

Knowledge, attitude, and behavior about sexual and reproductive health among adolescent students in Denpasar, Bali, Indonesia

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ARTICLE INFO

Article history:

Received 26 October 2018

Reviewed 08 January 2019

Received in revised form 25 February 2019

Accepted 28 February 2019

Keywords:

Sexual and reproductive health (SRH)

Adolescents

Students

Knowledge

Attitude

Sexual behavior

ABSTRACT

Background: Adolescent sexual and reproductive health (SRH) problems remain an important public health issue in many developing countries, such as Indonesia. Therefore, assessing SRH knowledge, attitude, and behavior among adolescents are worth considering for public health intervention purpose in order to reduce their vulnerability to SRH problems.

Aims: This study aimed to assess SRH knowledge, attitude, and behavior among adolescent students in Denpasar, Bali, Indonesia.

Methods: This was a cross-sectional school-based study conducted in Denpasar, Bali, Indonesia from July to September 2016. This study applied multi-stage random sampling to recruit 1,200 students out of 24 junior, senior, and vocational high schools. Variables in this study consisted of socio-demographic characteristics, knowledge, attitude, and behavior related to SRH. Data were analyzed using descriptive analysis and cross-tabulation to identify proportion differences.

Results: Regarding knowledge on SRH, students had less knowledge on a reproductive process (10.1%) and reproductive risk (11.4%), but half of them knew about the sexually transmitted infections (STIs) and HIV&AIDS (55.6%) and almost all had sufficient knowledge on puberty (90.7%). Meanwhile, few students argued that several sexual behaviors can be performed before getting married, such as kissing and hugging (48.9%), petting and oral sex (18.7%) and sexual intercourse (vaginal sex) (13.8%). Out of 1,200 adolescent students, 880 (73.3%) reported for have ever been in dating with someone. Among adolescent dating, few students reported for an experience of petting (14.3%), oral sex (9.8%), vaginal sex (6.5%), and anal sex (2.6%).

Conclusion: Adolescent students in Denpasar, Bali, had a low level of sufficient knowledge in some SRH aspects, a few students reported for permissive attitude and performed premarital sexual behaviors. Therefore, providing comprehensive sexuality education (CSE) is worth considering to improve knowledge and appropriate skills in order to prevent risky sexual behavior among adolescents.

INTRODUCTION

In many developing countries, including Indonesia, the high population of adolescents without adequate development of information, technology, and facilities can lead to adolescent's problems. One of those

problems which currently needs a lot of attention is risky sexual behavior. The national figure from the Indonesia Demographic and Health Survey in 2012 showed that 33.3% of females and 34.5% of males aged 15-19 years old have started dating before 15 years old [1]. Meanwhile, the finding from *Riset Kesehatan Dasar* (the National Health Research) in 2010 found that some

adolescents aged 10-24 years old had premarital sexual experience [2]. In addition, Indonesian adolescents have been documented with carrying a high risk sexual behavior since the protected sex among them was at very low level [3]. To respond this problem, some previous study suggested to provide comprehensive sexual and reproductive health (SRH) education [3, 4].

In many setting in Indonesia, adolescents face difficulties to access the SRH information and services. Even though they are supported by Health Law No. 36/2009, article 72 which stated that everyone has rights to obtain information, education, and counseling about reproductive health [5], the implementation is far away from the expectation. The socio-cultural in Indonesia places the reproductive health matters as taboo and sensitive issues and its discussion is viewed as private realm. Not surprisingly then, this condition contributes to insufficient knowledge regarding SRH and risky sexual behavior among Indonesian adolescents [6].

Risky sexual activity among adolescents would certainly increase the risk of being infected with STIs and HIV, as well as, unintended pregnancy [7]. As one of the provinces in Indonesia, adolescents in Bali are also vulnerable to SRH consequences due to lack of access to SRH information and services since SRH discussion is viewed as inappropriate for unmarried people. Moreover, their vulnerability is also due to Bali as a well-known tourism place which contributes to the acculturation process of overseas-cultures in terms of interpersonal relationship pattern among adolescents [8]. Not surprisingly then, there is an increasing acceptance among Balinese adolescents of premarital sex, even the pregnancy among unmarried couples can be accepted as long they commit to get married soon [9].

Indonesian Planned Parenthood Association (IPPA) of Bali Chapter reported that 29.3% of 1,225 unwanted pregnancy cases in 2015 came from young people (10-24 years) whereas adolescents (15-19 year) contributed to 7.7% of 1,162 STI sufferers [10]. A previous study conducted among senior high school students at 10th and 11th grade in Denpasar found that 29 students (4.26%) have performed premarital sexual intercourse (1.44% of females and 3.19% of males) [11]. In order to provide more insights related to SRH among adolescents in Denpasar, Bali, this study aimed to assess knowledge, attitude, and behavior about SRH among adolescents in Denpasar, Bali, Indonesia.

