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The Effect of Early Teenage Pregnancy on Depression and Mental Health in Malaysia

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Abstract

Background: The study focused on analysing the mental health such as emotional, social and psychological well-beings of the teenage girls towards the pregnancy and investigate the various factors such as sexual relationship associated with teenage pregnancy.

Methods: The study took a cross-sectional approach and adopted convenient sampling method for data collection. Data was collected from teenage girls aged 12 to 21 years from the state of Sabah. Data collection accomplished through survey data assessment, with survey responses data being collected through structured questionnaire as the effective research tool. The collected data is then statistically analysed for regression, ANOVA, one-way ANOVA and correlation analysis.

Results: Exploratory data analysis about the participants were explicated using frequency analysis. The statistical Test outcomes delineated the occurrence of significant relationship between engagements in sexual relationship with the age, marital status, distance of education, school attitude, self-esteem, self-efficacy, perceived social support, Peer community influences, Edinburgh Postnatal Depression Scale (EPDS), coping ability variables and other predictor variables. Similarly One-Way anova test, reveals the existence of statistical significant mean differences among age attribute of teenage girls, their engagement in sexual activity, predictor variables and their demographic details.

Conclusions: The life of the teenagers who are engaged in sexual activity were observed to be more challenging in terms of medically, psychologically, and physically. The present study strongly recommends that social activists would adopt possible measures in revealing a better solution towards the teenage pregnancy.

Keywords: Teenage pregnancy, Mental health, Edinburgh postnatal depression scale, Perceived social support, Rosenberg's Self-Esteem Scale, MesH- mental emotional social health, Domestic violence

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Introduction

Pregnancy in young girls between the age of 13 and 19 is referred to as teenage pregnancy (1). Pregnancy is the outcome of either voluntary or involuntary sexual activities. Teenage fertility becomes a matter of concern, owing to the increase in the death rate of teenage mothers and their newborn. This is due to the adverse effects of early pregnancy on the physiological, physical, social, and economic status of the females. Bearing children during the teenage affects the educational growth of females (2). Pregnancy during adolescence is a matter of concern in all healthcare systems. This is a social problem where adult practices and activities like sexual intercourse, childbirth, and nursing are being carried out by a person those who are at the age of 12 to 21 years old. Termination of education of the victim of teenage pregnancy is one of the major consequences of this. The uncontrolled pregnancy leads to a consequence like preventing the females from their potential to enjoy basic human rights (3,4).

Improper antenatal care and missing appointments with the doctors are the reasons for babies delivered by teenage mothers being premature and underweight. They are also at the risk of death during their first year of life. Teenage pregnancy is a crucial matter to be considered in Malaysia and Sabah. Sabah is the state in Malaysia located at the Borneo region. Around 3.5 million population and bordering Indonesia and Brunei by Land and Philippines by Sea. Major Ethnicity of Sabha are Indigenous People such as Dusun, Murut and Kadazan followed with Chinese, Malya and Indian people. Geographically, the land with hills and one of the highest mountain in Asia is located here. (5). Survey shows that 9.6% of the women aged 16-19 were pregnant during the survey or they were already mothers (6).

As a result, the state aims in taking different necessary steps and strategies in preventing early marriage and teenage pregnancy (7). Early marriage is one of the reasons stated by the State Community Development and Consumer Affairs Minister of Sabah for Teenage Pregnancy (8). Statistics carried out by the Health Ministry revealed that around 1500 teenage girls are found to be pregnant every month. But, 25% of the teenagers were unmarried (9). Awareness should be raised on changing the lifestyle of teenagers by educating them about the adverse effects of unsafe sex, where the education about sex is a part of Malaysians' Curriculum, and people with lack of education are not aware about the safer sex (10). Lack of love and affection from the parents, despite their busy schedule, makes children get involved in these anti-social activities (11).

Malaysia witnessed high teenage pregnancies in the year 2012 and the count was about 18,000 which came down to 7700 in the year 2018 (5). Around 14 out of 1000 teenagers were found to be pregnant every year. This shoots up the count to 18000 each year (12). Reports reveal that females from families with low-income, school dropouts, and the unmarried face these types of issues often. Among the Association of Southeast Asian Nations (ASEAN) countries, Sabah ranked 8th in teenage pregnancy cases. Poverty, negligence of parents, and poor educational background are some of the contributing factors to teenage pregnancy (13).

Infant mortality is found to be more in children given birth by teenage mothers than the adult ones (14,15). Society throws a negative attitude toward teenage motherhood and pregnancy stating that it is unplanned and highly disadvantageous concerning economical and material aspects (16,17). The teenage marriage and pregnancy in teenage leads to cultural, economic and social problems including domestic-violence. On the basis of research evidences, another research by Sattarzadeh attempted to offer unique documentary domestic violence image in earlier teenage marriages. In such an end, the Mental, Emotional, and Social Health (MeSH) keywords like Intimate Partner-Violence (IPV), "dating violence", "domestic violence" and "teenage marriage" are used and hence a total count of 176 articles are gained and chosen for study. By considering this higher rate, the teenage marriage could be prevented through increasing organisation co-operation and the public awareness (18).

Another important fact to be discussed is the post-partum depression rate which is relatively high in teenage mothers than in adult women (19,20). Psychological literature depicts adolescence as a 'crisis' time where an individual struggles to cope with the transition to adulthood from childhood (21). Adolescence usually has a lot of cognitive and

emotional changes and so is the case with teenage pregnancy (22,23). This mental and physical stress, combined with the additional responsibilities of parenthood, drastically affects the teenage mother's health. In recent days, the causes and effects of teenage pregnancies are the major challenging topics for discussions in research and debate. Some studies conclude that the educational and economic status of women get compromised while others state that teenage pregnancy is just a marker of these crucial conditions such as physical and mental stress rather than compromising the same. Teenage pregnancy imposes a very high risk of health factors for both the mother and the fetus. Hypertension, anemia, and premature labor in addition to difficulties in relationships are some of the difficulties induced on teenage women who are pregnant (24).

