

## Relationship of Adolescents' Characteristics, Smartphone Uses and Premarital Sexual Behavior in High School Students

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### Abstract

Adolescents' problematic behavior is in relation to premarital sexual behavior. Adolescents' premarital sexual behavior can cause abortion, unwanted pregnancy, death, potential HIV/AIDS infection as well as moral decency crime in Gowa District. Factors of premarital sexual behavior among adolescents include gender, origin of school, status and frequency of dating, religious norms, household norms, knowledge and the uses of smartphone. This research aims at analyzing adolescents' characteristics of and the uses of smartphone in relation with premarital sexual behavior among high school students in Gowa District, South Sulawesi Province. It was the correlational design quantitative research. Total samples amounted to 500 high school students in Gowa District, South Sulawesi Province after these were selected with the cluster sampling. The questionnaire used in this research consisted of religious norms (the reliability test results of 0.791, R-value of 0.397–0.678), household norms (the reliability test results of 0.856, R-value of 0.430–0.893), knowledge (the reliability test results of 0.738, R-value of 0.362–0.514), and premarital sexual behavior (the reliability test results of 0.844, R-value of 0.483–0.763), smartphone use with the calculated R value > r table (0.514) the reliability indicates the alpha cronbach's value > 0.60. The analyzed data use Chi square and logistic regression. The research results show that the premarital sexual behavior has total risk value of 66.0% and the unrisky value of 34.0%. It relates to some adolescents' characteristics among others frequency of dating ( $p=0.000$ ), status of dating ( $p=0.000$ ), religious norms ( $p=0.000$ ), household norms ( $p=0.000$ ), knowledge ( $p=0.000$ ), and smartphone use ( $p=0.000$ ), the variables of adolescents' characteristics i.e. gender and the origin of school do not have significant relationship ( $p>0.05$ ). The smartphone use is the most significant factor with the premarital sexual behavior (OR=3.583). The smartphone use is the most significant factor with premarital sexual behavior, and therefore, it indicates that teachers at school and parents at home should who carry out the control and adolescent education in the smartphone use are important factors to be upgraded. The school based health education program can avoid the risky premarital sexual behavior, and the program can focus on the control of smartphone use and skill training among adolescents.

**Keywords :**High school students, premarital sexual behavior, smartphone use.

## Introduction

Adolescents are the next generation of a nation who has potential valuable if they have optimal quality appropriate to their growth and development (BKKBN, 2012). If they have problems, their growth and development can be disturbed (Alender, Rector & Warner, 2010).

Adolescent problems frequently occur in relation to physical, psychological and social changes (Potter & Perry, 2010; Sarwono, 2011; Ali & Asrori, 2012; Stuart, 2013). The physical change in adolescents occurs during puberty after an adolescent boy begins to like the opposite gender so that he frequently undergoes a wet dream. On the other hand, an adolescent girl undergoes menstruation. Moreover, the psychological change in adolescents make them to take risks when they do something, face challenges and have a great sense of willing to know. Therefore, adolescents become the risky group with health problems. Furthermore, the social change in adolescents occur when they interact with their friends at school, out of their households and social environment, and therefore, they become more risky to do negative behavior which can cause health problems in society (Vingilis, Wade, & Seeley, 2002; Ali & Asrori, 2012).

Adolescent problems include among others smoking, improper diet, lack of physical activities, drug and alcohol misuses and premarital sexual behavior. Moreover, a health problem that frequently and mostly occurs in adolescents is premarital sexual behavior (BKKBN, 2012; Stuart, 2013).

Premarital sexual behavior is a sexual behavior conducted before marriage. Many researches show that the premarital sexual behavior is relatively high among adolescents. The research of Chiao, Yi, & Ksobiech, (2012) di Taiwan with the research object of students showed that premarital sexual behavior significantly occurred to adolescents (16%) who did the premarital sexual relationship. The research had the sample of 49% of the adolescent boys and 51% of the adolescent girls with the age group of 20 years old. Moreover, the research of Zhang, Gao, Sun, Lou, et al (2016) among adolescents in Shanghai, Taipei, and Hanoi

showed that social economic status had closed relations with the premarital sexual relationship that occurred 3.64 times for the adolescents in Hanoi. Moreover, the research of Mahyar (2011) related to adolescents of 13 STIKES (College of Health Sciences) in Jakarta Timur and it showed that there were 65 students (29.5%) who did the premarital sexual behavior from kissing lips and mouth, petting and sexual relationship or intercourse. Finally, it was found in the research of Center for Adolescents Information and Service (PILAR) PKBI Central Java Province in the period of June-July 2006 that of 500 respondents in Semarang there were 111 people (22%) who had done petting and 31 (6.2%) who had carried out intercourse (Dirjen P2PL Kemenkes RI, 2011).

The premarital sexual behavior has negative effects psychologically, socially and physiologically. The psychological effects relate to a sense of angry, fear, worry, depression, inferiority, guilty feeling and transgression. Moreover, the social effects that an adolescent will suffer include expelled feeling and drop out. Specifically an adolescent girl undergoes the changing role as a mother. Finally, the physiological effects cover unintended pregnancy, abortion and sexual infection diseases in adolescents (Potter & Perry, 2010).

