

Self-Esteem and Locus of Control as Mediators between Parent-Child Attachment and Attitude towards Sexual Behaviour among Adolescents Pregnant Out Of Wedlock

Nor Jumawaton Shahrudin^{1,*}, Mariani Mansor¹ Zainal Madon¹ and Hanina Halimatusaadiah Hamsan²

¹ Department of Human Development and Family Studies
University Putra Malaysia, Malaysia

² Department of Social and Development Science
Universiti Putra Malaysia, Malaysia

*Corresponding author's email: [norjumawatonshahrudin \[AT\] yahoo.com](mailto:norjumawatonshahrudin@yahoo.com)

ABSTRACT - *This study aims to identify the role of self-esteem and locus of self-control as mediators between parent-child attachment and attitude towards sexual behaviours among pre-marital pregnant adolescents. This study utilises the four questionnaires of the Inventory of Parent and Peer Attachment (Armsden & Greenberg 1987), the Rosenberg Self-Esteem Scale (Rosenberg, 1965), Rotter's Locus of Control Scale (Rotter, 1966), and the Brief Sexual Attitudes Scale (Hendrick & Reich, 2006). Furthermore, the researchers also utilise a sampling technique aimed at pre-marital pregnant adolescents. This study applies the Structural Equation Model (SEM) approach to process mediation analysis using the Smart PLS 8.0 software. The sample size taken for this study is around 145 pregnant teenagers aged between 13 and 25 years. The findings contribute to the evidence of existence of partial mediation between parent-child attachment and attitude towards sexual behaviour as explained through the self-esteem and locus of control mediators. The researchers have forwarded a number of suggestions to government and non-governmental agencies to form a strategic treatment plan to help pre-marital pregnant adolescents on the road to recovery, especially in the context of risky sexual behaviour.*

Keywords Parent-Child Attachment; Self-Esteem; Locus of Control and Attitude towards Sexual Behaviour

1. INTRODUCTION

Adolescents are at risk from the negative health outcomes associated with sexual-risk behaviour. Sexual-Risk Behaviour is a behaviour employed by persons who practice premarital sex, early sexual initiation, unprotected sexual intercourse, sex with multiple different partners or who have unprotected sex with partners who are potential carriers of sexually transmitted infections (STIs). Participation in sexual-risk behaviour is influenced by a wide range of factors depending on the demographic, biological, psychological, and social factors that influence an adolescent's development.

Adolescents aged 10-19 account for almost 1 billion people worldwide, or 27% of the world's population (UNFPA, UNESCO & WHO, 2015). In Malaysia, there are approximately 5.5 million adolescents represent 30.27% of the total population (Department of Statistic Malaysia, 2015). With the increasing number of adolescents, more and more individuals will become susceptible to SRBs and adolescents are particularly susceptible to SRBs because they lack the knowledge and skills to avoid unsafe behaviours and they lack access to acceptable, affordable, and appropriate reproductive health information and services (WHO, 2006). Moreover, the environment required to support adolescents has not really changed to accommodate their needs; families and communities are still unprepared to provide adolescents with the accurate reproductive health information and services required (Eggleston, Jackson, Hardee & Elizabeth, 2013).

The development of adolescent attitude towards sexual behaviour begin when deep feelings and desires about extreme sexual relationship emerge. This positive attitude towards sexual behaviour significantly means the phenomenon of pregnant adolescents is no one-off event, but continuous and cyclical (Miller, McCoy, Olson & Wallace, 1986; Eggleston et al, 2013; & Waggoner, 2012). For example, a study by Boden & Horwood (2006) identifies internal factors such as self-esteem and locus of self-control as factors influencing attitude towards sexual behaviour among adolescents.

The statistics provided by the Department of Social Welfare (JKM) for the year 2014 shows a sudden increase in the rate of female adolescents under 18 years of age being pregnant out of wedlock, with 191 cases as of May 2014, compared to 172 cases in 2013 (*Utusan Malaysia*, 2014). In addition, the Malaysian Ministry of Health (KKM) recorded

18,652 births by girls under 19 years of age in 2011 compared to only 5,962 cases during the second half of 2010 (Soon, 2012).

Findings in the West show that estranged relations between adolescents and parents influence the former's self-esteem and causes them to fall into delinquency and sexual activity. A study by Kerpelman, McElwain, Pittman and Adler-Baeder, (2016) involving 680 African-America and European-American adolescents shows risky sexual behaviour is positively-linked to relations with parents as well as low self-esteem. Adolescents with low self-esteem are inclined to participate in sexual activity to increase self-worth through acceptance and love as provided by their partner (Brassard, Dupuy, Bergeron, & Shaver, 2015). The study by DiIorio (2001) shows low self-esteem exists due to the family relationship factor, thus influencing their interpersonal relationships.