They may also face situations like isolation, ostracism, and their family members rejecting them. Most teenagers lack awareness of the terms related to menstrual cycles, coitus, issues in fertility, and child birth (25). Other important factors worth mentioning are peer sexual pressure, low self-image, and identity which lead to the breakdown of the family and tradition.

Therefore, teenage pregnancy remains to be persistent in our community due to a variety of factors and eventually leads to bringing a negative impact on the teenager's life. The non-completion of proper secondary schooling of these teenagers limits their potential to earn their livelihood which ruins their entire life. Concerning this, the study concentrates on finding and assessing the causes and consequences of teenage pregnancy on the academic performance of teenage students in a school. Also, various strategies for preventing the same and tackling some of the problems associated with teenage pregnancy have been explored, so that the sexually active teenage dropouts from schools in future could continue their education to achieve their career goals. The present study aimed to evaluate the effects of mental health such as depression and anxiety in teenage pregnancy.

Materials and Methods

The following section enumerated the research method, and the entire research approach of the objectives.

Study design

The study design is a cross-sectional descriptive study using a convenient sampling method and the study area is Sabah (a state in Malaysia). Samples were collected from 4 main districts in Sabah with high populations – Kota Kinabalu, Tawau, Semporna, and Beaufort. All the samples were collected from the district health clinics such as school health unit, maternal health unit, and primary and outpatient care unit that include the entire district health related issues.

Sample size

The Sample size of the study consists of 825 participants and the duration of the study is six months. The present study includes all teenagers born in Sabah, Malaysia, aged between 12-21 years old, regardless of their education level, religion and economic status and those willing to participate and obtain consent from parents.

Inclusion and exclusion criteria

The study excludes the non-residents of Sabah, it was verified by asking them about the place they live. Other exclusion criteria are teenagers who refused to be included in the study. Teenagers who are undergoing court cases were also excluded in order to avoid interruption and repetition in the investigation. Not consented by the parents/guardian and the teenagers above 21 years old are excluded.

Data collection

The data collection was done with a well-structured questionnaire that included two parts which are demographic analysis comprising the personal details of the study population like age, ethnicity, marital status, educational background, engagement in a sexual relationship, presence of children, sex education awareness, the distance between the school and residence, educational background of father and mother.

The second part involves the prediction analysis that focuses on the school attitude, self-esteem and efficacy, perceived social support, influence from the community, depression using Edinburgh postnatal depression scale, and coping ability. Validity denotes the degree to which the instrument explores the precise

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information by the objective. Our study analysed the state of art methods and developed a well-structured questionnaire with appropriate cross-checking by field experts.

Research tools

A survey assessment on the basis of well-though questionnaire stands as the prominent tool for a research. The survey analysis seems to be the flexible research tool at any research work phase. The outcomes obtained from questionnaire survey offer a valuable tool for the researchers to analyse the quantitative aspects of a problem

Research instruments

The questionnaire constitutes the research instrument, and the proper instructions are provided at beginning of questionnaire section of research and the guideline were given like the way to fill out the questionnaire. The structured questionnaire represents as the research instrument for the quantitative assessment. Similarly, the close-ended questions are considered for quantitative assessment.

Data analysis

The Statistical analysis evaluated with the descriptive inferential statistics was utilized for the determination of the correlation coefficient and consequently the detection of association with the demographic and predictor variables were also performed. Several factors were noted in the Excel sheets and a comparative analysis has been performed with statistical analysis. Statistical analysis was performed using Statistical Package for Social Sciences (SPSS) version 20.0. Mean standard deviation and range of values were estimated and the correlation coefficient was also determined for every set of values. Microsoft Excel 2010 and SPSS version 20.0 were employed for statistical analysis.

The demographic physical parameters including age and other factors were presented as the count and percentage using the frequency analysis. Analysis of variance (ANOVA) is a test used to test the significant difference among the groups. If the p-value is smaller than 0.05, it is shown that respondents differ significantly in this study. The Two-way ANOVA test was utilized to assess the differences between the investigated parameters in the different physical parameter groups. The study represents regression analysis and is presented in a table for the depiction of the interrelation of all the parameters for the determination of their corresponding significant value. The attribute of self-esteem is measured using Rosenberg's self-esteem scale for determining the self-efficacy followed by this.

It also assessed the perceived social support using Multidimensional Scale of Perceived Social Support (MSPSS) scale for estimating the community influence and school attitude of the population, and the depression level is evaluated using Edinburgh postnatal depression scale (EPDS) for defining the coping ability among the teenage population. The tool utilized in the study is SPSS version 20.0 with MSPSS scale.

The compliance with ethical standards and consent is described as all the participants were treated with informed consent after explaining the study's nature. The present study was approved by the Institutional Human Ethics committee of University Kebangsaan Malaysia (approval number: JEP-2021-038) and the study is registered by National Medical Research Register Malaysia (NMRR-20-3121-56069). Permissions were obtained from the corresponding parents or guardians. Confidentiality was maintained throughout the study. Wherever necessary the relevant information was cross-checked to maintain the originality. Details about the respondents were kept in a password-protected computer, which was accessed only by the principal investigator.

Results
Demographic analysis
The following figures deliberate the demographic analysis of the information collected from the study participants.

