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## **Why Some Adolescents Engage in Risk-Taking Behavior**

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Date of publication: June 24<sup>th</sup>, 2021

Edition period: June 2021 – October 2021

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**To cite this article:** Ajisuksmo, C. R. P. (2021). Why Some Adolescents Engage in Risk-Taking Behavior. *International Journal of Educational Psychology*, 10(2), 143-171. doi: [10.17583/ijep.2021.4258](https://doi.org/10.17583/ijep.2021.4258)

**To link this article:** <http://dx.doi.org/10.17583/ijep.2021.4258>

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# **Why Some Adolescents Engage in Risk-Taking Behavior**

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## **Abstract**

This study explored adolescents' reasons for involving themselves, or not, in risk-taking behavior, in two vulnerable areas of North Jakarta. The sample was purposively selected among households with adolescents ranging from 12 to 18 years old living in the two areas. The study involved 401 parents (8% female; 92% male; mean age 45.3 years) and 414 adolescents (57.49% female; 42.51% male; mean age 14.9 years). Parents' demographic data included educational level, employment status, family income, and expenditure. Adolescents were asked about their perceptions of their relationships with their parents, whether they had been involved in eight risky behaviors (smoking, consuming alcohol, substance use, brawling, crime, physical fighting, heavy petting, and premarital sex), and reasons for engaging in risky behaviors or not. The comparison of proportions of eight risky behavior was tested by different test procedures, namely Z test, Chi-Square and Marascuillo multiple comparison. Results revealed that older adolescents were more likely to be involved in risk-taking, and boys were more likely to engage in risky behaviors than girls. The study also indicated that curiosity and peer pressure were the main reasons adolescents engaged in risky behaviors. Advice from family members, fear of God, and fear of being sinful were reasons adolescents did not engage in risky behaviors.

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**Keywords:** adolescents, risk-taking behavior, urban poor.

# **Porqué Algunos Adolescentes se Implican en Conductas de Riesgo**

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## **Resumen**

Este estudio exploró las razones de los adolescentes para involucrarse, o no, en el comportamiento de riesgo, en dos áreas vulnerables del norte de Jakarta. La muestra se seleccionó a propósito entre los hogares con adolescentes de 12 a 18 años que vivían en las dos áreas. En el estudio participaron 401 padres (8% mujeres; 92% hombres; edad promedio 45,3 años) y 414 adolescentes (57,49% mujeres; 42,51% hombres; edad promedio 14,9 años). Los datos demográficos de los padres incluían el nivel educativo, la situación laboral, el ingreso familiar y los gastos. Se les preguntó a los adolescentes acerca de sus percepciones de sus relaciones con sus padres, si habían estado involucrados en ocho conductas de riesgo (fumar, consumir alcohol, consumir sustancias, pelearse, cometer delitos, peleas físicas, caricias y relaciones sexuales prematrimoniales) y las razones para participar en conductas de riesgo o no. Los resultados revelaron que los adolescentes mayores tenían más probabilidades de participar en la toma de riesgos, y los niños tenían más probabilidades de participar en conductas de riesgo que las niñas. El estudio también indicó que la curiosidad y la presión de los compañeros eran las razones principales por las que los adolescentes tenían conductas de riesgo. El consejo de los miembros de la familia, el temor a Dios y el temor de ser pecadores fueron razones por las cuales los adolescentes no se involucraron en conductas de riesgo.

**Palabras clave:** adolescentes, comportamiento de riesgo, pobres urbanos.

Adolescence is often considered a period of turmoil and behavioral problems for both adolescents and their parents, at least partly because that period of life is characterized by high curiosity and the desire to experiment. It is a time of changes and transformation (Uzaina & Srivastava, 2016) and a time to develop identity, opinions, and values (Rolison & Scherman, 2002; Saranya & Nigesh, 2017) as consequences of coping with developmental tasks of individuating from parents and gaining autonomy (Leather, 2009).

Another specific characteristic of adolescence is strong peer pressure, that is, orientation shifts from parents to peers (Baumgartner, Valkenburg, & Peter, 2010), and peers have a more powerful influence on adolescents' beliefs, attitudes, and behaviors (Brakefield et al., 2014). Indeed, risk-taking behaviors among adolescents tend to happen in the presence of peers; some examples are substance use (Allen, Chango, Szewedo, Schad, & Marston, 2012; Mason, Mennis, Linker, Bares, Zaharakis, 2014; Marotta, 2017), gambling (Van Hoorn, Crone, & Van Leijenhors, 2016), sexual behavior (Ajilore, 2015; Baumgartner et al., 2010), and aggressive behavior (Low, Polanin, & Espelage, 2013; Vitaro et al., 2015).

