

The Relationship between Exposure to Sexually Explicit Material and Teenage Pre-marital Pregnancy

Siti-Haidah M. I.¹, Susan M. K. T.¹, Bujang M. A.^{2*}, Voon Y. L.¹, Chan L. F.¹, Abdul-Wahab N.¹, Kalil E. Z.¹, Mohd-Ishak N³ and Kamal N. N.^{4*}

¹*Department of Psychiatry, Faculty of Medicine, 43600 UKM, Bangi, Selangor, Malaysia*

²*Clinical Research Center, Jalan Pahang, 53000 Kuala Lumpur, Malaysia*

³*PERMATA Pintar Universiti Kebangsaan Malaysia, 43600 UKM, Bangi, Malaysia*

⁴*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD 21205, USA*

ABSTRACT

Pre-marital pregnancy among teenagers poses a serious and widespread health and social problem especially among those aged between 10 and 19. This study aims to find out the extent to which this out-of-wedlock childbearing by a teenager is associated with exposure to sexually explicit material or pornography. It is hypothesised that frequent exposure to sexually explicit material or pornography could have an association with an increased rate of teenage pregnancy. This is a case-control study where pre-marital pregnant teenagers between 12 and 19 years were selected (as the cases) from government shelters throughout Malaysia, and non-pregnant teenagers were randomly selected from several secondary schools around Kuala Lumpur (as the control). A total of 114 pre-marital pregnant teenagers and 101 non-pregnant teenagers participated in this study. Participants from both

groups completed a questionnaire about their frequency of exposure to pornography. Pre-marital pregnant teenagers were almost ten times more likely to have had frequent exposure to pornography compared with non-pregnant teenagers (OR = 9.9 [CI 4.3 – 22.5]). Hence, frequent exposure to pornography was shown to have a significant association with pre-marital teenage pregnancy.

Keywords: Teenage pregnancy, pornography

ARTICLE INFO

Article history:

Received: 03 November 2015

Accepted: 13 April 2017

E-mail addresses:

hyedah@gmail.com (Siti-Haidah M. I.),

susan@ppukm.ukm.edu.my (Susan M. K. T.),

adam@crc.gov.my (Bujang M. A.),

voonyee_lee@ppukm.ukm.edu.my (Voon Y. L.),

laifchan@ppukm.ukm.edu.my (Chan L. F.),

norazura@ppukm.edu.my (Abdul-Wahab N.),

ekzakuan@ppukm.ukm.edu.my (Kalil E. Z.),

norwmu@hotmail.com (Mohd-Ishak N),

norazlinabouid@yahoo.com;

norazlyn@ppukm.ukm.edu.my (Kamal N. N.)

* Corresponding author

INTRODUCTION

Teenage pre-marital pregnancy has become a worrying trend in most countries (Singh & Darroch, 2000; Ekstrand et al., 2005; Chandra et al., 2008). In the United States, the percentage of out-of-wedlock birth among teenagers less than 20 years ago was 23% (National Vital Statistics Report, 2009). In Malaysia, 4500 out of 18000 (i.e. about 25%) teenagers were reported to be pregnant outside of a marriage (The Star, 2013). The occurrence of teenage pre-marital pregnancy can potentially lead to many social issues such as an increased risk of morbidity. For example, previous studies have consistently reported that teenage pregnancy has an increased risk for pre-term delivery (Gilbert et al., 2004; Fraser et al., 1995; Gortzak-Uzan, 2001; Igwegbe & Udigwe, 2001; Jolly, 2000).

There are many factors that could contribute to teenage pre-marital pregnancy. One of it is frequent exposure to sexually explicit materials or pornography. In this modern world, the Internet is ubiquitous in an adolescent's life (UCLA, 2003), and hence, it has a significant impact on adolescent development (Finkelhor et al., 2000). Although young people may reap many benefits from using the Internet (Fox et al., 2000; Lenhart et al., 2001), previous studies have shown that laissez-faire nature of Internet use among young people pushes them to start exploring pornographic websites (Lenhart et al., 2000; Stahl & Fritz, 2002).

