Original Article

Psychosocial Problem and its Associated Factors Among Adolescents in the Secondary Schools in Pasir Gudang, Johor

Latiffah Abdul Latiff[1], Esra Tajik[1], Normala Ibrahim[2], Azrin Shah Abu Bakar[3], Shirin Shameema Albar Ali Shirin[1]

1 Department of Community health, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.
2 Department of Psychiatry, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.
3 Cancer Resources and Education Center (CaRE), Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.

ABSTRACT

Introduction: Adolescence is a crucial period with impressive emotional changes. Emotional disorders such as depression, anxiety and stress are high among adolescents worldwide; however the psychosocial changes are often neglected. The aim of the current study was to determine the depression, anxiety and stress symptoms and their associated factors among adolescents. **Methods:** A cross-sectional study using cluster sampling was carried out among school-going adolescents in 10 secondary schools in Pasir Gudang, Johor, Malaysia. Respondents answered a self-administered questionnaire including socio-demographic, Inventory of Parent and Peer Attachment (IPPA), Depression Anxiety Stress Scale-21 (DASS-21) and Strength and Difficulties Questionnaire (SDQ). Using SPSS-21, chi-square test and binomial logistic regression were conducted to examine the associations between dependent and independent variables. **Results:** Respondents (52.6% female and 53.9% Malay) had 46.0% prevalence of depression symptoms, 59.1% anxiety, 38.1% stress and 45.6% psychosocial status (internalizing and externalizing problems). Age, father occupation and parental bonding were significantly predicted having moderate to extremely severe depression symptom (p<0.05). Younger adolescents (13-14 years old) were 1.42 times more likely to have anxiety symptom. In addition, respondents with insecure father attachment were 1.5 times more likely to have stress symptom (p<0.05). Respondents with insecure parental attachment were more likely to have psychosocial problem (p<0.05). **Conclusions:** Depression, anxiety and stress of adolescents were influenced by the sociodemographic of adoleascents and their parents. Age, gender and parental attachment were the significant predictors in the current study which should be the center of attention for the future studies to reduce the psychological disorders among adolescents.

Key words: Depression, Anxiety, Stress, Psychosocial status, Teens

Corresponding author:
Prof. Dr Latiffah Abdul Latiff
E-mail: latiffah.latiff@gmail.com

INTRODUCTION

Adolescence, as a complex developmental phase with many challenges, is a time of moving or changing from childhood with the immaturity into the adulthood with maturity (1, 2). The changes happen in the domain of biological, physically, psychosocial maturity and cognitive and the capacity of adolescents are different in coping with the speed of changes (3, 4). Adolescents suffer from psychosocial problems during their development. Psychosocial problems include emotional problems (e.g. anxiety, depression and stress) and behavioural problems (e.g. educational difficulties, conduct disorders, hyperactivity substance abuse). Since the psychosocial problems are not easy to be detected by the parents or teachers, they are easily neglected (5-7).

Malaysia has 5.47 million adolescents which is around one-fifth of the country's population. Psychosocial problems among Malaysian adolescents has reported 10-20%. (8) In addition, prevalence of severe depression, anxiety and stress among Malaysian secondary school students is from 9% to 11%. (9) Globally 26% of young people (16-24 years old) have a mental disorder (10). In addition, some other studies have noted the high prevalence of psychosocial problems in adolescents (11, 12). It is reported that 10% to 25% of adolescents experience psychosocial problems and/or mental distress during adolescence (6, 12).

According to mental health report by University of Washington, many adolescents today are suffering from

depression, anxiety and stress which are usual mental disorders characterized by absence of happiness and pleasure, sadness, low self-worth, disordered sleep, poor appetite, feelings of tiredness, poor concentration and failure to academic achievement (13). High prevalence of depression, anxiety and stress symptoms among adolescents is a risk factor for their mental health (14). These risk factors could even affect mental health in adolescence and threats the adolescents future negatively (15), however there are lack of data to show the burden of this disease in various parts of Malaysia.

