

Parent–Adolescent Sexual Communication and Adolescent Sexual Behavior: A Meta-Analysis Review

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Abstract: *Parent-adolescent sexual communication is a crucial subject in terms of knowledge transferring for an adolescent to spare from the dangers of sexual behavior. This is due to the notable role of parents in conveying sexual information and exerting a significant influence on adolescent sexual behaviors, values, and beliefs as to the risks. Numerous studies have demonstrated a positive correlation between parent-adolescent sexual communication and adolescent sexual behavior, i.e. delaying sexual debut, reducing sexual activities, increasing contraception and the use of condoms, and reducing the number of sexual partners. Nevertheless, there are still inconsistencies in the empirical literature. Other studies, for instance, have come up with an insignificant or even negative correlation. A sense of shame, inaccurate knowledge, and low self-efficacy can inhibit parent-adolescent sexual communication. This study aimed to synthesize literature and integratively scrutinize the correlation between parent-adolescent sexual communication and adolescent sexual behavior through the use of meta-analysis method. There were 28 studies used in the meta-analysis. The artifacts used for correction was error sampling (bare-bones meta-analysis). The findings showed a positive correlation between parent-adolescent sexual communication and adolescent sexual behavior at 0.0186, with a confidence level of 95%.*

Keywords: *sexual communication, sexual behavior, meta-analysis*

Introduction

Currently, the total population of the world shows that more than half of which are under 25 years old, and one-fourth of them are under 18 years old (UNFPA, 2014). Eighty-five percent of adolescents aged between 15 and 24 years were living in developing countries. Data in 2014 indicated that the majority (60%) of adolescents is living in Asia yet in a few decades to come, especially in Africa will encounter growth that has never happened before, i.e. the number of children under 18 years old will increase up to forty percent of total population in 2050 (UNICEF, 2014). This describes that in the current and a few decades later, the world population will be dominated by adolescents, commonly known as the demographic dividend.

Indonesia and other developing countries are predicted to have a demographic dividend. This should become a mutual concern so as to benefit such demographic dividend. Undoubtedly, adolescents, in this case, are pivotal. If the current adolescents transform into qualified human resources, the country will be greatly benefitted. Otherwise, if they transform into unqualified human resources, the demographic dividend certainly cannot be utilized.

Undeniably, there are numerous achievements accomplished by adolescents through various world-

class Olympic, whether in the fields of science, social science, or sports. Nevertheless, there are also many negative behaviors demonstrated by adolescents. The phenomena of negative behaviors on adolescents, unfortunately, are increasing annually, two of which are sexual deviation or paraphilia and premarital sex happened in several countries. In Nigeria, for instance, the prevalence rate of adolescents contracting infectious sexually transmitted diseases and HIV tremendously escalated. It was due to a number of adolescents involving in dangerous sexual activities, including early sexual debut, having multiple sexual partners, and the low rate and inconsistent use of condoms (Adeomi, Adeoye, Adewole, Israel&Obboh, 2014). It also happened in Sri Lanka in which the prevalence rate of adolescents rapidly increased up to 12.4% in the last year (Perera&Abeysena, 2018). Furthermore, according to Fetenne&Mekonnen (2018), in Ethiopia, the prevalence rate of risky sexual behavior on adolescents who did not participate in activities held by Clinical Centre for Reproductive Health was 60% higher than those who participated in the clinic.

The similar thing occurred in Indonesia. The data of the Ministry of the Republic of Indonesia showed that the data of premarital sex on adolescents since 2007 to 2012 was as follows: there was an increasing number of

male adolescents experiencing premarital sex at the age of 15 – 19 years, from 3.7% to 4.5%; meanwhile, the number of female adolescents decreased from 1.3% to 0.7%. However, there was a rapid increase in the number of male adolescents aged 20–24 years, from 10.5% to 14.6%. At the same age, the number of female adolescents also increased, although not very significant, from 1.4% to 1.8%. In order to avoid the increasing number of male adolescents engaging in sexual behavior every year, several studies assessed factors influencing adolescents to engage in premarital sexual behaviors, one of which is the involvement of parents.