Adolescents often engage in risky behaviors - defined as an individual acting in a dangerous way and possibly suffering particular, potentially harmful and dangerous conditions, social problems or illness, disability, and death (Mohd et al., 2015) - as a form of rebellion against forceful adult influence. In addition, adolescents' high curiosity motivates them to experiment with varied, novel, and complex activities and to be willing to take physical and social risks that provide sensation (Rolison & Scherman, 2002). Thus, engagement in one risky behavior likely leads to engagement in others (Leather, 2009). This appears to explain why risk-taking behavior reaches its peak during adolescence (Baumgartner et al., 2010). Of course, adolescents' risky behaviors have both short- and long-term implications for psychological and physical health, for instance, social problems in adulthood or physical illness, impairment, disability, and even death (Hale & Viner, 2016). Also, the frequency and intensity of individual risk behavioral patterns lead to augmented risk of sickness and impairment (Steptoe & Wardle, 2004; Baban & Craciun, 2007).

## **Parents, Peers, and Environment Influence Adolescents' Risk-Taking Behavior**

According to Bronfenbrenner's ecological theory of human development, interactive dynamics among all family members—parents, children, and extended families—have a role in shaping each family member's behavior. The quality of parent–adolescent relationships also influences adolescents' social and emotional development (Cavendish, Montague, Enders, & Dietz, 2014). Parental variables such as parenting practices, religiosity, monitoring, and attachment to mother and father significantly influence whether adolescents become involved in smoking cigarettes or using drugs and alcohol (Bahr, Hoffman, & Yang, 2005; Chuang, Ennett, Bauman, & Foshee, 2009; Jang & Johnson, 2010; Miller et al., 2011), risky sexual behavior (Baumgartner et al., 2010; Landor, Simons, Simons, Brody, & Gibbons, 2011; Sylvester, 2014; Ofole, 2015; Ajilore, 2015), aggressive behavior (Arım, Dahinten, Marshall, & Shapka, 2011; Batool, 2013), and antisocial behavior (Cook, Buehler, & Henson, 2009).

Authoritative parenting, which is typified by warmth and responsive communication, as well as by protective and strong control toward risky behavior, can prevent adolescents' engagement in it (Chuang et al., 2009; Miller et al., 2011). Authoritative parenting also affects adolescents' selection of their peers (Landor et al., 2011). In family life, parents introduce social norms and religious values that children adopt, later internalize, and, as adolescents, use as references not to engage in risky behaviors (Jang & Johnson, 2010; Landor et al., 2011). Research of Omoponle and Olanrewaju (2020) reported that there was a significant correlation between family background, child rearing practices, self-regulation and adolescents' tendencies to criminal acts. Of these variables, self-regulation gives the most significant contribution which is then followed by parenting pattern and family background. Harris-McKoy and Cui (2013) reported that lack of parental control was significantly associated with adolescent delinquency. According to Liu, Wang and Tian (2019) a good relationship between parents and adolescents, which is indicated by less conflict is very important in decreasing risky behavior among adolescents. Esiri (2016) reported that criminal behavior is learned through association with people who often commit crimes. This statement was supported by the study of Augustyn, Ward and Krohn (in Howell, 2019) that the probability of children involve in

criminal gangs were influenced by parents' membership in criminal gang. The study of Augustyn et.al. showed that parents are role models of behavior for adolescents. The above explanation indicates the important of good relationship between parents and adolescents.

Previous research on adolescents' risk-taking behavior reported that peer groups have both positive and negative impacts. Maxwell (2002) found that peers might influence adolescents to begin smoking cigarettes and marijuana. However, peers can also influence adolescents to stop consuming alcohol and chewing tobacco. Mason et al. (2014) showed that close friends' attitudes impact adolescents' substance use. Having unresponsive close friends who pay little attention to or do not care what adolescents do might lead to increased substance use. Conversely, close friends who show concern about and disapproval of substance use can affect its decrease.

A study on the relationship between religion, religiosity, and risky behavior reported that religion and religiosity play an important role in protecting adolescents from engaging in risky behavior, such as smoking and alcohol consumptions (Sinha, Cnaan, & Gelles., 2007; Marsiglia, Ayers, & Hoffman, 2012; Brown, et.al., 2014; Charro Baena, Meneses, Caperos, Preitos, & Uroz, 2018); premarital sex and HIV risks behavior (Gyimah, Kodzi, Emina, & Cofie, 2013; Cerqueira-Santos & Koller, 2016; Hasnain, Sinacore, Mensah, & Levy, 2005), fighting and violence (Salas-Wright, Vaughn, & Maynard, 2014).

