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RELATIONSHIP BETWEEN CDCYNERGY'S SOCIAL MARKETING MODEL WITH INTENTION OF HIV COUNSELING AND TESTING FOR PREGNANT WOMEN IN SURAKARTA INDONESIA

HUBUNGAN ANTARA CDCYNERGY'S SOCIAL MARKETING MODEL DENGAN NIAT DALAM KONSULTASI DAN TEST HIV PADA IBU HAMIL DI SURAKARTA INDONESIA

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ABSTRACT

HIV-AIDS epidemic is still becoming a global public health problem. More than 90% of HIV cases in children caused by transmission from their mother. Recent global efforts have focused on eliminating HIV infection in children through HIV counseling and testing for pregnant women (pregnant women VCT). The CDCynergy's social marketing model is widely used as a guide to conceiving robust social marketing plans. This study aimed to analyze the relationship between 6 dimensions of CDCynergy's social marketing model with the VCT intention of pregnant women. An observational analytic method with a survey approach is chosen for this research and the sample size was 90 pregnant women. Closed questionnaire was used as a research instrument. The results of logistic regression analysis showed that the strength of the relationship between VCT intention of pregnant women with the variable "conduct market research" was 12,527 units (p= 0.002), respectively. Conduct market research was having the most dominant relationship with the dependent variable compared to the other variables. Market research plays a great role as the base for social marketing program. Hence, it needs stakeholders support to optimize market research, especially in order to increase the engagement of pregnant women to attend VCT.

Keywords: *HIV, CDCynergy's Social Marketing Model, Pregnant Women VCT.*

ABSTRAK

Epidemi HIV-AIDS masih menjadi masalah kesehatan masyarakat global. Lebih dari 90% kasus HIV pada anak-anak karena penularan dari ibu ke anak. Akhir - akhir ini seluruh dunia telah berfokus untuk mengurangi infeksi HIV pada anak-anak melalui konseling dan skrinning HIV untuk wanita hamil (VCT ibu hamil). Model pemasaran sosial CDCynergy secara luas digunakan sebagai panduan untuk skrinning ibu hamil dengan perencanaan pemasaran sosial yang kuat. Penelitian ini bertujuan untuk menganalisis hubungan antara 6 dimensi model pemasaran sosial CDCynergy pada VCT ibu hamil. Metode penelitian dengan analitik observasional melalui pendekatan survei dengan jumlah sampel 90 orang ibu hamil. Kuesioner tertutup digunakan sebagai instrumen penelitian. Hasil analisis regresi logistik menunjukkan bahwa kekuatan hubungan antara VCT niat ibu hamil dengan variabel "melakukan riset pasar" masing-masing sebesar 12.527 unit (p= 0,002). Melakukan riset pasar memiliki hubungan yang paling dominan dengan variabel dependen dibandingkan dengan variabel lainnya. Riset pasar memainkan peran besar sebagai basis program pemasaran sosial. Oleh karena itu, perlu dukungan pemangku kepentingan untuk mengoptimalkan riset pasar, terutama dalam rangka meningkatkan keterlibatan ibu hamil untuk menghadiri VCT.

Kata kunci: *HIV, Model Pemasaran Sosial CDCynergy, VCT Ibu Hamil .*

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INTRODUCTION

HIV/AIDS epidemic in 2019 reach a number around 38 million people across the globe. Of these, 36.2 million were adults and 1.8 million were less than 15 years old (Global statistics of UNAIDS, 2020). The Joint United Nations Program on HIV / AIDS (UNAIDS) reports that there were 1.7 million people newly infected with HIV and 690,000 people died of AIDS in 2019. About 5,500 young women aged 15-24 are infected with HIV each week (UNAIDS, 2019a). Another study reported that a quarter of new HIV infections in young people (aged 15-24 years) had a greater proportion of infections in Indonesia, Myanmar, the Philippines and Thailand during 2018. Globally, new HIV infections among young women decreased by 25% between 2010 and 2018, yet every week 6,000 girls and young women become infected with HIV (UNAIDS, 2019b).