METHODS

Population and sample

A cross-sectional school-based study was conducted by Kisara (*Kita Sayang Remaja* =We Love Youth), IPPA of

Bali Chapter from July to September 2016. The population of this study was adolescents from junior, senior, and vocational high school in Denpasar, Bali with an inclusion criterion that students were in schools and willing to participate in this study at the time of survey. Adolescent students were selected as samples in this study because they can represent the adolescents in community, particularly in geographical area of Denpasar. As the most developed area, the rates of school-age adolescents who did not attend schools due to underprivileged economic status might be identified at very low level. Therefore, recruiting adolescent students in this study can estimate the SRH situation among school-age adolescents properly. The sample size was determined using the formula for a population proportion with assumptions: 95% confidence interval; 50% as the anticipated population proportion; and 5% of absolute precision, making a minimum sample size of 385 students. However, to increase generalizability, we decided to collect 400 students from each level of education (junior, senior, and vocational high school), resulting in a total sample of 1,200 students, as representative of the sampling population.

This study employed a multi-stage cluster random sampling to recruit students from the selected population. First, 24 schools were selected through cluster probabilistic selection, stratified by four sub-districts of Denpasar and school levels (junior high school, senior high school, and vocational high school) as well as grouped into private and public school, resulting in an equal number of students obtained with different school levels and types of school. Second, two classes were picked using a simple random sampling from the selected schools in Denpasar, and then, systematic random sampling was used to recruit 25 students from each class. Data were collected through a self-administered questionnaire and set to be anonymous to ensure confidentiality and reduce bias. Prior the data collection, we have explained the study's purpose to the students, and written informed consent from students has been obtained. In addition, teachers supervised the data collection process and they approved the study as students' guardian.

Variables and data analysis

Variables in this study consisted of four main groups, such as socio-demographic characteristics, knowledge, attitude, and behavior related to SRH. More than one questions were used to measure knowledge, attitude, and behavior. Moreover, data were analyzed descriptively to present distribution of variables in this study. Chi-square test was employed to identify the proportion differences by sociodemographic characteristics with significance level (α) at 0.05.

Table 1. Sociodemographic characteristics of adolescent students in Denpasar, Bali (N=1,200)

Variables	N	%
Age		
≤ 15 years old	369	30.8
> 15 years old	831	69.2
Sex		
Female	724	60.3
Male	476	39.7
Current educational level		
Junior high school	400	33.3
Senior high school	400	33.3
Vocational high school	400	33.3
Types of school		
Public/state school	600	50.0
Private school	600	50.0

RESULTS

Table 1 shows that the average age of students in this study was nearly 16 years and more than half aged 16 years and more (69.2%) with the majority were female students (60.3%). Meanwhile, the same number of students were obtained from three different school levels and two types of school.

The knowledge on SRH was measured by 63 questions, grouped into four main sections of knowledge: puberty (8 questions), reproductive process (9 questions), reproductive risk (4 questions), and STIs and HIV&AIDS (42 questions). Those who could answer correctly at least a half of total questions were classified into sufficient knowledge. Table 2 clearly presents that more than 90% of students had sufficient knowledge on puberty whereas

only one out of ten students had good enough knowledge on reproductive process (10.1%) and reproductive risk (11.4%). Meanwhile, only a half of the students had sufficient knowledge on STIs and HIV&AIDS (55.6%).

Based on cross-tabulation of each aspect of knowledge with sociodemographic characteristics, it showed that students aged > 15 years old and female students had significantly higher knowledge on puberty and STI and HIV&AIDS. While junior high school students had the lowest proportion of sufficient knowledge on puberty and STIs, including HIV&AIDS, vocational high school students appeared with the lowest sufficient knowledge on reproductive process. Meanwhile, those in public schools had higher proportion of sufficient knowledge on puberty, but the smaller proportion on reproductive risk.

Table 3 presents the attitude of adolescents regarding preferred time for sexual behavior. Most of the students argued that sexual behavior should be performed after getting married. Meanwhile, others argued that the following sexual behaviours can be performed before getting married such as kissing and hugging (48.9%), petting and oral sex (18.7%) and sexual intercourse (vaginal sex) (13.8%). Based on age, adolescents aged > 15 years old were consistent to approve all premarital sexual behaviors at higher proportion compared to those aged 15 years and less. Moreover, male students were more permissive to agree that petting, oral sex, and sexual intercourse could be performed before getting married. Junior high schools students were observed with the lowest percentage of the acceptance of premarital sexual behaviors. In addition, adolescents' approval of some premarital sexual behaviors was found higher among private-schooling adolescents.