Marsiglia, et.al. (2012) conducted a study with adolescents aged 14-17 in central Mexico and reported that adolescents who have high scores in both intrinsic religiosity and extrinsic religiosity were less likely to take risks by cigarette and alcohol use. Intrinsic religiosity referred to the importance of religion in personal behavior, while extrinsic religiosity referred to individual's involvement in religious activities such as church attendance. The Arli et al.'s study (2016) with Indonesian youth aged 18-24 showed that intrinsic religiosity influenced youth's perception of risky behavior, such as gambling, health and safety, and ethics. Youth with high scores in intrinsic religiosity were less likely to engage in risky behavior. Additionally, Ameri, Mirzakhani, Nabipour, Khanjani, & Sullman (2017) conducted a study with Iranian university students and found that students who engaged more often in religious activities and had stronger intrinsic religiosity were less likely to engage in risky behavior, such as sexual risk-taking, careless driving,

violence, smoking, alcohol, and substance use. According to Sinha, et al. (2007) and Mojahed (2014) religion has a very positive role in decreasing risk-taking behavior both directly and indirectly. Religious rules and prohibitions are a direct way in which risky behavior is inhibited, while religious activities and communities are indirect ways in which religion inhibits risky behavior. Religious teachings thus serve as a basis for preventing adolescents from engaging in risk-taking behaviors, for instance, premarital sex, alcohol and substance use, and violence.

Poverty is also regarded as predictor of criminal behaviors among adolescents (Sariaslan, Larsson, D'Onofrio, Långström, & Lichtenstein, 2014; Shah, Soomro & Mirjat, 2019). According to Shah et.al (2019) lack of resources to fulfill the needs lead adolescents to engage in criminal acts. Shong, Bakar and Islam (2018) stated that poor and unhappy family conditions as well as school failure are two factors associated with children's criminal behavior. The study of Madise, Zulu and Ciera (2007) reported that poverty is the driving factor for female adolescents to involve in early sexual activity and having sexual activity with multiple partners. These sexual activities are intended to get gifts or money. The explanation above shows that family life is essentials for adolescents to engage in risky behavior. Therefore, this study focuses on the risk-taking behavior of adolescents from vulnerable neighborhood. This study is also interested in identifying adolescents' perception on their connection with their parents. Another study on adolescents' risk-taking behavior also reported that family financial pressure, disadvantaged neighborhoods, unstable life, and lack of hope and certainty are likely to affect adolescents' risky behaviors (Caldwell, Wiebe, & Cleveland, 2006). Unfavorable and uncertain conditions leading to hopelessness indirectly impact adolescents' maladaptive school and coping behaviors (Bolland et al., 2007). McKelvey et al. (2011) reported that community violence negatively impacts children's psychosocial development, including risk-taking behavior. However, families with low conflict can protect children from community violence's negative effect. Thus, McKelvey et al.'s study (2011) showed that good family life and good parenting play important roles in decreasing adolescents' risk-taking behavior.

Referring to the above explanation on the risk-taking behavior among adolescents, this study is intended to provide an overview of eight risk-taking behaviors namely smoking, consuming alcohol, substance use, brawling,

crime, physical fighting, heavy petting, and premarital sex of adolescents in two vulnerable areas in North Jakarta Indonesia. The study also provides information on parent-adolescents relationship as perceived by adolescents which regarded as important factor that influence adolescents' engagement in risky behaviors. In this study adolescents' reasons for engaging in or not in risky behavior is also presented. Knowledge of the reasons for adolescents' involvement in risky behavior will provide information for designing future youth behavior change programs (Buckley & Sheehan, 2016) health promotion programs (Dey, Gmel, Studer, & Mohler-Kuo, 2014), and other prevention programs (Oman, Vesely, Kegler, McLeroy, & Aspy, 2003; Morales-Alema, 2011; Hale & Viner, 2016).

This study provides an overview of eight risk-taking behaviors (smoking, consuming alcohol, substance use, brawling, crime, physical fighting, heavy petting, and premarital sex) of adolescents in two vulnerable areas in North Jakarta, Indonesia. The study provides information on parent-adolescent relationships as perceived by adolescents. In addition, the study provides information on adolescents' reasons for engaging in or not in risky behaviors. Knowledge of the reasons for adolescents' involvement in risky behaviors will provide important information for designing future youth behavior change programs (Buckley & Sheehan, 2010), health promotion programs (Dey, Gmel, Studer, & Mohler-Kuo, 2014), and other prevention programs (Oman, Vesely, Kegler, McLeroy, & Aspy, 2003; Morales-Alema, 2011; Hale & Viner, 2016).

## **Method**

Using a nonrandom sampling method, this study was initially conducted as a household survey in two vulnerable neighborhoods in North Jakarta. The neighborhoods are located in two slum areas with poor quality and high-density housing, poor sanitation, inadequate access to clean water and other infrastructure. Although some household heads in these two neighborhoods have low-level permanent jobs, most work as temporary informal workers, fishermen, motorbike taxi drivers, truck drivers, port workers, or are unemployed. Therefore, these two neighborhoods are considered unsafe and vulnerable. Households with adolescents of 12 to 18 years old were purposively selected. The research defines "parents" as fathers, mothers, or

any adults living in the same house with adolescents and available to participate in interviews. Adolescents are identified as boys and girls of 12 to 18 years of age who are still in school, have dropped out of school, have already worked, or are unemployed. Informed consents were obtained from all participants involved.