Parents have an influence on adolescents' attitudes and behaviors, including their sexual behaviors. The parent-adolescent relationship appears to be an inseparable chain of ecology. Parents become an immediate set of systems for adolescents, followed by peer influence. Therefore, these two exert a powerful influence on adolescents. Barman-Adhikari, Cederbaum, Sathof, & Toro (2014) elaborated in their study that parental influence and peer influence are jointly related through a complex way in developing adolescents' decision-making related to their involvement in sexual behaviors.

Hutchinson (2002), Whitaker & Miller (2000) explained that parents give more powerful influence on adolescent sexual behaviors than what was suspected earlier. Several guidance processes identified have influenced adolescent sexual behaviors, such as: parent-adolescent intimacy (Jaccard, Ditus, & Gordon, 1998; Sandhu, Kaur, & Bhatt, 2017), parental monitoring (Siverding, Adler, Witt, & Ellen, 2005), parental involvement (Barman-Adhikari et al., 2014), and parent-adolescent sexual communication (Kahn, Holmes, Christopher, Farley, & Kim-Spoon, 2015; Rich, Robertson, & Wilson, 2014; Thoma&Hubner, 2014; Widman, Bradley, & Helms, 2014; Harris, Sutherland, & Hutchinson, 2013; Somers, Tolia, & Anagurthi, 2012).

In regards to communication, several studies showed the importance of parent-adolescent sexual communication. Widman et al. (2014) stated that there are two reasons, i.e. practical and theoretical ones, as to why parents can become agents of adolescent sexual socialization. From a practical perspective, parents can play an important role in providing sexual information and exerting a significant influence on adolescent sexual behaviors, values, and beliefs of the risks. Parents can also provide an open and honest communication model about sexual health which adolescents can imitate in their daily life. From a theoretical perspective, the Bronfenbrenner classical theory of ecological system points out that a human being lives in a set of systems, one of which is the family system that can directly or indirectly influence adolescent sexual behavior.

Donenberg & Wilson (2004) explained that the quality and quantity of parent-adolescent communication

appear to be a crucial role in reducing premarital sexual behaviors and increasing responsibility in the decision-making process related to sexuality. Clawson & Weber (2003) in their study figured out that parent-adolescent communication makes a significant contribution in predicting adolescent sexual behaviors.

The findings of the aforementioned studies demonstrated that there is a correlation between parent-adolescent communication and adolescent sexual behavior. Despite this, there are other studies contradicting those findings. Two studies (Miller & Fox, 1987; Newcomer & Udry, 1985) showed that parent-adolescent communication did not have any correlation with adolescent sexual behavior. This subject requires a further study that integrates all findings of several studies to discover more solid correlation patterns than previous studies (Hunter & Schmidt, 2014). Hence, this study used the meta-analysis method to estimate the degree of correlation in previous studies. The hypothesis proposed was parent-adolescent communication has a significant influence on adolescent sexual behavior.

Methods

Data Sources

The data in this meta-analysis study consisted of primary data accessed by using an online database from *ScienceDirect*, *SpringerLink*, *Pro-Quest*, *EBSCOhost*, and *JSTOR* through www.lib.ugm.ac.id. The keywords used were *parent-adolescent communication* and *sex behaviour*. It also used other similar keywords such as *parent-adolescent relationship*, *parent-adolescent discussion*, and *parent-adolescent influence* as the references. Several studies found based on the keywords were selected according to the primary criteria, whether or not the study explicates the correlation value or r-value between *parent-adolescent communication* and *sex behaviour*.

