

The Usage of Sexual Internet Media and Sexual Behaviour among Sexually Experienced Adolescents in Malaysia: Sexual Intention as a Mediator

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ABSTRACT

This study examines the relationships between the use of sexually explicit material, sexual intention, and sexual behaviour in a sample of 189 sexually experienced adolescents (aged 16-17) in Malaysia. Additionally, this study investigates the mediating role of sexual intention on the relationship between the use of Sexual Explicit Internet Media (SEIM) and sexual behaviour. A self-administered questionnaire focusing on the use of SEIM scale, Youth Pre-coital and Sexual Intentions Scale, and Sexual Behaviour Assessment measured adolescents' use of SEIM, sexual intention, and sexual behaviour. The results demonstrate that the use of SEIM positively correlates with adolescents' sexual intention and sexual behaviour. Increasing engagements in sexually-related behaviour reveal an increase in sexual intentions. Findings also denote that higher exposure to SEIM promotes sexual intention, which in turn increases engagement in sexually-related behaviour. In the attempt to control sexual arousal among adolescents, prevention and intervention

programmes which deal with sexuality should consider the role of Internet media and the development of healthy cognitive processes.

Keywords: Adolescents, sexual behaviour, sexual intention, sexual internet media

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INTRODUCTION

Adolescence, being the second decade of life, is an increasingly critical stage in the lifespan of individuals, especially from the health and social perspectives (World Health Organisation [WHO], 2005). Rapsey and Murachver (2006) defined adolescence as the period where individuals went through a series of rapid physical development, puberty, maturation of reproductive capacity, social and cognitive developments, as well as the attainment of rights and responsibilities of adulthood. Adolescence also relates to a time of substantial turmoil and rebellion, where adolescent sexual behaviour is regarded as problematic (Rapsey & Murachver, 2006). In Malaysia, issues such as premarital sexual intercourse, sexually transmitted diseases, unwanted and unsafe pregnancies, and abortions (Low, 2009; Yaacob et al., 2009) related to adolescents' sexuality are increasingly gaining public concern. According to World Health Organisation [WHO], (2009), there was increased involvement in sexual intercourse among adolescents under the age of 18 years. A statistical report from Royal Malaysia Police recorded 446 cases of baby dumping between the year 2010 and September 2014 (Razan, 2015). Additionally, statistics from the Malaysian Ministry of Health recorded 3980 cases of birth out of wedlock involving adolescents aged between 10 and 19 years old in 2014 (Razan, 2015).

During the developmental transitions period, adolescents tend to seek information

on sex from other sources, rather than solely relying on their parents (Chapin, 2000). Hence, there is a possible link between the influence of media and adolescents' sexual behaviour (Brown, L'Engle, Pardun, Guo, Kenneavy, & Jackson, 2006; Brown & L'Engle, 2009; L'Engle, Brown, & Kenneavy, 2006; Lo & Wei 2005; Zhang & Jenmott, 2015). Internet media provides a broad source of information for the public. The use of Internet media among adolescents becomes an important factor in determining adolescents' behaviour. Furthermore, Teague, Mackenzie and Rosenthal (2009) discovered that public, especially adolescents accessed explicit media on the Internet to obtain sexual gratification, sought romance, relieved boredom, as well as to satisfy their curiosity.

Among adolescents, sexually explicit Internet material (SEIM) serves two important functions, whereby, it enables adolescents to acquire sexual information, and it also provides them with erotic materials. Using the media to acquire and view sexual information may help adolescents who are shy and uncomfortable to discuss their uncertainties on sexually-related questions with the public or even with their peers. As the media provide numerous and convincing portrayals of sex as fun and risk-free, it becomes a preferred option among adolescents. Newly available technologies such as cell phones and digital cameras have made the sexually-related material more easily accessible for adolescents nowadays, as compared to

previous generations (Brown & L' Engle, 2009; Shek & Ma, 2016). A study conducted in Taiwan by Lo and Wei (2005) indicated that Taiwanese adolescents tend to use the Internet more than other traditional sources like magazines, books, and comics to seek out pornography. The availability and accessibility of sexually-related media such as pornography and erotica, which are designed to arouse sexual feelings, widely serve as sources of sexual information, hence, becoming a norm among teenagers. The easy availability of sexual contents on media may further influence adolescents into imitating ideas and characters from the media and practise them in real (Brown & L' Engle, 2009).