The sample included 401 parents (female  $n = 32$ ; 8% and male  $n = 369$ ; 92%). As many as 91.5% ( $n = 367$ ) were married, and 8.4% ( $n = 34$ ) were widows, widowers, or not married. Parents' mean age was 45.3 years ( $SD = 7.4$ ; min = 22.8 and max = 70.0). The survey also involved 414 adolescents, 57.49% ( $n = 238$ ) female and 42.51% ( $n = 176$ ) male. Adolescents' mean age was 14.92 years ( $SD = 1.65$ ). As many as 91.3% ( $n = 378$ ) of adolescents involved were still in school, 2.4% ( $n = 10$ ) had finished high school, and 6.3% ( $n = 26$ ) had dropped out. Of those still in school, 90.3% were male and 92% female.

Parents and adolescents were interviewed in separate places, using a questionnaire developed by the researcher by referring to the previous report conducted by Kusumawardani and Suhardi (2011) on behavioral health risk among adolescents in West Java, Indonesia including smoking, unhealthy behavior, and physical activities. The parental questionnaire obtained information related to educational background, employment, income, and household expenditure. The questionnaire for adolescents related to eight potentially risky behaviors (smoking, consuming alcohol, substance use, brawling, criminal activity, physical fighting, heavy petting, and premarital sex). Expected responses were "yes" or "no." In the adolescent questionnaire, 20 items addressed adolescents' perception of their relationship with their parents. Respondents chose from three alternative answers, that is, "often," "sometimes," and "never." The questionnaire also included items on reasons for taking or not taking risky behaviors.

Two hypotheses were tested in this study. First, whether there is different proportion between boys and girls in related to eight potential risky behaviors (smoking, consuming alcohol, substance use, brawling, criminal activity, physical fighting, heavy petting and premarital sex) ( $H_0: p_{\text{girls}} = p_{\text{boys}}$  against the alternative hypotheses  $H_a: p_{\text{girls}} \neq p_{\text{boys}}$ ). Were boys more likely to be involved in eight potential risky behaviors than girls? The second hypotheses was whether there is different proportion between adolescents age 13-15.9 years and adolescents age 16.18 years in their involvement to eight potential risky

behaviors ( $H_0: p_{13-15y} = p_{16-18y}$  against the alternative hypotheses  $H_a: p_{13-15y} \neq p_{16-18y}$ ). Were older adolescents i.e. age 16-18 years more likely to be engaged in eight potential risky behaviors than younger adolescents i.e. age 13-15 years old?

## Results

### Parents' Characteristics

Parents' educational backgrounds were as follows: More than half (63.4%) had a low level of education (35.7% elementary; 27.7% junior high), from elementary school, grade 1 to junior high school, grade 9. One-third of parents (33.4%) had graduated from senior high school and 2.7% from institutions of higher learning (0.5% did not answer). More than half of parents had been able to fulfill the basic requirement of 9 y compulsory education.

Work and family life were closely related to educational level. The higher the education, the better the jobs and quality of life or well-being. With regard to parents' employment, Table 1 indicates that most parents were informal workers in various sectors (40.6%;  $n = 163$ ) (e.g., motorbike taxi driver, truck driver, fishing laborers, building construction workers), and some were unemployed (6%;  $n = 24$ ). Data on parents' employment relates to data on their educational background: Lack of knowledge and skills needed for high levels of employment might have been the reason most parents worked in informal sectors with low wages.

Data indicated that parents were categorized at low socioeconomic levels (Table 1). In previous studies, Ponnett (2014) and Crandall, Magnusson, Novilla, Novilla, and Dyer (2017) reported that family financial problems influence adolescents' behavior and often lead to parental conflict because parents cannot meet the family's needs. Previous studies also reported that serious criminal cases often occur in low-income and low-resource communities, and these circumstances influence adolescents' antisocial behavior (Cook et al., 2009; Tjora, Hetland, Aarø, & Øverland, 2011; Elliott, Avery, Fishman, & Hoshiko, 2002; Djerboua, Chen, & Davison, 2016).

Table 1

*Parents' Educational and Employment Background*

Parents' educational and employment background	f = 401	%
Education		
No answer	2	.5
Elementary school	143	35.7
Junior high school	111	27.7
Senior high school	134	33.4
University/tertiary education	11	2.7
Employment		
Unemployed	24	6.0
Self-employed	83	20.7
Employee	86	21.5
Factory workers	45	11.2
Temporary informal workers in various sectors	163	40.6

**Adolescents' Perception of Their Connection with Their Parents**

**Table 2** characterizes relationships of adolescents and their parents as perceived by the adolescents. Even though numbers are small, some adolescents perceived their relationship with their parents as not strong. Some felt that their parents never supported or motivated them, never paid attention or listened to them, and never praised them. Some mentioned that their parents never fulfilled their needs, never spent time with them, and never provided advice they needed. Table 2 also shows that some adolescents reported that they were scolded with abusive words, often hit or beaten with or without tools, or abused by their parents.