Teenagers often have a positive attitude towards casual sex, and a result, sexual

activity becomes a normal part of their social development (Berg, 1998). One of the major causes is frequent exposure to pornographic materials. Sexually explicit materials which may contain pornography, is freely available to the public because of its widespread distribution by the mass media and is easily accessible (especially via the internet).

The exposure towards sexually explicit material may influence an individual's attitude. This is supported by the social learning theory which suggests that an individual learns attitudes by observing and imitating the behaviours of others (McDonald & Kielsmeier, 1972). An observed behavior does not have to be reinforced to be learned (Zimbardo & Leippe, 1991), and the model "can be presented on screen such as via television, video, or internet, in a novel, or by other vicarious means" (Martin & Briggs, 1986). Therefore, it has also been shown that teenagers' frequent exposure to pornography may influence the development of their sexual attitudes and behaviors (Zillmann, 2000; Haggstrom-Nordin, 2005; Rogala, & Tyden, 2003).

Numerous studies have pointed to the relationship between biological factors and increased feeling towards sex. One of the biological factors is puberty, regarded as an endocrinological event leading to sexual maturation (Peper & Dahl, 2013). This surge in hormones plays a major role within a larger set of biological changes in the process of achieving reproductive maturity, which includes rapid physical

growth, sexually dimorphic alterations, metabolic changes and a wide array of social, behavioural and emotional changes. Developing reproductive capabilities does not only involve changes in the body, but also in neural systems where the brain is a major target for sex steroid hormones (McCarthy & Arnold, 2011). Hence, this demonstrates that pubertal hormones contribute to brain-behavior interactions

The normal sexual development of a teenager can be very complex and dynamic. Children will have heightened sexual interest once they reach puberty (Ponton & Judice, 2004). Findings obtained from a survey in the US revealed that the average age of first sexual intercourse is 15.8 years (Berne & Huberman, 1999). Sexual interest usually increases with age and associated with sexual curiosity that could result in engaging in lengthy discussions about sex, and viewing pornographic material that can then eventually lead to seeking for opportunities to have sexual intercourse.

It is hypothesised that frequent exposure to pornographic material could potentially have a negative impact on the sexual development of an adolescent. The magnitude of this impact on unwanted teenage premarital pregnancy is still unknown and needs to be investigated. To date, there is still lack of research to determine whether (or not) frequent exposure to pornographic material can be a risk factor that is associated with unwanted teenage pregnancy, and also the strength of this relationship (if any), especially in Malaysia. Therefore, this study proposes

an initial hypothesis that frequent exposure to pornographic material will lead to premarital teenage pregnancy.

Theoretical framework, research question and research objective

The research question of this study: is frequent exposure to pornographic materials leads to unwanted teenage pregnancy? In addition, there are confounding factors such as ethnicity, family income and parents' level of education. This is a case control study because it is not ethical to use a prospective study design where the case group has to be exposed to explicit materials. The main objective of this study is to determine the association between exposure to pornography and teenage premarital pregnancy after having adjusted (or controlled) for the effect of confounding factors.

Significance of study

A previous study had shown that in Malaysia, frequent exposure to pornography was associated with premarital pregnancy than with marital pregnancy (Zain et al., 2015). However, this study compared two groups of premarital teenagers (i.e. between those pregnant and those not pregnant), and so it was evaluated the association between frequent exposure to pornography and teenage premarital pregnancy. Thus, it can be concluded that frequent exposure to pornography is linked to unhealthy/risky sexual behaviour. However, it is still unclear whether (or not) frequent exposure

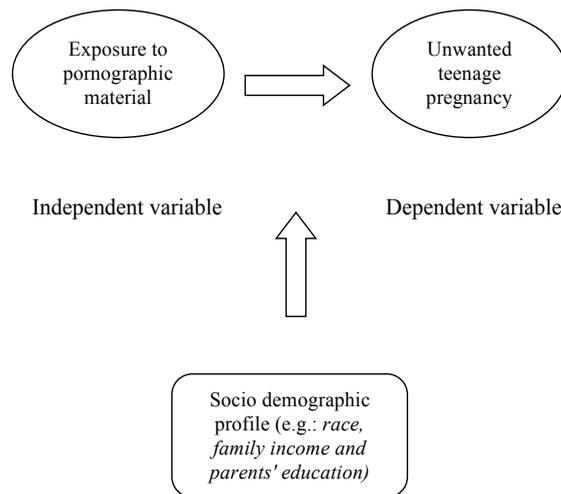


Figure 1. Research hypothesis of the study

to pornography is directly associated with teenage pregnancy.

