker support	Good	100	75,2
	Less	33	24,8
		133	100
Utilization of VCT	Utilizing	90	67,7
	Not Utilizing	43	32,3
		133	100

Bivariate Analysis

Table 3 performs the correlation between health belief model variable toward the utilization of VCT service. Respondent's understanding about HIV-AIDS and VCT shows that among 92 respondents who had a good competence 73.9 % of them utilize VCT and 26.1 % did not. While, 41 respondents who had less understanding about VCT service around 53.7% respondents employed VCT and 46.3% did not. Finally, the result of analysis indicated that there is a correlation between knowledge and the utilization of VCT with *p* value =0.035 ($p<0.05$). Respondent assessment toward the perceived threat showed that of all 113 respondents perceiving severe threat, there were 62.8% used VCT and 37.2% did not. While, 20 of respondents perceived less threat, 95% of them utilized VCT and the rest did not. There was correlation between perceived threat and VCT utilization with *p* value = 0,004 ($p < 0.05$).

Moreover, respondent assessment toward perceived benefits identifies that there were 78.6% from 103 respondents used VCT service, and 21.4% respondents did not use it due to perceiving less benefit.

Table 3: The correlation of each *health belief model*variables toward VCT utilization for high-risk group infected with HIV-AIDS in Makassar

Variable	Criteria	Utilization				Total		p
		Utilizing	%	Not Utilizing	%	n	%	
Knowledge	Good	68	73,9	24	26,1	92	100	
	Less	22	53,7	19	46,3	41	100	0,035
	Total	90	67,7	43	32,3	133	100	
Perceived Threat	Severe	71	62,8	42	37,2	113	100	
	Less	19	95	1	5	20	100	0,004
	Total	90	67,7	43	32,3	133	100	
Perceived Benefits	Good	81	78,6	22	21,4	103	100	0,000

	Less	9	30	21	70	30	100	
	Total	90	67,7	43	32,3	133	100	
Perceived Barriers	High	20	37	34	63	54	100	
	Low	70	88,6	9	11,4	79	100	0,000
	Total	90	67,7	43	32,3	133	100	
Family support	Good	48	90,6	5	9,4	53	100	
	Less	42	52,2	38	47,5	80	100	0,000
	Total	90	67,7	43	32,3	133	100	
Health worker support	Good	78	78	22	22	100	100	
	Less	12	36,4	21	63,6	33	100	0,000
	Total	90	67,7	43	32,3	133	100	

On the contrary, 70% from 30 respondents who perceived fewer benefits did not use VCT and 30% respondents used it. It also can be concluded that there was correlation between perceived benefits and the utilization of VCT with *p* value = 0000 (p<0.05). Regarding perceived barriers, the result revealed that there were 88.6% from 79 respondents who utilized VCT owing to perceived barriers and there were 11.4% respondent who did not use VCT. Meanwhile, there were 63% from 54 respondents who found difficulties or barriers did not use VCT and around 37% respondents used it. Hence, there was correlation between perceived barriers and the utilization of VCT with p=0,000 (p<0.05).

Referring to family support, the result indicates that 52.5% from 80 respondents utilized VCT because of not being supported well by their family. While, around 90.6% from 53 respondents were supported well by their family used VCT service and 9.4% respondents were not it. Finally, the result described that there was a correlation between family support and the utilization of VCT with *p* value=0.000 (p<0.05). Moreover last but not least is counselor support. Bivariate analysis identifies that there were 78% from 100 respondents who used VCT due to a good treatment by the counselor and there were 22% respondents who did not use VCT. Whereas, some respondents perceived a bad service from the counselor, yet around 63.6% from 33 respondents did not apply VCT service and only 36.4% respondents who used it. Therefore, there was correlation between counselor support and the utilization of VCT with *p* value=0.000 (p<0.05). The result of Bivariate analysis with multiple logistic regression test in table 4 indicated *p* of each variable, knowledge (*p*=0.035), perceived threat (*p*=0.010), perceived benefits (*p*=0.000), perceived barriers (*p*=0.000), family support (*p*=0.000) and health counselor support (*p*=0.000). Since, p result of dependent variable was ≤ 0.25, it figured out that there was an effect between Health Belief Model and the utilization of VCT.

Multivariate Analysis

The result of Bivariate analysis in table 4 and table 5 shows that the independent variable, namely knowledge, perceived threat, perceived benefits, perceived barriers, family support, and counselor support affecting the utilization of VCT. Hence, it needs to conduct multivariate log *p*=0.035), perceived threat (*p*=0.010), perceived benefits (*p*=0.000), perceived barriers (*p*=0.000), family support (*p*=0.000) and health counselor support (*p*=0.000) have *p* value = <0.05.

Table 4: The effects of each *health belief model* variables toward VCT utilization for high-risk group infected with HIV-AIDS in Makassar

Variabel	B	S.E	Wald	Df	Sig.	Exp(B)
Knowledge	0,895	0,393	5,184	1	0,023	2,447
Perceived Threat	-2,419	1,044	5,368	1	0,021	0,089
Perceived Benefits	2,151	0,465	21,362	1	0.000	8,591
Perceived Barriers	-2,582	0,453	32,548	1	0,000	0,076
Family support	2,162	0,521	17,246	1	0,000	8,686
Health worker support	1,825	0,435	17,607	1	0,000	6,205

Table 5: The simultaneous effects of each *health belief model* variables toward VCT utilization for high-risk group infected with HIV-AIDS in Makassar

Variable	B	S.E	Wald	Df	Sig.	Exp(B)
Knowledge	0,550	0,668	0,678	1	0,410	1,733
Perceived Threat	-2,194	1,232	3,170	1	0,075	0,111
Perceived Benefits	2,744	0,711	14,891	1	0,000	15,546
Perceived Barriers	-2,158	0,596	13,131	1	0,000	0,116
Family support	1,793	0,722	6,167	1	0,013	6,009
Health worker support	1,801	0,701	6,595	1	0,010	6,057
Constant	-2,143	0,763	7,883	1	0,005	0,117
Overall Percentage = 88,0						

Therefore, those variables have affected the utilization of VCT and the most affecting variable is perceived benefits. (Exp (B)=15.546).