Table 2. Sexual and reproductive health knowledge among adolescent students in Denpasar, Bali (N=1,200)

Sociodemographic characteristics	Sufficient knowledge on			
	Puberty N (%)	Reproductive process N (%)	Reproductive risk N (%)	STIs and HIV&AIDS N (%)
Total	1,088 (90.7)	121 (10.1)	137 (11.4)	667 (55.6)
Age (χ^2)	9.81***	0.99	0.32	43.04***
≤ 15 years old	320 (86.7)	42 (11.38)	45 (12.20)	153 (41.46)
> 15 years old	768 (92.4)	79 (9.51)	92 (11.07)	514 (61.85)
Sex (χ^2)	14.20***	0.00	0.24	11.52***
Female	675 (93.2)	73 (10.1)	80 (11.1)	431 (59.5)
Male	413 (86.7)	48 (10.1)	57 (12.00)	236 (49.6)
Current educational level (χ^2)	17.51***	8.62*	5.06	62.18***
Junior high school	343 (85.8)	49 (12.3)	52 (13.0)	160 (40.0)
Senior high school	370 (92.5)	46 (11.5)	51 (12.8)	266 (66.5)
Vocational high school	375 (93.8)	26 (6.5)	34 (8.5)	241 (60.3)
Types of school (χ^2)	20.84***	2.07	10.09***	0.76
Public/state school	567 (94.50)	53 (8.83)	51 (8.50)	326 (54.33)
Private school	521 (86.83)	68 (11.33)	86 (14.33)	341 (56.83)

* $p < 0.5$; ** $p < 0.01$; *** $p < 0.001$

Table 3. Adolescent students’ attitude toward sexual behavior in Denpasar, Bali (N=1,200)

Sociodemographic characteristics	Adolescents’ approval of premarital sexual behaviors		
	<i>Kissing, hugging, touching</i> N (%)	<i>Petting and oral sex</i> N (%)	<i>Sexual intercourse</i> N (%)
<i>Total</i>	587 (48.9)	224 (18.7)	166 (13.8)
<i>Age (χ^2)</i>	48.25***	20.04***	5.59*
≤ 15 years old	125 (33.9)	41 (11.1)	38 (10.3)
> 15 years old	462 (55.6)	183 (22.0)	128 (15.4)
<i>Sex (χ^2)</i>	2.41	38.83***	26.56***
Female	341 (47.1)	94 (13.0)	70 (9.7)
Male	246 (51.7)	130 (27.3)	96 (20.2)
<i>Current educational level (χ^2)</i>	61.64***	25.37***	13.82**
Junior high school	140 (35.0)	45 (11.3)	42 (10.5)
Senior high school	251 (62.8)	100 (25.0)	76 (19.0)
Vocational high school	196 (49.0)	79 (19.8)	48 (12.0)
<i>Types of school (χ^2)</i>	0.003	4.30*	13.54***
Public/state school	294 (49.0)	98 (16.3)	61 (10.2)
Private school	293 (48.8)	126 (21.0)	105 (17.5)

* $p < 0.5$; ** $p < 0.01$; *** $p < 0.001$

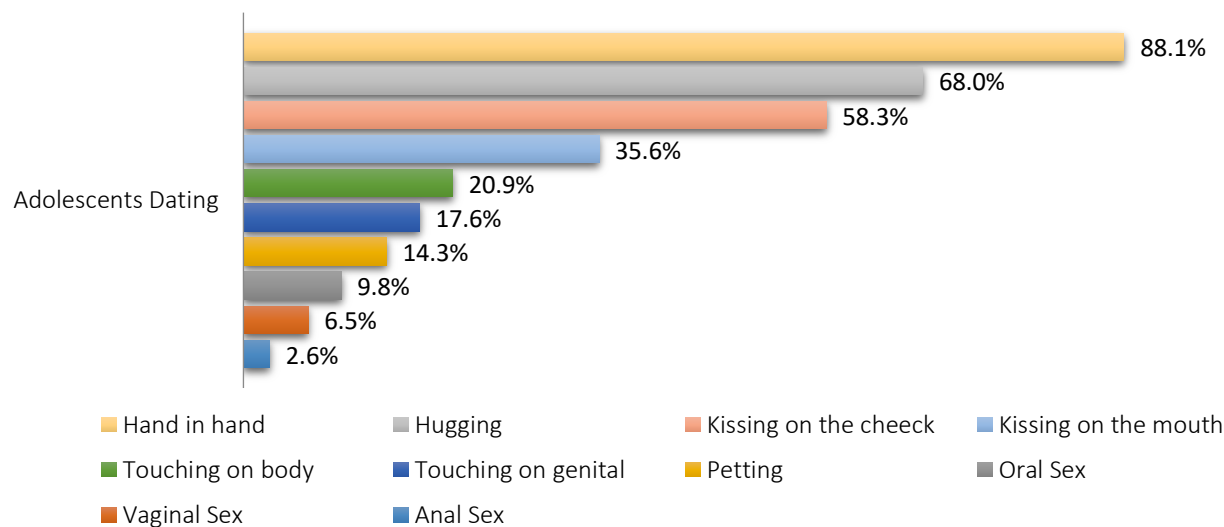


Figure 1. Sexual behaviors among adolescent students in Denpasar, Bali

Out of 1,200 students in this study, 880 respondents (73.3%) have been reported for have ever been in dating with someone. Figure 1 describes the sexual activities among the adolescents dating. It shows that among adolescent dating in this study, hand in hand, hugging, and kissing on the cheek was the common behaviour among couples. Meanwhile, few students reported for an experience of petting (14.3%), oral sex (9.8%), vaginal sex (6.5%), and anal sex (2.6%).