As such, these findings add to the current knowledge base related to the adverse consequences of frequent exposure to pornography by determining whether it increases the risk of teenage premarital pregnancy. This finding is very useful for determining the impact of frequent exposure to pornography among children and teenagers to result in unwanted premarital pregnancy. This study proposed an initial hypothesis that the impact of frequent exposure to pornographic material can be very serious and thus, it serves as a platform to increase awareness among the teenagers' parents. A comprehensive prevention strategy can thus be executed to limit teenagers' exposure to pornographic materials.

METHOD

Study design and sample

This is a case-control study which consisted of a target population of teenage girls aged between 12 and 19. The sample consisted of two groups which included (i) pregnant teenagers in selected government shelters throughout Malaysia (as the cases) and (ii) teenage female students from secondary schools around Kuala Lumpur City who were not pregnant (as the controls).

The pregnant teenagers were selected from government shelters which participated in the study. Therefore, it was a purposive sampling. Once the government shelters were identified, all pregnant teenagers in there were recruited. The age group of the pregnant teenagers 15 and below and above 15 were 25% and 75% respectively. Thus, for the control group, teenage students based

on similar age group in the case group were recruited. All the students in selected classes were selected as sample to represent the control group. The selection of the classes was also done by purposive sampling.

Questionnaire

The Malay version of the questionnaire was administered to all participants in both groups, which contains questions on their socio-demographic profile and details of their exposure to pornography. Details included their age (in years), ethnicity, highest educational attainment, family income per month, and their parents' highest educational level. Three questions (to be answered either 'yes' or 'no') were:

- i. *Have you ever watched pornographic pictures/clips on the mobile smart phone?*
- ii. *Have you ever read pornographic books or magazines?*
- iii. *Have you ever browsed pornographic websites?*

Respondents who answered "Yes" to at least one question were considered to have been exposed to pornographic material.

Study Procedures

At the commencement of this study, the researchers explained in detail the purpose of this study to all respondents before administering the questionnaire. Respondents were also assured that all their personal information would be kept confidential and therefore all data gathered

from this study would be made anonymous (because they were meant for research purposes only).

Next, a set of questionnaires was distributed to each respondent. Respondents were requested to answer all these questions by drawing on their own experience on the same day and then submit the completed questionnaire to the researcher D. None of the staff from the organisations which provided healthcare services to respondents were present in the room during administration of the questionnaire.

Statistical Analysis

Descriptive statistics such as frequencies and percentages were used to explain the exposure to pornography among different demographic variables of all the respondents. Pearson's Chi-square or Fisher's exact test were used to determine the univariate association between the varying demographic profiles of all the respondents and exposure to pornographic material between the cases and the controls. The choice of either to use Pearson's Chi-square or Fisher's exact test depends on the assumption of a particular statistical test. Pearson's Chi-square test was used when there are sufficient samples in each cell while Fisher's exact test was used when there are insufficient samples (expected cell sizes is less than 5) in at least 25% from the overall number of cells. The hypothesis of the study (see Figure 1) was then tested by using logistic regression analysis in order to determine the effect from exposure of pornography towards teenage pre-marital

pregnancy after some demographic profile (race, family income and parents' education) were controlled in the analysis. Data were analysed using IBM SPSS package (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp).