A study on 1,076 adolescents between the ages of 9 to 19 years in Chicago shows a close parent-child bond could shape the locus of self-control and help adolescents to steer away from sexual activity (Ahlin & Antunes, 2015). Parents are an important factor in shaping the adolescent locus of self-control, especially in communication (Peter, 2012). Previous studies show a link between parent-child attachment and attitude towards sexual behaviour among pre-marital pregnant adolescents (Crittenden, 2009). However, this study aims to examine this variable in detail in the context of pregnant adolescents in Malaysia. Furthermore, as proven by previous studies, self-esteem and locus of self-control are related to sexual behaviour (Owringi, Yousliani, & Zarnaghash, 2011). Nevertheless, there is still no consensus in previous studies to prove that self-esteem and locus of self-control could act as the mediating variable between parent-child attachment and attitude towards sexual behaviour. In other words, this study seeks to find a link between each of the studied constructs that could be identified as the contributing factor of attitude towards sexual behaviour. This study is expected to contribute to the understanding and a more detailed explanation of attitude towards sexual behaviour among pregnant adolescents in Malaysia.

2. RESEARCH OBJECTIVE

The research objective is to identify the role of self-esteem and the locus of self-control as mediators between parent-child attachments and attitude towards sexual behaviour among pre-marital pregnant adolescents.

3. RESEARCH METHODOLOGY

This study emphasises on the development perspective to understand and identify the effects self-esteem and locus of self-control have as mediators between parent-child attachments and attitude towards sexual behaviour among pregnant adolescents out of wedlock. A study that integrates the Bio-ecological Systems Theory (Bronfenbrenner, 1979) and the Social Cognitive Theory as the basis for a conceptual framework could finally provide a more detailed description and explanation of the attitude towards sexual behaviour among pregnant adolescents in Malaysia.

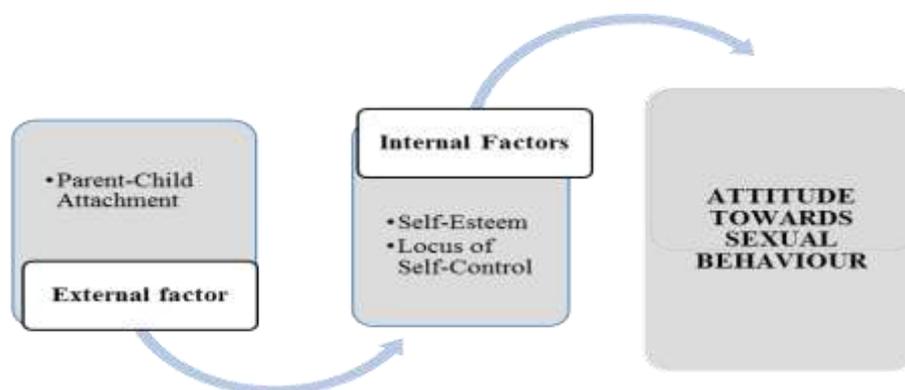


Figure 1: Research Conceptual Framework

Meanwhile, the Structural Equation Model (SEM) is used as mediation analysis by utilising the *Smart PLS 8.0* software. The PLS-SEM is one of the techniques of multivariate statistical analysis able to test links between the independent mediator variable and the dependent variable through a small sample size (Byrne, 2010).

Around 145 pre-marital adolescents between the ages of 14 and 19 years were involved in this study. The subjects were selected through purposive sampling as it is believed this sampling method could represent the research objective regarding the studied phenomenon, as well as increase in the value of required information, which are pre-marital pregnant adolescents (Burns, 1990; Johnson & Christensen, 2004). The subjects and their guardians have signed the Respondent Information and Consent Forms and the Parent and Guardian/Care Centre Consent Forms before

participating in the study. Therefore, in selecting a research subject, the researchers have used the Krejcie and Morgan table (1970) to determine the study sample size suitable and sufficient to achieve the research objective (Isaac, & Michael, 1995; Sekaran, 2000 and Chua, 2006).

This study utilises the questionnaires of the Inventory of Parent and Peer Attachment by Armsden, (1987) to measure parent-adolescent attachment, the Rosenberg Self-Esteem Scale by Morris Rosenberg, (1965) to measure the extent of low or high self-esteem in an individual, and the Brief Sexual Attitudes Scale by Hendrick, Hendrick, and Reich (2006) to measure attitudes towards sexual relationships. The researchers have obtained consent to use the aforementioned inventories from the original drafters or the family members and the organisations that maintain the copyright of the scales. A back-translation method has been used to translate the inventories into the Malay Language through the Brislin method (1970).

4. DATA ANALYSIS

Structural Equation Model analysis (SEM) through the Smart PLS 8.0 software is used to analyse data in this study.

5. RESEARCH RESULTS

Table 1 shows 118 (81.3%) of the research respondents consist of adolescents between 16 and 17 years of age, with 69 respondents (48%) with four to six siblings. Majority respondents are Malay adolescent. The data also shows that 69 respondents (48%) have 4 to 6 siblings, and 61 respondents (42.1%) only have a Lower Secondary Assessment (PMR)/PT3 education level. The data showing the majority of adolescent out-of-wedlock only have lower education levels.