Since 2007 the trend of HIV / AIDS transmission has shifted to housewives that generally get their disease from men with HIV / AIDS. As many as 4.9 million of housewives are married to high-risk men and around 6.7 million men in Indonesia are sex buyers. Predominantly, housewives do not have the power to control their partner's sexual behavior outside the home (Kementerian Kesehatan Republik Indonesia, 2018). Based on one of the study reported in Surakarta, Indonesia, of March 2017, 10,376 new HIV cases were reported. The number of VCT services for pregnant women up to March 2017 was 3,450. All Puskesmas (17 units) in Surakarta City provide VCT services for pregnant women. During 2019, 107 new HIV-AIDS cases were found in Surakarta, consisting of 53 HIV people (49.53%) and 54 AIDS cases (50.46%). The proportion of both HIV and AIDS cases in men was higher than women. The number of pregnant women who did VCT for pregnant women was only 0.76 percent of the total number of ANC visits for first pregnant women (n= 10,847). Among those, one case of HIV / AIDS in children was found (Dinas Kesehatan Kota Surakarta, 2019).

A mother with an HIV infection could transmit the virus to her child during pregnancy, childbirth or breastfeeding. This is known as mother-to-child transmission (MTCT). Which most of the HIV cases in children are through mother-to-child transmission. Recent global efforts in fighting HIV have focused on eradicating childhood HIV infection and

improving the care cascade for prevention of mother-to-child HIV transmission (PMTCT) (UNAIDS, 2016). PMTCT interventions can be in the form of Voluntary HIV Counseling and Testing (VCT), safe obstetrics and infant feeding practises, antiretroviral prophylaxis, lifelong antiretroviral therapy for all pregnant women with HIV infection, caesarean section before labour and before ruptured membranes, and complete avoidance of breastfeeding (Wariki *et al.*, 2017)

VCT, as a prevention strategy, can influence behavior change through a process involving personalized counseling, acquiring of HIV/AIDS knowledge and awareness, and learning one's HIV status. VCT significantly proven can reduce risky behaviors related to HIV by reducing the number of sex partners of participants. People living with HIV who received VCT showed higher engagement in protected sex than people living with HIV who did not receive VCT and increased odds of using condoms (Fonner *et al*., 2014).

The VCT program for pregnant women is carried out by screening pregnant women at the time of their first contact with health workers, and is integrated into the antenatal care (ANC) examination package. However, VCT services for pregnant women are not running optimally, it cannot reach all pregnant women as the target group. VCT services for pregnant women have been slow to receive due to ignorance, fear and stigma associated with HIV-AIDS infection, limited access to services and support for those infected with HIV. In 2018 HIV tests for pregnant women only covered 13.38% (761,373) of the total number of pregnant women in Indonesia (n= 5,291,143). Among these, pregnant women with HIV positive was recorded at 0.0558% (2,955) (Kementerian Kesehatan Republik Indonesia, 2018).

The definition of social marketing (SM) was agreed upon by iSMA (International Social Marketing Association), ESMA (European Social Marketing Association), and AASM (Australian Association of Social Marketing): "Social Marketing seeks to develop and integrate marketing concepts with other approaches to influence behaviors that benefit individuals and communities for the greater social good" (ISMA, 2013). There are three key elements in the definition, namely: (i) The main objective of SM is to achieve social good (not commercial gain) and its main focus is on achieving behavioral goals; (ii) Consists of a set of concepts and principles that can be used in

policy formulation, strategy development and implementation of social change programs, and (iii) As a systematic process of learning and evaluation (French, 2017).