Contreras and Cano (2014) stated that communication among family members is the essential dynamic of family relations, and lack of communication is associated with antisocial behaviors. Open communication relates to a democratic parenting style that shows warmth and relates positively to affection. In contrast, problematic communications are related to the authoritarian parenting style and positively related to criticism and rigid manners of setting rules.

Table 2

*Adolescents’ Perception of Connection with Parents*

No	Parent–adolescent connections	often/ never	Age			
			12–12.9 (n = 29)	13–15.9 (n = 218)	16–18 (n = 167)	Total (n = 414)
			Count	Count	Count	Count
1	Supports and motivates me	often	20	154	117	291
		never	2	5	4	11
2	Gives me attention and listens to me	often	23	151	126	300
		never	1	1	2	4
3	Hits me (with or without tools)	often	2	8	6	16
		never	20	148	125	293
4	Shows me affection	often	25	175	121	321
		never	0	4	4	8
5	Praises me	often	18	109	85	212
		never	2	5	7	14
6	Cheers me up	often	20	118	85	223
		never	2	2	9	13
7	Respects my freedom	often	13	84	56	153
		never	5	24	10	39
8	Scolds me with abusive words	often	1	11	10	22
		never	21	152	119	292
9	Understands me	often	21	128	99	248
		never	0	5	2	7
10	Trusts me	often	22	130	108	260
		never	1	0	2	3
11	Provides advice and guidance	often	23	170	129	322
		never	0	2	4	6
12	Provides my needs	often	26	158	101	285
		never	0	2	2	4
13	Harasses me	often	1	3	3	7
		never	28	200	155	383
14	Gives me money	often	28	184	125	337

		never	1	6	7	14
15	Buys things for me	often	12	110	76	198
		never	3	8	8	19
16	Has open communication with me	often	19	127	100	246
		never	1	8	5	14
17	Forces me to work for a living making me unable to learn, attend school, and play	often	0	4	6	10
		never	29	195	145	369
18	Spends time with me	often	13	78	68	159
		never	3	13	8	24
19	Touches parts of my body, making me uncomfortable	often	0	5	2	7
		never	28	198	153	379
20	Supports my schoolwork (only answered if attending school)	often	24	136	112	272
		never	3	21	11	35

### Adolescents' Engagement in Risky Behaviors

**Table 3** indicates that age correlates with adolescents' risky behaviors. Risky behaviors were performed mostly by older adolescents from 13 to 18 years. Alarmingly, some children aged 13 to 15 already smoked (6%), drank alcohol (1.4%), and engaged in brawls (2.8%), in physical fights (5.5%), and in heavy petting (0.5%). Table 3 also shows that smoking (5.6%), physical fights (4.6%), and brawling (2.2%) were the riskiest behaviors in which adolescents were involved. Although in relatively small numbers, some adolescents also engaged in consuming alcohol (1%), substance use (0.2%), heavy petting (0.5%), and premarital sex (0.2%).

Table 3  
Adolescents' Risky Behaviors by Age

No.	Risky behaviors	No/ Yes	Age				Z- value	p- value
			12–12.9	13–15.9	16–18	Total		
			(n = 100) %	(n = 218) %	(n = 167) %	(n = 414) %		
1	Smoking	no	100	94.0	94.0	94.4	0,000	1.,000
		yes	0	6.0	6.0	5.6		
2	Drinking alcohol	no	100	98.6	99.4	99.0	0,782	0.434
		yes	0	1.4	0.6	1.0		
3	Substance use	no	100	100	99.4	99.8	1.306	0.192
		yes	0	0	0.6	0.2		
4	Brawling	no	100	97.2	98.2	97.8	0.663	0.507
		yes	0	2.8	1.8	2.2		
5	Criminal activity	no	100	100	100	100	na	na
		yes	0	0	0	0		
6	Physical fights	no	100	94.5	95.8	95.4	0.603	0.546
		yes	0	5.5	4.2	4.6		
7	Heavy petting	no	100	99.5	99.4	99.5	0.138	0.890
		yes	0	0.5	0.6	0.5		
8	Premarital sex	no	100	100	99.4	99.8	1.306	0.192
		yes	0	0	0.6	0.2		

Table 4 shows adolescents' risk-taking behaviors across genders. Boys were more likely than girls to be involved in risky behaviors (e.g., smoking, drinking alcohol, brawling, and physical fighting). However, even though the number is small, some female participants were also involved in drinking alcohol (0.4%), substance use (0.4%), physical fighting (0.8%), and heavy petting (0.4%).