Demographic assessment
The following figure 1 (A-M) deliberates the demographic analysis of the information collected from the study participants. Figure 1A describes the age-wise distribution of the selected population which state that most of the study population (58.01%) belongs to the age group of 16 to 18 years and the very least number population (3.883%) belongs to the
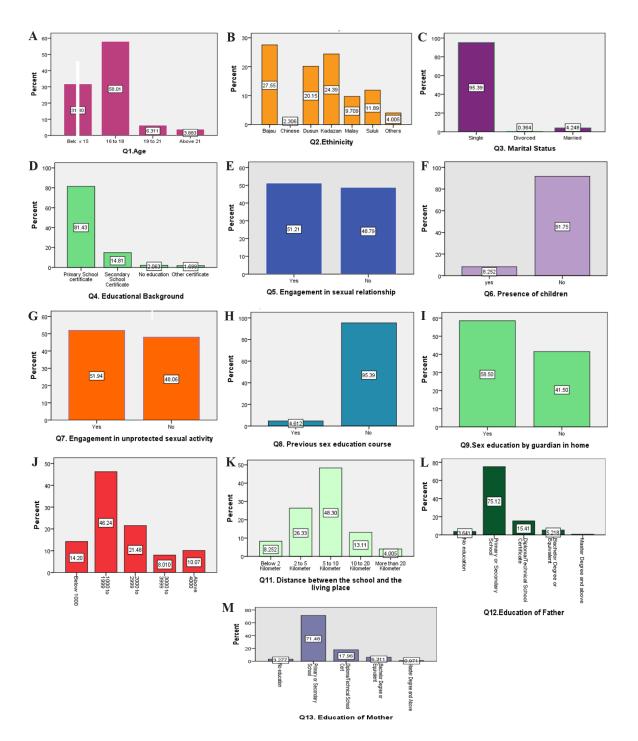
Figure 1. Demographic analysis.

age group above 21 years. Consequently, 31.8% of the study population were below 15 years of age and 6.3% were observed to be in the age range of 19 to 21. This data clearly states that the information collected belongs to teenagers and can reveal their observation according to their age maturity level.

Figure 1B describes the ethnicity of the investigated teenagers in which most of the respondents (27.5%) belong to Bajau followed by Kadazan (24.4%), Dusun (20.2%), Suluk (11.89%), Malay (9.7%), and the least with China (2.3%). This result demonstrates that the investigation has been conducted over a varied geographical area to avoid the regional bias. Meanwhile, Figure 1C revealed the marital status of the respondents to be 95.39% single, only 4.248% married, and 0.36% divorced.

Accordingly, figure 1d represents the educational background of the teenagers belonging to the study. 81.43% of the respondents completed primary school, 14.8% completed secondary school, and the remaining population has no education or other basic certificates. Figure 1E and F state that the majority (51.21%) of the responders were involved in a sexual relationship and 48.7 % were observed to be not involved in the sexual relationship whilst 91.75% have no children and the remaining 8.25% of the population have children (Figure 1F). Figure 1H represents that 95.39% of the population had no previous sex education and only 4.612% were subjected to previous sex education.

Therefore, according to Figure G, 51.94% have engaged in unprotected sexual activity and the remaining 48.06% of the population have not engaged with unprotected sexual activity. In specific, sex education has been provided by home members to 58.5% of the exposed teenagers. Figure 1J indicates the family income in terms of Malaysian Ringgit of the respondents in which the maximum of the respondents (46.24%) has a family income of 1000 to 1999. Few (8 to 10%) of the population were observed to have a family income of 3000 and 4000 above.

Figure 1K denotes that the average distance between the school and the living place is 5 to 10 *km* and half of the participants were residing within this distance. Only 4% of the population were living at a distance of more than 20 *km* from school. In figure 1 (A) and 1 (M), it is observed that most of the education of the parents were confined to primary and secondary education. Only minimum parents (<1%) have completed a master's degree.

Correlation analysis
Correlation between the demographic variables: Table 1A denotes the correlation between age and engagement in a sexual relationship which reveals the significant difference between the two factors. Here, the p-value is 0.000 which is less than 0.05.

The four different age groups such as below 15 years, 16 to 18 years, 18-21 years and above 21 years were investigated in this study, which may be one of the reasons for their engagement in sexual activity and hence proper awareness has to be created among the

girls belonging to 16 to 18 age group.
This correlation and significant difference presented in table 1B between the sexual activity and marital status reveals that even though they are single, the respondents are involved in the sexual activity which necessitates taking possible action among them to understand the ethically non-desirable behavior.
Table 2A represents that there is no correlation and significant difference between engagement in sexual relationships and distance between the school and the living place. Irrespective of the distance from the school to the residence, the respondents were engaged in sexual activity.

Correlation between School attitude and Engagement in a sexual relationship
Table 2(B) deliberates that the measurement of school attitude helps to understand that the activities and the social network communication in school have a positive correlation with sexual activities. If the teachers in school take prompt measures in resolving the personal problem associated with the girls, there is a chance of awareness generation regarding the sexual relationship.

Correlation in-between Self-Esteem and Engagement in a sexual relationship
Table 3 describes that there is a positive correlation and significant difference between self-esteem and engagement in a sexual relationship. Hence, motivational approaches should be handled among teenagers to increase their self-confidence and self-esteem.

Correlation between Self-efficacy and Engagement in a sexual relationship
Table 4 describes that self-efficacy behavior is correlated and significant with sexual activity among the respondents. The resistance toward sexual activity during the non-availability of contraceptives was assessed in table 5.
This information depicts that self-efficacy has to be greatly improved among the teenage population to decrease their engagement in sexual activity.