Socio-demographic data of adolescents such as age, gender, ethnics, academic achievement (16, 17), as well as family size, family economy and/or type of house, parental bonding (18-20) has a close relationship with the psychosocial problems. Demographic data of parents (i.e marital status and educational level) also have an important effect on psychosocial problems among adolescent (21, 22).

It is important to study the major psychosocial problems among adolescents in urban area. At present, there is lack of data on psychosocial problems of adolescents in Malaysia, especially in the southern area. This study is designed to determine the psychosocial status, depression, anxiety and stress symptoms and their associated factors among secondary school students (13-17 years old) in Pasir Gudang, Johor, Malaysia.

MATERIALS AND METHODS

Subjects

A cross sectional study was conducted in secondary schools in Pasir Gudang, Johor Bahru District, Johor in Malaysia, to determine the psychosocial problem and its associated factors among adolescents. Using cluster sampling method (23), at first, out of 33 national schools from 10 geographical sections (the city was divided according to the Department of Education in Pasir Gudang) ten schools were selected randomly. At the next step, students at Form 1, 2 and 4 were recruited in each secondary school. Students in Form 3 and 5 were excluded from the study because they had to pass Lower Secondary Assessment (PMR) and Malaysian Certificate of Education Examination.

Sample size

The sample size of the current study was calculated based on the sample size formula by Aday and Cornelius (2006) (24) and according to previous study by Ibrahim et al. (2014) (9) which reported among adolescents in Malaysia the proportion of those with no stress symptom was 0.57 and those with mild-moderate stress was 0.24. To calculate the sample size, a precision of 5%, adjusted design of 2 for cluster sampling and an estimate of 50% non-response rate were taken into consideration. The final sample size of 2980 subjects was calculated.

Instruments

The questionnaire set included the socio-demographic factors of students (age, gender, ethnicity, religion, academic achievement, family size, type of house) and parents (marital status, education level, occupation, household income). Moreover, 3 more questionnaires including Inventory of Parent and Peer Attachment (IPPA), Depression, Anxiety and Stress Scales (DASS-21) and The Strengths and Difficulties Questionnaire (SDQ) were used in this study. Except for DASS-21 which the translated version in Bahasa Melayu (Malay language) was available, all the questionnaires translated through translation and back-translation process in Bahasa Melayu.

The questionnaire of IPPA by Gullone and Robinson (2005) consisted of 25 items to evaluate mother's attachment and 25 items to evaluate father's attachment (25). It was in a form of Likert scale (1= almost never/ never true, 2= not very often true, 3= sometime true, 4= often true, 5= almost always/always true). The results were categorized into insecure attachment (score 25-75) and secure attachment (score 76-125). The construct validity of this questionnaire has been done in children and adolescents (25).

The DASS-21 questionnaire by Lovibond and Lovibond (1995) was used to assess three negative emotional states; depression, anxiety and stress (26). Each of these three scales consisted of seven items, which described the experience of the symptoms of participants over the last week. The questionnaire was in a form of Likert scale (0 = did not apply to me at all, 1 = applied to me to some degree, 2 = applied to me to a considerable degree, or a good part of time, and 3 = applied to me very much, or most of the time). The DASS questionnaire has been used among school-going adolescent (27, 28). This questionnaire has been validated in several studies (29, 30) and in Malaysia the translated version by Hashim et al. (2011) had been conducted for factorial and construct validity among adolescents (31). DASS-21 was established well with Cronbach's alpha scores of 0.91 for depression, 0.84 for anxiety and 0.90 for stress. For multivariate analysis, all depression, anxiety and stress were categorized into normal-mild as no symptom and moderate-severe as having symptom.

The SDQ questionnaire by Goodman (1998) is a brief behavioural screening questionnaire to measure five scales; emotional symptoms, conduct problems, hyperactivity, peer relationship problem and pro-social behaviour (32). SDQ also concludes externalizing and internalizing problems. Each question was assessed according to 0= strongly disagree, 1= agree, 2= strongly agree. Finally, the results were scored according to normal (score 0-13), borderline (score 14-16) and abnormal (score 17-40). The construct validity of this questionnaire has been done in several studies among adolescents (33, 34).