In the last decade, more research took an interest in SM, especially on social issues related to public health, prevention, environment, community development and welfare. SM can influence the behavior of those who decide public policies and of those belonging to various interest groups, resulting in positive effects in social change (Chichirez and PurcÄƒrea, 2018). The purpose of SM is to influence behaviors for good. Exchange in BC places an emphasis on voluntary behavior. To facilitate voluntary exchange, social marketers must offer clients something they want, for example, to prevent mother-to-child transmission of HIV. In this way, client / program target research can identify the benefits associated with changing behavior, thereby facilitating the voluntary behavior exchange process (Kotler and Lee, 2011). SM within the framework of the CDCynergy planning tool for social marketing, includes 6 stages, namely: (i) describe the problem, (ii) conduct market research, (iii) create a marketing strategy, (iv) intervention, (v) monitoring and evaluation, and (vi) implementation (CDC, 2010).

METHODS

This research location was in Surakarta City, one of the major cities in Central Java Indonesia. It's located 104 km from the capital city of Central Java Province that consists of 5 sub-districts, with a total area 44.04 km2. There are 17 primary healthcare centers (Puskesmas) and 14 hospitals. The researchers chose 5 Puskesmas for the study. The study was conducted for 3 months (June-August 2020). The research ethics letter was obtained from the Sebelas Maret University Health Research Ethics Committee (No.055/UN.27.06.6.1/KEPK/EC/2020).

A cross-sectional research method with a quantitative survey approach was chosen as the study design. The unit of analysis for the study was the CDCynergy PMTCT SM model and the intention of HIV testing and counseling (VCT) for pregnant women. The target population was 10,542 pregnant women. Then the researchers decided the study population of pregnant women taken from 5 Puskemas in Surakarta City, which was accessible for the study. Quota sampling technique was chosen, therefor from each Puskesmas we collected 18 sample of pregnant

women, until we reach 90 pregnant women as the total sample. There were six independent variables, namely: describe the problem, conduct market research, create a marketing conduct strategy, intervention, monitoring and evaluation, and implementation. The dependent variable was the intention of HIV counseling and testing for pregnant women (pregnant women VCT).

The research instrument used a closed questionnaire using a Likert scale, based on the description of the dimensions of the research variables in Table 1. Each question / statement is measured on a scale of 1-5, with 1 means strongly disagreeing and 5 means strongly agreeing.

VCT intention of pregnant women was measured using a nine-item scale, asking whether the intention of carrying out VCT for pregnant women is a prerequisite for conducting a pregnant woman's HIV test. The researcher compiled the assessment criteria for each question item based on the percentage and grade level (Table 2 and Table 3), hence both independent and dependent variables turned to categorial variables. The results of the questionnaire validity and reliability test showed that all questionnaires were valid and reliable, the Cronbach alpha value was ≥ 0.60. Univariate analysis was conducted to determine the description of the frequency distribution and the percentage of each variable. Since both independent dan dependent variables were categorical variables hence multiple regression analysis was used for describing the influences of the independent variables to the dependent variable.

RESULTS AND DISCUSSION

The characteristics of research subjects include: age, education, marital status, occupation and number of children (parity). Based on Table 3, most of the research subjects were aged 25-45 years, 69 of them were mothers (76.67%); last educational degree of 51 subjects was mostly until Senior High School (56.67%); 89 were married (98.89%); 55 subjects were housewives (61.11%); the number of children (Parity) was mostly 1-2 children, among 76 subjects (84.45%).

Most of the research subjects had good intentions for HIV testing and counseling for pregnant women, up to 46 (51.11%) people. The number of subjects who strongly agreed with the variable “describe the problem” was 74 (82.22%) and “conduct market research” was 69 (76.67%). Subjects had sufficient assessments to

variable "create a marketing strategy" were 60 (66.64%), "intervention" were 76 (84.44%), "monitoring and evaluation" were 77 (85.56%).

Table 1. Variables and Descriptions of CDCynergy's Social Marketing Model in The Study of Relationship Between CDCynergy's Social Marketing Model and The Intention and Behavior of Pregnant Women HIV Testing and Counseling in Surakarta Indonesia.