Discussion:

This research indicates that Health Belief Model variable is likely to influence significantly the utilization of VCT. Those models are perceived threat, perceived benefits, perceived barriers, family support, and counselor support. The influence of knowledge toward the utilization of VCT has been proven through Bivariate analysis. It is clearly showed that there were 73.9% responded in the group of good knowledge using VCT and only 53.7% in the group low knowledge used VCT. It was proven that knowledge had a strong effect in influencing the utilization of VCT, because only respondents who know well about the significances and the functions of HIV-AIDS and VCT will use the VCT service. This statement was supported by Aswar et al. [4] in their research which stated there was a significant correlation between the levels of knowledge about VCT and the utilization of VCT. The similar research was also shared by Purwanigsih et al. [3] who stated that knowledge influenced significantly the utilization of VCT.

The influence of perceived threat toward the utilization of VCT was also shown through bivariate analysis, the data was about 62.8% from 113 respondents who used VCT due to the strong threat to be infected. It indicated that people who were threatened of being infected by HIV-AIDS preferred to use VCT service. This fact is in line with Tsegay et al. [5] who stated that the risk of HIV-AIDS in the North West Ethopian 2011 was closely related to the utilization of VCT service. Similarly, Purwaningsih [3] found that the increasing of perceived seriousness and perceived susceptibility influenced the utilization of VCT service in Primary Health Centre Dupak.

Moreover, the perceived benefit toward the utilization of VCT was also revealed through bivariate analysis, about 78.6% respondents using VCT gave positive responses toward the utilization of VCT. On the other hand, there were 70.0 % respondents who did not use VCT service in which majority of them gave negative responses toward the utilization of VCT. A study in Northwestern Ethopia found that among the HBM construction, benefit was one of the significant predictor to do consultation and test [6]. A research conducted by Widiyanto [7] found that there was a significant correlation between the perceived benefit of VCT perceived by the sex workers and the utilization of VCT in Sunan Kuning, Semarang.

The next model influencing the utilization of VCT is perceived barriers. It was also proved that through Bivariate analysis in which respondents finding difficulties or obstacles in using VCT have potential not to use VCT. In contrast, respondents who perceived fewer barriers had more possibility to use VCT. This result in line with Fibriana [8] who stated there was a significant correlation between VCT treatment and perceived barriers with *p* value =0.022 based on the result of Chi square test. A study in Laos showed that the barriers in applying VCT for FMS were waiting time, uncomfortable clinic, unclear information about where to get VCT service, and the bad service from counselor [9]. Referring to this, the effect of family support toward the utilization of VCT was also identified through Bivariate analysis. It was performed clearly that 90.6% respondents used VCT owing to their family support. This fact was also supported by Legiati et al. [10] who revealed that the dominant factor affecting an expectant mother to do HIV test was due to husband's support.

Counselor support also affects the utilization of VCT where it has been proved through bivariate analysis. It has been performed early in table that 78% of all 100 respondents used VCT service due to good support of the counselor. While, there were 63.6% of 33 respondents did not use VCT dealing with a bad service of counselor. It indicated that counselor support affecting the utilization of VCT. A good counselor supports are able to convince the respondent in using VCT service. Muhartini et al. [11] in their research found that there was a significant correlation between the counselor support and the utilization of VCT used by HIV-AIDS sufferer in Bulukumba. Respect to this, Legiati et al. [10] in their research rejected Ho with *p* value =0.0001 ($p<0.05$). He revealed that midwives and their assistants support can be convinced an expectant mother to use VCT service. Muhartini (2013) as cited in Paribungin [11] conducted a study that concern on observing the VCT in local government clinic in Wisata Bandar Baru, Sibolangi Dely Serdang. The result of logistic regression test identified that counselor support affecting most in the utilization of VCT.

Furthermore, the multivariate analysis displayed Health Belief Model variable which influenced significantly the utilization of VCT services in the high-risk group of HIV-AIDS in Makassar. The models involved perceived benefit ($p=0.000$), perceived barriers ($p=0.000$), family support ($p=0.013$), and counselor support ($p=0.010$). Among the fourth variables, perceived benefit variable affect most the utilization of VCT (Exp(B)=15.546). It is explained that good service perceived by the respondents will convince them to use VCT service about 15.546 times compared to the respondent who get a bad service perceived benefits became a substantial element in Health Belief Models since it is one of consideration whether it can decrease or not HIV threat. The depiction of perceived benefits is also supported the availability of human resources to do the service. It is in line with the theory of *Health Belief Model*/Rosenstcok in Fibriana [8] who stated that prevention or even cure will be affected by the perceived benefits.

Conclusion and Suggestion

The result of observation identified that there were some factors affecting the utilization of VCT in the high-risk group of HIV-AIDS in Makassar; those are knowledge, perceived threat, perceived benefits, perceived barriers, family support, and counselor support. Regarding the factors affecting the utilization of VCT, it is highly recommended to improve the quality of counselor service in treating the high-risk group. Family should do advocacy or counseling to support the high-risk of HIV in doing VCT service. The counselors are suggested to improve their service in doing the counseling in order to set at the patients ease and to provide good advocacy.

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