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Life skills and sexual risk behaviors among adolescents in Indonesia: A cross-sectional survey

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Abstract

Background: Adolescents require life skills and individual and interpersonal abilities to grow into adults with a healthy lifestyle. Although the majority of the literature indicates that life skills increase teenagers' cognitive, social, and emotional abilities, there is a lack of data correlating life skills to sexual risk behaviors.

Objective: This study aimed to examine the relationship between life skills and sexual risk behaviors among adolescents aged 15–19 in Bandung, Indonesia.

Methods: This study was conducted using a cross-sectional survey of 480 adolescents from April to May 2021. A representative sample was drawn from the students aged 15–19 years. The participants were selected using simple random sampling generated by computer software. Life Skill Training Questionnaire High School (LSTQ-HS) and sexual risk behaviors instruments were used for data collection, and logistic regression was used for data analysis.

Results: From a total of 480 respondents, about 23.3% had masturbation experience, 25.8% had petting experience, 8.3% had sexual intercourse, 5% had sex before 18 years of age, and 4.2% had oral sex experience. Sexual risky behaviors were associated with unfavorable refusal skill (AOR = 6.46, 95% CI = 2.37, 17.53), assertiveness skill (AOR = 3.51, 95% CI = 1.32, 4.33), problem-solving skill (AOR = 5.35, 95% CI = 2.88, 11.39), and self-control skill (AOR = 7.31, 95% CI = 2.79, 17.24).

Conclusion: Life skills are important protective aspects for those who engage in sexually risky behavior. Considering the study findings, tailored life skills programs are critical for adolescent wellbeing and risk reduction. Nurses who take a proactive role in providing sexual and reproductive health services may provide more accurate information and provide early screening and assessment for sexual and reproductive behavior to reduce risky sexual behavior among adolescents. Schools are also encouraged to work with local health departments to conduct sexual education counseling programs.

Keywords

life skills; school adolescents; sexual behavior; substance use; nursing; Indonesia

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Background

Adolescent development is vital for character development and identity formation and a critical transition period from child to adult (Indonesian Ministry of Health, 2018). Adolescence is a time of considerable sexual development. Adolescence marks the beginning of puberty, a crucial milestone in sexual maturation (Santos, 2022), establishing a sense of identity in late adolescence (17–19 years) through social contact, peer interaction, and sexual attraction (Herting & Sowell, 2017). Adolescents begin to estimate their own risk-taking around middle adolescence (Sanci et al., 2018). During adolescence, a person's desire for intimacy and love grows, and they experiment with numerous ways to show it (Herting & Sowell,

2017). Adolescents are naturally curious and enthusiastic to try new things and explore with adults, such as sexuality issues and use drugs injection (Purnama et al., 2018).

As per the 2020 data, published by the Indonesian Census Bureau, adolescents (10–19 years of age) count approximately 46 billion or 17% of the total Indonesian population (51% age of 10 to 14 and 49% age of 15 to 19 years old) (Central Bureau of Statistics, 2020). Bandung is the first highest number of adolescents in Indonesia, accounting for 60% of total adolescents in Indonesia. As a result of early marriage in developing nations such as Indonesia, teenagers are more likely to become pregnant at an early age and to become parents before the age of 18. In the 2017 Indonesia Demographic and Health Survey (IDHS) data, 80% of women and 84% of men admitted that they had been in a relationship.

The 15-17 age group is the group that started dating for the first time (45% women and 44% men). The majority of women and men admit to engaging in various activities when dating, such as holding hands, hugging, lips kissing, and touching. In addition, it is reported that 8% of men and 2% of women have had sexual intercourse. Premarital sex was reported by 59% of women and 74% of men between the ages of 15 and 19. The majority of the cases occurred between the ages of 17 and 19, with the median age being 18 (National Population and Family Planning Board, 2017). Another study in 2017 reported that 12.5% of males and 2.7% of females aged 15-19 had premarital sexual intercourse (Yolanda et al., 2019). According to data from Bandung Census Bureau, approximately 65% of high school adolescents had premarital sex; 20% of them had an abortion (National Population and Family Planning Board, 2017). Another study in Bandung reported that 91% of 15–19-year-olds had sexual intercourse before marriage (Purnama et al., 2018). In addition, the sexual risk behavior among adolescents in Bandung is highly worrying. The higher number of sexual abuse and human trafficking involving adolescents as “sex slaves” has been prevalent (Paransa & Hatta, 2021).