Correlation between perceived social support and engagement in a sexual relationship

Table 1A. Age and engagement in a sexual relationship

Correlations			Q1. Age	Q5. Engagement in a sexual relationship
Spearman's rho	Q1. Age	Correlation coefficient	1.000	-0.581 **
		Sig. (two-tailed)	0	0.000
		N	824	824
	Q5. Engagement in a sexual relationship	Correlation coefficient	-0.581 **	1.000
		Sig. (two-tailed)	0.000	0
		N	824	824

** Correlation is significant at the 0.01 level (Two-tailed).

Table 1B. Engagement in a sexual relationship and Marital Status

Correlations			Q5. Engagement in a sexual relationship	Q3. Marital status
Spearman's rho	Q5. Engagement in a sexual relationship	Correlation coefficient	1.000	-0.192 **
		Sig. (two-tailed)	0	0.000
		N.	824	824
	Q3. Marital status	Correlation Co-efficient	-0.192 **	1.000
		Sig. (two-tailed)	0.000	0
		N.	824	824

** Correlation is significant at the 0.01 level (Two-tailed).

Table 2A. Correlation between Engagement in sexual relationships and Distance between the school and the living place

Correlations			Q5. Engagement in a sexual relationship	Q11. Distance between the school and the living place
Spearman's rho	Q5. Engagement in a sexual relationship	Correlation coefficient	1.000	-0.023
		Sig. (two-tailed)	0	0.513
		N	824	824
	Q11. Distance between the school and the living place	Correlation coefficient	-0.023	1.000
		Sig. (two-tailed)	0.513	0
		N	824	824

Table 2B. Correlation between School attitude and Engagement in a sexual relationship

Correlations			Q5. Engagement in a sexual relationship	Q15 Teachers are willing to help in personal problem solving
Spearman's rho	Q5. Engagement in a sexual relationship	Correlation coefficient	1.000	0.668 **
		Sig. (two-tailed)	0	0.000
		N	824	824
	Q15 Teachers are willing to help in personal problem solving	Correlation coefficient	0.668 **	1.000
		Sig. (two-tailed)	0.000	0
		N	824	824

* Q15 Teachers are willing to help teenagers to solve their personal problem such as school attitude and engagement in sexual relationship. ** Correlation is significant at the 0.01 level (Two-tailed).

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Table 3. Correlation between Self Esteem and Engagement in a sexual relationship

Correlations			Q5. Engagement in a sexual relationship	Q32. At times i think i am no good at all
Spearman's rho	Q5. Engagement in a sexual relationship	Correlation coefficient	1.000	0.197 **
		Sig. (two-tailed)	0	0.000
		N	824	824
	Q32 At times i think i am no good at all	Correlation co-efficient	0.197 **	1.000
		Sig. (two-tailed)	0.000	0
		N	824	824

*Q32. At times teenagers think that they were not good at doing things like studying and participating in activities. ** Correlation is significant at the 0.01 level (Two-tailed).

Table 4. Correlation between Self-efficacy and Engagement in a sexual relationship

Correlations			Q5. Engagement in a sexual relationship	Q33. Sex resistance without the availability of contraceptives
Spearman's rho	Q5. Engagement in a sexual relationship	Correlation coefficient	1.000	0.594 **
		Sig. (two-tailed)	0	0.000
		N	824	824
	Q33 Sex resistance without the availability of contraceptives	Correlation coefficient	0.594 **	1.000
		Sig. (two-tailed)	0.000	-
		N	824	824

** Correlation is significant at the 0.01 level (Two-tailed)

Table 5. Correlation between Perceived social support and Engagement in a sexual relationship

Correlations			Q5. Engagement in a sexual relationship	Q39. I can talk about my problem with my friends
Spearman's rho	Q5. Engagement in a sexual relationship	Correlation coefficient	1.000	0.577 **
		Sig. (two-tailed)	0	0.000
		N	824	824
	Q39 I can talk about my problems with my friends	Correlation co-efficient	0.577 **	1.000
		Sig. (two-tailed)	0.000	0
		N	824	824

* Q39 teenager's share their problems regarding school, sexual relationship, with their friends. ** Correlation is significant at the 0.01 level (Two-tailed)

Table 5 defines that there exists a correlation between perceived social support and engagement in a sexual relationship. This states that teenagers should be motivated to speak out about their problems with their friends.

Peer and community influence and engagement in a sexual relationship

Table 6 revealed that there exists a correlation and significant difference between peer and community influence and engagement in a sexual relationship. The classmate's influences also function as a cause for their engagement in their sexual activity.

Correlation between Edinburgh Postnatal Depression Scale (EPDS) and Engagement in a sexual relationship

Table 7 mentions that there is a significant difference and correlation between Edinburgh Postnatal Depression Scale (EPDS) and Engagement in a sexual relationship.

Correlation between the ability to cope and Engagement in a sexual relationship

Table 8 denotes the significant difference and correlation between the ability to cope and Engagement in a sexual relationship. The girls were instructed to

Table 6. Correlation between Peer and community influence and Engagement in a sexual relationship

Correlations			Q5. Engagement in a sexual relationship	Q48. My classmates
Spearman's rho	Q5. Engagement in a sexual relationship	Correlation coefficient	1.000	-0.076 *
		Sig. (two-tailed)	0	0.028
		N	824	824
	Q48. My Classmates	Correlation coefficient	-0.076 *	1.000
		Sig. (two-tailed)	0.028	0
		N	824	824

* Correlation is significant at the 0.01 level (Two-tailed)

Table 7. Correlation between Edinburgh Postnatal Depression Scale (EPDS) and Engagement in a sexual relationship

Correlations			Q5. Engagement in a sexual relationship	Q54. Being anxious or worried for no good reason
Spearman's rho	Q5. Engagement in a sexual relationship	Correlation coefficient	1.000	0.133 **
		Sig. (two-tailed)	0	0.000
		N	824	824
	Q54. Being anxious or worried for no good reason	Correlation co-efficient	0.133 **	1.000
		Sig. (two-tailed)	0.000	0
		N	824	824

** Correlation is significant at the 0.01 level (Two-tailed).

increase their ability to cope to attain self-efficacy and self-esteem.