On the topic of sexual behaviour, sexual intention appears to play a crucial role in explaining the adolescents' sexual behaviour. Sexual intention, defined as the motivational elements that influence sexual behaviour, indicates how hard people are willing to try, and how much of an effort they are planning to exert in order to engage in sexual behaviour (Ajzen, 1991). Various studies (Atwood et al., 2012; Busse, Fishbein, Bleakley, & Hennesy, 2010; Fingerson, 2005; Hull, Hennesy, Bleakley, Fishbein, & Jordon, 2011; Miller, Norton, Fan, & Christopherson, 1998; Sieverding, Adler, Witt, & Ellen, 2005) denoted the links between sexual intentions in predicting adolescents' sexual behaviour. Hypothetically, adolescents with higher intentions to engage in sexual behaviour tend to engage in sexually-related behaviour very soon.

Studies by Miller et al. (1998), and L' Engle and Jackson (2008) showed significant mediation effect of sexual intention in relation

to the influence of sexual socialisation and sexual behaviour among adolescents. L' Engle and Jackson (2008) examined the influences of perceived socialisation (parent, school, peers and media) on adolescents' cognitive susceptibility to initiating sexual intercourse, and the transition to intercourse two years later among 854 adolescents aged between 12 and 14 years old. Although cognitive susceptibility does not directly illuminate sexual intention, it, however, refers to the general sense of readiness for intercourse, the likelihood to initiate first coitus in the near future, and an increased tendency to engage in sexual intercourse when presented with an opportunity; which then partly supports the construct of the proposed mediation model. Results of the study revealed that cognitive susceptibility significantly mediated the relationship between the use of sexually explicit media and adolescents' sexual intercourse. L' Engle and Jackson (2008) highlighted that media socialisation influences teens' sexual behaviour not only directly, but also indirectly through the adolescents' cognitive susceptibility. Miller et al. (1998) stated that sexual intention appeared to be a mediating variable in the relationships between the quality of parent-adolescent communication, sexual value, age, pubertal development timing, and adolescents' sexual behaviour. Miller et al. (1998) further explained that the quality of parent-adolescent communication did not directly affect the adolescents' sexual behaviour, but the communication quality might be indirectly related to adolescents' sexual behaviour through

sexual intention. Furthermore, social cognitive theory (SCT) (Bandura, 1989) supports the mediation role of personal cognitive factors on the relationship between the environmental factors and the adolescents' sexual behaviours. According to SCT, both environmental and personal cognitive factors can explain behavioural outcomes. The social cognitive theory also explained behavioural outcomes in both direct and indirect relationships through personal cognitive factors. Additionally, past studies have also treated sexual intention as a mediator (L' Engle & Jackson, 2008; Miller et al., 1998).

This study aims to determine the relationship between the use of SEIM, sexual intention, and sexual behaviours among sexually experienced adolescents in Malaysia. Specifically, this study addressed:

1. The relationship between the use of SEIM, sexual intention, and sexual behaviours among adolescents in Malaysia.
2. The mediating role of sexual intention on the relationship between the use of SEIM and sexual behaviours among adolescents in Malaysia.

MATERIALS AND METHODS

Study Sample

A total of 189 sexually experienced adolescents (92 males and 97 females) aged 16 and 17 years old, with the mean age of 16.75 (SD=0.44) were included in the study. In terms of ethnicity, 46% of the respondents were Malay, followed by 42.3% Chinese, and 11.7% Indian. The respondents were