Figure 2 presents the proportion differences of sexual behaviors by sociodemographic characteristics. It showed that sexual behaviours were more common among

adolescents aged >15 years old, males, senior high school students, and private-schooling adolescents. Based on Figure 3, condom use among adolescent students who were sexually active in Denpasar was low. Only one out of five sexually active students reported for “always” using condom for vaginal sex (19.3%) from 57 students, and anal sex (21.7%) from 23 students. In addition, shown at Figure 4, it informs age at first sex among adolescent students who have performed oral, vaginal or anal sex. Out of 98 students, 1% reported for sexual debut at 11 years old whilst the majority had their first sex at age 15 years (43.9%) and 16 years (34.7%).

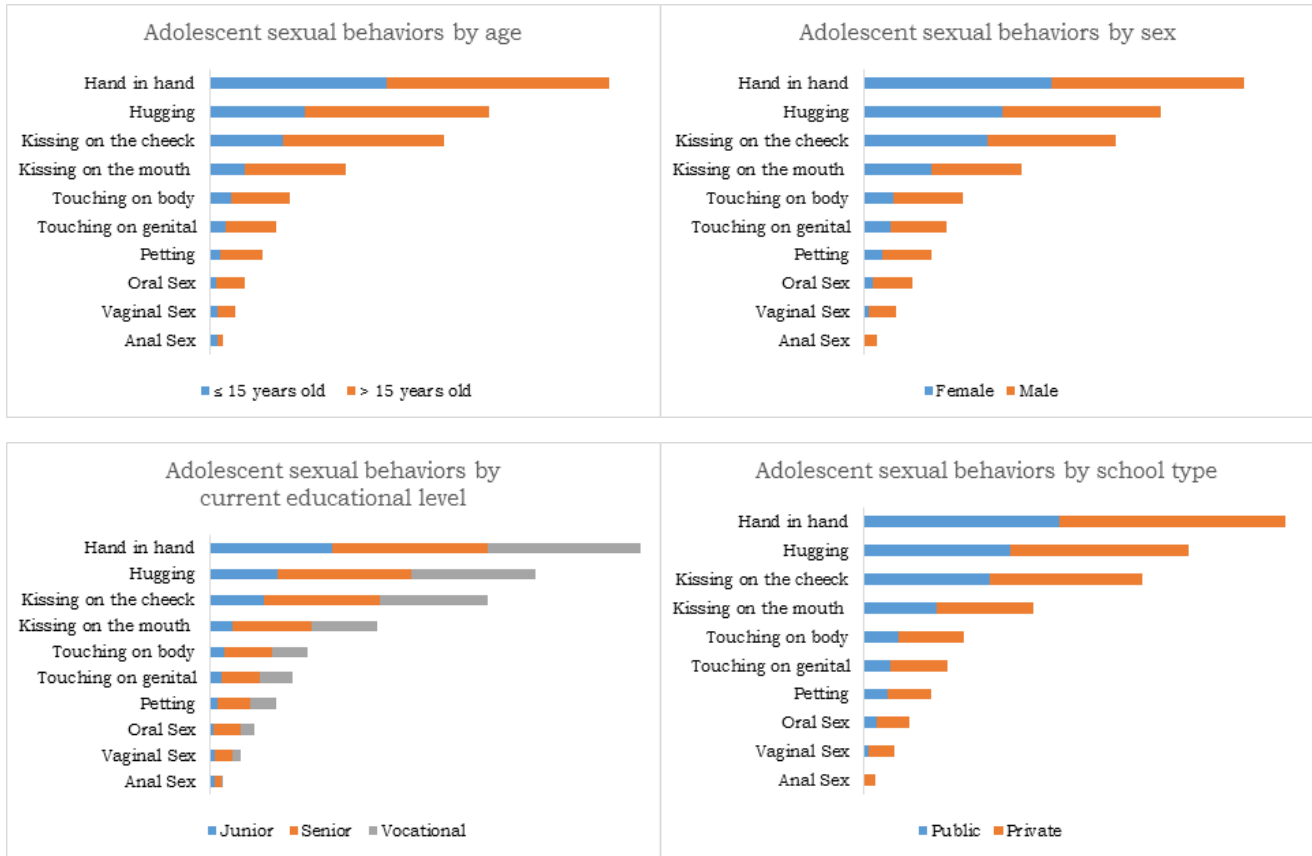


Figure 2. Sexual behaviors by sociodemographic characteristics among adolescent students in Denpasar, Bali

DISCUSSION

This study found that SRH knowledge varied by domain. Adolescents in this study were more knowledgeable related to puberty rather than other aspects. Puberty is an inevitable process and first sign of their adolescence life. It is understandable then, they are more likely to look for or receive more information related puberty at first-stage of the adolescent period before other SRH information is equipped [12]. Adolescents can obtain puberty-related information from their parents and they might be taught about puberty at schools. It is supported by findings from a previous study that 75.2% students had sufficient knowledge level about puberty, while 84.2% stated that they received first information from parents whereas teachers contributed to 18.1% as a source of information [13]. In Indonesia, puberty information is formally delivered by teachers at school in some sections of biology subject. However, it does not rule out the possibility that students also can receive information from various media and also the results from information sharing with peers that contributed to their knowledge on puberty. Based on sociodemographic characteristics,

older students, females, senior high school students, public-schooling students had higher knowledge of puberty. Older age of students is directly proportional to a higher educational level that might contribute to the exposure of puberty information. Meanwhile, due to the earlier onset of puberty symptoms among females, they want to be informed on SRH matters for menstruation preparedness [14]. In addition, the different internal culture and social environment between public and private schools might influence the adolescents' knowledge.