Table 1: Respondent Demographic Features

Variable	n	%	Mean	S.D
Age group(year)			17.62	2.36
14-15	6	4.14		
16-17	118	81.3		
18-19	21	14.56		
Ethnicity			1.03	0.29
Malay	143	98.6		
Chinese	1	7.0		
Indian	1	7.0		
Number of Siblings			4.98	2.39
0-3	45	31.0		
4-6	69	48.0		
7-10	27	19.0		
11 and above	4	2.0		
Level of Education (Certification)			3.46	1.172
None	2	1.4		
UPSR	23	15.9		
PMR/PT3	61	42.1		
SPM	41	28.3		
STPM	4	2.8		
Certificate/Diploma	12	8.3		
Degree	2	1.4		

Table 2 Respondent Parents Demographic Features (N = 145)

Variable	n	%	Mean	S.D
Father Education Level			2.26	1.353
None	39	26.9		
Primary School	74	51.0		
MCE/SPM	13	9.0		
STPM	4	2.8		
Certificate/Diploma	5	3.4		
Degree/Masters/PhD	10	6.9		
Mother Education Level			2.15	1.215
None	43	29.7		
Primary School	69	47.6		

MCE/SPM	18	12.4		
STPM	3	2.1		
Certificate/Diploma	7	4.8		
Degree/Masters/PHD	5	3.4		
Parent Income Estimate (RM)			RM1,907.59	RM2,460.669
No steady income	19	13.1		
100 to 1,000	63	43.0		
1,001 to 2,000	21	14.4		
2,001 to 3,000	16	11.0		
3,001 and above	26	18.5		
Parent Marriage Status			1.36	0.704
Married	112	77.2		
Divorced	14	9.7		
Widowed	19	13.1		

Referring to Table 2, the education level of almost half of the fathers (74 respondents, or 51%) and mothers (69 respondents, or 47.6%) of respondents are at a Primary School level, while 39 fathers (26.9%) and 43 mothers (29.7%) did not attend school. Meanwhile, the data shows the income level of the majority of parents (63 respondents, or 43%) are low, between RM100.00 and RM1, 000.00 monthly.

Measurement Model

In this study, the PLS-SEM analysis is applied to evaluate the effects of the research mediator. Hair, Joseph, Tomas and Ringle (2014) have recommended the bootstrapping method of Preacher & Hayes (2008) with the formula introduced by Efron (1987); and Davison and Hinkley (1997) as such;

$$t = \frac{w_1}{se^*_{w_1}}$$

Legend;

t = critical t value

w₁ = outer weight

se*_{w₁} = bootstrap standard error of w₁

In order to test the mediator concept, analysis of the Variance Accounted For (VAF) measure introduced by Iacobucci and Duhachek (2003) is applied with the following formula;

$$VAF = \frac{a \times b}{a \times b + \acute{c}}$$

Legend;

VAF = variance accounted for

a = path Y1 to Y2

b = path Y3 to Y2

acute c = path Y1 to Y3

According to Hair, Sarstedt, Hopkins & Kuppelwieser (2014), complete mediation effect value is when the VAF value > 80% (*full mediation*), partial mediation effect 20% ≤ VAF ≤ 80% (*partial mediation*) no mediation effect VAF ≤ 20% (*no mediation*).

Table 3 Effects of the self-esteem and locus of self-control mediators on the independent and dependent variables

Mediator	β	SE	<i>t</i>	<i>p</i>
Bootstrap Analysis Mediator Model 1				
Parent-child Attachment → Self-Esteem	.160	.073	3.430	.000**
Self-Esteem → Attitude towards Sexual Behaviour	.299	.083	3.584	.000**
Parent-child Attachment → Attitude towards Sexual Behaviour	.265	.078	3.410	.001*
Bootstrap Analysis Mediator Model 2				
Parent-child Attachment → Locus of control	.085	.065	3.280	.001*
Locus of control → Attitude towards Sexual Behaviour	.188	.072	2.759	.002*
Parent-child Attachment → Attitude towards Sexual Behaviour	.265	.078	3.410	.001*

This study includes two mediator model analyses (self-esteem and locus of self-control) involving the parent-child attachment independent variable with attitude towards sexual behaviour. Table 3 shows the results for path coefficient from Smart PLS bootstrap analysis for parent-child attachment and attitude towards sexual behaviour clearly shows a significant relationship ($\beta=.265$, $t=3.410$, $p \leq .05$).

Model 1

HA1: Self-esteem shows the mediator effect is significant in the relationship between parent-child attachment and attitude towards sexual behaviour.

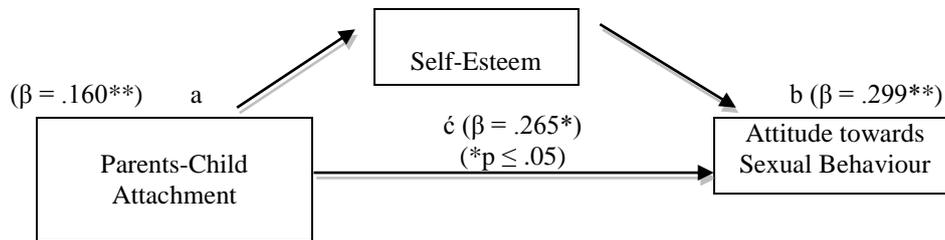


Figure 2 Mediator Effect of Self-Esteem on Parent-Child Attachment and Attitude towards Sexual Behaviour

To test the mediating effect, we adopt Baron and Kenny approach (Baron & Kenny, 1986). Specifically, we first established direct paths between Parents-Child Attachment and Attitude towards Sexual Behaviour. We then added the mediating variable to the model (self-esteem). According to Baron and Kenny, full mediation would occur only if the direct path from Parents-Child Attachment to Attitude towards Sexual Behaviour was insignificant, and the indirect path through self-esteem was significant. Table 4 (see the appendix) summarizes the results of the Baron and Kenny (1986) procedure. Self-esteem appeared to have a full mediating role. The direct path between Parents-Child Attachment and Attitude towards Sexual Behaviour became insignificant when the self-esteem mediator was added.