No	Research Variables/Dimensions	Descriptions
1	Describe problem	(a) Conducting identification of problem of community health and behavior causing antenatal VCT problems; (b) Discovering determinants which cause emergence of antenatal VCT problems; and (c) Proposing activities to resolve antenatal VCT problem through social marketing
2	Conduct market research	Clients' understanding on antenatal VCT: a) characteristics, b) attitudes, c) beliefs, d) values, e) behaviors, f) determinants, g) benefits, and h) constraints.
3	Create a marketing strategy: social marketing plan	(a) Determining antenatal VCT audience segment; (b) Target of behavioral change: antenatal VCT; (c) Benefits of antenatal VCT offered, and (d) Interventions that will influence or support change of behavior
4	Plan the intervention:	SM method used to influence, facilitate, or promote change of behavior
5	Plan monitoring and evaluation	(a) Conducting antenatal VCT program evaluation; (b) Basing evaluation on knowledge, attitudes, and change of behavior of antenatal VCT participants; (c) Measuring the extent of trust within individual/community group to fulfil their responsibilities on new change of behavior (antenatal VCT).
6	Implement the intervention and evaluation	(a) Implementing intervention plan to resolve antenatal VCT problems by using PS strategy; and (b) Applying consumer-centered SM technique in developing, implementing, and evaluating antenatal VCT program to promote or modify antenatal VCT behavior.

Source: Centers for Disease Control and Prevention (CDC, 2010).

Table 2. Assessment Criteria Based on Percentage

Percentage	Criteria
< 20,00	very less
20,00 – 34,00	less
34,00 – 48,00	enough
48,00 – 62,00	good
62,00 – 76,00	very good

Table 3. Assessment Criteria Based on Grade Level

Answer Interval	Criteria
4,20 – 5,00	very good
3,40 – 4,20	good
2,60 – 3,40	enough
1,80 – 2,60	less
1,00 – 1,80	very less

Table 4. Percent Distribution for The CDCynegy Social Marketing Model on Intention of Counselling and Antenatal HIV Test in Surakarta Indonesia (n=90)

Variable	%	Variable	%
Describe problem		Monitoring and evaluation	
Agree	17.78	Not Good	1.11
Strongly agree	82.22	Adequate	85.56
Conduct market research		Good	13.33
Agree	23.33	Implementation	
Strongly agree	76.67	Adequate	1.11
Create a marketing strategy		Very Good	98.89
Not Good	33.33	Antenatal VCT intentions	
Adequate	66.64	Good	51.11
Intervention		Not good	48.89
Adequate	84.44		
Good	15.56		

Table 5. Bivariate Analysis of Relations Between Variables of Cdcynegy Social Marketing Model with Antenatal VCT Intention and Behaviors.

Independent variable	Dependent variable: Intention of VCT of pregnant women	
	Correlation coefficient	P-value
Describe problem	0.011	0.917
Conduct market research	0.406**	0.000
Create a marketing strategy	0.123	0.249
Intervention	0.174	0.100
Monitoring and evaluation	0.215*	0.042
Implementation	-0.104	0.331

* significant correlation on level < 0.05 (2-*tailed*)
** significant correlation on level < 0.01 (2-*tailed*)

Table 6. Regression Results on The Correlation Between CDCynergy Social Marketing Model and Antenatal VCT Intentions and Behaviors

Independent variable	Exp (B)	CI 95%		*p*
		Lower Limit	Upper Limit	
Describe problem	0.632	0.167	2.394	0.500
Conduct market research	12.527	2.575	60.935	0.002*
Create a marketing strategy	1.406	0.496	3.987	0.522
Intervention	1.088	0.186	6.356	0.926
Monitoring and evaluation	3.477	0.472	25.623	0.221
Implementation	0.000	0.000	0.000	1.000

Source: Primary Data
Nagelkerke R square= 0.312
* significant on level < 0.05

The subjects that strongly agree with the variable "implementation" were 89 (98.89%) people.