The low level of knowledge's aspect on reproductive process reflects a lack of understanding of adolescents related to the process of how pregnancy occurs. It also indicates that many adolescents might assume that having sexual intercourse once will not cause pregnancy. As a finding among their counterparts that 50.9% girls believed that they would not get pregnant in her first sexual encounter [15]. Similarly, information about reproductive risk/consequences was poorly known by adolescents in Denpasar. It also denotes that adolescents were less knowledgeable related to unintended pregnancy and abortion-related information.

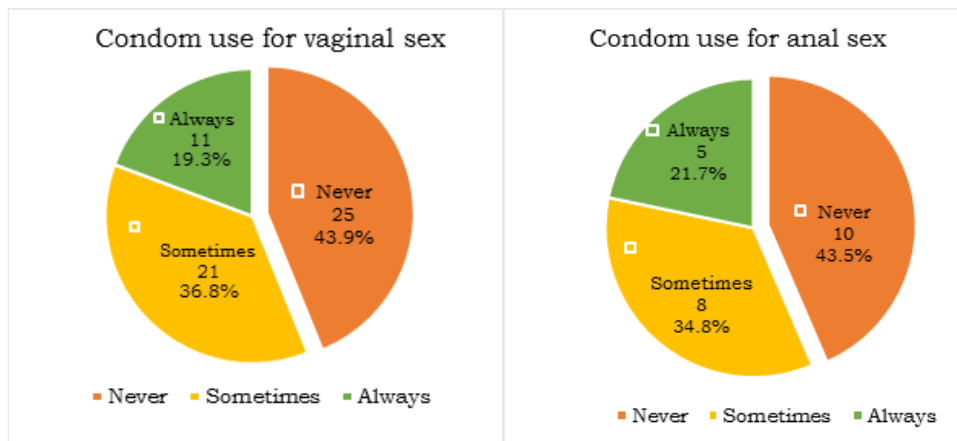


Figure 3. Condom use among sexually active adolescent students in Denpasar, Bali

A previous study also confirmed that 46% of respondents were aware of the fact that the natural herbs and 45.5% considered herbs as a better option for abortion [16]. Even though school curricula provides several subjects where students can rely on information related to SRH, such as biology, religion, sport science, and *budi pekerti* (character science), in fact, those subjects commonly only cover general information of SRH and its topic in each subject is limited in some sections.

Meanwhile, moderate-level of HIV&AIDS and STI knowledge among students might be due to HIV&AIDS information has been delivered by teachers at schools or through students' participation in extracurricular activities, such as *Kelompok Siswa Peduli AIDS dan Narkoba/KSPAN* (Students' Group with Awareness of AIDS and Drugs) and *Pusat Informasi dan Konseling Remaja/PIK-R* (Adolescent Center for Information and Counselling) [17]. Both of KSPAN and PIK-R are organized by appointed teachers in schools where the materials or activities not only can be led by teachers, but also health personnel from public health centers, regional health office, or NGOs who are concerns on this issue can take part as speakers. However, during the implementation, teachers commonly collaborate with two main organizations as the initiators for those extracurricular activities, such as Bali AIDS Commission for KSPAN and National Family Planning Board of Bali for PIK-R. Students who have interest in activities offered by those extracurricular can participate. Moreover, the core activities are intended to develop peer educators who help non-members of those activities to receive appropriate information.

It is important to note, however, both extracurricular activities place a lot attention on HIV&AIDS information, but limited information related to other types of STIs is provided. Therefore, adolescents in Denpasar might not be exposed with sufficient STI-related information.

Awang's study in 2014 confirmed that male adolescents did not know other types of STIs, except for HIV&AIDS and syphilis [18]. In another setting, a survey conducted among school-going adolescents found that 60.2% had good knowledge on HIV&AIDS whereas 34.1% and 5.7% students were in moderate and poor knowledge-level categories, respectively [19]. Moreover, this study found that females, students aged > 15 years old, senior or vocational high school students were more knowledgeable on STIs and HIV&AIDS. Similar to previous explanation that older students or with higher educational level tend to receive more information, supported by findings from a previous study that older adolescents aged 15–19 years were more likely to know about AIDS than their younger counterparts [20].