Some researches confirm that HIV and other sexual infection diseases can occur due to the premarital sexual behavior (South & Trent, 2010; Asaolu, Gunn, Center, dan Koss, et al 2016). With total sample of 380 adolescents with the age group of 18–24 years, Azinar's research (2013) found that 12.1% adolescents had the risky premarital sexual behavior with unintended pregnancy (KTD). The premarital sexual behavior contributes adolescent health problems every year. There are 210 million adolescent girls who suffer unintended pregnancy throughout the world, and of the number 46 million adolescents choose abortion. Due to the abortion, 70,000 adolescents died and four million adolescents experienced pain and disability. In Southeast Asian countries, there are 4.2 million abortion per year. Of the number, it is estimated that 750,000–1,500,000 abortion cases occur in Indonesia. Due to the abortion, 2,500 adolescent girls died (WHO, 2011). From

the interview results, the premarital sexual behavior was found two adolescent girls who chose abortion in Makassar for unintended pregnancy (Ayatollah, 2014). Moreover, many adolescent girls are infected with HIV/AIDS in South Sulawesi, and the number rises every year. It can be shown from the research of Ramadhani, Aminuddin, & Bahar (2013). The research showed that there were 22 districts/cities (91.7%) in South Sulawesi Province including Gowa District under the endemic HIV/AIDS. There were 7,147 HIV/AIDS cases in South Sulawesi Province until September 2013. Average HIV/AIDS suffer includes the productive age with the status of school-age children and workers. There were 63 HIV/AIDS cases in Gowa District (Badwi, Gafur & Munadhir, 2016). Based on the above research results, it can be known that the premarital sexual behavior causes abortion, unintended pregnancy, death, the increased risk of HIV/AIDS incidence as well as sexual crime to adolescents (Tueka, 2014).

The factors that influence the premarital sexual behavior are among others gender, religious norms and household norms (Browning, Leventhal, & Brooks, 2004). Norviatin (2014) states that the status and frequency of dating in adolescents (Nursal, 2008) can influence the premarital sexual behavior in adolescents. Various researches show that the origin of school influences the risky sexual behavior in adolescents (Ryu, et al, 2007; Amoateng, Kalule, & Arkaah 2014; Mujayapura, 2014). Mujayapura's research showed that respondents from private schools (60%) had higher risk of sexual behavior than those from state school. Knowledge and attitude of adolescents significantly distribute to the increase of premarital sexual behavior in adolescents (Tang, et al 2011; Yip, et al, 2013; Norviatin, 2014). From the above researches, it indicates that the premarital sexual behavior in adolescents has close relation to adolescents' characteristics, and these include gender, the origin of school, status and frequency of dating, religious norms, household norms, knowledge and attitude. However, there is any limitation from the previous researches concerning the premarital sexual behavior in adolescents, i.e. generalization difficulty to be made from the

previous researches for cultural development in other regions (Ryu, Kim, & Kwon, 2007; Oladipupo & Viatonu, 2014).

Wang & Davidson (2006) state that the premarital sexual behavior can occur in relation to pornography. Adolescents can access pornography through smartphone easily. Based on the research of Mariani & Bachtiar (2010) with total sample of 1,415 respondents from 36 classes in Mataram, it showed that 91% of the students had been exposed to pornography through smartphone. Pornography has impact and it stimulates adolescents to make sexual activities (Hartati, 2016). Moreover, the adolescents who are exposed to pornography through smartphone have a 4.3 times greater likelihood to make the premarital sexual behavior if compared to those who are not exposed to pornographic media (Ruhendi, 2013). The research results get support from Azinar's research (2013). With total sample of 380 students, it showed that 12.1% of the students who were exposed to pornography did premarital sexual behavior and it had risk of unintended pregnancy (KTD).

From some researches in South Africa, Chicago, Hong Kong, Taiwan, Shanghai, Taipei, Hanoi and Indonesia, it indicates some factors in relation to premarital sexual behavior. However, the factors has close relations with culture that develops in the related regions so that it is difficult to make generalization from the previous research results in relation to culture that develops in other regions (Ryu, Kim, & Kwon, 2007; Oladipupo & Viatonu, 2014). To know further about premarital sexual behavior in adolescents in Gowa District, it will consider culture in Makassar tribe in Gowa District such as adolescents' behavior with the status of dating who dare to live together and get married in religious way through the traditional way of anyyala (elopement) with the reason that they do not get the content of their two parents or other reason such as premarital pregnancy (Saleh, 2014).

Finally, there is no publication of a research on premarital sexual behavior in Gowa District so that it becomes consideration to see what factors in relation to the incidence of premarital sexual behavior with the title of relationship on adolescents' characteristics

and smartphone use and premarital sexual behavior in high schools in Gowa District very important to be studied.