Table I: Socio-demographic and psychological factors of respondents (n=2925)

		Frequency	Percentage
Gender	Male	1386	47.4
	Female	1539	52.6
Age group	13	760	26
	14-15	907	31
	16-17	1258	43
Ethnicity	Malay	1576	53.8
	Chinese	944	32.3
	Indian	344	11.8
	Others	61	2.1
Religion	Muslim	1579	54
	Buddha	831	28.4
	Hindu	322	11
	Christian	167	5.7
	Others	26	0.9
Academic performance	A	646	22.1
	B	965	33
	C	869	29.7
	D	445	15.2
Family size	Less than 4	678	23.2
	4 - 8	2007	68.6
	More than 8	240	8.2
Type of house	Squatter house	301	10.3
	Shop house	173	5.9
	Terraced house	1924	65.8
	Village house	272	9.3
	Condominium	132	4.5
	Bungalows	123	4.2
Marital status of parent	Married	2664	91.1
	Dead of father/mother	129	4.4
	Divorce	123	4.2
	Single parent	9	0.3
Father education level	Primary education	512	17.5
	Secondary education	594	20.3
	Malaysian Certificate of Education	1261	43.1
	Diploma or university degree	558	19.1
Mother education level	Primary education	453	15.5
	Secondary education	658	22.5
	Malaysian Certificate of Education	1363	46.6
	Diploma or university degree	451	15.4
Father occupation	Public sector	570	19.5
	Private sector	1340	45.8
	Self-employed	822	28.1
	Retired	85	2.9
	No job	108	3.7
Mother occupation	Public sector	307	10.5
	Private sector	521	17.8
	Self-employed	371	12.7
	Retired	33	1.1
	No job	1693	57.9

Household income	Less than RM 1000	749	25.6
	RM 1000-RM 3000	1468	50.2
	Higher than RM 3000	708	24.2
Mother attachment (n=2822)	Insecure Attachment (IPPA Score 25-75)	611	21.7
	Secure Attachment (IPPA Score 76-125)	2211	78.3
Father attachment (n=2742)	Insecure Attachment (IPPA Score 25-75)	746	27.2
	Secure Attachment (IPPA Score 76-125)	1996	72.8
Psychosocial status (n=2873)	Normal (SDQ Score 0-13)	1563	54.4
	Borderline (SDQ Score 14-16)	596	20.7
	Abnormal (SDQ Score 17-40)	714	24.9
Depression symptom (n=2918)	Normal (DASS Score 0-9)	1575	54.0
	Mild (DASS Score 10-13)	487	16.7
	Moderate (DASS Score 14-20)	560	19.2
	Severe (DASS Score >21)	296	10.1
Anxiety symptom (n=2910)	Normal (DASS Score 0-7)	1191	40.9
	Mild (DASS Score 8-9)	259	8.9
	Moderate (DASS Score 10-14)	750	25.8
	Severe (DASS Score >15)	710	24.4
Stress symptom (n=2899)	Normal (DASS Score 0-14)	1794	61.8
	Mild (DASS Score 15-18)	477	16.5
	Moderate (DASS Score 19-25)	406	14.0
	Severe (DASS Score >26)	222	7.7

Table II: Association between psychosocial status, depression, anxiety and stress symptoms with socio-demographic characteristics of respondents and their parents and parental bonding