Table 4  
*Adolescents' Risky Behaviors by Gender*

No.	Risky behaviors	Yes/ No	Boys	Girls	Total	Z-value	p-value
			(n = 176) %	(n = 238) %	(n = 414) %		
1	Smoking	no	87.5	99.6	94.4	5.294	0.000
		yes	12.5	.4	5.6		
2	Drinking alcohol	no	98.3	99.6	99.0	1.314	0.189
		yes	1.7	.4	1.0		
3	Substance use	no	100	99.6	99.8	0.901	0.368
		yes	.0	.4	.2		
4	Brawling	no	94.9	100	97.8	3.497	0.000
		yes	5.1	.0	2.2		
5	Criminal activity	no	100	100	100	na	na
		yes	.0	.0	.0		
6	Physical fights	no	90.3	99.2	95.4	4.273	0.000
		yes	9.7	.8	4.6		
7	Heavy petting	no	99.4	99.6	99.5	0.285	0.775
		yes	.6	.4	.5		
8	Premarital sex	no	99.4	100	99.8	1.351	0.177
		yes	.6	.0	.2		

According to Idemudia and Sekano (2015), gender and age are important factors that determine probability of risk-taking behaviors. Erol and Orth (in Idemudia & Sekano, 2015) reported that adolescent boys showed higher levels of risk-taking behaviors than girls. Djerboua et al. (2016) also stated that physical fighting related to injury was more frequent in males than in females. However, Idemudia and Sekano (2015) found no significant gender differences in risk-taking behavior. Meanwhile, Schulte, Ramo, and Brown (2009) identified factors that influenced alcohol-drinking behavior in adolescence and continued into adulthood. Their study's result indicated that certain biological and psychosocial factors appear to impact boys and girls similarly. However, as adolescents shifted into adulthood, biological and psychosocial impact appeared to differ between males and females.

Sabri et al. (2017) assessed gender differences regarding two factors of HIV transmission, multiple sexual partners and sharing needles. Results indicated that more men than women had recent multiple sex partners and shared needles. For physical fighting, Djerboua et al. (2016) reported that males were more often involved than females.

In this study the comparison of proportions of eight risky behavior, namely smoking, drinking alcohol, drug use, fighting, criminal acts, physical fights, heavy petting, and premarital sex engaged by adolescents was tested by different test procedures. A Z test was used to measure the equality of proportions among the population, a Chi-Square test was performed for testing the independence of risky behavior, and Marascuillo procedure was applied to provide the magnitude of variation in the pairs of proportions.

The two hypotheses, comparison of proportions of eight risky behaviors between girls and boys population as well as between adolescents age 13-15.9 and 16-18 years population were tested by Z test. For the gender population the hypotheses tested was  $H_0: p_{\text{girls}}=p_{\text{boys}}$  against the alternative hypotheses  $H_a: p_{\text{girls}}\neq p_{\text{boys}}$ . The Z test was applied to test the hypotheses of each risky behavior between girls and boys. For the age population the hypotheses tested was  $H_0: p_{13-15.9y}=p_{16-18y}$  against the alternative hypotheses  $H_a: p_{13-15.9y}\neq p_{16-18y}$ . The Z test was applied to test the hypotheses of each risky behavior between adolescents’ age 13-15.9 years and 16-18 years. This study did not include the population of age 12-12.9 y since they did not engage in risky behavior. The hypotheses tested in the Z test was performed with the following formula.

$$z = \frac{(\bar{p}_1 - \bar{p}_2)}{\sqrt{\bar{p}(1 - \bar{p}) \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Based on gender population, the result of Z test showed for smoking  $Z= 5.294$  with p value = 0.00, brawling  $Z = 3.497$  with p value = 0.00, and physical fight  $Z= 4.273$  with p value = 0.00. Small Z value showed for other five risky behaviors, namely drinking alcohol, substance use, criminal activity, heavy petting and premarital sex. The result of this Z test indicated that the proportions of three risky behaviors, namely smoking, brawling and physical fight are not equal between girls and boys population. Meanwhile, based on

age population, the result of Z test showed that all Z-values are small, less than 1.96 and all p values are more than 0.05. This study used  $\alpha = 0.05$  level of significant which means that the proportions of eight risky behaviors between age 13-15.9 and age 16-18 years are equal. There was no difference between adolescents age 13-15.9 and 16-18 years in engaging with eight risky behaviors (see table 3)

The Chi-Square test was performed to test the hypotheses  $H_0: p_1=p_2=\dots p_7=p_8$  against the alternative hypotheses that not all eight risky behaviors proportions are equal,  $H_a$ =not all  $p_i$  are equal ( $i=1, 2,3,\dots,8$ ). The result of Chi-Square test was  $\chi^2= 77.016$  with the p value = 0.00. This study choose  $\alpha$  0.05 level of significant ( $\chi^2= 77.016$ ;  $p<0.05$ ), which can be concluded that not all proportions of eight risky behaviors engaged by adolescents are equal.

