

The Effect of Internal and External Factors on Preventive Reproductive Health Behaviors in Adolescents, in Banjarmasin, Kalimantan

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ABSTRACT

Background: Many adolescents had engaged in unhealthy sexual behavior that can result in unintended health outcomes. In theory, adolescent sexual behavior is influenced by a complex set of interactions between biology, genetics, individual perception, personality characteristics, and sociocultural norms and values. This study aimed to determine the influence of internal and external factors on preventive reproductive health behavior in adolescents, in Banjarmasin, Kalimantan, using Health Belief Model.

Subjects and Method: This was an analytic observational study with the cross sectional design. The study was conducted at 10 senior high schools in Banjarmasin, Kalimantan. A total sample of 200 grade XI students was selected for this study by proportional stratified random sampling. The dependent variable was preventive reproductive health behavior. The independent variables were perceived susceptibility, perceived seriousness, perceived threat, perceived benefit, perceived barrier, self-efficacy, the role of parents, peer role, and information access. The data were collected by questionnaire and analyzed by path analysis.

Results: The strong role of parents ($b=0.05$; $SE=0.01$; $p<0.001$), perceived benefit ($b=0.06$; $SE=0.02$; $p=0.006$), perceived threat ($b=0.10$; $SE=0.02$; $p<0.001$), self-efficacy ($b=0.13$; $SE=0.01$; $p<0.001$), and peer role ($b=0.06$; $SE=0.01$; $p<0.001$) positively affected preventive reproductive health behavior. Perceived barrier ($b=-0.03$; $SE=0.01$; $p=0.026$) negatively affected preventive reproductive health behavior. Perceived threat increased with increasing role of parents ($b=0.05$; $SE=0.02$; $p=0.059$), perceived susceptibility ($b=0.21$; $SE=0.05$; $p<0.001$), perceived seriousness ($b=0.10$; $SE=0.04$; $p=0.015$), and self efficacy ($b=0.13$; $SE=0.06$; $p=0.040$). Perceived barrier decreased with improving access of information ($b=-0.16$; $SE=0.05$; $p=0.004$). Perceived benefit increased with improving access of information ($b=0.09$; $SE=0.04$; $p=0.030$) and perceived susceptibility ($b=0.20$; $SE=0.06$; $p=0.002$). Perceived susceptibility ($b=0.13$; $SE=0.04$; $p=0.004$), perceived seriousness ($b=0.10$; $SE=0.05$; $p=0.057$), and self efficacy ($b=0.09$; $SE=0.03$; $p=0.006$) increased with access of information. Self efficacy increased with stronger role of parents ($b=0.06$; $SE=0.02$; $p=0.018$), and peer role ($b=0.07$; $SE=0.04$; $p=0.062$).

Conclusion: Preventive reproductive health behavior among adolescents is affected by the role of parents, perceived of threat, self efficacy, peer role, perceived of benefit, and perceived of barrier. Health belief model can predict health preventive behavior.

Keywords: Preventive behavior, reproductive health, health belief model, internal and external factors

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BACKGROUND

The adolescent period is known as the critical phase in life at risk for various

problems, includes free sex. Based on WHO (2015), which reported an increase in delivery cases among adolescent girls

aged 15-19 years to 49 births per 1000 with 11% experienced complications in pregnancy and childbirth. As many as 4.4 million adolescents in developing countries have abortions. BKKBN (2012) noted cases of teenage pregnancy out of marriage as many as 48.1% and 800,000 teenagers have an abortion.

Based on Indonesian Basic Health Survey (2012) reported that there are 220 cases of pregnant teenagers out of marriage, 325 adolescents girls give birth, and 30 cases of adolescents having reproductive tract infections, in Banjarmasin, Kalimantan (BKKBN Provinsi Kalimantan Selatan, 2013)

Sexual activities conducted by adolescents have a negative impact on themselves, family, and social environment, so the need for preventive behavior as a protection for the future life of adolescents (WHO cit Mmari *et al.*, 2013).

Sulaeman (2016) stated that behavior is formed based on internal and external factors. Mmari *et al.* (2013) mentioned the protective factor against sexual risk behavior in adolescents not only focusing on the individual itself, but the need for the involvement of others and the environment such as government, the role of family, peers, and access to information.