Premarital sex practice among adolescents is increasing at an alarming rate, which could have a negative effect on women's reproductive health in the future. Sexual exposure during adolescence could increase the risk of sexually transmitted illnesses such as HIV/AIDS, adolescent pregnancy, and fatherhood (Unigwe et al., 2022). Early marriage, which results in early sexual exposure, and pregnancy, has also been shown to have adverse effects on reproductive health (Sezgin & Punamäki, 2020). In addition, promiscuity negatively influences health because it encourages risky behaviors, including free sex, illegal activity like abortion, the use of illicit drugs, and the spread of sexually transmitted diseases (STDs) (Lutfinawati & Ananingsih, 2014; Pratiwi & Basuki, 2011). However, formal sex education in schools is rare or insufficient in many developing countries. Inadequate sex education leads to unprotected sex, unwanted pregnancy, and STDs. Unprotected sex in adolescents is due to a lack of understanding and inappropriate sex education (Kumar et al., 2017). Also, parental communication on sexuality and STDs is lacking (Rogers, 2017). As a result, adolescents have limited opportunities to discuss sexual concerns, hindering healthy sexual development (Sales et al., 2013).

Life skills are the ability to perform adaptive and positive behaviors that enable individuals to effectively deal with the demands and challenges of everyday life (World Health Organization, 1994). It is a broad concept that comprises varied cognitive skills required to function in society, preserve mental health, and enjoy a more rewarding social life. Unlike dispositional characteristics like personality traits, life skills are acquired (World Health Organization, 1994). In the social learning theory, the conceptual framework of life skills includes psychological aspects such as acquired learnable behaviors and attitudes that are amenable to modeling (Bandura, 1986; Botvin & Kantor, 2000). According to Kase et al. (2016), adolescents and adults engage in four main categories of daily activities. First, we need Decision-Making skills (DM), which help us make good decisions about how to solve problems based on logic and imagination. Second, Interpersonal Relationship skill (IR) refers to the ability to imagine sentiments

and emotions based on other people's words and behaviors and exhibit empathy. Third, Effective Communication skill (EC) is the ability to communicate one's ideas to others successfully. Fourth is the Coping-with-Emotions skill (CE), which entails the ability to effectively manage one's own emotions (Kase et al., 2016).

Higher life skills increase socially appropriate behavior (Botvin & Kantor, 2000). Adaptive behavior can be seen in educational contexts. Since DM reflects executive functions and CE affects emotional regulation, these characteristics appear to be linked to risky sexual behaviors (Hattori & Ikeda, 2016). Developing one's life skills requires inputs such as information, skills, and attitudes in order to grow and maintain a greater quality of life (Lestari & Suminar, 2016). Life skills have a significant impact on supporting the lives of teenagers, notably the prevention and reduction of adolescent challenges. Adolescents' life skills are hoped to provide them with a tougher, stronger, more disciplined, religious, moral, and character-filled life (Ermayani, 2015). Adolescents with strong character will become superior and proud teenagers due to their physical health, emotional stability, and intellectual development (Ermayani, 2015).