RESULTS

A total of 215 respondents participated in this study, which included 114 pregnant adolescents (as the cases) and 101 adolescents who were not pregnant (as the controls). Both the case and the control subjects had both different family income ($p < 0.001$) and parents' education level (father's education with $p = 0.037$ and mother's education with $p = 0.002$), with these differences having statistical significance. Hence, these are the confounding variables for the research hypothesis (see Figure 1). There was no statistically-significant difference ($p = 0.141$) in age group. This was because this study initially planned that the age group among the control subjects and case subjects to be similar. Meanwhile, the difference in ethnicity (between the cases and the controls) was also found to be statistically significant ($p = 0.015$). Although there was a pattern of different ethnicity in both groups, however, it could not be inferred that pregnant Malay adolescents were more frequently exposed to pornographic material. This was because the participants were from government shelters where the majority were Malays and Muslims (Table 1).

About 80.7% (92/114) of the pregnant respondents were frequently exposed to pornographic material, while 34.7% (35/101) of those who were not pregnant were frequently exposed to pornography. From among the pregnant teenagers, 78.9% of them were exposed to pornographic pictures, 43.0% to pornography by surfing the internet, and 36.0% by reading pornographic magazines.

Similarly, among those who were not pregnant, 28.7% of the respondents were exposed to pornographic pictures, 13.9% by surfing the internet, and 11.9% by reading pornographic magazines.

Multiple logistic regression analysis was performed to determine the association between frequent exposure to pornography and teenage pregnancy, after having controlled (or adjusted for) three possible confounding factors, namely race, family income and parents' education level. The results showed that frequent exposure to pornography increased the odds of teenage premarital pregnancy in the case group to almost 10 times ($OR = 9.9 [CI 4.3 - 22.5]$) of those from the control group (Table 2).

DISCUSSION

The findings of this study show that frequent exposure to sexually explicit material (or pornographic material) is associated with teenage premarital pregnancy. This study also found that the odds of teenage premarital pregnancy were approximately 10 times higher than that of those from the control group (who did not have frequent

Table 1
Profile of respondents and exposure to pornographic materials between case and control groups

	Pregnant		Not Pregnant		P - value
	n	%	n	%	
Age					
≤15	28	24.56%	34	33.66%	0.141 ^a
> 15	86	75.40%	67	63.34%	
Monthly family income					
Low (<RM1500)	76	68.50%	39	41.90%	<0.001 ^a
High (≥RM1500)	35	31.50%	54	58.10%	
Father's education					
Low	80	84.21%	53	71.62%	0.037 ^b
High	15	15.79%	21	28.38%	
Mother's education					
Low	101	92.66%	64	77.11%	0.002 ^b
High	8	Of 7.34%	19	22.89%	
Race					
Malay	110	96.5%	91	90.1%	0.015 ^b
Chinese	2	1.8%	10	9.9%	
India	2	1.8%	0	0.0%	
Exposure to pornography					<0.001
Yes	92	80.7%	35	34.7%	
No	22	19.3%	66	65.3%	

Note: ^aP-value were derived from Pearson Chi-square test

^bP-value were derived from Fisher's exact test

Table 2
Exposure to sexually explicit material towards teenage pregnancies

	OR 95% CI	P value
Exposure to sexual materials		<0.001
Not	reference group	
Yes	9.9 (4.3, 22.5)	

Note: The odds ratio was derived after adjusting for race, family income and parents' education using multiple logistic regression

exposure to pornographic materials). Most of them had access to pornographic pictures and also by surfing the internet. Since this was a retrospective study, causality could not be inferred and thus, the finding could

then be interpreted in one of the two ways: a) those who were already pregnant had been frequently exposed to pornographic material; b) frequent exposure to pornographic material is an important risk factor for

teenage premarital pregnancy (or teen out-of-wedlock childbirth).

A study by Collins et al. (2004) found that teenagers who watch television programmes containing sexually explicit scenes will have a higher tendency to initiate and maintain intimate sexual relationships. In a long-term study, Chandra et al. (2008) reported that teenagers who were exposed to television programmes which are sexually explicit were found to be at least twice more likely to become pregnant within the next three years compared with their peers. Brown and L'Engle (2009) also found that the exposure to sexual media was associated with an increased level of adolescent sexual activity. Our results are consistent with the findings of other researchers, in that, teenagers who exposed to pornographic material tend to engage in unsafe sexual intercourse. However, the high odds-ratio reported in this study showed that teenagers from the control group were much less exposed to pornography compared with those from the case group.