Figure 2 shows the bootstrap analysis for the effects of the self-esteem mediator towards parent-child attachment and attitude towards pre-marital pregnancy. The path coefficient for parent-child attachment with attitude towards sexual behaviour (\hat{c}) clearly shows a significant relationship ($\beta=.265$, $t=3.410$, $p \leq .05$). Therefore, the HA1 is supported. Meanwhile, the path of self-esteem (b) with attitude towards sexual behaviour is significant ($\beta=.299$, $t=3.584$, $p \leq .05$). The path of parent-child attachment and self-esteem (a) shows the relationship is significant ($\beta= .160$, $t=3.430$, $p \leq .05$). To test this mediator concept, the VAF value as suggested by Hair et.al (2014) uses the following formula is 34.14%.

$$VAF = \frac{a \times b}{a \times b + \hat{c}}$$

Behaviour is explained through the self-esteem mediator. As the VAF $\geq 20\%$ but $\leq 80\%$, it shows effects of partial mediation. The study findings is in line with the research by Wallace, Barry, Zeigler-hill, and Green (2012) that found the self-esteem factor as the mediator factor affecting adolescent risky sexual behaviour. However, this finding contradicts the study by Owрани et al. (2011) that proves parent-child relationship influences adolescent attitude towards sexual behaviour through the adolescent self-esteem mediator effect. Nevertheless, a study by Cederbaum, Angeles, Hutchinson, and Jemmott, (2013) shows that attitude towards use of birth control tools has a significant relationship with adolescents with high self-esteem.

Therefore, one contribution of this study is proving that self-esteem serves as mediator to attitude towards sexual behaviour, but has a negative relationship with parent-child attachment. Hutchinson and Wood, (2007) found the best way to predict the attitude of pregnant adolescents on a subject is through measuring their self-esteem. However, this study proves parent-child attachments have no significant relationship with self-esteem. The findings of this study also supports a previous study that reports the existence of sexual desire is motivated by need for love, affection, attention, joy, and fun is due to lack of love and affection from parents (Pfitzner, Hoff, & McElligott, 2003).

Model 2

HA2: Locus of self-control shows the mediator effect is significant between parent-child attachment and attitude towards sexual behaviour

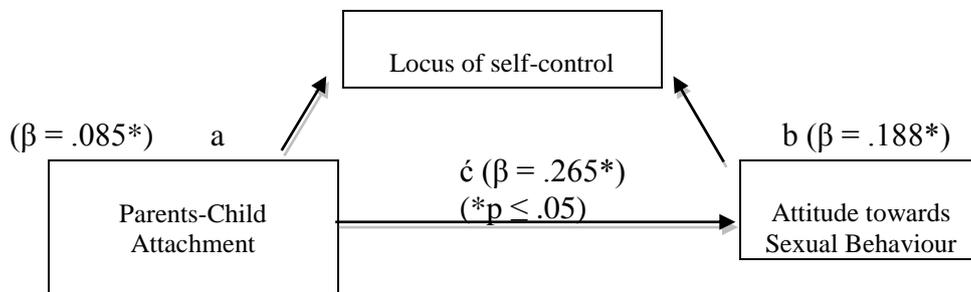


Figure 3 Mediator Effect of Locus of Self-Control on Parent-Child Attachment and Attitude towards Sexual Behaviour

Figure 3 shows the bootstrap analysis for the effects of the locus of self-control mediator towards parent-child attachment and attitudes towards pregnancy out of wedlock. The path coefficient for parent-child attachment with attitude towards sexual behaviour (\hat{c}) clearly shows a significant relationship ($\beta = .265$, $t = 3.410$, $p \leq .05$). Meanwhile, the path of parent-child attachment and locus of self-control (a) shows the relationship as not significant ($\beta = .085$, $t = 2.759$, $p \leq .05$). The path of locus of self-control with attitude towards sexual behaviour is significant (b) ($\beta = .188$, $t = 2.759$, $p \leq .05$) as the value of $t \geq 1.96$. Therefore, the HA2 is supported. This means 26.8% of the effects of parent-child attachment on attitude towards sexual behaviour is explained through the locus of self-control mediator. As the VAF $\geq 20\%$ but $\leq 80\%$, it shows effects of partial mediation.

