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Association between social-cognitive factors and intention towards sexual activity among school-going late adolescents in Kuantan, Malaysia

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ABSTRACT

This was a cross-sectional study to identify the association between socio-cognitive factors (permissive attitude, social-norms, and self-efficacy) and intention towards sexual activity among 466 Malaysian school-going late adolescents (aged 18–19 years) in Kuantan, Malaysia. Majority were females (64.4%), Malays (67.4%) and Muslims (68.2%). Simple logistic regression from data collected by self-administered validated Youth Sexual-Intention Questionnaire (YSI-Q) showed significantly increase risk of having sexual intention for each unit increase in permissive attitude, social-norms and self-efficacy scores with the odds ratio (OR) of 1.424, 1.303 and 1.215, respectively. On the other hand, multivariate logistic regression resulted in male, non-Malay, ever-smoker students and permissive attitude showing significantly higher risk towards having sexual intention with the OR of 0.163 (male was the reference group), 5.110, 3.288 and 1.236, respectively. In order to reduce risky sexual behaviour among adolescents, school-based health education is essential.

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Introduction

The transition phase from childhood to adulthood is a critical step that impacts and influences their lifelong development and affects their future quality of life (Batubara, 2010; Moronkola & Fakeye, 2007). Adolescents are considered an asset to the country as they will become the future leaders who will continue to sustain national agendas. In Malaysia, unprotected sex among adolescents leads to increase risk of sexually transmitted infections (STIs) and teenage pregnancies that become a crucial major health issue for the country (Azmawaty et al., 2019; Suan et al., 2015). The World Health Organization (WHO) defines teenage pregnancy as a pregnancy that occurs in the 10 to 19 years old girl (Braine, 2009). Centers of Disease Control and Prevention (CDC), 2017 disclosed that the rate of reported cases of chlamydia, gonorrhoea, and primary and secondary syphilis increased for both sexes in 15 to 24-year-old during 2016–2017. Compared to older adults, sexually active adolescents aged 15–19 years and young adults aged 20–24 years are at higher risk of acquiring sexually transmitted infections (Centers of Disease Control and Prevention (CDC), 2017).

Findings from the National Health and Morbidity survey 2017 among school-going adolescents in Malaysia found that the risky sexual behaviours were relatively high among these adolescents who

ever had sex, such as did not use condom (87.3%), multiple sexual partners (16.6%) and had sex before the age of 14 years old (31.7%) (Lodz et al., 2019).

Pahang is the highest state in Malaysia of having adolescents aged 13 to 17 years old that have had sex (9.5%) (National Health and Morbidity Survey (NHMS), 2017). In Malaysian culture, in which the majority of the populations are Malay, sex remains a taboo and is a sensitive issue to be discussed (Ismail & Abd Hamid, 2016). Although the reported number of adolescents engaged in premarital sex in Malaysia is low compared to other western countries (Awaluddin et al., 2015), the number does not match with the rising number of teenage pregnancies every year. The reason for this is Malaysian adolescents are not free to disclose about sex, or to share about their sexual life experiences (Wong, 2012). The implications of teenage pregnancy are numerous with mostly affecting the health of the mother as well as the newborn. This problem also contributes to the cycle of ill health and poverty (Suan et al., 2015).

One of the theories to explain adolescent sexual attitudes and behaviours is the Theory of Behavioural Action described by Ajzen and Fischbein in 1980, whereby changing behavioural intentions is believed to lead to a positive behavioural outcome. Therefore, in order to have an effective educational programme regarding safe sex and sexual risk reduction intervention, it is important to understand the sexual intention's pattern of the target population. Although there were extensive studies and literature on sexual knowledge, attitudes, and behaviours among adolescents worldwide (Tornello et al., 2014), but studies related to adolescents' sexual intention to engage in premarital sex have been few (Muhammad, Tohid, et al., 2017).

Therefore, this research is conducted with the aim to identify the sociodemographic and cognitive factors of the Theory of Planned Behaviour (Ajzen, 1991) associated with intention towards sexual activity among school-going late adolescents in Kuantan, Pahang, a district in one of the states in Malaysia. It is hoped that the findings from this research will enlighten us in planning adolescent sexual health education programmes to reduce risky sexual activity among adolescents.

Materials and methods

Study area, population, design and period

This study was conducted in Kuantan, a district in Pahang, which is one of the states in Malaysia. There are seven areas in the district, namely Beserah, Kuala Kuantan 1, Kuala Kuantan 2, Penor, Sungai Karang, Ulu Kuantan, and Ulu Lebar. Kuantan city is located on the border of Kuala Kuantan and Beserah. This study involved adolescents aged 18 to 19 years old, and study in government schools in Kuantan. Using a cross-sectional study design, this study was conducted from March until June 2018.