Efforts to strengthen adolescent reproductive health prevention behavior theoretically can be explained through Health Belief Model Theory (HBM) by Hochbaum, Rosenstock, and Kegels (Sulaeman, 2016). This model explains health preventive behavior influenced by internal factors such as perceived of susceptibility, perceived seriousness, perceived benefits, perceived barriers, and self-efficacy. External factors (cues of action) such as access to information, parent roles, and peer support.

Based on the above explanation, the success of efforts to strengthen preventive behavior of adolescent reproductive health is needed by the involvement of guidance and support from all parties. This stud aimed to analyze the influence of internal and external factors on preventive behavior of reproductive health in adolescent, in Banjarmasin, Kalimantan, using Health Belief Model.

SUBJECTS AND METHOD

1. Study design

This was an analytic and observational study with a cross sectional design. The study was conducted at 10 senior high schools in Banjarmasin, Kalimantan, Indonesia, in November 2017.

2. Population and Sample

A total sample of 200 grade XI students was selected for this study by proportional stratified random sampling.

3. Variable of the study

The dependent variable was preventive reproductive health behavior. The independent variables were perceived susceptibility, perceived seriousness, perceived threat, perceived benefit, perceived barrier, self-efficacy, the role of parents, peer role, and information access.

4. Operasional definition of variable

Perceived susceptibility was defined as an understanding of adolescent about vulnerability condition of reproductive organ exposed to sexual disease caused by viruses, bacteria, and fungi. The data was measured by questionnaire. The measurement scale was continuous.

Perceived seriousness was defined as the understanding of adolescents on the severity/seriousness of seeking health reproduction in terms of prevention of sexual transmitter transmission.

Perceived threat was defined as adolescent consciousness about reproductive health threats including premarital

sexual behavior impact and sexual disease transmission. The measurement scale was continuous.

Perceived benefit was defined as the adolescent's understanding of the benefits of maintaining reproductive health in the prevention of sexual disease transmission. The measurement scale was continuous.

Perceived barrier was defined as the adolescent's understanding of the barriers when maintaining reproductive health in the prevention of sexual disease transmission. The measurement scale was continuous.

Self-efficacy was defined as the ability of adolescents in maintaining reproductive health and avoiding promiscuity to prevent transmission of sexual diseases. The measurement scale was continuous.

Parent role was defined as parent involvement (father and mother) in communicating with adolescents includes supervision, attention, and advice on reproductive health information. The measurement scale was continuous.

Peer support was defined as the positive influence of peers in maintaining adolescent reproductive health and preventing the transmission of sexual diseases. The measurement scale was continuous.

Information access was defined as the availability of information obtained by adolescents on reproductive health through printed media, electronic media, or health workers. The measurement scale was continuous.

5. Study instrument

The data of preventive behaviour of reproductive health was measured by Lie Minnesota Multiphasic Personality (L-

MMPI) scale. The other data was collected by questionnaire.

6. Data analysis

The categorical data of the study subject's characteristic were described in frequency (n) and percentage (%). Univariate analysis was described in mean, standard deviation (SD), minimum and maximum value. Bivariate analysis was analyzed by Pearson correlation test.

Multivariate analysis was analyzed using path analysis by IBM SPSS AMOS 22 version, following steps:

- a. Model specification
- b. Model identification
- c. Model fit
- d. Parameter estimation
- e. Model re-specification

7. Research ethics approval

The research ethics clearance for this study was obtained from the Research Committee at Dr. Moewardi Hospital. Research ethics included informed consent, anonymity, and confidentiality.

RESULTS

1. Characteristic of the study subjects

Table 1 showed that most of the study subjects were female (104 students, 52.0%), class of natural sciences (101 students, 50.0%), and Muslims (113 students, 56.5%).

2. Bivariate analysis

The bivariate analysis on the Table 2 showed that perceived susceptibility, perceived seriousness, perceived threat, perceived benefit, self-efficacy, parental role, and information access were positively affected with preventive behaviour of reproduction health. Perceived barrier was negatively affected with preventive reproduction health behavior.