Meta-Analysis Procedures and Data Criteria

Meta-analysis was used as a basis for accepting or rejecting the hypothesis. Through the use of meta-analysis, the correction on errors of sampling, measurements, and other artifacts that resulted in obscurity or even contradictory findings could be made (Hunter & Schmidt, 2004). Thus, it is necessary to integrate all findings of the studies to estimate the degree of correlation yielded by those studies as the basis for the theory development. Glass (in Fitz-Gibbon, 1984) stated that a meta-analysis focuses on a statistical analysis of a number of research findings aiming to integrate the findings. In line with this, Rubin also explained that the aim of meta-analysis is to estimate the degree of correlation yielded in previous studies (Hunter & Schmidt, 2004). Card (2012) in his book *Applied Meta-Analysis for Social Science Research* also pinpointed the similar emphasis that meta-analysis

Table 1, Characteristics of Samples

No	Year	Authors	N	r	Characteristics	Source of Communication	Communication Theme	Sexual Activities
1.	1998	Booth-Butterfield, M.B., & Sidelinger, R	133	0,56	High School Students	Parents	Specific Sexual Theme	Sexual Intercourse
2.	2000	Whitaker, D.J., & Miller, K.S	907	-0,02	Adolescence from 2 Schools	Mother	General Sexual Theme	Sexual Intercourse
3.	2000	Whitaker, D.J., & Miller, K.S	907	-0,09	Adolescence from 2 Schools	Mother	General Sexual Theme	Number of Sexual Partners
4.	2000	Whitaker, D.J., & Miller, K.S	907	0,09	Adolescence from 2 Schools in Montgomery	Mother	General Sexual Theme	Sexual Debut
5.	2002	Hutchinson, M.K	234	0,5	Female (19-21)	Parents	General Sexual Theme	Sexual Risk Behavior
6.	2003	Clawson, C.L., & Weber, M.R	214	-0,23	Hispanic latin, Africa, White Adolescence (18 – 21)	Father	Specific Sexual Theme	Sexual Risk Behavior
7.	2003	Clawson, C.L., & Weber, M.R	214	-0,19	Adolescence (18 – 21)	Mother	Specific Sexual Theme	Sexual Risk Behavior
8.	2004	Wilson, H.W., & Donenberg, G	30	0,495	Adolescence in Psychiatric Clinic	Parents	General Sexual Theme Behavior	Sexual Risk
9.	2006	Fasula, A.M., & Miller, K.S	530	0.04	High School Students African-American & Hispanic	Mother	General Sexual Theme	Sexual Risk Behavior
10.	2007	Hutchinson, M.K., & Montgomery, A.J	488	-0,184	African American Adolescence with Adverse Sexual Health Effects	Father	General Sexual Theme	Sexual Intercourse
11.	2007	Hutchinson, M.K., & Montgomery, A.J	488	-0,118	African American Adolescence with Adverse Sexual Health Effects	Mother	General Sexual Theme	Sexual Intercourse
12.	2008	Usher-Seriki, K.K., Bynum, M.S., & Callands, T.A	274	0,22	African American Females	Mother	General Sexual Theme	Sexual Intercourse
13.	2008	Usher-Seriki, K.K., Bynum, M.S., & Callands, T.A	274	-0,01	African American Females	Mother	Values in Sexual	Sexual Intercourse
14.	2012	Van Campen, K.V., & Romera, A.J	122	0,14	South American Adolescence	Parents	General Sexual Theme	Debut Sexual
15.	2012	Somers, C.L., Tolia, S., & Anagurthi, C	53	0,31	Females	Father	Sexual Nature	Sexual Behavior
16.	2012	Somers, C.L., Tolia, S., & Anagurthi, C	53	0,28	Females	Mother	Sexual Nature	Sexual Behavior
17.	2012	Somers, C.L., Tolia, S., & Anagurthi, C	77	0,21	Males	Father	Sexual Nature	Sexual Behavior
18.	2012	Somers, C.L., Tolia, S., & Anagurthi, C	77	0,4	Males	Mother	Sexual Nature	Sexual Behavior
19.	2013	Harris, A.L., Sutherland, M.A., & Hutchinson, M.K	134	0,74	African- American Adolescence (18 – 22)	Parents	General Sexual Theme	Sexual Activities
20.	2014	Widman, L., Bradley, S.C., & Helms, S.W	1463	0,08	Southeast American High School Student with Low Income Parents	Parents	General Sexual Theme	Sexual Activities
21.	2014	Thoma, B.C., & Huebner, D.M	257	0,08	Male who Have Homoseksual orientation	Parents	Sexual Risk Behavior	Sexual Risk
22.	2014	Rich, S.L., Robertson, A.A., & Wilson, J.A	273	-0,09	Females	Parents	General Sexual Theme	Sexual Risk Behavior and Use
23.	2015	Kahn, R.E., Holmes, C., Farley, J., & Spoon, J	219	-0,14	Adolescence	Parents	General Sexual Theme	Debut Sexual
24.	2015	Kahn, R.E., Holmes, C., Farley, J., & Spoon, J	219	-0,13	Adolescence	Parents	General Sexual Theme	Use of Condoms
25.	2017	Sandhu, D., Kaur, K. & Bhatt, V	200	-0,18	Males	Father	General Sexual Theme	Sexual Risk Behavior
26.	2017	Sandhu, D., Kaur, K. & Bhatt, V	200	-0,23	Males	Mother	General Sexual Theme	Sexual Risk Behavior
27.	2017	Sandhu, D., Kaur, K. & Bhatt, V	200	-0,05	Females	Father	General Sexual Theme	Sexual Risk Behavior
28.	2017	Sandhu, D., Kaur, K. & Bhatt, V	200	-0,06	Females	Mother	General Sexual Theme	Sexual Risk Behavior