The level of exposure to pornography of children increased in tandem with their age (Longe, 2007). A study in America revealed that the average age of a child when first exposed to internet pornography was 11 years, with the majority of these children aged between 12 and 17. Almost 90% of the children between aged 8 and 16 were exposed to pornographic material when surfing the internet, while doing homework (Cheryl, 2007). These findings clearly indicate that allowing children to surf the internet at home without adult

supervision is unsafe as they do not have adequate guidance, thereby preventing their balanced psychosocial growth and development. In Malaysia, no academic studies have been undertaken to find out how these young people were exposed to pornography, except a survey conducted in 2001 which showed that they had access to pornography "without parental knowledge" (UNESCO, 2001).

A national survey of 4527 teenagers aged between 10 and 19 was conducted by the Malaysian National Population and Family Planning Development Board (NPFDB) from 1994 to 1996 (UNESCO, 2001). This survey questionnaires assessed respondents' knowledge, attitude and sexual health by mass media (e.g. using popular English, Malay and Tamil media). Respondents were from urban and rural areas of West and East Malaysia. The survey found teenagers did not have sufficient knowledge of sexual health either their parents or from the schools. Many of the adolescent respondents were alarmed to learn about the physiological changes their bodies were undergoing. As neither were available to explain these physiological changes of their, more than two-thirds of these 13 to 19-year-olds 'educated' themselves by accessing pornographic materials in the form of magazines and watching video-films without parental knowledge.

Without proper and adequate guidance by the parents, two-thirds of the respondents soon engaged in masturbation or sexual intercourse. Additionally, two-thirds of these

teenagers had also started dating at the age of 13 and 15, and 18% of the respondents had already engaged in sexual intercourse between the age of 15 and 19. More urban teenagers had started to live together, especially those who were older and/or those who intended to marry at an older age. Studies have found that over time, an increasing number of Malaysian teenagers were also becoming sexually active, from 9% in 1995 to 13% in 2000 (Zulkifli et al., 1995). Boys were more sexually active than girls. Living away from their family was also found to be associated with increased teen sexual activity, and this association was found to be statistically-significant (Zulkifli et al., 2000).

One possible solution to overcome this problem is by introducing sexual education. However, the introduction of sexual education may not be appropriate as seen from the experience of Norway. In Norway, sexual education was introduced and had always been taught as a compulsory topic since 1955; however, the abortion rate among teenagers had also gradually increased to nearly 50% (National Board of Health and Welfare, 2005). This was attributed to lack of knowledge and negligence in contraceptive use, along with having a liberal attitude toward casual sex among teenagers (Ekstrand et al., 2005). Another possible solution may be to establish a socio-culturally and religiously-sensitive approach for a holistic sexual health education, by highlighting the role of sex within the context of a loving marital relationship for procreation purposes .

In view of the easy accessibility of pornographic materials, parents and guardians play a crucial role in guiding their children and teenagers especially when they are exposed to inappropriate and sexual explicitly contents (whether these materials come from traditional sources such as television, magazines or, from internet). Another way to protect children and teenagers from the dangers to pornography is to block their access to such materials by using an internet filtering software. Although it may not be totally effective, it can still filter out many pornographic websites.

CONCLUSION

In conclusion, it was found that frequent exposure to pornography is associated with teenage premarital (or out-of-wedlock) pregnancy. Future research should explore other risk factors associated with frequent exposure to pornography among teenagers. The findings can provide valuable information to policy-makers to implement certain preventive strategies for minimising unwanted teenage pregnancies.

A major limitation of this study was data from other groups of pregnant teenagers (apart from the Malay ethnic group) were not included in this study (since it was very difficult to engage them to participate in this study). Therefore, almost all the respondents in this study were Malay Muslims.