In order to identify the equality of the proportion of risky behaviors, a multiple comparisons procedures known as Marascuillo procedure was performed. The result showed that there is difference on the proportion of risky behaviors that adolescents engaged in, namely between smoking vs substance use, smoking vs criminal activity, smoking vs heavy petting, smoking vs premarital sex, substance use vs physical fights, criminal activity vs physical fights, physical fights vs heavy petting, and physical fights vs premarital sex (see table 5)

Table 5  
*Result of Multiple Comparison using Marascuillo procedures*

Pairwise Comparison	$ p_i-p_j $	$CV_{ij}$	Significant if $ p_i-p_j  > CV_{ij}$
Smoking - Drinking alcohol	0.046	0.046	Not Significant
Smoking - Substance use	0.053	0.043	Significant
Smoking - Brawling	0.034	0.050	Not Significant
Smoking - Criminal activity	0.056	0.042	Significant
Smoking - Physical fights	0.010	0.057	Not Significant
Smoking - Heavy petting	0.051	0.044	Significant
Smoking - Premarital sex	0.053	0.043	Significant

Drinking alcohol - Substance use	0.007	0.020	Not Significant
Drinking alcohol - Brawling	0.012	0.032	Not Significant
Drinking alcohol - Criminal activity	0.010	0.018	Not Significant
Drinking alcohol - Physical fights	0.036	0.043	Not Significant
Drinking alcohol - Heavy petting	0.005	0.022	Not Significant
Drinking alcohol - Premarital sex	0.007	0.020	Not Significant
Substance use - Brawling	0.019	0.028	Not Significant
Substance use - Criminal activity	0.002	0.009	Not Significant
Substance use - Physical fights	0.043	0.040	Significant
Substance use - Heavy petting	0.002	0.016	Not Significant
Substance use - Premarital sex	0.000	0.013	Not Significant
Brawling - Criminal activity	0.022	0.027	Not Significant
Brawling - Physical fights	0.024	0.047	Not Significant
Brawling - Heavy petting	0.017	0.030	Not Significant
Brawling - Premarital sex	0.019	0.028	Not Significant
Criminal activity - Physical fights	0.046	0.039	Significant
Criminal activity - Heavy petting	0.005	0.013	Not Significant
Criminal activity - Premarital sex	0.002	0.009	Not Significant
Physical fights - Heavy petting	0.041	0.041	Significant
Physical fights - Premarital sex	0.043	0.040	Significant
Heavy petting vs Premarital sex	0.002	0.016	Not Significant

### **Reasons to Engage in Risky Behaviors**

Knowledge about reasons for risky behaviors is very important. In this study, seven factors influenced adolescents to engage in risky behaviors: (1) pressure from friends and (2) family, (3) desire after watching a film, (4) after viewing the Internet, (5) after reading a book or magazine, and (6) after seeing something directly, and (7) wanting to try something or wanting to know more about something. [Table 6](#) indicates that wanting to try or wanting to know ( $n = 21$ ; 50%) and pressure from friends ( $n = 17$ ; 40.5%) were the most frequent reasons adolescents engage in risky behaviors.

Table 6  
*Reasons to Engage in Risky Behaviors*

Reasons to engage in risky behaviors	No/Yes	Boys	Girls	Total
		(n = 37)	(n = 5)	(n = 42)
		%	%	%
Peer pressure	no	56.8	80.0	59.5
	yes	43.2	20.0	40.5
Family pressure	no	97.3	100.0	97.6
	yes	2.7	.0	2.4
Encouraged by viewing movies	no	97.3	80.0	95.2
	yes	2.7	20.0	4.8
Encouraged by viewing the Internet	no	89.2	80.0	88.1
	yes	10.8	20.0	11.9
Encouraged by books and/or magazines	no	94.6	100.0	95.2
	yes	5.4	.0	4.8
See directly	no	81.1	100.0	83.3
	yes	18.9	.0	16.7
Try/want to know	no	48.6	60.0	50.0
	yes	51.4	40.0	50.0
Others	no	97.3	100.0	97.6
	yes	2.7	.0	2.4

### Reasons Not to Engage in Risky Behaviors

Adolescents reported eight reasons not to engage in risky behaviors: (1) being advised by family; (2) by religious leaders; (3) by other adults, such as teachers, community leaders, etc.; or 4) by friends or peer groups; 5) fear of God for committing sins; 6) of being scolded by parents; 7) of destroying the future; and 8) of harm; and (9) others. [Table 7](#) indicates that being advised by family (68%) was higher than being advised by teachers and community leaders (23.9%), religious leaders (20.7%), and friends or peers (14.5%). Data suggests that families play an important role in influencing adolescents not to engage in risky behaviors. This follows [Morales-Alema \(2011\)](#) who indicated that parental involvement is a significant buffer for high-risk sexual behavior.