integrates findings of several studies in order to discover the basic relationship patterns underlying the literature, and thus provides a basis for the theory development.

In this study, the criteria of the data were published journals in the last 20 years from 1998–2018. The variables used were parent-adolescent communication as the independent variable and adolescent sexual behavior as the dependent variable. The theme of communication varied from sexual themes in general to the specific ones. The sexual behaviors used in this study included sexual activities, risky sexual behaviors, the use of condoms, sexual debut, and the number of sexual partners.

There were 16 research articles used in this study, where seven of which reported more than one correlation between parent-adolescent communication and sex behavior. Therefore, the total number of studies used in the meta-analysis was 28 studies.

Data Analysis

The process of analyzing the data began with correcting artifacts or research imperfections. The correction used in this study was *bare-bones meta-analysis* or the sampling error correction. Nevertheless, it did not strive to correct the measurement errors since not many studies selected explicitly reported the reliability of measurement tools. Ergo, it was considered inadequate. The *bare-bones meta-analysis* for sampling error correction was carried out by:

- a. Calculating the population correlation mean
- b. Calculating the variance of r_{xy} (σ^2r)
- c. Calculating the variance of sampling errors (σ^2e)
- d. Calculating the estimated variance of population correlation
- e. Calculating the impact of sampling errors

Results

The characteristics of samples used in this meta-analysis study included: 1) having a primary communication source, namely parents; 2) incorporating the theme of parent-adolescent communication, including the sexual communication in general or in specific; 3) assessing sexual behaviors, including sexual activities, risky sexual behaviors, the use of condoms, and sexual debut. These characteristics are thoroughly elaborated in Table 1.

a. Population Correlation Mean

Based on the formula of the equation, it required the calculation of the number of subjects (N) multiplied by the correlation value (r-value) in each study. Afterwards, the result was then calculated based on the above equation. The results of the calculation are shown in Table 2. The number of samples was 9,347; thus, the population correlation mean after the correction (\check{r}) was 0.0186.

Table 2. Sampling Error Correlation

Numberof Study	N	ri	N x ri
1	133	0,56	74,48
2	907	-0,02	-18,14
3	907	-0,09	-81,63
4	907	0,09	81,63
5	234	0,5	117
6	214	-0,23	-49,22
7	214	-0,19	-40,66
8	30	0,495	14,85
9	530	0,04	21,2
10	488	-0,184	-89,792
11	488	-0,118	-57,584
12	274	0,22	60,28
13	274	-0,01	-2,74
14	122	0,14	17,08
15	53	0,31	16,43
16	53	0,28	14,84
17	77	0,21	16,17
18	77	0,4	30,8
19	134	0,74	99,16
20	1.463	0,08	117,04
21	257	0,08	20,56
22	273	-0,09	-24,57
23	219	-0,14	-30,66
24	219	-0,13	-28,47
25	200	-0,18	-36
26	200	-0,23	-46
27	200	-0,05	-10
28	200	-0,06	-12
Total	9347	2,423	174,054
\check{r}			0,0186

b.Variance of r_{xy} (σ^2r)