recruited using the convenience sampling method, whereby, respondents frequenting areas such as tuition centres, recreation parks, restaurants, nearby school area, and shopping complexes were conveniently invited to take part in the study. Inclusion and exclusion criteria were practised when selecting respondents. As an inclusion criterion, adolescents had to be between the ages of 13 and 18 years. Adolescents aged below 13 and those above 18 years on their last birthdays were excluded from the study. A total of 551 adolescents were recruited, of which 189 sexually active adolescents were filtered and selected for this study. This study was a part of an extensive study that was conducted on sexual socialisation influences and sexual behaviour among adolescents in Malaysia. Respondents of the study were selected from three metropolitan and urbanised cities in Peninsular Malaysia, namely Penang (46.6%), Kuala Lumpur (31.2%), and Johor Bahru (22.2%). Evidence supported the popular notion that adolescents in urban cities have more opportunities to gain access to a large group of peers and are often subjected to less parental control and supervision due to dual working parents (Boislard & Poulin, 2011). This condition gives urban-city adolescents increased opportunities to access external socialisation agents that could influence them, both positively and negatively.

Procedure

Data was collected using paper-and-pencil self-administered questionnaires.

Respondents were informed of the purpose of the study and assured of their confidentiality. The respondents who had agreed to participate in the study were requested to sign the consent form. They were then provided with a questionnaire and asked to respond to all the questions in the questionnaire based on their own understanding and experiences. It took them about 30 minutes to complete the questionnaire. All the administration measures were conducted in the Malay language, which is the Malaysian national language and was widely understood and used by Malaysian citizens. In order to ensure optimum comprehension, the back-translation procedure from English to the Malay language was utilised. The original English version of the questionnaire was first translated into Malay by a language expert who was proficient in both languages, as well as knowledgeable in psychology. Next, the Malay translated version of the questionnaire was then translated into English without referring to the original English version by another language expert with psychology knowledge. Finally, both the original and the translated English questionnaires were compared to check for consistency in translation.

Measures

Use of SEIM. Adolescents' exposure to SEIM was measured based on five items (Peter & Valkenburg, 2006). Respondents were required to respond to questions about how often they had intentionally viewed: (a)

pictures with clearly exposed genitals; (b) movies with clearly exposed genitals; (c) pictures in which people were having sex; (d) movies in which people were having sex; and (e) erotic content sites within the past six months. The response for the 5-item scale ranged from 1 (never) to 7 (several times a day). A composite score was computed by summing up the scores for the 5-item scale. Higher scores indicated more frequent exposure to SEIM.

Sexual Intention. Adolescents' intention to engage in sexual behaviour was measured by two items using the Youth Pre-coital and Sexual Intentions Scale (Ball, Pelton, Forehand, Long, & Wallace, 2004). Respondents were asked to respond to "How many times have you thought of touching a boy's/ girl's private parts or having a boy/ girl touch your private parts?" and "How many times have you thought of having sex with a boy/girl?". The respondents responded to the items using a 4-point scale ranging from 1 = never, 2 = sometimes, 3 = most of the time, and 4 = always. A higher total score indicated higher intentions to engage in sexual behaviour.

Sexual Behaviour. The adolescents' sexually-related behaviour was assessed using Sexual Behaviour Assessment (Yaacob et al., 2009). The respondents were required to respond to four items in the scale that was intended to measure the adolescents' frequency of involvement with a particular sexual behaviour within the last 12 months. Each respondent was also asked how often he/she engaged in kissing, love touching, and sexual intercourse. The

response categories were from 1 (never), 2 (sometimes), 3 (most of the time), and 4 (always). A higher score meant higher frequency of involvement in that particular sexual behaviour.

Data Analysis. Data from this study was analysed using Predictive Analytics Software (PASW version 18) and Analysis of Moment Structures (AMOS version 18), with maximum likelihood estimation. While running the data, several stages of analyses were conducted. Firstly, a confirmatory factor analysis (CFA) was conducted to examine the psychometric properties of sexual behaviour and the use of SEIM assessments. In evaluating the goodness of fit for the model of adolescents' sexual behaviour, the Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI) with a cut-off value of .95 or above were used. The Root Mean Square Error of Approximation (RMSEA) with a cut-off value of less than 0.06 indicated a good fit (Hu & Bentler, 1999). Due to the small sample size, the chi-square value with a cut-off value of less than 5 was reported to further support the goodness of fit of a model (Hu & Bentler, 1999).

A Pearson correlation analysis was also conducted to determine the relationship between the study variables. The mediation analysis was also tested by following the steps recommended by Baron and Kenny (1986).