Bivariate analysis was conducted by using Spearman's correlation test. Significant results obtained were: (i) Correlation of 0.406 was

obtained on “conduct market research”; medium strength of correlation between VCT intention variable and “conduct market research” and the p-value = 0.000 showed that correlation between the two was statistically significant; (ii) on “monitoring and evaluation”, correlation of 0.215 was obtained; low strength of correlation between antenatal VCT intention variable and “monitoring and evaluation”, and the p-value = 0.042 showed that correlation between the two was statistically significant (Table 5).

The results of logistic regression analysis that illustrates the strength of the relationship between VCT intention of pregnant women with

the variable "describe the problem" was 0.632 units (b = 0.632; 95% CI = 0.167 - 2.394; *p*= 0.500), "conduct market research" was 12,527 units (b = 12,527; 95% CI = 2,575-60,935; *p*= 0.002), “create a marketing strategy” was 1,406 units (b = 1,406; 95% CI = 0.496-3,987; *p*= 0.522), “intervention ” was 1,088 units (b = 1,088; 95% CI = 0.186- 6.356; *p*= 0.926); and " monitoring and evaluation" was 3,477 units (b = 3,477; 95% CI = 0.472-25,623; *p*= 0.221), respectively and (vi) “implementation” related to VCT intention of pregnant women of 0.000 units (b = 0.000; 95% CI = 0.000-0.000; *p*= 1,000) (Table 6).

In conclusion, the variable "conduct market research" has the most dominant relationship with the intention of pregnant women VCT compared to the other five variables. Overall, the logistic regression model in this study can describe the relationship between the six independent variables and the VCT intention variable of pregnant women by 31.2% (Nagelkerke R square= 0.312).

HIV testing is a cornerstone of HIV prevention, but it is difficult to increase its use, especially among hard-to-reach populations. There is growing evidence that a "test and treat" approach can significantly reduce the HIV epidemic in certain populations at higher risk of HIV infection (Montaner *et al*., 2010).

Large studies in Kenya show that rejection of taking HIV testing was associated with knowing that the testing was not mandatory, the relationship with the child's father was unstable, and not having discussed HIV testing with a partner before the ANC. Decisions about HIV testing are taken not only regarding pregnant women, but also their partner (Ujiji et al., 2011). Most men do not know the availability of HIV testing services for pregnant women, but in general, men support doing HIV testing for pregnant women (Zenebe

et al., 2016). Several social and structural barriers lead to less than optimal acceptance and rates of HIV testing. These including constraints in society, injustice, power imbalance, violence, marginalization, taboo, stigma and discrimination (UNAIDS, 2019b). Negative stigma does not only arise from the community, but also from health workers. Generally, pregnant women in health services with poor resources are less empowered and tend to refuse to comply with the advice of health professionals in antenatal care. Several studies on routine HIV testing have primarily focused on the tension between increasing the rate of testing and the potential for violation of ethical principles (Ujiji *et al*., 2011).

PMTCT programs must strengthen women's intentions through consent and information that HIV testing has positive consequences for them. However, women's right to choose not to have HIV testing should be emphasized in any attempt to scale up PMTCT programs (Mirkuzie *et al*., 2011). The elimination of childhood HIV infection depends on full use of PMTCT services (Rawizza *et al*., 2017).

According to Bandura behavior is defined as the outcome of interaction between the personal factors and environmental action. It also mentioned that "internal factors of personal nature in form of cognitive, affective and biological events, behaviors patterns and environmental influences operate as factors that are influencing each other"(Chichirez and PurcÄƒrea, 2018). Since the goal in changing people behavior is challenging, hence a proper personalized research is needed. Market research encompass “understanding of the target audience’s characteristics, attitudes, beliefs, values, behaviors, determinants, benefits and barriers to behavior change in order to create a strategy for social marketing programs” (CDC, 2010). VCT can affect behavior change through individualized counseling, acession of HIV/AIDS knowledge and awareness, and learning HIV status of certain individual (Fonner *et al*., 2014). Strategies focused on VCT access and availability to increase uptake, including: community mobilization for VCT, mass media campaigns, exciting SM, special promotions, for example, sponsoring outdoor events, increasing the number of VCT sites, increasing use of car services and outreach. All the strategic above can be affected by many factors according to the three levels in the health services delivery and utilisation framework,

videlicet, macro, meso, and microlevel (Mugisha, *et al*., 2011).