A previous study reported that 52.6% of adolescents were able to make decisions for themselves and their families, and 15.4% were unable to solve the problem due to complex issues (Sulistianingrum & Arifah, 2016). Unable to solve problems affects problem-solving skills, leading to teenagers' frustration and hopelessness (Sulistianingrum & Arifah, 2016). A study in Thailand has reported that 44% of adolescents lack life skills, and 40% have inadequate communication skills. However, recent studies reveal that relatively few youth contacts focused on life skills, and service use remains low at 12% (Dingeta et al., 2012; Kennedy et al., 2014; Temesgen & Markos, 2015; Wolie, 2014). Schools were an excellent place for adolescents to communicate positive and unpleasant life experiences. There are several areas where nurses may help enhance adolescents' sexual and reproductive health and minimize the number of unintended pregnancies and sexually transmitted illnesses, including communities, schools, public health facilities, and acute care clinics. Thus, understanding the relationship between life skills and sexually risky behavior in adolescents is critical for developing sexual and reproductive health programs and determining whether or not to incorporate life skills into school health programs. Although many studies have been conducted to explore adolescent sexual risk behaviors and their associated factors, none have investigated the relationship between life skills and sexual risk behaviors among adolescents in Indonesia. This study aimed to examine the relationship between life skills and sexual risk behaviors among adolescents aged 15–19 in Bandung, Indonesia.

Methods

Study Design

This survey was conducted using a cross-sectional design at a senior high school in Bandung, West Java, Indonesia. With a total population of 41,231 people, Bandung is home to around 12,369 young people aged 10–24 years, including

teenagers, accounting for 30 percent of the total population (Central Bureau of Statistics, 2020).

Participants

The inclusion criteria of the participants were adolescents aged 15-19 years and willing to be respondents. In contrast, the exclusion criteria were adolescents who have cognitive impairment and are diagnosed with HIV. The participants were selected using the convenience sampling technique. Estimated sample were calculated using G-Power software version 3.1 with F-test, $\alpha = 0.05$, effect size = 0.10 (Fung & Cohen, 1998), power level = 0.80, estimation a minimum sample of 199. Following the addition of a 10% non-response rate, the total minimum sample size to be recruited was 210.

Instruments

The adolescent life skills variable in this study was measured using Life Skill Training Questionnaire High School (LSTQ-HS) made by the National Health Promotion Associates (NHPA), which was developed by Botvin and Kantor (2000) in English. The questionnaire consists of four sections (A and D) with a total of 52 questions. The questionnaire used a Likert scale; strongly agree = 4, agree = 3, disagree = 2, disagree = 1, and strongly disagree = 0. Unfavorable life skills are those with a score below average (mean = 94.38). The instrument had good valid ($r = 0.43$) and reliability (Cronbach' Alpha = 0.88) (Botvin & Kantor, 2000).

A measure of sexual risk behaviors used an instrument developed by Ugarte et al. (2013). Each participant was questioned about their sexual behavior over the previous 12 months. This questionnaire is divided into five aspects and has a total of 22 questions. Sexual risk behavior is defined if they practiced at least one of the listed behaviors in the questionnaire. There was a dichotomy in the responses: adolescents with risky sexual conduct (classified as 1) and no risky sexual behavior (coded as 0). Cronbach Alpha was 0.70 (Ugarte et al., 2013).

All instruments were translated from English to Indonesian and back to English to ensure it was the same. After receiving consent from the original authors, the translation process began. Two Indonesian multilingual nursing scholars independently translated the instruments. The researchers then analyzed the two translated versions that addressed ambiguities and inequalities and chose the final form. The reverse translation procedure was created with the goal of establishing a significance instead of a literal "word for word" translation (Ozolins et al., 2020). First, an independent bilingual translator translated the instrument from Indonesian to American English. Finally, both healthcare professionals and the primary investigators evaluated the reverse-translated instrument in comparison to the original instruments. Twenty (5%) of senior high school students were pre-tested. The internal consistency of the questionnaire was determined by Cronbach's alpha 0.7. The data were verified daily for errors and missing data.

Data Collection

Data were collected from April to May 2021. The researchers were aided by one of the instructors whom the school assigned to schedule online meetings with prospective school

respondents to recruit respondents who met the previously established research inclusion criteria.

Data Analysis

Univariate analysis was used to analyze studied variables using frequency, mean, standard deviation, and range. Bivariate logistic regression in ENTER mode was utilized to evaluate the association between studied variables. Variables with a p -value less than 0.25 in bivariate regression were included in the multivariate regression model. Adjusted odds ratios (AORs) were used to evaluate the association, with a p -value less than 0.05 indicating a statistically significant.