RESULTS

Confirmatory Factor Analyses

The CFA was conducted to test the psychometric properties of the use of SEIM and sexual behaviour scale. The single factor measurement model for the use of SEIM provided a good fit to data: $\chi^2(2, N = 189) = 4.340, p = 0.114$; GFI = 0.991; AGFI = 0.932; CFI = 0.997; TLI = 0.987; RMSEA = 0.079; CMIN/DF = 2.170, after correlating the error of items based on the modification indexes. The reliability of the scale was good ($\alpha = 0.87$).

In the case of sexual behaviour, the single factor measurement model provided a good fit to data: $\chi^2(2, N = 189) = 2.163, p = 0.339$; GFI = 0.994; AGFI = 0.972; CFI = 0.999; TLI = 0.999; RMSEA = 0.021; CMIN/DF = 1.081. The reliability of the scale was good ($\alpha = 0.82$).

Furthermore, the model was approached by including variables as proposed in the mediation model. The model provided a good fit to the data: $\chi^2(30, N = 189) = 47.246, p = 0.024$; GFI = 0.954; AGFI = 0.916; CFI = 0.988; TLI = 0.982; RMSEA = 0.055; CMIN/DF = 1.575.

The results of the study indicated significant relationships between the use of SEIM, sexual intention, and sexual behaviour (Table 2). Specifically, the use of SEIM ($r = 0.567, p < 0.001$) was positively correlated with sexual intention. Both the use of SEIM ($r = 0.460, p < 0.001$) and sexual intention ($r = 0.487, p < 0.001$) were positively and significantly related to sexual behaviour.

Table 1

The relationship between the use of SEIM, sexual intention and sexual behaviour

Scale	GFI	AGFI	CFI	TLI	RMSEA	CMIN/DF	<i>p</i>
Use of SEIM	0.991	0.932	0.997	0.987	0.079	2.170	0.114
Sexual Behaviour	0.994	0.972	0.999	0.999	0.021	1.081	0.339
Overall model	0.954	0.916	0.988	0.982	0.055	1.575	0.024

Table 2

The role of sexual intention as a mediator

Variable	M	SD	1	2	3
1. Use of SEIM	12.41	7.83			
2. Sexual intention	4.01	1.78	0.567***		
3. Sexual behaviour	13.26	12.93	0.460***	0.487***	

Note: M: Mean; SD: Standard Deviation; *** $p < 0.001$

A structural model was constructed to test the indirect effect of the use of SEIM and sexual behaviour through sexual intention. The results of the study showed that the squared multiple correlations (R^2) for sexual intention and sexual behaviour were 0.33 and 0.34, respectively. The use of SEIM specifically explained 33% of the variance in adolescents' sexual behaviour. Additionally, 34% of the variability in adolescents' sexual behaviour could be explained by both sexual intention and use of SEIM.

In Step 1, the direct effect of SEIM use on sexual behaviour was tested. The results indicated that the direct effect of the use of SEIM on sexual behaviour was statistically significant ($\beta = 0.44$, $p < 0.01$). In step 2, the use of SEIM significantly predicted sexual intention ($\beta = 0.57$, $p < 0.01$). In step 3, sexual intention significantly predicted

adolescents' sexual behaviour ($\beta = 0.49$, $p < 0.01$). The path coefficient for the direct effect of the use of SEIM on adolescents' sexual behaviour decreased and became non-significant when the sexual intention was controlled ($\beta = 0.13$, $p > 0.01$). This indicated that sexual intention entirely mediated the relationship between the use of SEIM and sexual behaviour among adolescents.

In order to test for a significant mediation effect of sexual intention on the relationship between the use of SEIM and sexual behaviour, a Sobel test was performed. The results of the Sobel test ($Z = 3.949$, $p < 0.01$) confirmed the role of sexual intention as a mediator in explaining the relationship between the use of SEIM and adolescents' sexual behaviour.