Regression analysis

Tables 9A and B describe the regression analysis

Table 8. Correlation between the ability to cope and Engagement in a sexual relationship

Correlations			Q5. Engagement in a sexual relationship	Q62. Effort and concentration to make the situation better
Spearman's rho	Q5. Engagement in a sexual relationship	Correlation coefficient	1.000	0.465 **
		Sig. (two-tailed)	0	0.000
		N	824	824
	Q62 Effort and concentration to make the situation better	Correlation coefficient	0.465 **	1.000
		Sig. (two-tailed)	0.000	0
		N	824	824

** Correlation is significant at the 0.01 level (Two-tailed).

Table 9A. Regression analysis in Engagement in a sexual relationship and investigated scales

Model summary				
Model	R	R-square	Adjusted R square	Std. The error in the estimate
1	0.812 a	0.659	0.656	0.29338

a. Predictors: (Constant), Q62 Effort and concentration to make the situation better, Q30 I wish I could have more respect for myself, Q54 Being anxious or worried for no good reason, Q48 My Classmates, Q39 I can talk about my problems with my friends., Q33 Sex resistance without the availability of contraceptives, Q32 At times, I think I am no good at all., Q15 Teachers are willing to help in personal problem solving.

Table 9B. Regression analysis in Engagement in a sexual relationship and investigated scales

Coefficients					
Models	Unstandardized Coefficients		Standardized Co-efficient	T-test	Sig.
	B	Std. Error	Beta		
(Constant)	-0.547	0.064		-8.531	0.000
Q15. Teachers are willing to help in personal problem solving	0.197	0.024	0.371	8.369	0.000
Q30. I wish I could have more respect for myself	0.340	0.016	0.496	21.648	0.000
Q32. At times I think I am no good at all	0.105	0.018	0.200	6.008	0.000
Q33. Sex resistance without the availability of contraceptives	0.075	0.017	0.141	4.294	0.000
Q39. I can talk about my problem with my friends	0.082	0.021	0.141	3.869	0.000
Q48. My Classmates	-0.049	0.010	-0.141	-5.036	0.000
Q54. Being anxious or worried for no good reason	-0.089	0.016	-0.185	-5.622	0.000
Q62. Effort and concentration to make the situation better	-0.052	0.019	-0.105	-2.768	0.004

a. Dependent Variable: Q5. Engagement in a sexual relationship.

between the investigated predictor variables and the engagement in the sexual relationship among the study population. The R-value has been observed to be 0.812 and the R square value is 0.659. This states that there is a positive correlation as the value of R is near 1. It shows that the questions and scales used for the survey have been carefully analyzed in improving the social behavior of the teenage respondents.

Table 10A and B describe the regression analysis between the investigated predictor variable age, among the study population. The R-value has been observed to be 0.921 and the R square value is 0.849. This states that there is a positive correlation as the value of R is near 1. It reveals that the questions and scales used for the survey have been carefully analyzed in improving the social behavior of the

teenage respondents concerning their age.

Mann-Whitney U Test
The Mann-Whitney U Test performed to assess the relationship between age and sexual relationship states that there exists a significant difference between age and sexual activity among the respondents with a significant difference as p=0.000 (Table 11). Meanwhile, table 12 assessment of the age and predictor variable demonstrates that there exists a significant difference among the respondents with a significant difference of p=0.000.

One-Way ANOVA
Table 13 represents the analysis of variance between the age and predictor variables, table 14 shows the

Table 10A. Regression analysis of age and predictor variables

Model summary				
Model	R	R-square	Adjusted R square	Std. The error in the estimate
1	0.921 a	0.849	0.848	0.27760

a. Predictors: (Constant), Q62. Effort and concentration to make the situation better, Q30. I wish I could have more respect for myself, Q54. Being anxious or worried for no good reason, Q48. My Classmates, Q39. I can talk about my problems with my friends., Q33. Sex resistance without the availability of contraceptives, Q32. At times I think I am no good at all., Q15. Teachers are willing to help in personal problem solving.

Table 10B. Regression analysis of age and predictor variables

Coefficients					
Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.574	0.061		75.336	0.000
Q15. Teachers are willing to help in personal problem solving	-0.217	0.022	-0.287	-9.728	0.000
Q30. I wish I could have more respect for myself	-0.250	0.015	-0.257	-16.831	0.000
Q32. At times I think I am no good at all	-0.292	0.017	-0.390	-17.636	0.000
Q33. Sex resistance without the availability of contraceptives	0.234	0.017	0.310	14.174	0.000
Q39. I can talk about my problems with my friends	-0.113	0.020	-0.137	-5.620	0.000
Q48. My Classmates	0.098	0.009	0.199	10.684	0.000
Q54. Being anxious or worried for no good reason	-0.189	0.015	-0.275	-12.552	0.000
Q62. Effort and concentration to make the situation better	-0.169	0.018	-0.240	-9.508	0.000

a. Dependent Variable: Q1. Age.

Table 11. Engagement in sexual relationships and age

Test statistics ª	
	Q5. Engagement in sexual relationship
Mann-Whitney U	14734.000
Wilcoxon W	129215.000
Z	-19.884
Asymp. Sig. (two-tailed)	0.000

a. Grouping variable: Q1. Age.

analysis of variance between the sexual activity and predictor variables, and consequently, table 15 denotes the comparison of means by ANOVA among the demographic variables enrolled in the study.