Socio-Demographic Factors of Respondents	Psychosocial Status		Depression Status		Anxiety Status		Stress Status	
	P		**p**		**P**		**p**	
gender	6.05	.048*	6.89	.953	8.61	.003*	5.67	.017*
age	14.37	.073	36.27	.001*	16.58	.002*	10.58	.032*
ethnicity	39.14	.001*	87	.001*	29.21	.001*	7.34	.062
religion	33.78	.001*	86.81	.001*	25.24	.001*	5.11	.276
academic performance	57.61	.001*	92.67	.001*	28.1	.001*	28.1	.001*
family size	10.57	.032*	1.44	.488	0.27	.873	2.9	.235
type of house	34.80	.002*	15.24	.033*	17.94	.012*	13.32	.065
marital status	12.31	.002*	6.45	.011*	0.88	.348	1.04	.307
father education level	32.68	.001*	33.53	.001*	19.12	.001*	7.73	.102
mother education level	5.79	.671	48.70	.001*	22	.001*	5.02	.285
father occupation	25.20	.001*	25.57	.001*	12.77	.012*	3.05	.55
mother occupation	22.96	.003*	17.85	.001*	9.56	.049*	5.23	.264
household income	4.18	.383	3.32	.191	3.52	.172	0.81	.668
mother attachment	99.57	<.001*	87.43	<.001*	22.53	<.001*	15.88	<.001*
father attachment	94.26	<.001*	111.0	<.001*	18.76	<.001*	13.60	<.001*

* Significant, p < 0.05

Data Collection Procedure

Data in all ten schools were collected by trained research assistants. After briefing the study, participants were requested to read the information sheet about the study and fill the consent form. Those students whose parents and themselves filled the consent form attended the study and the forms were collected one day before data collection. Participants were requested to fill completely and accurately the self-administered pre-tested questionnaire set in the class at a specified time of data collection during class time.

Ethical Issue

Permission to undertake the study was obtained from the Ministry of Education, Department of Education in Pasir Gudang and Johor State, and the Ethics Committee of the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia.

Data Analysis

SPSS-21 was used to analyse the data. Descriptive analysis was also used to show percentages and frequencies. Besides, the Chi-square test was used to do the bivariate analysis for the association between psychosocial status, depression, anxiety and stress symptoms and associated factors. Binomial logistic regression was used to predict or estimate the probability of having depression or anxiety or stress based on associated factors. The results were considered as significant if $p<0.05$.

RESULTS

A total of 2980 respondents participated in the study, giving a response rate of 98.1%. However there was no missing data for demographic factors, psychological questions including DASS-21, IPPA and SDQ had response rate of 93.7% to 99.8% (35). Out of 2925 respondents, 2822 completed their mother attachment questions (response rate of 96.5%) and 2742 completed their father attachment questions (response rate of 93.7%). Moreover, 2873 filled completely the SDQ questionnaires (response rate of 98.2%) and the response rates for 3 scales of DASS-21 (depression, anxiety and stress) were 99.8%, 99.5% and 99.1%, respectively.

The detailed results of socio-demographic of respondents and psychological factors (parental bonding or parent attachment, psychosocial status and symptom of depression, anxiety and stress) are shown in Table I. More than half of the respondents were female (52.6%), Malay (53.9%) and Muslim (54%). The number of students at the age group of 16-17 years old was higher than other groups (43%). About two third of the students (62.7%) obtained B and C in their academic performances. A total of 68.6% of the students had 4-8 members in their family and most of them lived in a terraced house (65.8%).

Socio-demographic data of parents declared that 91.1% of parents were married and the educational level of father and mother showed that 43.1% of fathers and 46.6% of mothers had an education level of SPM (Malaysian Certificate of Education, lower than Diploma). In term of profession, the number of fathers working in the private sector is higher (45.8%) than other jobs. However, unemployment marked the highest percentage for mothers with (57.9%) compared to other jobs. About half of the families (50.2%) had household income of RM1000-RM3000 (Table I).

In addition, Table I indicates about one fifth of the students (21.7%) had insecure attachment with their mothers while 27.2% had insecure attachment with their fathers. The psychosocial problem was screened by psychosocial status, which about one fifth of respondents (24.9%) had abnormal psychosocial status. Results on DASS-21 showed that 59.1% of the respondents had anxiety symptom, while 46.0% had depression symptom and 38.1% had stress symptom.