Additionally, all the subjects in the control group are from secondary schools in Kuala Lumpur. No pregnancy test was conducted to confirm whether the

student was pregnant or not except by the respondent's own admission. Sample selection was conducted using purposive sampling. Future studies may consider collecting more representative samples for case and control group. Besides that, this study assumed that the subject in the control group understood the definition of pornographic materials without showing them examples of pornographic materials as this was considered immoral.

Besides, it was also a case-control study and therefore it would be difficult to establish the causal relationship between frequent exposure to pornographic material and teenage premarital pregnancy (because data collected were retrospective in nature). Therefore, future longitudinal studies are still warranted for elucidating the actual 'cause-and-effect' relationship between frequent exposure to pornographic material and teenage premarital pregnancy. Such future studies should consider a broader socio-economic context for gleaning a better understanding of the factors that have an impact on teenage premarital pregnancy, thereby providing us with a better preventive strategy to tackle this problem.

ACKNOWLEDGEMENT

We would like to thank government shelters throughout Malaysia and secondary school students in Kuala Lumpur City for their participation in this study. We extend our appreciation to Mr. Hon Yoon Khee for his kind assistance in proofreading this manuscript. This study was funded by the

National University of Malaysia Special UKM-GUP-ERGS Grant (University Research Grant-Exploratory Research Grant Scheme), Phase 1/2011 (Project Code: UKM-GUP-2011-32). The authors also thank the Malaysian Department of Social Welfare, Ministry of Education and Islamic Religious Department for their invaluable assistance.

REFERENCES

- Berg, K. K. (1998). Om experimenterande, risktagande och problembeteende. In K. K. Berg (Ed.), *Ungdomsmedicin* (pp. 95-111). Stockholm: Liber.
- Berne, J., & Huberman, B. (1999). *European approaches to adolescent sexual behavior and responsibility*. Advocates for Youth Washington, D. C. Retrieved from <https://www.advocatesforyouth.org/storage/advfy/documents/european.pdf>
- Brown, J., & L'Engle, K. (2009). X-Rated: Sexual attitudes and behaviors associated with US early adolescents' exposure to sexually explicit media. *Communication Research*, 36(1), 129-151.
- Chandra, A., Martino, S. C., Collins, R. L., Elliott, M. N., Berry, S. H., Kanouse, D. E., & Angela, M. (2008). Does Watching Sex on Television Predict Teen Pregnancy? Findings from a Longitudinal Survey of Youth. *Pediatrics*, 122(1052), 1047-1054.
- Cheryl, T. (2007, February 13). *Keep Your Child Safe from Internet Porn*. Retrieved from www.cbn.com.
- Collins, R. L., Elliott, M. N., Berry, S. H., Kanouse, D. E., Kunkel, D., Hunter, S. B., & Miu, A. (2004). Watching sex on TV predicts adolescent initiation of sexual behavior. *Pediatrics*, 114(3), 280-289.