Discussion

With the escalation of teenage pregnancy in Malaysia, it is significantly necessary to have a deep understanding of the situation of education and the life characteristics of the victims. Unfortunately, few studies ought to estimate the attributes, perceptions,

Table 12. Age and predictor variables

Test statistics ª									
	Q11. Distance between the school and the living place	Q15. Teachers are willing to help in personal problem solving	Q30. I wish I could have more respect for myself	Q32. At times I think I am no good at all	Q33 Sex resistance without the availability of contraceptives	Q39. I can talk about my problems with my friends	Q48. My Classmates	Q54. Being anxious or worried for no good reason	Q62. Effort and concentration to make the situation better
Mann-Whitney U	45736.000	8122.000	23711.000	19609.500	12707.000	4585.000	46571.000	19815.000	7729.000
Wilcoxon W	80189.000	122603.000	138192.000	134090.500	127188.000	119066.000	161052.000	134296.000	122210.000
Z	-6.526	-21.030	-16.113	-16.459	-19.331	-22.727	-6.224	-16.501	-21.048
Asymp. Sig. (Two-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

a. Grouping variable: Q1. Age.

and beliefs of teenagers who are discussed as follows. Similar to the present study, Igba *et al* (26) also investigated the effects of teenage pregnancy. For this purpose, 500 students were enrolled in the Abakaliki zone, and the data required for the evaluation was collected through a well-structured questionnaire. The study used a t-test for hypothesis testing. The findings of the study revealed that peer pressure, bad parental upbringing, depression, poor nutritional complications, lack of sex education awareness among the students, and stigmatism might be the potential causes of pre-marital sex. The study recommended that society needs to take extraordinary support in

preventing their termination of secondary education. Likewise, the UN reports believed that more than 125 girls were exposed to pregnancy in a day around the regions of Namibia. Maemeko *et al* (27) attempted to determine the influence of teenage pregnancy on academic performance around the Zanbezi region. It utilized a qualitative approach for determining the teenage pregnancy impact in education performance with study population of four pregnant students and two teachers. Maemeko EL *et al* (27) and Wong SP *et al* (28) also reported that alcohol influence and drug abuse apart from other above-discussed factors are responsible for undesirable teenage behaviours.

Table 13. Comparison of mean between age and predictor variables

		Sum of squares	df	Mean square	F	Sig.
		ANOVA				
Q15. Teachers are willing to help in personal problem solving	Between groups	472.812	3	157.604	499.909	0.000
	Within groups	258.517	820	0.315		
	Total	731.329	823			
Q30. I wish I could have more respect for myself	Between groups	111.101	3	37.034	92.946	0.000
	Within groups	326.724	820	0.398		
	Total	437.825	823			
Q32. At times, I think I am no good at all	Between groups	460.720	3	153.573	449.537	0.000
	Within groups	280.133	820	0.342		
	Total	740.853	823			
Q33. Sex resistance without the availability of contraceptives	Between groups	343.890	3	114.630	243.546	0.000
	Within groups	385.950	820	0.471		
	Total	729.840	823			
Q39. I can talk about my problems with my friends	Between groups	376.643	3	125.548	446.702	0.000
	Within groups	230.464	820	0.281		
	Total	607.107	823			
Q48. My classmates	Between groups	497.567	3	165.856	111.029	0.000
	Within groups	1224.917	820	1.494		
	Total	1722.484	823			
Q54. Being anxious or worried for no good reason	Between groups	462.496	3	154.165	301.307	0.000
	Within groups	419.557	820	0.512		
	Total	882.053	823			
Q62. Effort and concentration to make the situation better	Between groups	468.696	3	156.232	341.409	0.000
	Within groups	375.240	820	0.458		
	Total	843.937	823			

Table 14. Comparison of mean between Engagement in sexual activity and predictor variables

ANOVA		Sum of squares	df	Mean square	F	Sig.
Q15. Teachers are willing to help in personal problem solving	Between groups	257.691	1	257.691	447.224	0.000
	Within groups	473.638	822	0.576		
	Total	731.329	823			
Q30. I wish I could have more respect for myself	Between groups	176.927	1	176.927	557.433	0.000
	Within groups	260.899	822	0.317		
	Total	437.825	823			
Q32. At times I think I am no good at all	Between groups	28.898	1	28.898	33.365	0.000
	Within groups	711.955	822	0.866		
	Total	740.853	823			
Q33. Sex resistance without the availability of contraceptives	Between groups	204.135	1	204.135	319.188	0.000
	Within groups	525.705	822	0.640		
	Total	729.840	823			
Q39. I can talk about my problems with my friends	Between groups	140.839	1	140.839	248.291	0.000
	Within groups	466.267	822	0.567		
	Total	607.107	823			
Q48. My classmates	Between groups	6.379	1	6.379	3.056	0.081
	Within groups	1716.105	822	2.088		
	Total	1722.484	823			
Q54. Being anxious or worried for no good reason	Between groups	2.111	1	2.111	1.972	0.161
	Within groups	879.942	822	1.070		
	Total	882.053	823			
Q62. Effort and concentration to make the situation better	Between groups	128.231	1	128.231	147.275	0.000
	Within groups	715.706	822	0.871		
	Total	843.937	823			