## **Method**

The research design in this study uses cross sectional design. The case group in this research is adolescents with the status of students who go to school at high schools in Gowa District. The research was conducted in Gowa District located in the South of South Sulawesi Province which borders with seven (7) districts/cities, i.e. in the north it borders with Makassar City. Total territory of Gowa District reaches 1,883.33 square kilometers or the same as 3.01% of total land area in South Sulawesi Province. Gowa District's territory is divided into 18 sub-districts and 167 and 726 villages/administrative villages. Total population in Gowa District amounts to 691,309 people. Population in the research covers high school students in the territory of Gowa District, South Sulawesi. Total population reaches 16,466 students from 92 high schools. The sample from the population was decided with probability cluster sampling. The sampling was carried out with the division of Gowa District into two regions, i.e. low and high area. Moreover, the ninety two high schools were randomized in a kind of drawing straws. As a result, each population member had tag number at first appropriate to total population of twenty two high schools. Moreover, the researchers selected 15 high schools. Total number of samples could be plotted with the consideration of sample measurement suggested by Roscoe in (Sugiyono, 2014), i.e. the feasible sample in a research with total number of 30–500 respondents. Total students in each school was directly sent a letter from UPT P2T BKPM South Sulawesi Province. Finally, the inclusive criteria were students who have smartphone.

There are two instruments in this research. The first instrument in this research referred to Mujayapura's research (2014) on the relationships of adolescents' characteristics and the role of peer group, and premarital sexual behavior in high school students (SMA and SMK) in Semper Timur Village

Administrative, Jakarta Utara. The valid instrument from Mujayapura's research consisted of gender, the status and frequency of dating, the origin of school, religious norms (the reliability test results of 0.791, R value (0.397–0.678), household norms (the reliability test results of 0.856, R value (0.430–0.893), knowledge (the reliability test results of 0.738, R value of 0.362–0.514), and premarital sexual behavior (the reliability test results of 0.844, R value of 0.483–0.763) that had been tested in high school students in Jakarta Province. Moreover, the reference used in the instrument design was among others from Tomey, (2006), Theory of Planned Behavior (TPB) used to explain the relationship of beliefs, attitude, intention and a behavior (Ajzen, 2012). The instrument of smartphone use based on the reference, i.e. Uses and Gratification Theories from Bungin, (2006); Katz, Gurevitch, and Hazz, (2000); Wang & Davidson, (2006); Widaningsih, (2008); Tartari, (2015); Mariani & Bachtiar, (2010); Currie, (2013); Ruhyadi, (2013); Tadesse and Yakob, (2015); Hartati, (2016) that contained 18 points on perception and behavior in the use of smartphone consisting of negative and positive statements with the indicators of using applications on smartphone. The research's instrument content validity test were conducted by two scholars in this field, i.e. the First Academic (Pembimbing I) Adviser and Second Academic Adviser as the efforts to get the instrument content validity. The researchers had carried out validity and reliability testing before the instruments were used as the measurement tool in the research. Face validity and test validity was conducted with Product Moment Pearson's Test and reliability used Alpha Cronbach Test in 30 respondents in SMK 1 Sungguminasa. The respondents did not include the research sample. The instrument validity test results indicated Alpha Cronbach's value > 0.60, and it meant that all research instruments were stated reliable (Anastasia and Urbina, 1997 in Dharma, 2011). Finally, the data of Chi Square Test were analyzed with multivariate logistic regression for the sample phases.

**Results**

**Adolescents' Characteristics, smartphone use and premarital sexual behavior**

The respondents' characteristics studied in the research consist of gender, frequency and status of dating, religious norms, household norms and knowledge. These are presented in the tables of frequency and percentage. The distribution of adolescents' characteristics, smartphone use and premarital sexual behavior can be shown in the following table clearly.

Table 1 indicates that most of the respondents come from private schools (65.8%), female (53.4%), their dating is more than one (77.2%), 58.8% of the respondents remain have the existing status of dating right now. Based on the religious norms, 59.8% of the respondents admit to have low devout, 51.4% of the respondents are untight in the implementaton of household norms. Based on the smartphone use, 61.0% of the respondents

uses smartphone with the consideration of duration, applications and utilization.

**Relationships of adolescents' characteristics, smartphone use and premarital sexual behavior**

The bivariate analysis in this research describes the relationship between dependent variable, i.e. premarital sexual behavior and the independent variables in this research, i.e. adolescents' characteristics and smartphone use.

Based on bivariate correlation analysis results in Table 2, it indicates that there is significant relationship between premarital sexual behavior and the frequency of dating (p value0.000), status of dating (p value0.000), religious norms (p value0.000), household norms (p value 0.000), knowledge (p value 0.000), and smartphone use (p value0.000). Moreover, the characteristic variables that consist of gender and the origin of school do not have significant relationship (p value > 0.05).