The study findings contribute evidence that the locus of self-control functions as a mediator between parent-child attachment and attitudes towards sexual behaviour. Previous findings prove parents are the most important factor in influencing the adolescent locus of self-control. Previous findings prove a close relationship with parents could shape the locus of self-control and help adolescents avoid sexual behaviour (Ahlin & Antunes, 2015). This study is in line with the research by Peter (2012) that proves an estranged relationship between parent and adolescent could affect the locus of self-control and causing to adolescent to be highly-inclined to participate in sexual behaviour. However, this study rejects the findings of Ahlin et al (2015) that found parent attachment could help adolescents develop a locus of self-control, thus being able to abstain from sex.

6. DISCUSSION

The purposes of the current study were two-fold: identify the role of self-esteem as mediators between parent-child attachment and attitude towards sexual behaviours among adolescents out of wedlock and second to to evaluate locus of control as mediators between parent-child attachment and attitude towards sexual behaviours. Overall, the research findings prove that self-esteem and locus of self-control act as mediator variables between parent-child attachment and attitudes towards sexual behaviour. The results show that pre-marital pregnant adolescent attitude and behaviour as being influenced by various factors in various social environments, including the relationship between the adolescents and their mothers (Deptula, Henry, & Schoeny, 2010). Previous studies support the hypothesis that identified internal factors such as personality and self-esteem as factors with strong effect on the adolescent sexual attitude and behaviour. Findings in

the West also clearly prove that locus of self-control and self-esteem are main mediator factors in influencing risky sexual attitude and behaviours among adolescents and are among the factors with strong effects and the ability to influence attitude (Santor, Messervey, & Kusumakar, 2000; Edward S. Herold, 1979; Wallace, Barry, Zeigler-hill, & Green, 2012; & Owrangi, Yousliani, & Zarnaghash, 2011). The results show findings to be in line with the cross-cultural study carried out by Boden and Horwood, (2006) proving that low self-esteem that emerged from estranged familial relationship would influence adolescent self-esteem in both positive or negative aspects (DiIorio et al., 2001).

Additionally, psychological outcomes, low self-esteem, have been associated with sexual activity occurring in adolescence (Malhotra, 2008). Thus, it is essential for adolescents to be aware of and educated on the consequences of these risk behaviours. Parental attachment is a particularly important familial factor. Evidence has suggested that adolescents who perceive that their parents know where they are and who they are with outside of the home are substantially less likely to engage in sexual behaviour (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003; Yang & Werch, 1990). Those who perceive their parents as less likely to monitor their behaviours have been shown to engage more often in risky sexual behaviours (Wyn, & Harris, 2012).). In addition, a higher sense of family connectedness has also been shown to prevent adolescents from engaging in risky sexual behaviours (Kabiru, & Ezeh,(2007), while a lower sense of connectedness (Kakavoulis, (2001) is associated with increased sexual activity. Additional familial factors found to be associated with sexual behaviour are lower parental education (Kenny, & Rice, 1995) and employment levels (Lewis, Doherty, Hickey, & Skinner, 2010), and negotiated unsupervised time (Markham, Tortolero, Escobar- Chaves, Parcel, Harrist, & Addy, 2003).

In the context of this research, it is proven that self-esteem and locus of self-control function as partial mediators due to parent-child attachment and attitude towards sexual behaviour. This is because both internal and external factors of an adolescent could stimulate one's attitude and behaviour. Nevertheless, at the moment, within the Malaysian context there has yet to be a study in the context of pre-marital pregnant adolescents in Malaysia using the self-esteem and locus of self-control as mediators in their study.

Individuals with fearful and preoccupied styles of attachment had the lowest self-esteem of the attachment style groups and poor health behaviors, suggesting that a high dependence on relationships to maintain self-esteem, combined with unsatisfying relationships, may be particularly damaging. As expected, low self-esteem was positively correlated with sexual behavior. This finding is consistent with previous studies (Miller, 2002) and shows the importance of self-esteem in understanding sexual behavior. Previous studies have provided preliminary evidence for the relations among self-esteem, parent-child attachment, and attitude towards sexual behavior. A unique contribution of the current study was the evaluation of a mediational role of low self-esteem in the adoption of attitude towards sexual behavior. As we hypothesized, self-esteem was a highly significant mediator of the relation between parent-child attachment and attitude towards sexual behavior. These results suggest that the tendency of those with secure attachment styles to have higher self-esteem may at least partially account for their practice of better health behaviors than those with insecure parent-child attachment styles.

Finally, this study illuminated the relation of parent-child attachment to attitude towards sexual behavior, suggesting that individuals with insecure style of interaction with parents have lower self-esteem and participate in sexual behavior. This study also found that self-esteem partially mediated the relation between parent-child attachments to attitude towards sexual behavior. In this way, low self-esteem helps explain why people with insecure relations behave in a manner more conducive to positive sexual attitude and behavior. These findings support the importance of a focus on self-esteem and improved social relationships in the development of attitude towards sexual behavior interventions. Specifically, sexual behavior interventions might benefit from a particular focus on parents-child attachment to significant others with the hope of developing more secure attachments. Building emotionally healthier perceptions of how one can relate to romantic partners could bolster self-esteem and increase motivation for practicing sexual behaviors. There have been many suggestions for why attitude towards sexual behaviors are so prevalent, including environmental factors such as parent-child attachment. The current findings also suggest that more underlying associations such as styles of attachment, developed early in life, and their effects on self-esteem may impact future attitude towards sexual behavior to adolescent.