- Ekstrand, M., Larsson, M., Essen, L. V., & Tyde'n, T. (2005). Swedish teenager perceptions of teenage pregnancy, abortion, sexual behavior, and contraceptive habits – a focus group study among 17-year-old female high-school students. *Acta Obstet Gynecol Scand*, 84(10), 980-986.
- Finkelhor, D., Mitchell, K., & Wolak, J. (2000). *Online victimization: a report on the nation's young people*. National Center for Missing and Exploited Children. Retrieved from http://www.unh.edu/ccrc/pdf/Victimization_Online_Survey.pdf
- Fox, S., Rainie, L., Horrigan, J., Lenhart, A., Spooner, T., Burke, M., Lewis, O., & Carter, C. (2000). *The online healthcare revolution: How the web helps Americans take better care of themselves*. Pew Internet and American Life Project. Retrieved from http://www.pewinternet.org/files/old-media/Files/Reports/2000/PIP_Health_Report.pdf.pdf
- Fraser, A. M., Brockert, J. E., & Ward, R. H. (1995). Association of young maternal age with adverse reproductive outcomes *New England Journal of Medicine*, 332(17), 1113-1118.
- Gilbert, W., Jandial, D., Field, N., Bigelow, P., & Danielsen, B. (2004). Birth outcomes in teenage pregnancies. *The Journal of Maternal-Fetal and Neonatal Medicine*, 16(5), 265-270.
- Gortzak-Uzan, L., Hallak, M., Press, F., Katz, M., & Shoham-Vardi, I. (2001). Teenage pregnancy: risk factors for adverse perinatal outcome. *Journal of Maternal-Fetal Medicine*, 10(6), 393-397.
- Haggstrom-Nordin, E., Hansson, U., & Tyden, T. (2005). Association between pornography consumption and sexual practices among adolescents – a cross-sectional survey among high school students in a medium sized city in Sweden. *International journal of STD and AIDS*, 16(2), 102-107.
- Igwegbe, A. O., & Udigwe, G. O. (2001). Teenage pregnancy: still an obstetric risk. *Journal of Obstetrics and Gynaecology*, 21(5), 478-481.
- Indramalar, S. (2012, October 11). Rising teen pregnancies child marriages worrying. *The Star*. Retrieved from <http://www.thestar.com.my/news/nation/2012/10/11/rise-in-child-marriages-worrying/>
- Jolly, M. C., Sebire, N., Harris, J., Robinson, H. S., & Regan, L. (2000). Obstetric risk of pregnancy in women less than 18 years old. *Obstetrics and Gynecology*, 96(6), 962-966.
- Lebo, H. (2003). *The UCLA Internet report – Year three*. Los Angeles, CA: UCLA Center for Communication Policy. Retrieved from <http://www.digitalcenter.org/pdf/InternetReportYearThree.pdf>
- Lenhart, A., Rainie, L., & Lewis, O. (2001). *Teenage life online: the rise of the instant message generation and the Internet's impact on friendships and family relations*. Pew Internet & American Life Project. Retrieved from http://www.pewinternet.org/files/old-media/Files/Reports/2001/PIP_Teens_Report.pdf.pdf
- Longe, O. B., Chiemekwe, S. C., Onifade, O. F. W., Balogun, F. M., Longe, F. A., & Otti, V. U. (2007). Exposure of children and teenagers to Internet pornography In South Western Nigeria: Concerns, trends & implications. *Journal of Information Technology Impact*, 7(3), 195-212.
- Martin, B. L., & Briggs, L. J. (1986). *The Affective and Cognitive Domains: Integration for Instruction and Research*. Englewood Cliffs, NJ: Educational Technology Publications.
- McCarthy, M. M., & Arnold, A. P. (2011). Reframing sexual differentiation of the brain. *Nature Neuroscience*, 14(6), 677-683.

- McDonald, F., & Kielsmeier, C. (1972). *Social learning theory and the design of instructional systems. In The affective domain: A resource book for media specialists* (pp. 93-106). Washington, DC: Gryphon House.
- NBHW. (2003). *Abortions 2003*. National Board of Health and Welfare. Sweden: Centre for Epidemiology.
- Peper, J. S., & Dahl, R. E. (2013). Surging hormones—brain-behavior interactions during puberty. *Current Directions in Psychological Science*, 22(2), 134-139.
- Ponton, L. E., & Judice, S. (2004). Typical adolescent sexual development. *Child and Adolescent Psychiatric Clinics of North America*, 13(3), 497-511.
- Rogala, C., & Tyden, T. (2003). Does pornography influence young women's sexual behaviour? *Women's Health Issues*, 13(1), 39-43.
- Singh, S., & Darroch, J. E. (2000). Adolescent pregnancy and childbearing: levels and trends in developed countries. *Family Planning Perspectives*, 32(1), 14-23.
- Stahl, C., & Fritz, N. (2002). Internet safety: adolescents' self-report. *Journal of Adolescent Health*, 31(1), 7-10.
- Stephanie, J. V. (2009). *Changing Patterns of Nonmarital Childbearing in the United States*. National Vital Statistics Report. Retrieved from <https://www.cdc.gov/nchs/data/databriefs/db18.pdf>
- UNESCO. (2001). *Nationwide survey hopes to pave way for a National Adolescent Reproductive Health (ARH) programme*. Adolescent Reproductive Health UNESCO Regional Clearing House on Population Education and Communication. (Research Brief no 002). Bangkok.
- Zain, N. M., Low, W. Y., & Othman, S. (2015). Factors associated with pregnancy among unmarried women in Malaysia. *Southeast Asian Journal of Tropical Medicine and Public Health*, 46(3), 526-38.
- Zillmann, D. (2000). Influence of unrestrained access to erotica on adolescents' and young adults' dispositions towards sexuality. *Journal of Adolescent Health*, 27(2), 41-44.
- Zimbardo, O. G., & Leippe, M. (1991). *The Psychology of Attitude Change and Social Influence*. New York: McGraw-Hill.
- Zulkifli, S. N., & Low, W. Y., (2000). Sexual practices in Malaysia: determinants of sexual intercourse among unmarried youths. *Journal of Adolescent Health*, 27(4), 276-80.
- Zulkifli, S. N., Low, W. Y., & Yusof, K. (1995). Sexual activities of Malaysian adolescents. *Medical Journal of Malaysia*, 50(1), 4-10.