Ethical Consideration

This study was approved by the ethical committee of Universitas Padjadjaran, Indonesia (II/130L/ETIK/VII/2020), and the study was also approved by the Indonesian Political and National Unity Agency. The researchers discussed the aims, benefits, time of the research, then explained the rights of the respondents and the time agreed to conduct the research process with the respondent. The respondents who agreed to participate in the study completed an informed consent form. Besides, permission to use the instrument was obtained from the original authors prior to data collection.

Results

A total of 480 adolescents responded to the study, yielding a response rate of 95%. The respondents' mean ($\pm$ SD) age was 16.89 (SD = 0.76) years. As Table 1 shows, 65% of the participants were males. The religion of 95% of respondents was Muslim, followed by 5% Protestant. In addition, 84.2% of respondents had received sexual education information. The majority of sexual education information obtained by the respondents came from the internet (44.2%).

Table 1 Demographic characteristics of the participants ($n = 480$)

Variables	n (%)	Mean $\pm$ SD
Age		16.89 $\pm$ 0.76
Gender		
Male	312 (65.0)	
Female	168 (35.0)	
Grade		
X	164 (34.2)	
XI	168 (35.0)	
XII	148 (30.8)	
Education on risky behaviors		
Yes	404 (84.2)	
No	76 (15.8)	
Source of information		
Internet	212(44.2)	
Friend	144 (7.5)	
Teacher	128 (26.7)	
Parent	8 (1.7)	
Mass media	96 (20.0)	

Table 2 shows that the mean total score of life skills among adolescents was 94.38 (SD = 14.63). The highest life skill domain was refusal skill (17.84 $\pm$ 7.37), followed by assertiveness (6.84 $\pm$ 2.77), problems solving (5.93 $\pm$ 2.03), and self-control skills (4.69 $\pm$ 1.75). Of 480 respondents,

23.3% had masturbation experience, 25.8% had petting, 8.3% had sexual intercourse, 5% had sex before 18 years of age, and 4.2% had oral sex experience.

Table 2 Life skills and sexual risk behaviors among adolescents in Indonesia ($n = 480$)

Variables	Mean $\pm$ SD	Range	n (%)
Life skills	94.38 $\pm$ 14.63	51 - 119	
Refusal skill	17.84 $\pm$ 7.37	0 - 24	
Assertiveness skill	6.84 $\pm$ 2.77	0 - 12	
Problem-solving skill	5.93 $\pm$ 2.03	0 - 8	
Self-control skill	4.69 $\pm$ 1.75	0 - 8	
Sexual risky behavior			
Masturbation			112 (23.3)
Petting			124 (25.8)
Sexual intercourse			40 (8.3)
Sex before 18			24 (5.0)
Oral sex			20 (4.2)

Table 3 shows that being male, receiving education on risky behaviors, having unfavorable refusal skills, assertiveness skills, problem-solving skills, and self-control skills were statistically significant with sexual risk behaviors. In the multivariate logistic regression, after adjusting for potential confounders, being female, being male, receiving education on risky behaviors, having unfavorable refusal, assertiveness, problem-solving, and self-control skills were associated with sexual risk behaviors. Life skills showed a statistically significant correlation with risky sexual behavior even after controlling for the other variables. Having unfavorable refusal (AOR = 6.46, 95% CI = 2.37, 17.53), assertiveness skill (AOR = 3.51, 95% CI = 1.32, 4.33), problem-solving skill (AOR = 5.35, 95% CI = 2.88, 11.39), and self-control skill (AOR = 7.31, 95% CI = 2.79, 17.24) were found to be significantly associated with risky sexual behavior.