Table 3

Results for sexual intention as a mediator in the relationship between the use of SEIM and sexual behaviour (N=189)

Path	Estimate	SE	Critical ratio	p Value
Use of SEIM → Sexual intention	0.774	0.098	7.916	0.001
Sexual intention → Sexual behaviour	0.114	0.025	4.576	0.001
Use of SEIM → Sexual behaviour	0.129	0.031	4.198	0.001
Use of SEIM → Sexual Intention → Sexual behaviour	0.042	0.026	1.629	0.104

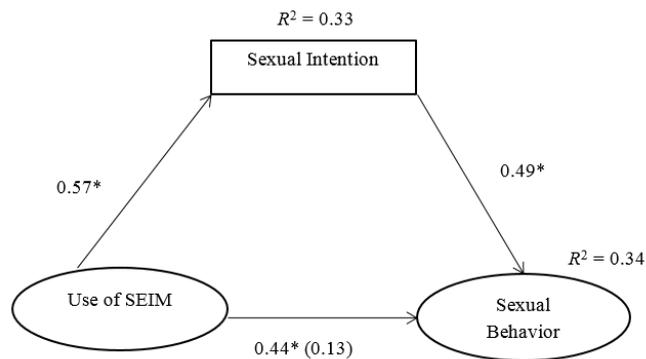


Figure 1. Hypothesized model linking the use of SEIM to sexual intention and sexual behaviour. Path coefficients are presented in standardized units N= 189. *p < 0.001

DISCUSSION

This study aimed to examine the relationships between the use of SEIM, sexual intention, and sexual behaviour among sexually experienced adolescents in Malaysia. The findings of the study suggest that both SEIM use and sexual intention are positively related to sexual behaviour. These findings are also in line with previous studies (Bleakley, Hennessy, Fishbein, Coles, & Jordan, 2009; Brown & L’Engle, 2009; Hull et al., 2011; Lo & Wei, 2005). Meanwhile, the availability of studies that

examine the mediation effect of sexual intention on the relationship between the use of SEIM and adolescents’ sexual behaviour is limited. The results of this study fill the knowledge gap and the growing literature on adolescents’ sexual behaviour, especially in the Malaysian context.

Findings indicate that high usage of SEIM is related to an increased sexual intention. Adolescents who frequently viewed SIEM revealed higher intentions of engaging in sexually-related behaviour, which eventually leads to higher actual

engagement in sexually-related behaviour. The results of this study support the claim that exposure to sexual media content will increase adolescents' perceptions of social pressure to have sex, which consequently increases their intention and engagement in sexually-related behaviour (Atwood et al., 2012; Bleakley & Fishbein, 2011; L'Engle et al., 2006). It is obvious that sexual content in the Internet media poses a risk factor to adolescents' sexual intention and behaviours. Therefore, policymakers should exercise stricter control over this detrimental Internet media. At the same time, they can revitalize programs to educate and equip adolescents with comprehensive knowledge on positive decision making for issues concerning reproductive health through media literacy programs, which the current formal reproductive health education lacks. Brown (2006) suggested that media literacy program should expose adolescents to how the media was produced and advertised, at the same time teaching them the proper way to select and assess reliable sources, as well as to analyse the accessed information. Pinkleton, Austin, Chen, and Cohen (2012) also highlighted that the media could improve adolescents' reproductive health knowledge and influenced adolescents' decision-making outcomes regarding their sexual activities. Media literacy programs could strengthen adolescents' logic-oriented decision-making process, which in turn influenced their sexual decisions (Pinkleton et al., 2012).

Sexual intention is also related to sexual behaviour. Adolescents intending to engage

in sexually-related behaviour were found to display frequent engagements in sexually-related behaviours such as kissing, love touching, and sexual intercourse. These results are in line with previous studies (Bleakley et al., 2009; Busse et al., 2010; Hull et al., 2011) which linked sexual intention to actual sexual behaviour. Sexual intention is seen as a critical cognitive factor that affects adolescents' sexual decision and continues to be influential in adolescents' actual sexual behaviour (Ajzen, 1991).