**Table 1 Frequency Distribution and Percentage of Adolescents' Characteristics, Smartphone Use and Premarital Sexual Behavior (N=500)**

Variables	Categories	f	%
Gender	Male	233	46.6
	female	267	53.4
Origin of School	State school	171	34.2
	Private school	329	65.8
Frequency of boyfriend change	One	114	22.8
	More than one	386	77.2
Status of dating	No	206	41.2
	yes	294	58.8
Religious norms	Devout	201	40.2
	Undevout	299	59.8
Household norms	Tight	243	48.6
	Untight	257	51.4
Smartphone use	No	195	39.0
	Yes	305	61.0
Knowledge	Low	398	79.6
	High	102	20.4
Premarital sexual behavior	Risky	330	66.0
	Unrisky	170	34.0

**Table 2 Relationship of Adolescents' Characteristics, Smartphone Use and Premarital Sexual Behavior (N=500)**

Variables	Risky		Unrisky		p Value
	f	%	f	%	
Gender					
Men	150	30.0	83	16.6	0.474
Women	180	36.0	87	17.4	
Origin of School					
State School	103	20.6	68	13.6	0.059
Private School	227	45.4	102	20.4	
Frequency of Boyfriend Change					
One	59	11.8	55	11.0	0.000
More than one	271	54.2	115	23.0	
Status of dating					
No	67	13.4	139	27.8	0.000
Yes	263	52.6	31	6.2	
Religious Norms					
Devout	92	18.4	109	21.8	0.000
Undevout	238	47.6	61	12.2	
Household Norms					
Tight	126	25.2	117	23.4	0.000
Untight	204	40.8	53	10.6	
Knowledge					
Low	311	62.2	87	17.4	0.000
High	19	3.8	83	16.6	
Smartphone use					
No	100	20.0	95	19.0	0.000
yes	230	46.0	75	15.0	

**Multivariate analysis to the relationship between adolescents' characteristics, smartphone use and premarital sexual behavior**

The multivariate analysis comes from the development from bivariate analysis. In this research, the statistic test used in this study includes double logistic regression statistical

test.

Based on the bivariate correlation analysis results to be analyzed with multivariate methods in Table 4, it indicates that the variables that meet requirements for the multivariate analysis consist of frequency of boyfriend change, status of dating, religious norms, household norms, knowledge, attitude

**Table 3 Selection Results of Bivariate Analysis To Be Analyzed in Multivariate Analysis**

No	Variables	p Value
1	Frequency of Boyfriend change	0.000
2	Status of Dating	0.000
3	Religious Norms	0.000
4	Household Norms	0.000
5	Knowledge	0.000
6	Smartphone Use	0.000

**Table 4 Multivariate Analysis Relationship Results of Frequency of Boyfriend Change, Status of Dating, Religious Norms, Household Norms, Knowledge, Attitude and Smartphone Use and Premarital Sexual Behavior**

Variables	Koef $\beta$	SE (B)	p value	OR (minimal-maximal)
Frequency of Boyfriend Change	-1.487	0.449	0.001	0.226 (0.94 - 0.545)
Status of Dating	1.149	0.519	0.027	3.155 (1.141 – 8.720)
Religious Norms	-1.203	0.344	0.000	0.300 (0.153 – 0.589)
Household Norms	-.797	0.359	0.026	0.451 (0.223 - 0.910)
Knowledge	-3.724	0.547	0.000	0.024 (0.08 – 0.070)
Smartphone Use	1.276	0.508	0.012	3.583 (1.324 – 9.695)

\* POR value calculated on the basis of logistic regression test

and smartphone use.

Based on the multivariate analysis results from Table 4, it indicates that smartphone use OR 3.583 (1.324–9.695) is the most dominant factor towards premarital sexual behavior, the other factors consecutively include the status of dating OR 3.155(1.141–8.720), household norms OR 0.451 (0.223–0.910), religious norms OR 0.300 (0.153–0.589), frequency of boyfriend change OR 0.226 (0.94–0.545), knowledge OR 0.024 (0.08–0.070).

## Discussion

### **Analysis to the relationship of adolescents' characteristics (gender, origin of school, frequency of boyfriend change, status of dating, religious norms, household norms and knowledge) and premarital sexual behavior**

Adolescents are the next generation of a nation who have great potency if they have optimal quality appropriate to their growth and development. Adolescent problems frequently relate to changes in relation to physical, psychological and social change. The frequent and great problem that occurs among adolescents is premarital sexual behavior. The behavior conducted by adolescents or their couples before marriage is called premarital sexual behavior (Sarwono, 2016).

The effect of premarital sexual behavior in Gowa District can be shown in the number of HIV incidence. From the South Sulawesi Province data in 2010, it rose from 3,684 HIV/AIDS cases to 3,918 cases. Major causes of the high HIV/AIDS cases are free sex behavior and sexual relationship, and it

reaches 60%.

Finally, there is alcohol drinking tradition or *ballo* and the *anyyala* tradition (elopement) in Gowa District. Adolescents and their parents accept the *ballo* tradition. For *anyyala* tradition or (elopement), it occurs when a couple loves each other but does not get the consent of their parents or has been pregnant unintendedly. The research results indicate that there are more many adolescents with the risky sexual behavior in the district. It is the first step to uncover the causal factors associated with premarital sexual behavior in Gowa District.