Community-based HIV prevention interventions are designed to increase HIV knowledge and reduce involvement in risky behavior (Ibrahim and Sidani, 2014). Interventions based on the principles of SM have been shown to have a positive impact on a variety of health-related behaviors, making them a promising approach to increasing HIV testing uptake. SM interventions are consumer-oriented and use a variety of different communication channels (including mass media or multi-media campaigns) to achieve behavior change. Evidence from research suggests that multimedia SM interventions can significantly increase HIV test uptake (Noestlinger, 2012). The meta-analysis study concluded that a multimedia social marketing campaign had a significant impact on increasing HIV test uptake [OR = 1.58, 95% CI = 1.40 - 1.77] [24]. Kotler and Lee (2011) study concluded that social marketing applications on HIV / AIDS improve public health (Kotler and Lee, 2011).

A research conducted in Ghana of 300 mothers who were interviewed, showed that lack of information, perceptions of privacy and confidentiality, waiting time, poor relationship with health staff and fear of being positive were factors that related with a lower intention in getting counseling about the HIV test (Kwapong, *et al*., 2014). In the other hand, some researchers on their study reported, that guidelines for counseling were not strictly adhered to. More importantly, arising from this study was the fact that program managers need to constantly receiving feedback from the patients in order to improve the running of the program (Asiyanbola, *et al*., 2016). HIV testing is not a simple behavioral domain, there are important differences in how people think about testing. Significant knowledge gaps remain. It is necessary to consolidate the individual and community health benefits of HIV testing interventions, in relation to the technological, psychosocial and sociocultural context of HIV testing. Despite growing evidence of the effectiveness of SM interventions to improve HIV testing, there is a need for well-designed, high-quality, robust and innovative evaluation, and process evaluation, to allow for better clarity in identifying SM interventions and the mass media to improve HIV testing (Ilmiyah, *et al*., 2018).

External supporting factors that influence the behavior of pregnant women in accessing or

not accessing VCT services include affordability of location and information, quality of services, infrastructure, and quality of health workers. Besides that, the social environment, family support and stigma also have a big influence (Kotler and Lee, 2011; Yenita, 2018). Low interest in using VCT service was related to an optimal SM strategy between product, price, place and promotion. Optimizing SM campaign as promotion can be reach by using variety of communication media. Emphasizing benefit of VCT through modifying campaign, good positioning statement and situation analysis, is founf to be usefull to minimize stigma barriers (Ilmiyah *et al*., 2018).

CONCLUSION

The results showed that the relationship between CDCynergy's social marketing model in the dimension of "conduct market research" with the intention and behavior of VCT of pregnant women was dominant compare to the other dimensions. Optimizing market research before developing plans and strategies needs to be done

considering that it has a strong influence on increasing VCT coverage for pregnant women. The government or stakeholders support to optimize market research is needed, especially in order to increase the engagement of pregnant women to attend VCT. Further research is needed to analyze how the relationship between CDCynergy's social marketing model and VCT intention and behavior of pregnant women through mixed methods research, both quantitative research and qualitative research.

The main limitation of this study was the use of a cross-sectional design and sampling method during the Covid-19 pandemic era. Regardless of its limitations, this study provides information on the importance of CDCynergy's social marketing model for strengthening the intention and behavior of pregnant women VCT.

CONFLICT OF INTEREST

The authors confirm that this article content has no conflict of interest.

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