The results of this study provide the evidence that sexual intention appears as a mediator in the relationship between the use of SEIM and sexual behaviour among adolescents. Similarly, the results further support findings by L'Engle and Jackson (2008) on the mediation effect of cognitive susceptibility on the use of sexually explicit media in relation to adolescents' sexual intercourse. According to Bandura (1989) and Chapin (2000), exposure to sexual media content could affect adolescents' attitudes, norms, and their portrayed behaviour. The findings supported the fact that adolescents' use of sexual media directly encouraged their tendency to engage in any sexual behaviour. After fixing sexual intention as the mediator, the direct effect of the use of SEIM and sexual behaviour was weakened and became non-significant. In other words, adolescents' sexual behaviour was not primarily influenced by SEIM usage itself, but also through sexual intention. This implies that sexual intention is the vital factor that contributes to adolescents' sexual behaviours. Environmental factors

may not influence sexual behaviour directly if adolescents themselves do not have strong intentions to engage in sexual behaviour. Given that adolescents' sexual intention is important in influencing adolescents' sexual behaviour, programs targeting adolescents must consider the healthy development of cognitive processes to effectively control their sexual arousal.

The results of this study contained several limitations. Firstly, the present study was limited by the sampling method that was used. This study utilised a non-randomised sampling method in identifying the study sample due to issues related to sensitivities towards specific research topics in Malaysia. Therefore, the generalizability of the findings was limited. Secondly, the cross-sectional study may not explain the causality link related to the use of SEIM, sexual intention, and sexual behaviour. Therefore, a longitudinal study could have been better in determining the cause and effect of the study variables. Furthermore, the respondents' age may have also been a constraint in obtaining a holistic view of sexual development among adolescents; as the respondents in this study consisted only of late adolescents, aged between 16 and 17 years.

CONCLUSION

The present study provides statistical support concerning adolescents' sexual engagement by highlighting the mediating role of sexual intention on the relationship between the use of SEIM and adolescents'

sexual behaviour. The results provide evidence on the importance of SEIM usage and the individuals' sexual intention in determining adolescents' sexual engagement. Consequently, sexual reproductive health education targeting adolescents should incorporate media literacy programs and healthy cognitive processes, in the effort to promote better reproductive health among adolescents.

REFERENCES

- Ajzen, I. (1991). The theory of planned behaviour. *Organisational Behaviour and Human Decision Processes*, 50(1), 179-211.
- Atwood, K. A., Zimmerman, R., Cupp, P. K., Fongkaew, W., Miller, B. A., Byrnes, H. F., ... & Chookhare, W. (2012). Correlates of precoital behaviours, intentions and sexual initiation among Thai adolescents. *The Journal of Early Adolescence*, 32(3), 364-386.
- Ball, J., Pelton, J., Forehand, R., Long, N., & Wallace, S. A. (2004). Methodological overview of the Parents Matter! Program. *Journal of Child and Family Studies*, 13(1), 21-34.
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, 44(9), 1175-1184.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Bleakley, A., & Fishbein, M. (2011). A model of adolescents' seeking sexual content in their media choice. *The Journal of Sex Research*, 48(4), 309-315.