### **Relationship of gender and premarital sexual behavior**

The analysis results indicate that there is insignificant relationship between gender and premarital sexual behavior in adolescents (p value: 0.474). The research results differ from other researches from (Ubaidur, et al 2001; Aras, et al. 2007; Oljira, Berhane, & Worku, 2011 Rahyani, et al. 2012; Mujayapura, 2014). The researches indicate that there is significant relationship between gender and premarital sexual behavior. Gender is the biological differences between male and female since an individual is born. Decision in premarital sexual behavior closely relates to the individual characteristics, i.e. adolescence with the status of dating or other factors.

Gender is one of the predisposition factors an individual does some behaviors when he/she is getting older. A female grows faster when entering 10 years old while for a male it occurs in 14 years old. Early maturity of reproductive organs in adolescents occurs together with psychosexual maturity when an individual begins to have interest on the

opposite gender in a kind of fostering a love relationship or making dating (Potter & Perry, 2010). Male and female can engage in premarital sexual behavior for various factors. The research of Li, Huang, Xu, Cai, Huang & Ye, (2013) indicates that the percentage of students who has had sexual relations in the last three (3) months, i.e. 7% male and 5.1% female consecutively and 49.4% students having sexual relations with two or more spouses.

This research differs from some research results that indicate that there is a significant relationship between gender and premarital sexual behavior with (p value 0.002). The research results in Bangladesh, and Ethiopia are similar that a significant proportion of sexual relationship is mostly from adolescent boys (Ubaidur, et al 2001; Aras, et al. 2007; Oljira, Berhane, & Worku, 2011 Rahyani, et al. 2012; Mujayapura, 2014). Moreover, from ten high schools it is shown that that students who have had sexual intercourse in the last three (3) months are 7% male and 5.1% female consecutively and 49.4% have sexual relationship with two or more spouses (Li, Huang, Xu, Cai, Huang & Ye, 2013). The majority of adolescent girls engaged in the risky sexual practices has spouses engaged in the risky sexual practices as well (Cole., Logan., & Shannon, (2007).

Changes due to puberty frequently cause many maladaptive behaviors. The research from Downing & Bellis (2009) shows that 45.6% of menarche girls  $\leq$  12 years old and 53.3% of boys categorized puberty  $\leq$  11 years old indicate that puberty at an earlier age can be predicted to have sexual behavior and can have sexual intercourse around the age of  $<16$  years old. Therefore, it can be concluded that adolescent girls and boys have high risk premarital sexual behavior. It is appropriate to a research that shows that adolescent boys and girls when dating more likely engage in premarital sexual behavior (Gevers, Mathews, Cupp, Russell, & Jewkes, 2013). In general, adolescent boys and girls see intimacy, sexual pleasure and social status as the primary goal in a romantic relationship (Randall & Byers, 2003).

It is likely that the opinion of these researchers relates to culture in Makassar tribal community in Gowa District, such as

adolescent behavior with dating status whether they are boys or girls who have the courage to live together and get religious marriage with the anyyala tradition (elopement) because they do not get the consent of their parents or other reasons such as unintended premarital pregnancy.

Moreover, this research results show that gender has no relationship between premarital sexual behavior in adolescents. It can occur because there are more many adolescent girl respondents if compared to adolescent boys and the difference of the risky premarital sexual behavior only amounts to 6% between adolescent boys and girls. Likewise in the research of Maulina & Kuntarto, (2015) it states that there is no relationship between gender and student attitudes about sexual behavior because it gets influence from the number of adolescent girl respondents if compared to adolescent boy respondents. Based on Notobroto's research (2013) it also states that there is no relationship between gender and sexual behavior because the number of adolescent boys who engage in non-intimate sexual behavior is the same as the number of adolescent girls despite the intimate sexual behavior in adolescent boys is higher than in adolescent girls.

In this research, however, adolescent girls reach 6 percent and it is higher than in adolescent boys. This can relate to different patterns that likely occur for the influence of race, genetics, opinion, motivation and culture in a region (Sasaki & Kameoka, 2009., Zietsch, Verweij, Bailey, Wright, et al. 2010., Jong, et al. 2015., Ott, Millstein, et al (2006). In general, adolescent boys and girls see intimacy, sexual pleasure and social status as the major goal in a romantic relationship (Randall & Byers, 2003). Moreover, it relates to local culture in the Makassar tribal community in Gowa District, i.e. adolescent behavior with the status of dating whether they are boys or girls has the courage to live together and get religious marriage through the anyyala tradition (elopement) with the reason of not getting the consent of their parents or other reason, i.e. extramarital pregnancy (Saleh, 2014).



### **Relationship between the origin of school and adolescents' sexual behavior**

Based on the bivariate analysis results, the respondents with the risky sexual behavior come from private schools (45.4%). The research results are the same as the research of Mujayapura, (2014) that indicates that the respondents (60%) from the private schools have premarital sexual behavior if compared to those from state schools. The bivariate analysis results in this research indicate that there is no significant relationship between the respondents' origin of school and adolescent sexual behavior (p value: 0.059). It is in parallel with the research of Widodo, (2009) that states that there is no relationship between the spouses' origin of school and free sex behavior in adolescents (p=0.213). Moreover, Firmiana, Prasetya, & Imawati, (2014) also show that there is no relationship between religiosity and dating behavior that tends to premarital sexual behavior in the three origin types of school. Furthermore, another research also proves that premarital sexual behavior occurs in adolescents despite they have the background of school with religious education if compared to the others (Khairunnisa, 2013).