Regarding the attitude, few students argued that kissing and hugging; petting and oral sex; and sexual intercourse can be performed before getting married. It may be due to the acculturation process between foreigners' and natives' cultures occurred in Bali that play important roles to the adolescents' acceptance of premarital sex [8]. Moreover, during the puberty period, the level of curiosity and sexual intention reach a peak, followed by any misconception related to reproductive process and consequences, in which, turns to permissive attitude towards sexual behavior. With these kinds of responses, it is logical to assume that students in Denpasar might potentially perform premarital sex, as well as, risky sexual behavior.

A study in Nepal conducted by Bhatta found that high proportion of students (32.4%) who agreed for premarital sex was in line with high prevalence of premarital sex (25%) [21]. Moreover, older, male, or senior high school students, as well as, those in private schools were in a higher acceptance of premarital sexual behaviors. Focusing on sex, this study is similar to a previous study which found that males were more likely to have a permissive attitude toward sex. It may be due to gender

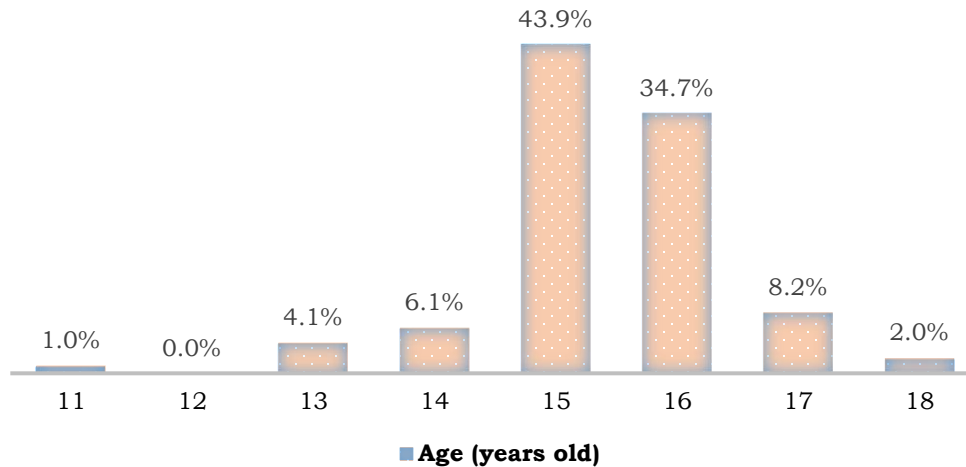


Figure 4. Age at sexual debut among sexually active adolescent students in Denpasar, Bali

norms in the Indonesian context where females are expected to maintain their virginity, but it is not strongly applied for males [22].

This study also highlighted the sexual activities among adolescents who have been dating with someone with a few of them reported for having sexual intercourse. Similar to a previous study in Denpasar which found that 4.26% of the school adolescents have performed premarital sexual intercourse [11]. Moreover, characteristics of adolescents who had higher proportion of engagement in premarital sexual behavior were in line with those who more approved premarital sex, indicating key prioritize for intervention.

In addition, risky sexual behaviour e.g., low condom use among adolescent students was also well-documented in Denpasar, Bali. Surprisingly, only one out of five sexually-active students reported for "always" using condom for vaginal sex (19%), and anal sex (22%). These percentages are slightly lower than the national figure of condom use prevalence which was about 25% among male adolescents aged 15-24 years old [3]. With low consistency for protected sex, it indicates that adolescent students in Denpasar carry high risk of being infected with STIs, HIV&AIDS, and unintended pregnancy. Low condom use might be related to the socio-cultural context of Indonesia where contraceptive tools are not acceptable for unmarried people. As a consequence, the restricted access to both SRH information and services especially condoms transforms to barriers as underlying reasons for unprotected sex. In addition, condom use in fact, seems to be highly linked with trust and more intimate relationship and hence, its negotiation can become extremely difficult [23, 24].

The findings of this study suggested to clarify any misconceptions related to SRH among adolescent students in Denpasar, Bali such as false beliefs in reproductive process and consequences. Even though schools seem supporting the delivery of SRH information through the presence of some subjects and extracurricular activities, the coverage of given information was not satisfactory. For school subjects formally taught by teachers, the lessons related SRH are limited in terms of duration and frequency and those depend on teachers' willingness to what extent the SRH-related information should be provided. In most situations, SRH information provided by teachers mostly covers physical-anatomy of reproductive organs and it counts less than 10 percent of total meetings [25]. Meanwhile, for extracurricular activities, KSPAN focus on providing materials related to HIV&AIDS, drugs, and STIs whereas information related to age maturation of marriage, drugs, HIV&AIDS, and sexuality is strongly attached in PIK-R's activities. Both of those extracurricular activities are commonly arranged once a week depending on schools' situation and policy. Obviously, we note some weaknesses, such as low coverage of other aspects of information such as reproductive process and consequences/risk and also the duration for providing SRH information is quite lacking. More importantly, necessary skills and efficacy to make informed decisions are not prioritized in both extracurricular activities.