Table 3 Relationships between demographic characteristics, life skills, and sexual risk behaviors

Variables	Sexual risk behaviors		Crude OR with 95% CI	Adjusted OR with 95% CI
	Yes ($n = 175$)	No ($n = 305$)		
Age				
15	15	70	Ref.	Ref.
16	18	122	2.66 [0.67, 9.72]	1.43 [0.18, 3.76]
17	30	62	2.14 [0.78, 5.92]	1.61 [0.10, 5.14]
18	47	20	1.77 [0.08, 7.19]	0.221 [0.11, 5.01]
19	65	31	0.95 [0.04, 4.10]	0.71 [0.04, 2.41]
Gender				
Female	70	235	Ref.	Ref.
Male	105	70	3.62 [2.06, 6.51] *	4.39 [1.74, 19.16] *
Grade				
X	45	130	Ref.	Ref.
XI	63	125	2.42 [0.89, 7.73]	2.05 [0.20, 5.84]
XII	67	50	0.63 [0.23, 9.56]	1.10 [0.08, 2.45]
Education on risky behaviors				
Yes	79	259	2.67 [1.29, 6.43] *	3.46 [1.37, 8.25] *
No	96	46	Ref.	Ref.
Source of information				
Internet	54	112	1.134 [0.68, 8.32]	0.55 [0.18, 1.63]
Friend	26	87	1.04 [0.45, 4.06]	0.22 [0.03, 2.81]
Teacher	17	42	0.38 [0.01, 3.08]	0.037 [0.01, 0.15]
Mass media	17	24	0.044 [0.025, 5.20]	0.69 [0.04, 3.31]
Parent	10	10	Ref.	Ref.
Life skills				
Refusal skill				
Unfavorable	76	284	7.46 [3.27, 16.73] *	6.46 [2.37, 17.53] *
Favorable	99	21	Ref.	Ref.
Assertiveness skill				
Unfavorable	68	232	7.01 [2.34, 18.23] *	3.51 [1.32, 4.33] *
Favorable	107	73	Ref.	Ref.
Problem-solving skill				
Unfavorable	56	257	5.68 [4.34, 20.56] *	5.35 [2.88, 11.39] *
Favorable	119	48	Ref.	Ref.
Self-control skill				
Unfavorable	85	244	4.96 [2.37, 12.03]	7.31 [2.79, 17.24] *
Favorable	90	61	Ref.	Ref.

Discussion

In this study, adolescent life skills were reported low. This study corroborates with [Manaboriboon et al. \(2016\)](#), which found that adolescents' life skills for HIV prevention remained

inadequate. A possible source of inadequate life skills in adolescents is a lack of fundamental debriefing during adolescent development, which results in being unable to successfully navigate the transition phase from adolescence to adulthood without experiencing difficulties ([Manaboriboon et al., 2016](#)). Adolescents with poor life skills are more likely to

engage in risky behaviors such as drug use, drinking, and sexual activity, leading to HIV infection (Darmawati et al., 2021; Fauzi et al., 2021). Healthcare professionals, especially nurses, must increase health promotion activities to improve adolescent life skills.

Problem-solving and self-control skills were the lowest domain scores of life skills among adolescents. Perhaps, this is because adolescence is an age of unreasonable expectations in terms of ideals. Aiming too high and expecting too little can lead to debilitating stress. Previous research indicates that unpleasant emotions such as anger or distress can have a detrimental effect on health if they are not addressed appropriately (Sulistianingrum & Arifah, 2016). In contrast, refusal and assertiveness skills have the highest domain scores of life skills in this study. This result is demonstrated by the adolescents' ability to say "no" or decline an invitation with a negative value. Adolescents may avoid unfavorable invitations like smoking, drinking, and smoking marijuana (Lindayani et al., 2020). Good communication between adolescents and peers or parents in transmitting knowledge helps adolescents the sexual risk behaviors (Darmawati et al., 2021). Nurses and other health care providers must strengthen health promotion in sexual risk behavior prevention initiatives focusing on enhancing the life skills of adolescents.

Our study also found that the prevalence of adolescent sexual behavior was high. Kissing, hugging, and masturbation are all common adolescent sexual behaviors. Adolescents are driven by a desire to be like adults, which motivates them to do what adults often do in terms of sexuality (Purnama et al., 2018). A previous survey in America found that nearly 46% of sexually active high school students did not wear a condom, and new sexually transmitted diseases cases were recorded among adolescents aged 15 to 24 (Kann et al., 2018). Furthermore, 60% of adolescents agreed to have engaged in premarital sex, and 50% of those living with HIV and AIDS, which presents a dilemma for Indonesian youth today (Imron, 2017). However, increasing premarital sex among youths could impair reproductive health, especially among young women (Salam et al., 2016). Thus, nurses and other health professionals must collaborate with schools to improve health promotion through sexual education counseling.