Sampling method

The total population sampling was executed, whereby all students from the nine secondary schools in Kuantan District who fulfilled the study criteria and gave their consent were recruited into this study. The inclusion criteria were Malaysian citizens, studying in government secondary schools, aged 18 to 19 years old, and are able to understand and write in Malay or English language. Students who were absent from schools and/or married during the data collection period were excluded.

Sample size calculation

The sample size was calculated based on a single proportion formula using OpenEpi version 3, with an expected prevalence of sexual intention was 50% as there was no available published data on this, absolute precision of 5% and non-response rate of 20%, making the minimum sample required was 465.

Study instrument

'Sexual Intent' occurs when a defendant perceives him- or herself to be acting based on sexual desire or in pursuit of sexual gratification. It does not include accidental or an innocuous, non-sexual act. A linear combination of three variables socio-cognitive factors (attitude, social-norm, and self-efficacy) directly influence the sexual or behavioural intention, which in turn affect the actual action of the sexual activity. The most critical determinant of the real action is the sexual or behavioural intention, a mediator between the cognitive factors (attitudes, social norms, self-efficacy) and the actual behaviour (Sheeran, 2002).

As mentioned, this study focused on the Theory of Planned behaviour with the actual behaviour is sexual activity, attitude is a permissive attitude, social-norm is perceived as social pressure on the performing sexual activity and self-efficacy is a belief of one's ability to perform the sexual activity. Perceived social pressure is influenced by the judgement of others such as parents, partner, peers, and teachers. It was hypothesized that more permissive attitude, more perceived social-norms and higher self-efficacy would lead to a higher sexual intention to perform the sexual activity.

This study used a self-administered questionnaire consisting of two parts in which Part 1 covered the sociodemographic profiles with 12 items and Part 2 covered the sexual intention questions with 20 items. This set of items was adapted from the locally developed and validated Malay version of Youth Sexual Intention Questionnaire (YSI-Q) (Muhammad, Shamsuddin, et al., 2017). All the determinants (permissive attitude, perceived social-norms, perceived self-efficacy, and sexual intention) reflected the same behaviour, which was sexual activity. All participants need to answer each question using a four-point Likert scale of strongly disagree, disagree, agree and strongly agree, and using a bipolar adjective scale from good to bad. The use of this simple scale has made it easier for the respondents and yielded a good response rate in this study.

Statistical analysis

The results were analysed using the Statistical Package for Social Science (SPSS) version 22.0. The categorical variables (sexual intention, gender, ethnicity, and others) were summarized using counts and percentages (%), whereby continuous variables (attitude, social-norm, and self-efficacy) were presented using mean and standard deviation (SD) or median and interquartile range (IQR). Simple logistic regression analysis was used to assess the relationship between sexual intention and its determinants. Variables with a *p*-value of less than 0.5 in the univariate analysis were included in the preliminary model of multiple logistic regression. The results were presented as an odd ratio (OR) with a confidence interval (CI) of 95%.

Results

A total of 466 pre-university students aged between 18 and 19 years old from nine government secondary schools participated in this study. More than half of them were females ($n = 300$, 64.4%), Malays ($n = 314$, 67.4%) and Muslims ($n = 318$, 68.2%). Majority of the respondents were non-smokers ($n = 378$, 81.8%), half of them were involved in the process of dating ($n = 213$, 45.7%) and none of them was married. [Table 1](#) shows the median and IQR scores for the level of Theory of Planned Behaviour determinants, with a low level of permissive attitude [median (IQR) = 6(4)] and low level of

Table 1. The level of theory of planned behaviour determinants (Permissive attitude, social-norms, and self-efficacy) of the respondents ($n = 466$).

Variables	Median	Interquartile range
Permissive attitude (score range 5–20)	6	4
Social norms (score range 6–24)	8	7
Self-efficacy (score range 4–16)	12	5

social-norms [median (IQR) = 8(7)] with the maximum scores of 20 and 24, respectively. Furthermore, the scores for self-efficacy was quite high [median (IQR) = 12(5)] with maximum scores of 16.

From Figure 1, the prevalence of intention towards sexual activity among the late adolescents in Kuantan was found to be low, with only 33 (7.1%) from a total of 466 participants admitted to having intention towards sexual activity.

To assess the social-cognitive factors associated with intention towards sexual activity, simple logistic regression followed by multiple logistic regression was conducted and the results were tabulated in Tables 2 and 3, respectively. As shown in Table 2, using simple logistic regression, the cognitive variables were significantly associated with intention towards sexual activity. For each unit increase in the permissive attitude, social-norms and self-efficacy scores, there were 1.424, 1.303- and 1.215-times increased risk of having intention towards sexual activity, respectively.