The research results are not in parallel with the researches that state that the adolescents' origin of school has influence to premarital sexual behavior (Ryu, et al 2007; Amoateng, Kalule, & Arkaah 2014). It can occur despite school is the second environment after household for adolescents. However, schools indirectly have role in the establishment of adolescents' health behavior including adolescents sexual behavior. According to some researches, these state that the significant relationship between the location of school and premarital sexual behavior in the multivariate factors that influence adolescents is different social interaction, leisure time activities, attitude to sexuality and the influence of peers (Dewi, 2009., Fletcher, 2007), and the respondents in this research have negative attitude (65.0%) with the risky sexual behavior.

It gets strong support from Sarwono's statement, (2016) that school is not again the one environment for adolescents that can influence their behavior because there are supermarket, amusement parks and friends'

houses become adolescent choice during school hours. Adolescents frequently build interaction with their peers specifically, such as carrying out joint activity or making a gang (Ali, Asrori, 2014). Adolescence is the period when children begin to allocate much of their time together with their peers (Haas., Schaefer., & Kornienko, (2010). Hauser & Obeng (2015) state that a significant factor towards sexual behavior is their peers. Otherwise, Suparmi & Isfandari, (2016) state that adolescents who have peers never do the risky premarital sex and it is 11 times greater than those who do premarital sex. Another research also states that adolescents who have girlfriends are the significant environmental factors to occur premarital sexual behavior (Ryu, Kim, Kyunghee, & Kwon, 2007).

Researchers conclude that the origin of school indirectly has role in the establishment of adolescent sexual behavior. Moreover, social interaction at school can get influence from the frequency of dating and race. The role of nurses as case finders has to be able to identify factors that can change adolescents' health status at school or home so that they can know health problems that can appear from adolescents' risky behavior in relation to free sex behavior, unintended pregnancy and the infection of sexual diseases, such as HIV/AIDS (Allender, et al, 2010).

### **Relationship between frequency of dating and adolescent sexual behavior**

According to Jean Piaget (Bybee and Sund, 1982) in Ali., Asrori, (2014) states adolescent interaction is very risky and potentially it can make trouble. Their social changes relate to their early dating, hanging out with their peers at school, out of their households and social environment so that they tend to have risk with negative behavior and otherwise, it can trigger health problems in public (Vingilis, Wade, & Seeley, 2002; Sarwono, 2011; Ali & Asrori, 2012; Stuart 2013).

The frequency of girlfriend change can be a factor in relation to the incidence of premarital sexual behavior. It is also found in the research of Mujayapura (2014). He states that there is a correlation between frequency of dating and sexual behavior (p = 0.026). Based on research conducted by Nursal (2008) it finds that factors related to

sexual behavior in high school students in Padang have more than three girlfriends and less than 5 hours per week and more than 21 hours / week. Finally, the research of Kazaura & Masatu (2009) shows that adolescents with the age range of 10-19 year old in Tanzania are active in having sex with multiple partners and the number reaches about 32%.

The results of the logistic regression analysis in this research show that frequency of dating with more than one time has an effect on sexual behavior with POR 0.226 (95% CI: 0.94 - 0.545). Moreover, the research of Suparmi & Isfandari (2016) states that adolescent boys who have girlfriends have friends who have every had premarital sex. The risk reaches 11 times greathan to carry out premarital sex.

This researches conclude that dating adolescents frequently can terminate their commitment because there is any difference of viewpoint and attitude in their relationship. They will make relationship with other spouses and it will give them more comfortable. They consider their spouses as a way of approaching the opposite gender to know similarity and perpetuate the attraction so that they can fall into the risky sexual behavior.

### **The relationship of religious norms and adolescents' sexual behavior**

The univariate analysis results on the relationship of religious norms and adolescent sexual behavior indicate that the devout respondents reach 40.2% if compared to those with low devout (59.8%) when they carry out their religious norms. From the bivariate analysis results, moreover, the respondents who are low devout when carrying out their religious norms tend to carry out risky sexual behavior (47.6%). The religious norm relates to premarital sexual behavior with (p value : 0.0000). It is in parallel with the research of Hauser and Obeng (2015) in United States from some religions testing the influence of religiosity towards premarital sexual behavior. It indicates that the decision of making premarital sexual behavior gets influence from their parents, peers, religion and media. Religiosity is proved to have significant relationship to sexual behavior (Agardh, Tumwine, & Ostergren, 2011;

Khairunnisa, 2013). Fequency to carry out religious activities and feel having religion are significant predictor of premarital sexual behavior (Penhollow, Young, & Denny, 2005). Moreover, McPherson, et al (2013) in their research also state that the frequent presence of religious services can be related to sexual health behavior and it has more positive influence. The results of logistic regression analysis in this research find that adolescents who are low devout will be risky to carry out premarital sexual behavior and it amounts to 0.300 if compared to those who are devout adolescents.