Table 15. Comparison of mean between demographic variables

		Sum of squares	df	Mean square	F	Sig.
ANOVA						
Q2. Ethnicity	Between groups	81.310	3	27.103	8.364	0.000
	Within groups	2657.035	820	3.240		
	Total	2738.345	823			
Q3. Marital Status	Between groups	24.757	3	8.252	60.540	0.000
	Within groups	111.776	820	0.136		
	Total	136.533	823			
Q4. Educational background	Between groups	92.414	3	30.805	143.516	0.000
	Within groups	176.008	820	0.215		
	Total	268.422	823			
Q5. Engagement in sexual relationship	Between groups	99.665	3	33.222	256.483	0.000
	Within groups	106.213	820	0.130		
	Total	205.879	823			
Q6. Presence of children	Between groups	3.626	3	1.209	16.868	0.000
	Within groups	58.762	820	0.072		
	Total	62.388	823			
Q7. Engagement in unprotected sexual activities	Between groups	109.475	3	36.492	311.006	0.000
	Within groups	96.214	820	0.117		
	Total	205.689	823			
Q8. Previous sex education course	Between groups	3.384	3	1.128	28.141	0.000
	Within groups	32.864	820	0.040		
	Total	36.248	823			
Q9. Sex education by a guardian at home	Between groups	164.513	3	54.838	1265.243	0.000
	Within groups	35.540	820	0.043		
	Total	200.053	823			
Q10. Monthly income of the parents	Between groups	.769	3	0.256	0.197	0.899
	Within groups	1068.210	820	1.303		
	Total	1068.979	823			
Q11. Distance between the school and the living place	Between groups	59.964	3	19.988	26.010	0.000
	Within groups	630.151	820	0.768		
	Total	690.115	823			
Q12. Father's education	Between groups	.368	3	0.123	0.308	0.819
	Within groups	326.054	820	0.398		
	Total	326.422	823			
Q13. Mother's education	Between groups	0.715	3	0.238	0.515	0.672
	Within groups	379.041	820	0.462		
	Total	379.756	823			

The study also insisted that the influence of teenage pregnancy leads to poor academic performance, followed by dropout due to pregnancy-related negative issues.

Niyonsenga *et al* (29) identified the factors associated with postpartum depression prevalent in teenage mothers. The authors used a convenient sampling method for a group of 120 teenage mothers aged 15 to 19 years. Further, the study conducted the Edinburgh postnatal depression scale for the assessment of depression. The study suggested that teenage mothers were associated with various problems and risks such as weight or shape disturbances, parental distress, income, and economic and other psychological distresses. However, the reviewed article has the following limitations: it failed to reveal self-efficacy and demographic details, and our study has no such limitations.

Similarly, Nicolet *et al* (30) also used the Edinburgh scale for the measuring baseline characteristics of teenage mothers in the urban zone of Cameroon. It includes 1344 women around 20 years of age with the selected questionnaire and revealed that more prevalence of depressive disorder was found in teenage mothers. Motivated by this evaluation, the present study also enrolled the scale for analyzing depression among teenage mothers. Further, it (30) strongly recommends to develop better maternal care programs for supporting teenagers to uplift their education.

The issues determined from the literature confirm the health risk of teenage pregnancy with induced hypertension, anaemia, loss of education and maturity, etc. Further, the mentioned study suggested that ostracism, rejection by the concerned family, and isolation were also observed to endanger teenagers' lives. In a similar context, Sulaiman *et al* (5) aimed to understand the impacts and consequences of increased pregnancy rates among the teenage groups in Malaysia.

Nasreen *et al* (31) demonstrated that the victim's stop of schooling affects their future economic perspective. Sulaiman *et al* (5) also revealed that low economic groups were affected highly that further enhanced the level of depression (32). The main limitation of the present study was that it faced many underreported cases and stateless teenagers who were not identified.

Conclusion

The current study has been motivated in drawing attention to the dropout teenage female population mainly due to their engagement in sexual activity. Thus, the study enumerated the factors associated with teenage pregnancy among 825 female population around the surrounding regions of Sabah. The following conclusion was drawn from the statistical analysis. The population life who are engaged in sexual activity were observed to be more challenging medically, psychologically, and physically. They were also found to lack family support in providing awareness about sex-education. The parents of such victims were mostly constrained by education and low income. The depression level is high among the teenage pregnancy-associated population and they seek community or peer support to overcome them. With such feelings and anxiety, they are found to be constantly worried about their future which hampers their life. If they were treated with high care by providing certain awareness programs, they could be able to cope with the competitive world. Furthermore, the school attitude has to be increased to deal with this problem. Meanwhile, the forbidden education has to be made hassle-free among the investigated population. This study strongly recommends that social lovers adopt possible measures in revealing a better solution to the present and future suspects.

Ethical committee confirmation
NMRR ID: NMRR-20-3121-56069 (National Medical Research Register Malaysia) Ethics approval reference: JEP-2021-038 (University Kebangsaan Malaysia).

Conflict of Interest
None.

References

1. Ochen AM, Chi PC, Lawoko S. Predictors of teenage pregnancy among girls aged 13–19 years in Uganda: a community based case-control study. BMC Pregnancy Childbirth 2019 Jun 24;19(1):211.

2. Xavier CG, Brown HK, Benoit AC. Teenage pregnancy and long-term mental health outcomes among Indigenous women in Canada. Arch Womens Ment Health 2018 Jun;21(3):333-40.

3. Durojaye E. Advancing sexual and reproductive health and rights of adolescents in Africa: the role of the courts. Int Hum Rights Women 2019:247-65.

4. Ayanaw Habitu Y, Yalew A, Azale Bisetegn T. Prevalence and factors associated with teenage pregnancy, Northeast Ethiopia, 2017: a cross-sectional study. J Pregnancy 2018 Nov 1;2018:1714527.

5. Sulaiman SK, Hod R, Idris IB. The effects and consequences of uncontrolled teenage pregnancy in Sabah, Malaysia. Int J Prog Res Sci Engin 2021;2(7):10-6.

6. Ouma S, Obita KO, Mananura T, Omara AH, Nabbale F, Rama MT, et al. Teenage marriage in post conflict Northern Uganda: a case of Amuru district. Sci J Public Health 2018;6(2):61-5.