7. THEORY IMPLICATION

The research on pre-marital pregnant adolescents integrated the Bio-ecological Systems Theory (Bronfenbrenner, 1979) and the Social Cognitive Theory of (Bandura, 2001). Therefore, this study provides a detailed information regarding the aetiology and development of attitude towards sexual behaviour, internal and external factors that influence attitude towards sexual behaviour through both bio-ecological systems and social cognitive theories. As sexual behaviour is a development phenomenon related to a combination of child biological inclinations and event patterns and transitions of time within the individual's environment, the Bronfenbrenner ecological system theory (1992) is highly relevant and coincide with the aetiology and development of sexual behaviour, as well as providing a more

detailed description of the influence of social environment, individual development transformation (biological and psychological), and the transition of time impacting sexual behaviour.

The implication of the social cognitive theory (Bandura, 2001) could be understood from the reciprocal effects happening between adolescents within their social environmental context, thus influencing attitudes towards sexual behaviour. Within the context of social environment of the pregnant adolescent, internal and external factors could influence the development of sexual attitude and behaviour. These factors are often linked to individual attitude, with family and peers forming the correlation between sexual behaviour and social ecology, and finally affecting the development of sexual behaviour among pre-marital pregnant adolescents.

The explanation of this theory could increase understanding in the Malaysian cultural context, especially in influencing sexual attitude and behaviour. The relationship elaborated allows this research to answer the question of 'why' attitude towards sexual behaviour emerge in the adolescent pregnant out of wedlock. Furthermore, the findings could provide an idea to develop a suitable treatment method to be used to treat pre-marital pregnant adolescent sexual behaviour, intervention of the function of family, as well as application of intervention in psychology and counselling, especially for psychology officers in Malaysia.

8. RESEARCH IMPLICATION

There are a number of limitations and drawbacks in conducting this research. Firstly, there is a common method variance in this study that leads to bias in the results, but it is not considered a serious problem (Spector, 2006). Secondly, this study could not be summarised to all pre-marital pregnant teenagers in all Malaysian institutions, as the research only involves pre-marital pregnant adolescents placed in institutions in Peninsular Malaysia, and not involving pre-marital pregnant adolescents placed in institutions in Sabah and Sarawak. Furthermore, this study is cross-sectional, with the research data collected only once due to time restraint.

9. CONCLUSION

Overall, this study is believed to contribute to understanding the phenomenon of pre-marital pregnant adolescents from the perspective of the teenagers themselves. In addition, the findings could help the Ministry of Women, Family, and Community Development to plan and develop a treatment and intervention plan for pre-marital pregnant adolescents placed in shelters. As of this moment, psychology officers placed under the JKM only practise the counselling session approach and planning activities suited to pre-marital pregnant adolescent according to their creativity. Through a specific and standard treatment plan, it is hoped the recovery process from a mental and physical aspect for these pregnant teenagers could be carried out in full so the phenomenon of relapse pre-marital pregnant adolescents be a thing of the past.

10. REFERENCES

- [1] Ahlin, E. M., & Antunes, M. J. L. Locus of control orientation: parents, peers, and place. *Journal of Youth and Adolescence*, 44(9), 1803–1818. 2015.
- [2] Armsden, G. C., & Greenberg, M. T. The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*, 16(5), 427–454. 1987.
- [3] Baron, R. M., & Kenny, D. A. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173–1182. 1986.
- [4] Black, M. M., Oberlander, S. E., Lewis, T., Knight, E. D., Zolotor, A. J., Litrownik, A. J., et al. Sexual intercourse among adolescents maltreated before age 12 : a prospective investigation. *Pediatrics*, 124(3), 941–949. 2009
- [5] Boden, J. M., & Horwood, L. J. Self-Esteem , Risky Sexual Behavior , and Pregnancy in a New Zealand Birth Cohort, 549–560. 2006.
- [6] Brassard, A., Dupuy, E., Bergeron, S., & Shaver, P. R. Attachment insecurities and women's sexual function and satisfaction: The mediating roles of sexual self-esteem, sexual anxiety, and sexual assertiveness. *The Journal of Sex Research*, 52(1), 110–119. 2015.
- [7] Brislin, R. W. Back-translation for cross-cultural research. *Journal of cross-cultural psychology*, 1(3), 185-216. 1970.
- [8] Bronfenbrenner, U. *The ecology of human development*. Harvard University press: USA. 1979.
- [9] Burns, R. *Introduction To Research Methods In Education*. Longman Cheshire Pty.Ltd: Melbourne Australia. 1990.
- [10] Byrne, B. M. *Structural Equation Modelling with AMOS; Second Edition*. Taylor & Francis Group :New York.