Providing comprehensive sexuality education (CSE) is worth considering among adolescents to equip them with reproductive and sexual health and rights, gender equality, and knowledge and skills for HIV prevention in order to be able in making informed decisions [26]. Nowadays, the Kisara IPPA of Bali Chapter as one of the pioneers of SRH program among adolescents in Denpasar

has started implementing CSE in some schools in Denpasar in collaboration with related stakeholders such as Education Regional Office and Health Regional Office of Denpasar City. To date, even though there is no formal evaluation of this implementation, CSE in many settings is promising to delay sexual debut and prevent risky sexual behavior among adolescents [27, 28].

In Denpasar, CSE implementation is integrated to the school curricula. Appointed teachers in some subjects have been trained about the use of CSE module developed by Rutgers WPF prior to providing CSE materials routinely as part of the discourse in some subjects (natural science/biology, religion, sports science, and guidance and counseling). With this implemented program, it obviously increases the coverage of SRH information, as well as, the frequency and duration of information delivery. Furthermore, CSE implementation is not limited to the school settings, but it is supported by public health centers which align with their existing adolescent health program. There is a collaboration between teachers and health providers to refer adolescents with SRH problems to seek for help in public health centers and also to create private space for adolescents in discussing SRH matters. Therefore, expanding the number of schools that adopt CSE is substantial to increase the access to SRH information and services among adolescents in Denpasar. More importantly, according to findings of this study, CSE implementation should target adolescent students with low SRH knowledge, higher acceptance of premarital sexual behaviors, and have engaged in sexual behaviors. Younger adolescents or junior high school students in particular, should be equipped with sufficient knowledge and appropriate skills as soon as possible in order to be able in making informed decisions and prevent themselves from adverse SRH outcomes. Moreover, compared to public schools, students in private schools should be prioritized for intervention.

There are several limitations noted for this study. First, the findings relied on descriptive statistics so that information related factors associated with SRH knowledge, attitude, and behavior were not deeply discussed. Second, the self-reported of SRH behavior might be prone to bias due to social desirability. However, that potential bias can be reduced by the anonymous and self-administered questionnaires. Moreover, other variables were not collected in this study, such as sources of SRH information since previous study found that peers at school and mass media were perceived to the main sources among adolescents [29]. In addition, the socio-cultural and religious factors are not identified in this study that can help explain the nature of adolescents in Balinese context. Therefore, future studies need to take the limitations of this study into consideration.

CONCLUSIONS

School-going adolescents in Denpasar, Bali had low level of knowledge on some SRH aspects, particularly related to reproductive process and risk. In addition, some of the adolescents had the permissive attitude for premarital sex, as well as, a few of them reported for having sexual debut and unprotected sex. Hence, providing CSE is the promising solution so far to enhance their knowledge and skills in making informed decisions, including preventing risky sexual behavior. CSE implementation should target adolescents of which had lower SRH knowledge, permissive attitude of sexual behavior and had premarital sex experiences.

CONFLICT OF INTERESTS

Authors declared that there is no conflict of interest.

ACKNOWLEDGMENTS

Authors thank to Kisara of IPPA Bali Chapter who provided funding support for this study. In addition, authors gratefully acknowledge National Unity and Politics Board of Denpasar, Education Regional Office of Denpasar and also Head Master in all selected schools who gave permission for this study.

REFERENCES

1. Statistics Indonesia (Badan Pusat Statistik-BPS), National Population and Family Planning Board (BKKBN), Kementerian Kesehatan (Kemenkes-MoH), ICF International. Indonesia demographic and health survey 2012. Jakarta, Indonesia: BPS, BKKBN, Kemenkes, ICF International; 2013.
2. MoH Indonesia. Riset kesehatan dasar [Basic health research] 2013. Jakarta: MoH Indonesia; 2013.
3. Putra IGNE, Astuti D, Widyastari DA. Prevalence and determinants of condom use among male adolescents in Indonesia. *Int J Adolesc Med Health*. 2018. doi:10.1515/ijamh-2018-0141
4. De Castro F, Rojas MR, Villalobos HA, Allen LB, Breverman BA, Billings DL, Uribe ZP. Sexual and reproductive health outcomes are positively associated with comprehensive sexual education exposure in Mexican high-school students. *Plos One*. 2018; 13(3):1-15.
5. MoH Indonesia. Health Law No. 36/2009.
6. Susanto T, Rahmawati I, Wuryaningsih EW, Saito R, Syahrul, Kimura R, Tsuda A, Tabuchi N, Sugama J. Prevalence of factors related to active reproductive health behavior: A cross-sectional study Indonesian adolescent. *Epidemiol Health*. 2016;38.