In addition, multiple logistic regression showed that gender, ethnicity, smoking status and permissive attitude were significantly associated with intention towards sexual activity (Table 3). Males, non-Malays and ever-smoker respondents were at a higher risk of having intention towards sexual activity with a *p*-value of 0.001, 0.001 and 0.019, respectively. The result also showed that for every unit increase in the permissive attitude score, there were 1.236 times increased risk of having intention towards sexual activity among the respondents with a *p*-value of 0.002. Father's education, mother's education, total household income, dating status, social norms, and self-efficacy were included in the preliminary analysis but were found not to be significantly associated with intention towards sexual activity in the final model of the multiple logistic regression.

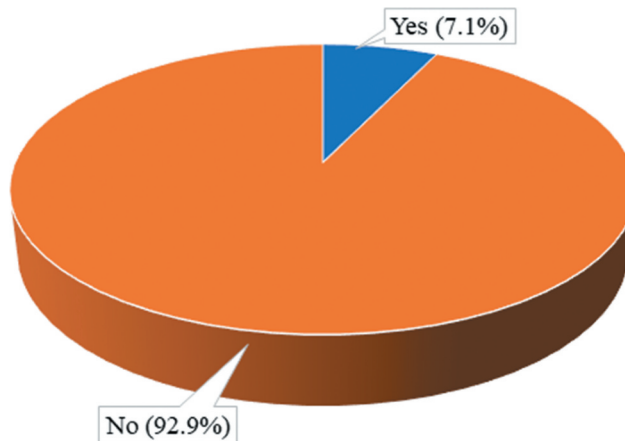


Figure 1. Prevalence of intention towards sexual activity among late adolescents in Kuantan Government Schools (n = 466).

Table 2. Socio-cognitive factors associated with intention towards sexual activity using simple logistic regression (n = 466).

Variable	Odds ratio (OR)	95% confidence interval of OR	<i>p</i> -value
Permissive Attitude	1.424	1.268–1.600	0.001
Social-norms	1.303	1.191–1.425	0.001
Self-efficacy	1.215	1.066–1.386	0.001

Table 3. Factors associated with intention towards sexual activity using multiple logistic regression (n = 466).

Variables	Odds ratio (OR)	95% confidence interval of OR	p-value
Gender			
Male*	1.000		
Female	0.163	0.058–0.462	0.001
Ethnicity			
Malay*	1.000		
Non-Malay	5.110	1.881–13.886	0.001
Smoking status			
Non-smoke*	1.000		
Ever smoke	3.288	1.218–8.875	0.019
Permissive attitude	1.236	1.084–1.410	0.002

*Reference group

No significant association at multivariate level was found with father's education, mother's education, total household income, dating status, social norms, and self-efficacy.

Discussion

Nowadays, many Malaysian adolescents are sexually active and practice unprotected risky sex despite social and culture restriction. Therefore, they may get exposed to various harmful consequences related to STIs and teenage pregnancy. In Malaysia, adolescent pregnancy remained hidden and underreport from society. Despite the low prevalence of premarital sex across the states in Malaysia (Abdullah et al., 2020; Lodz et al., 2019), the number of teenage pregnancies is rising. Around 4,000 teenage girls under the age of 18 were reported pregnant annually based on the Health Ministry's statistics (Malaysian Journal of Nursing OnLine News Portal, 2018). These teenage mothers were at risk for anaemia, abandoning their babies, dropping school and suffering from mental health problems (Malaysian Journal of Nursing OnLine News Portal, 2018; Suan et al., 2015).

Among sexually active adolescent females in the United States, one in four had STI such as chlamydia or human papillomavirus (HPV) (Forhan et al., 2009). In Malaysia, the three commonest STIs presented to the Genito-Urinary Clinic were genital wart, syphilis and gonorrhoea, and about 8.8% of the patients with STIs were confirmed to have HIV infection (Hariyadurai et al., 2019). One study concluded that school students had moderate level of knowledge about STIs although they were sexually active (Anwar et al., 2010). Lack of good knowledge about the diseases and its prevention may lead to harmful sexual behaviour. Overall, epidemiology data on sexually transmitted infection among adolescents in Malaysia is still very limited.