Based on the formula of the equation, the results of the calculation are shown in Table 3. Based on Table 3, the variance of r_{xy} (σ^2r) was 0.0338.

c.Variance of Sampling Errors (σ^2e)

Based on the \check{r} -value acquired, that was 0.0186, and the mean value of total subjects, that was 334, the variance of sampling errors (σ^2e). Based on the calculation above, the variance of sampling errors (σ^2e) was 0.003.

d.Estimated Variance of Population Correlation

Variance of population correlation is a variance that is corrected by subtracting the variance of correlation from the variance of sampling errors. Based on the calculation above, the variance of correlated errors was 0.0308

e.Confidence Interval

To calculate the confidence interval, the following equation was used:

$$\check{r} \pm 1.96 SD$$

$$\check{r} \pm 1.96 \times \sigma^2r$$

$$\check{r} \pm 1.96 \times 0.0338$$

$$\check{r} \pm 1.96 \times$$

$$\check{r} \pm 0.360346$$

$$0.0186 \pm 0.360346$$

Therefore, the confidence limits were $-0.342 < \check{r} < 0.379$

f. Impact of Sampling Errors

Therefore, the impact of sampling errors was 9.74%. It indicates that other unspecified error factors were 90.26%.

Table 3. Varians r_{xy}

Number of Study	N	ri	(ri - r)	(ri - r) ²	N(ri - r) ²
1	133	0,56	0,54138	0,2930923	38,98128
2	907	-0,02	-0,03862	0,0014915	1,352794
3	907	-0,09	-0,10862	0,0117983	10,70106
4	907	0,09	0,07138	0,0050951	4,62126
5	234	0,5	0,48138	0,2317267	54,22405
6	214	-0,23	-0,24862	0,0618119	13,22775
7	214	-0,19	-0,20862	0,0435223	9,313773
8	30	0,495	0,47638	0,2269379	6,808137
9	530	0,04	0,02138	0,0004571	0,242265
10	488	-0,184	-0,20262	0,04105486	20,03477
11	488	-0,118	-0,13662	0,01866502	9,108532
12	274	0,22	0,20138	0,0405539	11,11177
13	274	-0,01	-0,02862	0,0008191	0,224435
14	122	0,14	0,12138	0,0147331	1,797439
15	53	0,31	0,29138	0,0849023	4,499822
16	53	0,28	0,26138	0,0683195	3,620934
17	77	0,21	0,19138	0,0366263	2,820225
18	77	0,4	0,38138	0,1454507	11,1997
19	134	0,74	0,72138	0,5203891	69,73214
20	1.463	0,08	0,06138	0,0037675	5,511859
21	257	0,08	0,06138	0,0037675	0,968249
22	273	-0,09	-0,10862	0,0117983	3,220937
23	219	-0,14	-0,15862	0,0251603	5,510107
24	219	-0,13	-0,14862	0,0220879	4,837251
25	200	-0,18	-0,19862	0,0394499	7,889981
26	200	-0,23	-0,24862	0,0618119	12,36238
27	200	-0,05	-0,06862	0,0047087	0,941741
28	200	-0,06	-0,07862	0,0061811	1,236221
Total	9347	2,423	1,90164	2,0261802	316,1009
Mean	334			Varians	0,0338

Discussion

From the results of the meta-analysis, it was known that 1) the population correlation after the correction (\check{r}) was 0.0186; 2) the variance of sampling errors was 0.003 with the value of the standard deviation of 0.18385 within the confidence interval of 95% and the acceptance limits of $0,342 < \check{r} < 0,379$. The value of the correlation between parent-adolescent sexual communication and adolescent sexual behavior at 0.0186 indicates that the correlation is relatively moderate. It means that the hypothesis stating that there is a correlation between parent-adolescent sexual communication and adolescent sexual behavior can be accepted.