APPENDIX

Borang soal selidik/Questionnaire

Sila isikan tempat kosong atau tandakan (X) pada pilihan anda

Kindly fill in the blank or mark (X) for your option

Bahagian 1: Profail demografik		
<i>Part 1: Demographic profile</i>		
No.	Data profail/ <i>Profile data</i>	Jawapan/ <i>Answer</i>
1	Umur <i>Age</i>	Nyatakan:tahun <i>State:year</i>
2	Jantina <i>Sex</i>	() Lelaki/ <i>Male</i> () Perempuan/ <i>Female</i>
3	Bangsa <i>Ethnic</i>	() Melayu/ <i>Malay</i> () Cina/ <i>Chinese</i> () India/ <i>Indian</i> () Lain- lain/ <i>Others</i>
4	Agama <i>Religion</i>	() Islam/ <i>Muslim</i> () Buddha/ <i>Buddhist</i> () Kristian/ <i>Christian</i> () Hindu/ <i>Hindu</i> () Lain- lain/ <i>Others</i>
5	Tahap pendidikan tertinggi bapa <i>Father's highest education level</i>	() Tidak bersekolah/ <i>No formal education</i> () Sekolah rendah/ <i>Primary school</i> () Sekolah menengah/ <i>Secondary school</i> () Diploma or sijil/ <i>Diploma or certificate</i> () Sarjana muda/ <i>Bachelor degree</i> () Sarjana or Doktor falsafah/ <i>Master or Doctor of Philosophy</i>
6	Tahap pendidikan tertinggi ibu <i>Mother's highest education level</i>	() Tidak bersekolah/ <i>No formal education</i> () Sekolah rendah/ <i>Primary school</i> () Sekolah menengah/ <i>Secondary school</i> () Diploma or sijil/ <i>Diploma or certificate</i> () Sarjana muda/ <i>Bachelor degree</i> () Sarjana or Doktor falsafah/ <i>Master or Doctor of Philosophy</i>
7	Pendapatan keluarga sebulan <i>Family's monthly income</i>	Nyatakan: RM..... <i>State: RM.....</i>
Bahagian 2: Pendedahan kepada bahan - bahan lucah		
<i>Part 2: Exposure to pornographic materials</i>		
8	Pernakah anda menonton klip/ gambar lucah di telefon bimbit? <i>Have you ever watched pornographic clips/pictures on the mobile smart phone?</i>	() Tidak/ <i>No</i> () Ya/ <i>Yes</i>
9	Pernakah anda membaca buku/ majalah lucah? <i>Have you ever read pornographic books or magazines?</i>	() Tidak/ <i>No</i> () Ya/ <i>Yes</i>
10	Pernakah anda melayari laman web lucah? <i>Have you ever browsed through pornographic websites?</i>	() Tidak/ <i>No</i> () Ya/ <i>Yes</i>