Table 1. Characteristic of the study subjects

No.	Characteristics	N	%
1.	Age		
	16 years	64	32.0
	17 years	78	39.0
	18 years	58	29.0
2.	Sex		
	Male	96	48.0
	Female	104	52.0
3.	Study major		
	Natural sciences	101	50.5
	Social sciences	99	49.5
4.	Religion		
	Muslim	113	56.5
	Catholic/ Christian	30	15.0
	Christian Protestant	29	14.5
	Budha	28	14.0
5.	Parental education		
	Elementary school	16	8.0
	Junior high school	49	24.5
	Senior high school	88	44.0

Table 2. The results of bivariate analysis

Independent variable	r	p
Perceived susceptibility	0.14	0.045
Perceived seriousness	0.18	0.010
Perceived threat	0.32	<0.001
Perceived benefit	0.20	0.003
Perceived barrier	- 0.13	0.055
Self efficacy	0.39	<0.001
Parental role	0.39	<0.001
Peer role	0.35	<0.001
Information access	0.26	<0.001

3. Path Analysis

a. Model specification

Table 3 showed that preventive behaviour of reproductive health increased with parental role ($b = 0.05$, $SE = 0.01$, $p < 0.001$), perceived benefit ($b = 0.06$, $SE = 0.02$, $p = 0.006$), perceived threat ($b = 0.02$, $SE = 0.02$, $p < 0.001$), self-efficacy ($b = 0.13$, $SE = 0.02$, $p < 0.001$), and peer role ($b = 0.06$, $SE = 0.01$, $p < 0.001$). Preventive reproductive health behavior decreased with perceived barrier ($b = -0.03$, $SE = 0.01$, $p = 0.026$).

Perceived threat increased with self-efficacy ($b = 0.13$, $SE = 0.06$, $p = 0.040$), perceived susceptibility ($b = 0.21$, $SE = 0.05$, $p < 0.001$), perceived seriousness ($b =$

0.10 , $SE = 0.04$, $p = 0.015$), and parental role ($b = 0.05$, $SE = 0.02$, $p = 0.059$),

Perceived threat decreased with higher information access ($b = 0.16$, $SE = 0.05$, $p = 0.004$).

Perceived benefit increased with perceived benefit ($b = 0.20$, $SE = 0.06$, $p = 0.002$), higher information access ($b = 0.09$, $SE = 0.04$, $p = 0.030$).

Perceived susceptibility ($b = 0.13$, $SE = 0.04$, $p = 0.004$) and perceived seriousness ($b = 0.10$, $SE = 0.05$, $p = 0.057$) increased with higher information access.

Self-efficacy increased with higher information access ($b = 0.09$, $SE = 0.03$, $p = 0.006$), stronger parental role ($b = 0.06$, $SE = 0.02$, $p = 0.018$), and peer role ($b = 0.07$, $SE = 0.04$, $p = 0.062$).