According to Table II, Chi square test revealed the association between socio-demographic factors of adolescents, socio-demographic factors of parents and parental bonding (mother and father attachment) with psychosocial status, symptoms of depression, anxiety and stress. All variables had significant association with psychosocial status ($p<0.05$) except age, mother educational level and household income ($p>0.05$). Most of the variables including age ($x^2=36.27$, $p=0.001$), ethnicity ($x^2=87$, $p=0.001$), religion ($x^2=86.81$, $p=0.001$), academic performance ($x^2=92.67$, $p=0.001$), type of house ($x^2=15.24$, $p=0.033$), marital status of parents ($x^2=6.45$, $p=0.011$), father educational level ($x^2=33.53$, $p=0.001$), mother educational level ($x^2=48.70$, $p=0.001$), father occupation ($x^2=25.57$, $p=0.001$), mother occupation ($x^2=17.85$, $p=0.001$), mother attachment ($x^2=87.43$, $p<0.001$) and father attachment ($x^2=111.0$, $p<0.001$) had significant association with depression symptom.

In addition, Table II reports that except for family size, marital status of parents and household income, rest of variables had significant association with anxiety symptom ($p<0.05$). Moreover, results presents us that gender, age, academic performance, mother and father attachment had significant association with stress symptom ($p<0.05$), although none of the socio-demographic factors of parents had a significant relationship with the stress symptom ($p>0.05$).

Table III shows the multivariate analysis between the symptoms of depression, anxiety, stress and associated factors. The results showed that age group, father occupation, mother attachment and father attachment were significantly predicted having moderate to extremely severe depression symptom among the

Table III: Multivariate analysis between symptoms of depression, anxiety, stress and associated factors

Variables	Multivariate analysis		
	B	Exp(B)	*P*-value
Depression			
Age group			
13	0.45	1.57	0.008*
14-15	0.33	1.39	0.045*
16-17	(1)	(1)	(1)
Father occupation			
Public sector	0.24	1.27	0.028*
Private sector	Ref.	Ref.	Ref.
Self-employed	0.37	1.45	<0.001*
Retired	0.62	1.86	0.004*
No job	0.57	1.77	0.014*
Mother attachment			
Insecure Attachment	0.53	1.70	0.005*
Secure Attachment	(1)	(1)	(1)
Father attachment			
Insecure Attachment	0.55	1.74	0.002*
Secure Attachment	(1)	(1)	(1)
Anxiety			
Age group			
13	0.35	1.42	0.016*
14-15	0.13	1.14	0.341
16-17	(1)	(1)	(1)
Stress			
Gender			
Male	(1)	(1)	(1)
Female	0.14	1.15	0.103
Father attachment			
Insecure Attachment	0.41	1.50	0.029*
Secure Attachment	(1)	(1)	(1)
Psychosocial status			
Father attachment			
Insecure Attachment	0.66	1.94	<0.001*
Secure Attachment	(1)	(1)	(1)
Mother attachment			
Insecure Attachment	0.53	1.71	0.002*
Secure Attachment	(1)	(1)	(1)

* Significant, p < 0.05

respondents after controlling for associated factors. Being at age group of 13-14 years old was 1.57 times and age group 14-15 years old was 1.39 times (or 39%) more likely to have depression symptom (moderate and severe). Comparatively those with secure attachment, insecure mother attachment was 1.7 times and insecure father attachment was 1.74 times (or 74%) more likely to have depression symptom (moderate and severe). Students with father occupations including governmental (OR=1.27, p=0.028), self-employed (OR=1.45, p<0.001), retired (OR=1.86, p=0.004) and jobless (OR=1.77, p=0.014) were more likely having depression symptom.

The respondents in age group of 13 years old were 1.42 times more likely having anxiety symptom (moderate and severe) after controlling for other associated factors. In addition, respondents with insecure father attachment were 1.5 times (or 50%) more likely to have stress symptom (moderate and severe). Furthermore, respondents with insecure father (OR=1.94, p<0.001) and mother (OR=1.71, p=0.002) attachment were more likely to have psychosocial problem (Table III).