- 2010.
- [11] Cederbaum, J. A., Angeles, L., Hutchinson, M. K., & Jemmott, L. S. Maternal HIV Serosstatus, Mother-Daughter Sexual Risk Communication and Adolescent HIV Risk Beliefs and Intention, *17*(7), 2540–2553. 2013.
- [12] Chua, Y. P.. Kaedah Dan Statistik Kajian. Buku 5. Statistik Kajian Lanjutan. Kuala Lumpur. 2006.
- [13] Crittenden, C. P., Boris, N. W., Rice, J. C., Taylor, C. a, & Olds, D. L. The role of mental health factors, behavioral factors, and past experiences in the prediction of rapid repeat pregnancy in adolescence. *The Journal of Adolescent Health : Official Publication of the Society for Adolescent Medicine*, *44*(1), 25–32. 2009.
- [14] Davison, A.C. and Hinkley, D. V. *Bootstrap Methods and Their Application*. Cambridge University Press:New York 1979.
- [15] Deptula, D. P., Henry, D. B., & Schoeny, M. E. How can parents make a difference? Longitudinal associations with adolescent sexual behavior. *Journal of Family Psychology : JFP : Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, *24*(6), 731–9. 2010.
- [16] Department of Statistic Malaysia. Statistic of Population in Malaysia. Department of Statistic:Putrajaya. 2015.
- [17] DiIorio, C., Dudley, W. N., Kelly, M., Soet, J. E., Mbwaru, J., & Sharpe Potter, J. Social cognitive correlates of sexual experience and condom use among 13- through 15-year-old adolescents. *The Journal of Adolescent Health : Official Publication of the Society for Adolescent Medicine*, *29*(3), 208–16. 2001.
- [18] Efron, B. Better bootstrap confidence intervals. *Journal of the American statistical Association*, *82*(397), 171–185. 1987.
- [19] Eggleston, E., Jackson, J., Hardee, K., & Elizabeth, B. Sexual Attitudes and Behavior among Young in Jamaica Adolescents, *25*(2), 78–84. 2013.
- [20] El-Kamary, S. S., Higman, S. M., Fuddy, L., McFarlane, E., Sia, C., & Duggan, A. K.. Hawaii’s healthy start home visiting program: determinants and impact of rapid repeat birth. *Pediatrics*, *114*(3), 317–26. 2004.
- [21] Fornell, C., dan Larcker, D. F. Evaluating Structural Equation Models With Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39–50. 1981.
- [22] Gay C. Armsden, M. T. G. The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*, *16*(5), 427–454. 1987.
- [23] Gullone, E., & Robinson, K.. The Inventory of Parent and Peer Attachment?Revised (IPPA-R) for children: a psychometric investigation. *Clinical Psychology & Psychotherapy*, *12*(1), 67–79. 2005.
- [24] Hair, Joseph F., G. Tomas M. Hult, Christian M. Ringle, and M. S.. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage Publications:Thousand Oaks, CA. 2014.
- [25] Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V.. Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, *26*(2), 106-121. 2014.
- [26] Hendrick, C., Hendrick, S. S., & Reich, D. A. The brief sexual attitudes scale. *Journal of Sex Research*, *43*(1), 76–86. 2006.
- [27] Herold, E. S., Goodwin, M. S., & Lero, D. S. Self-esteem, locus of control, and adolescent contraception. *The Journal of psychology*, *101*(1), 83-88. 1979.
- [28] Iacobucci, D., & Duhachek, A. Advancing alpha: Measuring reliability with confidence. *Journal of consumer psychology*, *13*(4), 478-487. 2003.
- [29] Isaac, S. & Michael, W. B. *Handbook in Research and Evaluation*. (EdITS., Ed.). San Diego. 1995.
- [30] Johnson, B., dan Christensen, L. *Educational Research: Quantitative, Qualitative, and Mixed Approaches (2nd Ed.)*. Allyn and Bacon: Needham Heights, MA. 2004.
- [31] Kabiru, C. W., & Ezech, A. Factors associated with sexual abstinence among adolescents in four sub-Saharan African countries. *African Journal of Reproductive Health*, *11*(3), 111-120. 2007).
- [32] Kakavoulis, A. Family and sex education: a survey of parental attitudes. *Sex Education: Sexuality, Society and Learning*, *1*(2), 163-174. 2001).
- [33] Kerpelman, J. L., McElwain, A. D., Pittman, J. F., & Adler-Baeder, F. M. Engagement in risky sexual behavior adolescents’ perceptions of self and the parent–child relationship matter. *Youth & Society*, *48*(1), 101-122. 2016.
- [34] Krejcie, R. V., & Morgan, D. W. Determining sample size for research activities. *Educational and psychological measurement*, *30*(3), 607-610. 1970.
- [35] Lewis, L. N., Doherty, D. A., Hickey, M., & Skinner, S. R. Predictors of sexual intercourse and rapid-repeat pregnancy among teenage mothers: an Australian prospective longitudinal study. *Med J Aust*, *193*(6), 338-420. 2010.
- [36] Low, W. Y., Ng, C. J, Fadzil, K. S, & Ang, E. S.. Sexual issues: let’s hear it from Malaysian boys. *The Journal of Men’s Health & Gender*, *4*(3), 283–291. 2007.
- [37] Miller, B. C., McCoy, J. K., Olson, T. D., & Wallace, C. M. Parental discipline and control attempts in relation to adolescent sexual attitudes and behavior. *Journal of Marriage and the Family*, 503–512. 1986.
- [38] Miller, B. C. Family influences on adolescent sexual and contraceptive behavior. *Journal of Sex Research*, *39*, 22–26. 2002.
- [39] Owrangi, A., Yousliani, G., & Zarnaghash, M. The relationship between the desired disciplinary behavior and