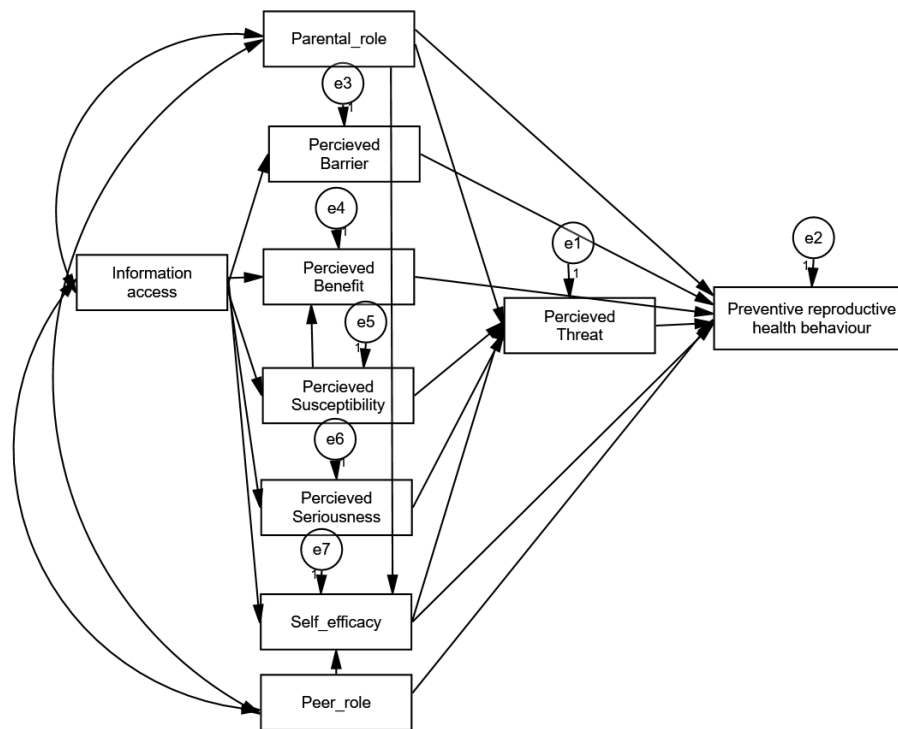


Figure 1 Model fit and parameter estimation

Table 3. Path analysis on the effect of the influence of internal and external factors on preventive reproductive health behavior in adolescents

Dependent variable	Independent variable	b*	SE	p	β^{**}
Direct effect					
Preventive reproductive health behaviour	← The role of parents	0.05	0.01	< 0.001	4.37
Preventive reproductive health behaviour	← Perceived barrier	- 0.03	0.01	0.026	- 2.23
Preventive reproductive health behaviour	← Perceived benefit	0.06	0.02	0.006	2.75
Preventive reproductive health behaviour	← Perceived threat	0.10	0.02	< 0.001	3.54
Preventive reproductive health behaviour	← Self efficacy	0.13	0.02	< 0.001	4.60
Preventive reproductive health behaviour	← Peer role	0.06	0.01	< 0.001	3.76
Indirect effect					
Perceived threat	← Parental role	0.05	0.02	0.059	1.88
Perceived threat	← Perceived susceptibility	0.21	0.05	< 0.001	4.19
Perceived threat	← Perceived seriousness	0.10	0.04	0.015	2.42
Perceived threat	← Self efficacy	0.13	0.06	0.040	2.05
Perceived barrier	← Access of information	-0.16	0.05	0.004	-2.87
Perceived benefit	← Access of information	0.09	0.04	0.030	2.16
Perceived benefit	← Perceived susceptibility	0.20	0.06	0.002	3.17
Perceived susceptibility	← Access of information	0.13	0.04	0.004	2.84
Perceived seriousness	← Access of information	0.10	0.05	0.057	1.90
Self efficacy	← Access of information	0.09	0.03	0.006	2.72
Self efficacy	← Parental role	0.06	0.02	0.018	2.36
Self efficacy	← Peer role	0.07	0.04	0.062	1.86

N observation = 200

Model Fit:

CMIN = 41.29 p = 0.015 (≥ 0.05) GFI = 0.96 NFI = 0.83 CFI= 0.91

RMSEA= 0.06 (<0.08)

b* = Unstandarized path coefficient

β^{**} = Standarized path coefficient

DISCUSSION

1. The association between parental role and preventive reproductive health behavior in adolescents

This study showed that parental role was directly associated with preventive behaviour of reproductive health. Parental role was indirectly associated with preventive behaviour of reproductive health through self-efficacy and perceived threat.

The role of parents is very important in the life of adolescents, namely educating, directing, supervising the behavior of everyday teenagers (Parke and Buriel cit Santrock, 2007). In the stage of adolescent development required the communication process and supervision of parents to the behavior of adolescent reproductive health (BKKBN, 2013)

Sidze and Defo (2013) reported that the higher the quality of adolescent communication with parents the less likely the adolescents having sex with their peers. Parental exposition of perceived threat including the social value, culture, and norm, is a guide for adolescents to control sexual behavior (Bleakley *et al.*, 2011 in Harris, 2016). Markazi and Badrigargari (2011) showed that parental role and parenting pattern were associated with self-efficacy in girl adolescent.

2. The association between perceived barrier and preventive reproductive health behavior in adolescents

The results of path analysis showed that perceived barrier was negatively associated with preventive reproductive health behavior in adolescents. Perceived barrier refers to an individual's assessment of the perceived barriers to behavior change (Janz and Backer 1984 in Sulaeman, 2016). Adolescents who are able to overcome obstacles and barriers to healthy

behavior have good preventative health reproductive behavior.

This finding is consistent with Marmarà *et al.* (2017) that construction of health belief theory indicates woman aged 50-60 years do not want to do breast examination for fear of cancer diagnosed.