The findings of the meta-analysis also reinforce the findings of previous studies regarding the correlation between parent-adolescent sexual communication and adolescent sexual behavior. The study on parent-adolescent sexual communication actually is the further development of the variable of parental influence or

parent involvement. Numerous studies use communication as the indicator of parent involvement, as in the study conducted by Barman-Adhikari et al. (2014). They measured parental influence based on several indicators, including parental monitoring, parent-child relationship satisfaction, and parent-teen sexual risk communication. The findings of the study demonstrated that parent-adolescent sexual communication could reduce the adolescent vulnerability on any negative peer influences and thus linearly reduce their intention to engage in sexual activities.

A number of studies do not use parent-adolescent sexual communication as an indicator but rather as a variable. Among those are Thoma & Huebner (2014), Wilson & Donenberg (2004), Hutchinson (2002), Hutchinson & Montgomery (2007), and Usher-Seriki & Callands (2008).

Thoma & Huebner (2014) in their study pointed out that parent-adolescent sexual communication will protect adolescents from risky sexual behaviors, although high degree of communication on male adolescents with a homosexual orientation is more likely associated with higher risk.

Wilson & Donenberg (2004) explained that the quality, rather than the quantity, of parent-adolescent communication is associated with sexual risk-taking on adolescents. Meanwhile, Hutchinson (2002) stated that early parent-adolescent communication is associated with the delayed sexual debut, consistency in the use of condoms, and indirectly reduces risk of sexually transmitted diseases. Together with Montgomery (2007), Hutchinson continued the study and found out that the sexual communication between mother and female adolescent can reduce the risky sexual behavior and pregnancy. It correlates with the findings of Usher-Seriki & Callands (2008), which demonstrated that the sexual communication between mother and adolescent regarding negative consequences of premarital sexual behavior can reduce sexual behavior and delay sexual activities.

Several studies in this meta-analysis used adolescents, both male and female, as the subject, and involved parents, both father and mother, as the source of communication. The themes of sexual communication used in this study were sexual themes in general and specific, values in a sexual relationship, and risky sexual behavior. Furthermore, adolescent sexual behavior used in the study included sexual activities, intercourse, the number of sexual partners, sexual debut, risky sexual behaviors, and the use of condoms.

Some of the findings of those studies demonstrated that there is a correlation between parent-adolescent sexual communication and adolescent sexual behavior. The results of the meta-analysis also demonstrated that there is a moderate correlation at 0.0186 between parent-

adolescent sexual communication and adolescent sexual behavior. It indicates that there is a correlation between these two variables, although not very significant. Thus, there are other factors that need to be considered to reduce adolescent sexual behavior, apart from parent-adolescent sexual communication. In this regard, Harris (2016) explained that parent knowledge, accurate information, and parent self-efficacy to convey sexual materials to adolescent are of crucial components necessarily considered in further studies.

Conclusion

The results of the meta-analysis confirm the findings of previous studies related to the correlation between parent-adolescent sexual communication and adolescent sexual behavior, although the correlation value is considered relatively moderate. Several studies have demonstrated that there is a positive correlation between parent-adolescent sexual communication and adolescent sexual behavior, including delaying sexual debut, reducing sexual activities, increasing contraception and the use of condoms, and reducing the number of sexual partners. The correlation value of 0.0186 indicates that there is a correlation between parent-adolescent sexual communication and adolescent sexual behavior although not too significant. It also indicates that there are other factors or variables necessarily considered in further studies. The limited number of studies used in the meta-analysis may become the cause of the moderate correlation value. Besides, this study merely used *bare-bones meta-analysis* due to the limited number of studies that reported the reliability of measurement tools in the publications. This study suggests further studies to add a number of studies that include the reliability of measurement tools so that the correction of measurement errors can be administered.

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