7. Nwosu UM. Contemporary factors of teenage pregnancy in rural communities of Abia state, Nigeria. Int J Commun Med Public Health 2017;4(2):588-92.

8. Samsury SF, Ismail TAT, Hassan R. Low birth weight infant among teenage pregnancy in Terengganu, Malaysia: a cross-sectional study. Malays Fam Physician 2022 Mar 17;17(1):44-51.

9. Panting AJ, Yong TSM. Religiosity and risky sexual behavior among adolescents in Sarawak, Malaysia. Glob J Health Sci 2020;12(13):49-57.

10. Inthavong K, Ha LTH, Anh LTK, Sychareun V. Knowledge of safe sex and sexually transmitted infections among high school students, Vientiane Prefecture, Lao PDR. Glob Health Action 2020;13(sup2):1785159.

11. Mendo-Lázaro S, León-del-Barco B, Polo-del-Río MI, Yuste-Tosina R, López-Ramos VM. The role of parental acceptance–rejection in emotional instability during adolescence. Int J Environ Res Public Health 2019;16(7):1194.

12. Bidin MSS, Shaffie F. Associated Factors among unmarried pregnant adolescents in Malaysia. Int J Adv Stud Soc Sci Innov 2020;4(1):2600-746.

13. Wado YD, Sully EA, Mumah JN. Pregnancy and early motherhood among adolescents in five East African countries: a multi-level analysis of risk and protective factors. BMC Pregnancy Childbirth 2019 Feb 6;19(1):59.

14. Mohamoud YA, Kirby RS, Ehrenthal DB. Poverty, urban-rural classification and term infant mortality: a population-based multilevel analysis. BMC Pregnancy Childbirth 2019;19(1):1-11.

15. Brăila AD, ZAVATE AC, Stepan AE, Sabetay C, Kamel J, Georgescu-Brăila M, et al. The acute abdomen in pregnancy and postpartum of a teenager woman. Case report. Rom J Morphol Embryol 2018;59(3):939-43.

16. Amjad S, MacDonald I, Chambers T, Osornio-Vargas A, Chandra S, Voaklander D, et al. Social determinants of health and adverse maternal and birth outcomes in adolescent pregnancies: a systematic review and meta-analysis. Paediatr Perinat Epidemiol 2019 Jan;33(1):88-99.

17. Boaz KM, Willy I. Causes and consequences of teenage pregnancy in Rwada. 2021.

18. Sattarzadeh N, Farshbaf-Khalili A, Hatamian-Maleki T. An evidence-based glance at domestic violence phenomenon in early marriages: a narrative review. Int J Women Health Reprod Sci 2019;7(3):246-54.

19. Rea CJ, Cox J. Encyclopedia of quality of life and well-being research. Springer; 2021. Social support and depression among adolescent mothers. p. 1-7.

20. Dinwiddie KJ, Schillerstrom TL, Schillerstrom JE. Postpartum depression in adolescent mothers. J Psychosom Obstet Gynaecol 2018 Sep;39(3):168-75.

21. Perret-Catipovic M, Ladame F. Adolescence and psychoanalysis: the story and the history. 1st ed. Routledge; 2018. p. 1-16.

22. Barboza-Salerno GE. Cognitive readiness to parent, stability and change in postpartum parenting stress and social-emotional problems in early childhood: A second order growth curve model. Children Youth Services Rev 2020;113:104958.

23. Boorman RJ, Creedy DK, Fenwick J, Muurlink O. Empathy in pregnant women and new mothers: a systematic literature review. J Reprod Infant Psychol 2019;37(1):84-103.

24. Tang X, Lu Z, Hu D, Zhong X. Influencing factors for prenatal stress, anxiety and depression in early pregnancy among women in Chongqing, China. J Affect Disord 2019;253:292-302.

25. Abiodun O, Alausa K, Olasehinde O. Ignorance could hurt: an assessment of fertility awareness, childbirth intentions and parenting attitudes among university students. Int J Adolesc Med Health 2018;30(2).

26. Igba D, Igba C, Nwafor C, Elom C, Mgboro C. Teenage Pregnancy and girl-child education. Int J Appl Environ Sci 2018;13(3):237-48.

27. Maemeko EL, Nkengbeza D, Chokomosi TM. The impact of teenage pregnancy on academic performance of grade 7 learners at a school in the Zambezi region. Open J Soc Sci 2018;6(09):88.

28. Wong SP, Twynstra J, Gilliland JA, Cook JL, Seabrook JA. Risk factors and birth outcomes associated with teenage pregnancy: a Canadian sample. J Pediatr Adolesc Gynecol 2020 Apr;33(2):153-9.

29. Niyonsenga J, Mutabaruka J. Factors of postpartum depression among teen mothers in Rwanda: a cross-sectional study. J Psychosom Obstet Gynaecol 2021 Dec;42(4):356-360.

30. Nicolet L, Moayedoddin A, Miafo JD, Nzebou D, Stoll B, Jeannot E. Teenage mothers in Yaoundé, Cameroon—risk factors and prevalence of perinatal depression symptoms. J Clin Med 2021 Sep 15;10(18):4164.

31. Nasreen HE, Rahman JA, Rus RM, Kartiwi M, Sutan R, Edhborg M. Prevalence and determinants of antepartum depressive and anxiety symptoms in expectant mothers and fathers: results from a perinatal psychiatric morbidity cohort study in the east and west coasts of Malaysia. BMC Psychiatry 2018 Jun 15;18(1):195.

32. Samsuddin SN, Masroom MN, Yunus WM. Mental health of Muslim unwed pregnant teenagers. Malaysian J Med Health Sci 2019 Apr;15(SUPP1):76-82.