3. The association between perceived benefit and preventive reproductive health behavior in adolescents

This study showed that perceived benefit was associated with preventive reproductive health behavior. Another construct of the health belief model is the perceived benefit of healthy behavior. Perceived benefit refers to the individual assessment of efficacy to reduce the risk of disease (Resenstock 1974 in Sulaeman, 2016).

Teenagers with high confidence in the future benefit of preventive behavior will try to do activities that maintain reproductive health, for example, clean healthy life, clean genital hygiene, and avoidance of promiscuous sexual behavior. Didarloo *et al.* (2017) also stated that early breast examination in girl adolescent provides benefits in breast cancer detection.

4. The association between perceived threat and preventive reproductive health behavior in adolescents

The results of path analysis showed that perceived threat positively associated with preventive reproductive health behavior.

Perceived threat focus on the individual's perception of vulnerability and the seriousness or severity of a disease. If adolescents feel threatened against the risk of reproductive diseases, then adolescents will perform preventive behaviors against reproductive infection. Assessment of perceived threats is based on the

circumstances that enable a person to transmit the disease.

Noegroho et al., (2015) stated that preventive behaviour of reproductive health in adolescent increased with perceived threat.

5. The association between self efficacy and preventive reproductive health behavior in adolescents

The result of path analysis showed that self-efficacy was directly associated with preventive reproduction health behaviour in adolescents. In addition, self-efficacy showed an indirect positive effect through the perceived threat on preventive reproductive health behavior.

Self-efficacy is a self-confidence of an individual's ability to well perform a certain action so that he tried to show the best thing he could do in order to achieve the maximum result (Bandura, 1977 in Sulaeman, 2016). Self-efficacy plays an important role in the daily life of adolescents, in this case, the preventive reproductive health behavior.

Another study by Wheeler's (2010) found that high self-efficacy in adolescent girls was correlated with decision making for non-sexual intercourse. In the health belief model, the high perception of health threat will increase the self-efficacy of adolescents, in this case, adolescents being able to manage the aspects of his efficacy.

6. The association between peer role and preventive of reproductive health behavior in adolescents

The results of path analysis showed that peer role was directly and positively associated with preventive reproductive health behavior in adolescents. Peer role was associated with preventive behavior of reproductive health through self efficacy.

Peers are a group of people of approximately the same age as themselves (Santrock, 2007). According to Stanhope

and Lancaster (2004) in Yusuf (2014) peers have an important role in the development of personality and identity. Cattellino et al. (2014) explained that associating with good moral friends can reduce the influence of deviant behavior in adolescents. The good association provides a positive effect on health by avoiding sexual behavior in adolescents.

The potential development process of adolescents required high self-efficacy and supported the role of peers. The results showed the relationship between peer social support and self-efficacy of adolescents. Adolescents with high peer support have a high efficacy for health status (Thompson *et al.*, 2016).

7. The association between perceived susceptibility with preventive reproductive health behavior in adolescents

Path analysis results showed that there was an indirect positive influence of perceived vulnerability on reproductive health preventive behavior through assessment of health threat and perceived benefit.

Perceived susceptibility is a part of the theoretical health belief model. Resenstock (1974) in Sulaeman (2016) explains that a person with a high susceptibility perception believes that he or she is at high risk for disease if it is unhealthy.

8. The association between perceived seriousness and preventive reproductive health behavior in adolescents

The results of path analysis showed that perceived seriousness was positively associated with preventive behaviour of reproductive health through perceived of threat.

Perceived seriousness were a form of assessment of the severity of health problems and its potential consequences

(Janz *et al.*, 1984; Glanz cit Sulaeman, 2016). Didarloo *et al.*, (2017) stated that perceptions of high disease severity affect the awareness of adolescent girls to perform breast self-examination.

9. The association between information access and preventive reproductive health behavior in adolescents

The results of path analysis showed that information access was associated with preventive reproduction health behaviour through perceived susceptibility, perceived seriousness, perceived benefit, and self-efficacy. Access of health service was associated with preventive reproductive health behaviour through perceived barrier.

Katz *et al.*, in Ruben (2013) stated that adolescents' needs for reproductive health information can be met by accessing the media. Chàvez *et al.*, (2013) stated that the use of digital technology positively associated with the prevention of sexually transmitted disease and HIV in the adolescent.

This study concludes that internal and external factors are associated with preventive behaviour of reproductive. This finding is consistent with health belief model on predicting preventive health behavior.

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