- family functioning locus of control and self esteem among high school students in cities of tehran province. *Procedia - Social and Behavioral Sciences*, 30, 2438–2448. 2011.
- [40] Patrick, M. E., Palen, L. A., Caldwell, L., Gleeson., Smith, E., & Wegner, L. A qualitative assessment of South Africa adolescents' motivations for and against substance use and sexual behavior. *Journal of Research on Adolescence*, 20(2), 456–481. 2010.
- [41] Peter, R. *Attachment, locus of control, and romantic intimacy in Adult Children of Alcoholics: A correlational investigation*. Florida Atlantic University Boca Raton Florida. 2012.
- [42] Pfitzner, M. a, Hoff, C., & McElligott, K.. Predictors of Repeat Pregnancy in a Program for Pregnant Teens. *Journal of Pediatric and Adolescent Gynecology*, 16(2), 77–81. 2003.
- [43] Preacher, K. J., & Hayes, A. F. SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36, 717–731. 2004.
- [44] Preacher, K. J., & Hayes, A. F. *Contemporary approaches to assessing mediation in communication research*. In A. F. Hayes, M. D. Slater, & L. B. Snyder (Eds.), *The Sage sourcebook of advanced data analysis methods for communication research*. Sage Publications.Thousand Oaks, CA. 2008
- [45] Rasamimari, A., Dancy, B., Talashek, M. Predictors of sexual behaviors among Thai young adults. *Journal of the Association of Nurses in AIDS Care*, 18(6), 13–21. 2007.
- [46] Richard W. Brislin. Back-Translation for Cross-Cultural Research. *Journal of Cross-Cultural Psychology*, 1(3), 185–216. 1970.
- [47] Rosenberg. (1965). *The adolescent self-image*. Princeton University Press : Princeton, NJ. 1965.
- [48] Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 80(1), 1–28. 1966.
- [49] Santor, D. A., Messervey, D., & Kusumakar, V. Measuring Peer Pressure , Popularity , and Conformity in Adolescent Boys and Girls : Predicting School Performance , Sexual Attitudes , and Substance Abuse, 29(2). 2000.
- [50] Santrock, J. *Psychology*. McGraw-Hill, Higher Education :New York (2000).
- [51] Sekaran, U. *Research Methods For Business: A Skill Building Approach (4 Ed.)*. John Wiley and Sons Inc. : New York. 2000.
- [52] Siti Nor, Y., Fui-Ping, W., Rozumah, B., Mariani, M., Rumaya, J., & Mansor, A. Factors related to sexual knowledge among Malaysian adolescents. *Jurnal Kemanusiaan*, 16, 21–32. 2010.
- [53] Sobel, M. E. *Asymptotic confidence intervals for indirect effects in structural equation models*. In S Leinhardt (Ed.), *Sociological Methodology*. American Sociological : Association.Washington, DC. 1982.
- [54] Soon, I. Adolescent out of wedlock: “One born every day.” *The Star*. 2012.
- [55] UNFPA, UNESCO & WHO. *Sexual and Reproductive Health of Young People in Asia and the Pacific: A review of issues, policies and programmes*. UNFPA : Bangkok. 2015.
- [56] Utusan Malaysia.. Adolescent out of wedlock in Malaysia. *Utusan Malaysia*. 2014.
- [57] Waggoner, M. R., Lanzi, R. G., & Klerman, L. V. Pregnancy intentions, long-acting contraceptive use, and rapid subsequent pregnancies among adolescent and adult first-time mothers. *Journal of Child and Adolescent Psychiatric Nursing : Official Publication of the Association of Child and Adolescent Psychiatric Nurses, Inc*, 25(2), 96–104. 2012.
- [58] Waggoner, M. R., Lanzi, R. G., & Klerman, L. V. Pregnancy intentions, long-acting contraceptive use, and rapid subsequent pregnancies among adolescent and adult first-time mothers. *Journal of Child and Adolescent Psychiatric Nursing* 25(2), 96–104. 2012.
- [59] Wallace, M. T., Barry, C. T., Zeigler-hill, V., & Green, B. A.. Locus of Control as a Contributing Factor in the Relation between Self-Perception and Adolescent Aggression, 38(November 2011), 213–221. 2012.
- [60] World Health Organization Global strategy for the prevention and control of sexually transmitted infections: 2006–2015. World Health Organization : Geneva. 2006.
- [61] Wyn, J., Lantz, S., & Harris, A. Beyond the ‘transitions’ metaphor: Family relations and young people in late modernity. *Journal of Sociology*, 48(1), 3-22. 2012.
- [62] Young, M. & Werch, C. E. Relationship between self-esteem and substance use among students in fourth through twelfth grade. *Wellness Perspectives:Research. Theory and Practice*, 7(2), 31–44. 1990.