Researchers conclude that religiosity activities at home, school and public have significantly important role in establishing adolescents' religious values. The condition is appropriate to the research results that adolescents who are low devout when they carry out their religious norms have greater trend in their risky sexual behavior if compared to the devout adolescents when they carry out their religious norms. The findings strengthen the viewpoint that lack of parents' supervision and religious control increase the possibility of premarital sexual behavior occurrence in adolescents.

### **Relationships of household norms and students' sexual behavior**

Other researchers find that the factor that postpones the first sexual relationship in adolescent boys and girls relates to their parents. They disapprove their children's sexual behavior and carry out monitoring and control (Nagamatsu, Miyuki, Saito, Hisako and Sato, 2008). Moreover, their pattern of monitoring power through their children's attitude reaches 10.6% and the intention of sexual behavior 9.28% (Suwarni, 2009). Parents are the family control that can influence adolescents' premarital sexual behavior. However, Aseltine, Robert, Doucet and Schilling, (2010) find that adolescent in their early age who live with divorced parents significantly is risky to carry out sexual behavior. According to Mmari, Kalamar, Brahmhatt and Venables (2016), it indicates that adolescent girls who grow up in their relatives do not give information about sexual relationship if compared to those who are growing up in the hand of their biological

parents.

Kornreich, Hearn, Rodriguez, dan O'Sullivan (2003) indicate that having siblings or older brothers generally has effect on adolescent girls in their sexual interaction. However, Li, Chen, Cao, Li, Zuo and Yan (2013) in China find that of 4,769 female students who do not have siblings, it indicates 41% higher to approve premarital sexual behavior with more than one spouse.

Researchers conclude that households have great responsibility in growing up moral values since their children's early age because moral values is a part of substance in the development of adolescent personality. However, in their growth and development they frequently neglect the values approved in their families. On the contrary, they follow new norms and values obtained out of their households such as dating activities out of their home.

#### **Relationship of knowledge and premarital sexual behavior**

The further analysis results from the research shows that adolescent knowledge about sexual behavior remains low, and from the data found in the research there are 102 respondents (20.4%) who have high knowledge about sexual behavior and the others totaling 311 respondents (62.2%) have low knowledge.

The research results are the same as the research of Chi, Yu, & Winter, (2012). Their research states that there is any relationship between the knowledge of reproductive health and sexual behavior. Sexual behavior among students in China frequently occurs because they have limited access to the sex-related knowledge. The lack of adolescent knowledge about reproductive health makes them difficult to refuse free sex so that it increases the possibility of being exposed to sexually transmitted diseases and extramarital pregnancy (BKKBN, 2010). Finally, Zelnik and Kim (1982) in Sarwono, 2016 state that when adolescents have never receive sex education, they tend to experience more unintended pregnancy.

The research from Wong (2012) states that the knowledge of reproductive health and attitude closely relates to religious values and differences in cultural norms around sexual

problems. The knowledge of reproductive health is definitely important for adolescents to reject the invitation of conducting sexual behavior. Therefore, Gao, Yu, Ahmed, Zhu, et al (2011) in their multivariate analysis show that sexual knowledge significantly relates to premarital sexual behavior. In this research it is shown that the adolescents' low knowledge will influence them to the risky sexual behavior and it is 0.024 times higher than those who have high knowledge. These findings indicate that adolescents have to be prepared for negotiations on sexual problems and decision making from their early age through comprehensive and accessible education and health services as stated by Chevers, Mathews., Cupp., Russell, & Jewkes, (2013).

Researchers argue that adolescent knowledge can get influence from experience, age, culture, and relationships. Immature personality and unstable emotion easily affect them to negative things like premarital sexual behavior. These findings indicate that adolescents have to be prepared for negotiations on sexual problems and decision making from their early age through comprehensive and accessible education and health services (Gevers, Mathews, Cupp, Russell, & Jewkes, 2013). Communication between parents and their children is definitely important in inhibiting the risky premarital sexual behavior in adolescents (Amoateng, et al 2014; Bazargan and West, 2006).

The knowledge of reproductive health that adolescents adopt from proper sources can become the factor of establishing strong basis when they make attitudes on all sexual behaviors towards their maturity age (Notoatmodjo, 2007). The research of Bazargan and West (2006) states that the intervention program which focuses on knowledge does not change adolescent intention to involve in sexual activities. The problems of risky premarital sexual behavior in adolescents is very worrying because the ability of self efficacy to avoid free sex and HIV/AIDS remains low ((Muflih, & Setiawan, 2017). The intervention program has to focus on stimulating adolsecents to delay their sexual activity if they can reduce the pressure of their peers and build their self efficacy through increasing their motivation

and behavioral skill in appropriate to culture.