Table 7  
*Reasons Not to Engage in Risky Behaviors*

No	Reasons not to engage in risky behaviors	No/Yes	Boys (n = 139)	Girls (n = 233)	Total (n = 372)
			%	%	%
1	Advised by family	no	33.8	30.9	32.0
		yes	66.2	69.1	68.0
2	Advised by religious leaders	no	79.9	79.0	79.3
		yes	20.1	21.0	20.7
3	Advised by other adults (teachers)	no	80.6	73.4	76.1
		yes	19.4	26.6	23.9
4	Advised by peers	no	87.8	84.1	85.5
		yes	12.2	15.9	14.5
5	Fear of God/of committing sins	no	54.7	42.1	46.8
		yes	45.3	57.9	53.2
6	Fear of parents	no	51.8	48.5	49.7
		yes	48.2	51.5	50.3
7	Fear of ruining the future	no	58.3	43.8	49.2
		yes	41.7	56.2	50.8
8	Fear of dangerous impact	no	58.3	51.1	53.8
		yes	41.7	48.9	46.2
9	Others	no	97.8	97.0	97.3
		yes	2.2	3.0	2.7

### Discussion and Conclusion

This study was conducted in vulnerable areas of North Jakarta, where more parents have low educational and employment backgrounds as well as low-income and expenditure levels.

Previous studies reported that family income influences development of adolescents’ behavior, that is, financial problems lead to adolescents’ maladaptive coping due to the family’s inability to meet their basic needs (Ponett, 2014; Crandall et al., 2017). Adolescents from low-income families take risky behaviors as a form of maladaptive coping with family financial

stress. Besides that, most low-income families live in communities with high crime rates, high poverty, and few resources; antisocial behaviors are perceived as normative (Cook et al., 2009). Djerboua et al. (2016) reported that family prosperity influences adolescents' risk-taking behavior. Adolescents from families with low socioeconomic levels have higher risk of being involved in physical fights and having related injuries. Tjora et al. (2011) reported that parents' socioeconomic status was significantly associated, directly and indirectly, with adolescents' initiation and development of smoking behavior. Conversely, high socioeconomic status had direct negative association with adolescents' smoking behavior.

A study conducted by Jang & Johnson (2010) showed that adolescents imitate the behavior of those around them, especially their parents when they see their parents smoke and use drugs. Parents directly show their adolescents that smoking and using drugs is part of an acceptable lifestyle. Additionally, Elliott et al. (2002) reported that experiencing and witnessing family violence contributed to risky sexual behavior among young female adolescents. Meanwhile, the study of Herrera & McCloskey (2003) indicated that childhood sexual abuse appeared to be the powerful predictor of girls' criminal behavior. Study by Iverson, Jimenez, Harrington, & Resick (2011) reported that exposure to family violence during childhood, including childhood physical abuse, childhood sexual abuse, and witnessing parental violence contribute to the risk for victimization of intimate partner violence for both male and female. Communities at lower socioeconomic levels have low level of education and do not have enough knowledge about parenting and childcare. Therefore, children in poor communities are often exposed to family violence.

The present study also showed that fear of God for committing sins, fear of parents, and fear of damaging the future were reasons adolescents did not engage in risky behaviors. This study supports Landor et al. (2011) in that a negative relationship exists between religious beliefs and risky sexual behavior; parental religiosity affects authoritative parenting and youth religiosity. The present study also supports the findings of previous studies (Marsiglia, et.al., 2012; Arli et.al., 2016; Ameri, et.al., 2017) that religion and religiosity can directly and indirectly influence adolescents' perceptions of risky behavior and the eagerness to engage in risky behavior. Thus, it is very

important to integrate religious aspects while developing intervention programs for adolescents to prevent them from engaging in risky behavior. Despite peers' influence on sexual behavior, the parental role was found strong enough to facilitate adolescents in deciding not to engage in risky sexual behavior. Parents play an important role in protecting their adolescents from risky activities. They play a role in preparing their adolescents to be responsible for the various decisions that they make, including in their sexual behavior. Communication with and supervision of adolescents by their parents greatly helps adolescents to not feel alone in facing challenges in their development.

The present study indicated that even though the percentage is small, less than 10% of adolescents living in two vulnerable areas of North Jakarta engage in risky behaviors, namely, smoking, consuming alcohol, substance use, brawling, crime, physical fighting, heavy petting, and premarital sex. However, this study showed that there is difference on the proportion of risky behaviors that adolescents engaged in.

The study also revealed that some parent–adolescent relationships are not strong, thus likely influencing adolescents' engagement in risky behaviors. Fear of God because of sins, fear of parents, and fear of damaging the future were the most common reasons for adolescents not to involve themselves in risky behaviors. Intervention programs intended for young people, therefore, will also be relevant for communities at a lower socioeconomic level.

### **Acknowledgments**

This study is part of research funded by Wahana Visi Indonesia. The author would like to thank Wahana Visi Indonesia and all participants in this study for their support. The authors would like to thank Enago ([www.enago.com](http://www.enago.com)) for the English language review.

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