- Bleakley, A., Hennessy, M., Fishbein, M., Coles, H. C., & Jordan, A. (2009). How sources of sexual information relate to adolescents' beliefs about sex. *American Journal of Health Behaviour, 33*(1), 37-48.
- Brown, J. D. (2006). Media literacy has potential to improve adolescents' health. *Journal of Adolescent Health, 39*(1), 459-460.
- Brown, J. D., & L'Engle, K. L. (2009). X-rated: Sexual attitudes and behaviours associated with U.S. early adolescents' exposure to sexually explicit media. *Communication Research, 36*(1), 129-151.
- Brown, J. D., L'Engle, K. L., Pardun, C. J., Guo, G., Kenneavy, K., & Jackson, C. (2006). Sexy media matter: Exposure to sexual content in music, movies, television and magazines predicts black and white adolescents' sexual behaviour. *Paediatrics, 117*(4), 1018-1027.
- Busse, P., Fishbein, M., Bleakley, A., & Hennessy, M. (2010). The role of communication with friends in sexual initiation. *Communication Research, 37*(2), 239-255.
- Chapin, J. R. (2000). Adolescent sex and mass media: A developmental approach. *Adolescence, 35*(140), 799-811.
- Fingerson, L. (2005). Do mothers' opinions matter in teens' sexual activity? *Journal of Family Issues, 26*(7), 947-974.
- Hu, L., & Bentler, P. H. M. (1999). Cut off criteria for the fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling, 6*, 1-55.
- Hull, S. J., Hennessy, M., Bleakley, A., Fishbein, M., & Jordan, A. (2011). Identifying the causal pathways from religiosity to delayed adolescent sexual behaviour. *Journal of Sex Research, 48*(6), 543-553.
- L'Engle, K. L., & Jackson, C. (2008). Socialization influences on early adolescents' cognitive susceptibility and transition to sexual intercourse. *Journal of Research on Adolescence, 18*(2), 353-378.
- L'Engle, K. L., Brown, J. D., & Kenneavy, K. (2006). The mass media are an important context for adolescents' sexual behaviour. *Journal of Adolescent Health, 38*(1), 186-192.
- Lo, V. H., & Wei, R. (2005). Exposure to internet pornography and Taiwanese adolescents' sexual attitude and behaviour. *Journal of Broadcasting & Electronic Media, 49*(2), 221-237.
- Low, W. Y. (2009). Malaysian youth sexuality: Issues and challenges. *JUMMEC: Journal of Health and Translational Medicine, 12*(1), 3-14.
- Razan, M. (2015). Remaja Malaysia kurang arif dalam kesihatan reproduktif, kata Mei Fun [Malaysian teenagers are less knowledgeable in reproductive health, said Mei Fun]. *New Sabah Times*. November 21 2015. Retrieved March 20, 2017, from <http://www.newsabahtimes.com.my/nstweb/fullstory/1160>
- Miller, B. C., Norton, M. C., Fan, X., & Christopherson, C. R. (1998). Pubertal development, parental communication and sexual values in relation to adolescent sexual behaviours. *The Journal of Early Adolescence, 18*(1), 27-52.
- Peter, J., & Valkenburg, P. M. (2006). Adolescents' exposure to sexually explicit online material and recreational attitudes toward sex. *Journal of Communication, 56*(4), 639-660.
- Pinkleton, B. E., Austin, E. W., Chen, Y. C., & Cohen, M. (2012). The role of media literacy in shaping adolescents' understanding of and responses to sexual portrayals in mass media. *Journal of Health Communication: International Perspectives, 17*(4), 460-476.
- Rapsey, C., & Murachver, T. (2006). Adolescent sexuality. In R. D. McNulty & M. M. Burnette (Eds), *Sex and sexuality-sexuality today: Trends and controversies* (Vol. 1, pp. 61-103). London, England: Praeger Publishers.

- Shek, D. T. L., & Ma, C. M. S. (2016). A six-year longitudinal study of consumption of pornographic materials in Chinese adolescents in Hong Kong. *Journal of Paediatrics Adolescence Gybecol*, 29(1), S12-S21. doi: 10.1016/j.pag.2015.10.004
- Sieverding, J. A., Adler, N., Witt, S., & Ellen, J. (2005). The influence of parental monitoring on adolescent sexual initiation. *Arch Podiatrics & Adolescents Medicine*, 159(1), 724-729.
- Teague, M. L., Mackenzie, S. L. C., & Rosenthal, D. M. (2009). *Your health today: Choices in a changing society* (2nd ed.). New York, USA: McGraw-Hill Companies.
- World Health Organization [WHO]. (2005). *Sexual and reproductive health of adolescent and youth in Malaysia: A review of literature and projects 2005*. Retrieved February 3, 2017, from <http://www.wpro.who.int/publications/docs/ASRHmalaysia.pdf>
- World Health Organization [WHO]. (2009). *Global health risks: Mortality and burden of disease attributable to selected major risks*. Retrieved February 3, 2017, from http://www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf
- Yaacob, S. N., Baharudin, R., Juhari, R., Mansor, M., Abu Talib, M., & Wong, F. P. (2009). *Understanding of sexuality and psychosocial health among Malaysian adolescent* (Final report). Serdang, Malaysia: Universiti Putra Malaysia.
- Zhang, J., & Jemmott, J. B. (2015). Unintentional exposure to online sexual content and sexual behaviour intentions among college students in China. *Asia Pacific Journal of Public Health*, 27(5), 561-571. doi: 10.1177/1010539514562446.