Sexual intention is a person's desire and plans to perform actual behaviour under his/her control (voluntary) in the context of sexual activity. Based on the Theory of Planned Behaviour, in a situation when a person has full control of him or herself, the motivation or intention is the most proximal determinant of behaviour. This study showed the prevalence of intention towards sexual activity in Kuantan, Malaysia is 7.1%. The low prevalence could be because they may not be forthcoming or truthful enough to admit their experience as it is against the social norms to practice sexual activity before marriage, largely among the Malay culture. Another possibility could be due to the study population who are at the tertiary level of education that have received at least basic knowledge of sexual and reproductive health during their secondary level of education. A study on knowledge of premarital sexual activity by Wong (2012) found that students with high knowledge scores on sexual reproductive health have significantly less risk to perform sexual activity.

In this study, multiple logistic regression showed that gender, ethnicity and smoking status were among the demography factors significantly associated with intention towards sexual activity. A local study reported that students with higher premarital sexual experience showed significantly higher scores in sexual intention than students without premarital sexual experience (Abdullah et al., 2020). Similarly, a study by Ahmad et al. (2014) demonstrated a positive correlation between premarital sexual practices with smoking, drinking alcohol, and using illicit drugs. A study conducted in Negeri Sembilan, another state of Malaysia also found that students who smoked cigarettes were

4.2 times more likely to have sexual intercourse before marriage (Lee et al., 2006). Both studies were comparable to the current study that ever-smoker adolescents have higher intention towards sexual activity.

Another recent study conducted by Lodz et al. (2019) on the risk of sexual behaviours among school-going adolescents in Malaysia reported the prevalence of ever had sex among the adolescents in Malaysia was 7.3%, with most of them were males and Indian. Chinese also has been reported to have a higher risk to be involved in the sexual activity compared to the Malay according to the Malaysian National Health Program (Awaluddin et al., 2015). In line with a study by Abdullah et al. (2020), this study results showed significant association between ethnicity and intention towards sexual activity.

A systematic review of the physiology of adolescent sexual behaviour highlighted the differences in hormonal and gender in which males may be more inclined to engage in unprotected sex with more than one partner (Pringle et al., 2017). Another survey conducted among college students aged 18–22 years old in urban Klang Valley, Malaysia also reported that male students had a higher prevalence of sexual intention compared to female (18% and 1.4%, respectively) (Muhammad, Tohid, et al., 2017). These findings were comparable to our study in which male adolescents were shown to have higher sexual intention than females.

The three variables of Theory of Planned Behaviour namely permissive attitude, social-norm and self-efficacy had been reported to be positively correlated with sexual intention (Abdullah et al., 2020). However, in this study, the results from multiple logistic regression showed only permissive attitude was found to have a significant association with intention among the school-going late adolescents in Kuantan to engage in sexual activity. This difference could be due to the different types of statistical tests used and management of the confounding factors during analysis.

The findings on the higher risk of having sexual intention with higher permissive attitude score are supported by a study performed by Nik Farid et al. (2013), who reported that permissive attitude is a risk factor for engaging in sexual intercourse among people in the rehabilitation centre. Similarly, a survey conducted among Korean adolescents reported that permissive attitude was the most influential factor to predict sexual intention as compared to self-efficacy and social-norm (Cha et al., 2007). Another study reported that male held more permissive attitudes towards premarital sex than females (Zuo et al., 2012). In addition, females with lower sexual intention appear to be more influenced by psychosocial aspects, including the effect of peers, than males (Pringle et al., 2017). This could explain why social-norm and self-efficacy though positively correlate with sexual intention were found to be not significantly associated.

Adolescent sexual health education which includes sexuality education, knowledge of harmful sexual behaviours and its association such as smoking and drug, knowledge of STIs and its prevention should be highlighted as a way to reduce and prevent risky sexual intention and behaviour. As mentioned in the study by Khalaf et al. (2014), perceived barriers such as feasibility, acceptability, and accountability should be addressed by the community leaders and policy makers in order to establish the national sexuality education in Malaysia.

Limitations

Malaysia is a multicultural country hence the factors of intention towards sexual activity may differ among the adolescent from various states and ethnic groups because of the diversity of socio-economic and cultural background. This study documented the findings among pre-university school students aged 18–19 years old in the city of Kuantan, among adolescents in a specific age group and confined to the urban area. The use of self-reported questionnaires for sensitive topics may also have created discomfort in the participants and may lead to the limitation to get honest responses in this study.

Conclusion

This study showed significant association between social cognitive factors with permissive attitude and intention towards sexual activity among adolescents. School-based sexual education program towards sexual risk reduction intervention should be tailored to the cultural background and needs social support from the parents, schools and community. A good knowledge on sexual health, disease prevention and safe sex may be converted into a positive attitude and a responsible behaviour in order to reduce any risky and harmful sexual activity among adolescents.

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Disclosure statement

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