### **Relationship of Smartphone Use and Premarital Sexual Behavior**

The univariate analysis results shows that the respondents (61.0%) who mostly use smartphone for utilization, duration and applications that they use frequently and from the bivariate analysis it causes more risky for sexual behavior (46.0%) with (P value: 0.000). This condition shows that adolescence age spend much time for smartphone use. The biggest potential technology users are adolescents. Based on the data of (Ministry of Communication and Information, 2016), Internet users in Indonesia at this time had reached 82 million people in 2016, and it occupied the sixth rank in the world. Of the number, eighty percent of the Internet users are adolescents with the age range of 15-19 years old for Facebook users. In this matter, Indonesia occupied the fourth rank in the world.

The results of logistic regression analysis show that the most influential factor related to premarital sexual behavior in high school students in Gowa District, South Sulawesi Province is smartphone use with OR = 3.583. The research results is parallel with the research conducted by Currie (2013). The last research involves 1,800 high school students in Los Angeles and it shows that adolescents that use smartphones to accessing Internet are more likely to get effect of premarital sexual behavior. This condition shows that the greater the adolescents for smartphone use the more many adolescents tend to have risky sexual behavior. The research results are parallel with the research of Amaliyasari & Puspitasari (2008) that states that information of sexual media greatly influences the respondents' sexual behavior, namely the possibility of the respondents who obtains information about sexual behavior will be unreasonable, i.e. 4,424 times greater than those who never obtain sexual information.

Tartari (2015) shows that adolescents spend much time on social media pages every day. The adolescents have risk to be exposed to Facebook depression, cyberbullying and sexual abuse in online way. Adolescent sexual activity is at risk because their lifestyle that uses hand phone and Internet

cafes does not make them to get proper knowledge but a negative information source of sexual behavior. In the research of Mariani & Bachtiar (2010) that involves 36 classes with total sample of 1,415 respondents in Mataram, the research results show that about 91 percent of the students have been exposed to pornographic material via smartphones. This research indicates that the lifestyle of adolescents greatly influence the establishment of sexual behavior patterns.

Smartphone use has negative influence. Choi, et al (2016) shows a strong relationship between the use of dating applications and premarital sexual behavior. Currie (2013) states that the research conducted to 1,800 high school students in public schools in Los Angeles, United States shows that when adolescents use smartphones to accessing Internet, they are more likely two times higher to have sex with someone they meet online. Pornography has an impact so that they want to engage in sexual activities (Hartati, 2016). Furthermore, when adolescents are exposed to pornography through smartphones, they have 4.3 times opportunity to performing premarital sexual behavior if compared to those who are not exposed to pornographic media (Ruhyandi, 2013). In the research of Tadesse and Yakob (2015), it also states that 503 respondents (70.3%) of the research samples have sexual relations after they watch pornography.

Based on this research, the researchers conclude that smartphone use has a significant effect in increasing adolescent knowledge, attitude and sexual activity. In other words, smartphone use has a positive and negative effect on adolescents' life. When adolescents get negative influence from smartphone use, they will have difficulty to refusing not to imitate the behavior observed from the smartphone use or conducting self-control in their peer interaction and improving their interaction quality in the building of their interpersonal relationships. In addition, the adolescents are exposed to pornography through smartphones, they will have potential to engage in premarital sexual behavior if compared to those who are not exposed to pornographic media. The role of parents is very important because they will provide guidance in technology uses. Therefore, it

can have a good impact on their children.

## Conclusion

This research concludes that there is significant relationship between the independent variables of multiple dating frequency, dating status, religious norms, household norms, knowledge and the uses of smartphone and the variable of the premarital sexual behavior among high school students in Gowa District, South Sulawesi. Of the six independent variables, the dominant variable with premarital sexual behavior is the uses of smartphone. It was based on the multivariate logistic regression analysis test among adolescents who use smartphone. The opportunity reaches 3.583 times for the premarital sexual behavior if compared to those who do not use smartphone.

The use of smartphone is the factor that closely relates to premarital sexual behavior, and it indicates that adolescents' control and education particularly for the use of smartphone conducted by teachers at school and parents at home are very important to be upgraded. It is the school-based health education program that can focus on the control of smartphone use and skill training. The program is important because adolescents can avoid the risky premarital sexual behavior. Moreover, the role of parents is also important in the guidance and use of smartphone so that it not only gives negative effects to the adolescent but also positive ones definitely. Therefore, the use of smartphone can increase creativity and prestige among adolescents as well.

A nurse can have important role in preventing premarital sexual behavior at school through the implementation of adolescence health cadres with peer counselor and peer education approach. A counselor nurse has to be able to give a variety of reproduction health information that includes adolescent development, adolescent sexual behavior, the effects of premarital sexual behavior in adolescents and reproduction health services that are usually used at school and society. As an educator, the nurses become a source of information about adolescent reproduction health and they give how to solve issues and

alternatives that the adolescent can use.

The school-based health education program focus on control of smartphone uses and skill training among adolescents so that they can avoid risky premarital sexual behavior. Adolescence intervention study should be carried out particularly concerning adolescents' uses of smartphone. The information technology development not only give negative impact to adolescents such as premarital sexual behavior but also it has greater positive effects such as creativity, prestige among adolescents. Moreover, the role of parents is very important when they give supervision and guidance for the uses of smartphone among their children. Therefore, it has positive effects as well.

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