In addition, this study demonstrated an association between gender and sexual risk behavior. Previous research has indicated that adolescent males are more likely than females to engage in sexual risk behaviors (Killoren & Deutsch, 2014). Gender norms may explain some sex disparity, which requires females to refrain from sex than males (Kreager et al., 2016). Thijs et al. (2015) reported that having sexual intercourse was more common in boys than in girls, and Skinner et al. (2017) projected that boys are more likely than girls to have many sexual partners by the age of 17 and that girls experienced more unwanted sex (Skinner et al., 2017). In summary, previous findings on the association between gender and sexually risky behavior are inconsistent, and additional research is needed to identify whether the associations have any sex-specific implications.

Life skills have a significant correlation with sexual risk behaviors among adolescents. Life skills can help adolescents develop self-confidence, enabling them to be more independent and capable of making sound decisions. A

previous study reported that about 12.1% of adolescents had the decision-making ability, reject risky behaviors such as having free sex, violence, and screening the influence of social media (Sulistianingrum & Arifah, 2016). Young people with inadequate life skills are more likely to engage in high-risk behaviors with serious long-term health and social repercussions (Salam et al., 2016). Adolescence is also a time of many critical life events and actions, many of which might have detrimental effects on one's health (Salam et al., 2016). Considering these findings, tailored life skills programs are critical for adolescent wellbeing, risk reduction, and HIV prevention.

However, there are some limitations of this study that should be highlighted. First, measuring sexual risk behaviors in adolescents can be challenging. Relying only on self-reported screening procedures might lead to recollection bias and social desirability bias, associated with participants' honesty when reporting on sensitive topics (Althubaiti, 2016). It is possible that respondents' responses were influenced by their mistrust of the survey's privacy and confidentiality. Even though self-reported data on sensitive topics such as teen drinking habits are often valid (Maslowsky et al., 2019), including parental and teacher ratings could help future studies gain a more accurate finding. Second, because this study employed cross-sectional data, it was impossible to demonstrate temporal relationships or causality, although life skills might theoretically minimize sexual risk behaviors. Future research should adopt longitudinal designs to determine whether life skills are predictors of sexual risk behaviors and examine patterns particular to the gender relationship. Finally, a lack of information on potential confounding variables, such as social views and norms, might influence the association between life skills and sexual risk behaviors.

Conclusion

This study revealed that adolescents had low life skills and a higher prevalence of sexual risk behaviors. In addition, life skills had a significant correlation with sexual risk behaviors. Future studies to explore more profound sexual practices using qualitative exploration are needed to understand adolescents' experience of sexual risk behaviors. Given the potentially detrimental effects of risky sexual behaviors on adolescent sexual and reproductive health, these behaviors must be identified and assessed early in adolescents. This is crucial in Indonesia, where adolescent pregnancy, abortion, and HIV infection are familiar yet limited treatment access. Nurses who proactively provide sexual and reproductive health services to adolescents may provide more accurate information to their peers. It is essential for nurses to screen adolescents for behavioral problems so that they can provide sexual and reproductive health services. Nurses also could provide early screening and assessment for sexual and reproductive behavior, including HPV vaccination and safety of the home, school, and social environments. Schools are encouraged to work with local health departments to implement sexual education counseling programs. Additionally, community-based sexual and reproductive health education and behavioral assessments can be used to target

underprivileged teenage groups through schools, hospitals, clinics, homeless shelters, and religious and community settings.

Declaration of Conflicting Interest

All author declares no conflict of interest.

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Authors' Contributions

All authors contributed equally in this study in substantial contributions to the conception or design of the work, analysis, or interpretation of data for the work; drafting the work; final approval of the version to be published.

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Data Availability

The datasets generated during and/or analyzed during the current study are not publicly available due to subject confidential information but are available from the corresponding author on reasonable request.

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