7. Azinar M. Perilaku seksual pranikah berisiko terhadap kehamilan tidak diinginkan [Primary sexual behaviors risk on unwanted pregnancy]. *Jurnal Kesehatan Masyarakat*. 2013;8(2):153-160.
8. Faturochman. Sikap dan perilaku seksual remaja di Bali [Adolescents' attitude and sexual behaviors in Bali]. *Jurnal Psikologi*. 1992;(1):12-17.
9. Suka IG, Muninjaya AAG, Wiasti NM, Kartika DAAS, Aryastami K. Pemberdayaan perarem untuk menurunkan angka hamil di luar nikah dan kawin usia muda di Desa Pengotan Kabupaten Bangli [Empowerment of perarem to reduce premarital pregnancy and early married in Pengotan Village, Bangli District]. *Buletin Penelitian Sistem Kesehatan*. 2013;16(3):275-281.
10. IPPA of Bali Chapter. Data kehamilan yang tidak diinginkan dan infeksi menular seksual [Unwanted pregnancy and sexually transmitted infections data]. Denpasar: IPPA of Bali Chapter; 2015.
11. Rahyani KY, Utarini A, Wilopo SA, Hakimi M. Perilaku seks pranikah remaja [Premarital sexual behavior of adolescents]. *Jurnal Kesehatan Masyarakat Nasional*. 2012; 7(4): 180-185.
12. Nurdjannah S. Knowledge and behaviour about adolescent reproductive health in Yogyakarta, Indonesia. *International Journal of Public Health Science*. 2015;4(4): 326–331. doi: 10.11591/v4i4.4754.
13. İşğüven P, Yörük G, Çizmeçiğlu FM. Educational needs of adolescents regarding normal puberty and menstrual patterns. *JCRPE J Clin Res Pediatr Endocrinol*. 2015; 7(4): 312-22.
14. Yazıcı S, Gulumser D, Yıldız O, Fatma Y. The level of knowledge and behavior of adolescent male and female students in Turkey on the matter of reproductive health. *Sex Disabil*. 2011; 29:217–227
15. Nwaorgu OC, Onyeneho NG, Okolo M, Obadike E, Enibe G. Reproductive health knowledge and practices among junior secondary school grade one students in Enugu State: Threat to achieving millennium development goals in Nigeria. *East Afr J Public Health*. 2008; 5(2): 5-11.
16. Gul S, Rubab B, Ahmad N, Iqbal U. Herbal drugs for abortion may prove as better options in terms of safety, cost & privacy. *A Sci Innov Res*. 2015; 4(2): 105-8.
17. Wiriyana IGNA, Hanim D, Lestari A. Pengetahuan, sikap dan tindakan HIV/AIDS anggota dan bukan anggota kelompok siswa peduli AIDS dan narkoba [Knowledge, attitudes and practices of HIV/AIDS between members and non-members of students' group with awareness of AIDS and drugs]. *Nexus Kedokteran Komunitas*. 2017; 6(2): 45-53.
18. Awang H, Wong LP, Jani R, Low WY. Knowledge of sexually transmitted diseases and sexual behavior among Malaysian male youths. *A Biosoc Sci*. 2014; 46(2): 214-24.
19. Abdeyazdan Z, Sadeghi N. Knowledge and attitude toward AIDS/HIV among senior school students in Isfahan. *Iran J Clin Infect Dis*. 2008; 3(2): 93-8.
20. Rahman M, Mizanur M, Kabir, Shahidullah. Adolescent knowledge and awareness about AIDS/HIV and factors affecting them in Bangladesh. *Journal of Ayub Medical College*. 2009;21(3):3-6
21. Bhatta DN. Adolescent students' attitude towards premarital sex and unwanted pregnancy. *Health Renaissance*. 2013; 11(2): 145-9.
22. Widyastuti ESA. Personal dan sosial yang mempengaruhi sikap remaja terhadap hubungan seks pranikah [Personal and social factors influencing adolescent attitudes toward premarital sex]. *Jurnal Promosi Kesehatan Indonesia*. 2009;4(2):75-85.
23. Siramaneerat I, Agushyvana F, Nugraha A, Mungkhamee S. Knowledge, attitude, and behavior toward premarital sex among adolescents in Indonesia. *Journal of Health Research*. 2017;31(6):447–53.
24. Rondini S, Krugu JK. Knowledge, attitude and practices study on reproductive health among secondary schools in Bolgatanga, upper east region, Ghana. *Afr J Reprod Health*. 2009; 13(4): 51-66.
25. Widyastari DA, Pimonpan I, Zahroh S. "Women won't get pregnant with one sexual intercourse" misconceptions in reproductive health knowledge among Indonesian young men. *Journal of Health Research*. 2015;29(1):63-69.
26. UNESCO, UNFPA. Youth and comprehensive sexuality education. New York: UNESCO, UNFPA; 2011
27. Chi X, Hawk ST, Winter S, Meeus W. The effect of comprehensive sexual education program on sexual health knowledge and sexual attitude among college students in Southwest China. *Asia Pac J Public Health*. 2015; 27(2): 2049–66. doi: 10.1177/1010539513475655.
28. Kirby D, Ecker N. International technical guidance on sexuality education: an evidence-informed approach for schools, teachers and health educators. Paris, France: United Nations Educational, Scientific and Cultural Organization; 2009.
29. Muhwezi WW, Anne RK, Cecily B, Herbert M, Doris K, Sheri B, Knut IK. Perceptions and experiences of adolescents, parents and school administrators regarding adolescent-parent communication on sexual and reproductive health issues in urban and rural Uganda. *Reproductive Health*. 2015;12(110):1-16.