DISCUSSION

In the current study, the prevalence of psychosocial problem including externalizing and internalizing was high. Respondents showed 24.9% psychosocial status at the abnormal level and 20.7% at the borderline. In addition, 46% had depression, while 59.1% and 38.1% had anxiety and stress, respectively. Although there is lack of data for adolescents in term of psychology in Malaysia, the results of this study are higher than the results of the study on undergraduate students in Malaysia by Latiffah et al. (36) in 2014 and Shamsuddin et al. (37) in 2013. For instance, Latiffah et al. (36) reported 27%, 60% and 22.6% for depression, anxiety and stress symptoms respectively. Moreover, another study conducted among 300 early adults in Malaysia showed 12% to 21% for depression. The different percentages may due to various geographic areas and age groups. According to Sund et al. (38) in 2011, many stressors become stressful challenges in early adolescence and are the reason for being depressed.

Psychosocial statuses also showed a significant association with some demographic factors such as gender, academic performance, family size and type of house. Females are more conscious about their physical appearance especially when they just hit puberty, so they face some psychosocial problems during at this stage (39). Moreover, American Psychological Association (APA) (40) in 2010 reported the differences between genders by dealing with stress. They indicated that women are more likely to have stress, physical and emotional symptoms of stress compared to men. APA in 2010 showed that the main problems to increasing stress

level among females are lack of stress management, sleep, healthy diet and physical activity.

In the present study, early adolescence was a predictor for having depression and anxiety. The result may have a root in sex differences which occur in early adolescence. Adolescents in younger ages have difficulties in communicating emotion, cognition and diagnostician because of lack of cognitive capabilities. They also have problem to challenge with fears and anxiety as a result of their young ages (41).

The current study showed the association between father occupation and depression. In line with this study, Deb et al. (42) in 2015 showed the relationship between parental occupation and depressive disorders among students. They indicated that parental occupation is related to socio-economic classes of family and both of these factors are the reasons to increase the academic stress among adolescents and academic stress may be the origin of depressive disorder. Apart from that, anxiety and stress could take place when parents expect high academic achievement and increase the pressure on their children for excellent results. In line with this study, Deb et al. (43) in 2014 also revealed that 35%-37% stress and anxiety was due to high level of expectation for academic results. They also mentioned that lower academic grade was an association with higher stress.

According to Chhabra and Sodhi (17) in 2011, adolescents from a family of more than 8 members have more psychological problems (60%) compared to those with a family size less of than four members. They showed that these problems may be due to lack of care given by parents to each child in the family (17). In addition, children who live in non-standard quality of life such as substandard housing, have the potential to face situations like family chaos and impaired emotional development (44). Meanwhile, the study by Deb et al. (45) in 2010 on anxiety among 460 Indian adolescents (14-18 years) showed more anxious in adolescents, forming low and medium economic status rich families.

Furthermore, the parents' demographic factors are influenced factors for adolescents. For instance, this study showed a significant association between psychosocial status and parents' marital status and occupations, and educational level. Disrupted families usually meet dramatic degeneration in standard of living and furthermore, female headed families face poverty after the divorce (46). In addition, Bradshaw et al. (47) in 2013 showed higher stress level in adolescents, whose mothers had very high or very low educational level. They reported that the stress level was less in adolescents from families with medium educational level of parents.

The present study revealed that the mother and/or father attachment is a predictor for depression and stress among adolescents. Parent-child relationship plays substantial

role in development or prevention of depression, anxiety and stress among children and adolescents (48,49). Kamkar et al. (49) in 2012 showed that insecure parent attachment especially mother attachment was associated with depressive disorder and girls are more vulnerable. They showed the reason of depressive disorder in case of insecure attachment is low self-esteem which makes adolescents to have socialization pressure. In addition, Deb et al. (45) in 2010 showed more anxious in adolescents, whose mother and father were more engaged to work and had less time to share their personal issues with them.

There is a number of limitations found in the current study. For instance, although we found that Pasir Gudang had the highest number of psychosocial problems in Malaysia, this study only covered a small area of Johor Bahru. Thus, this study is not a representation of adolescents in the whole of Malaysia. Furthermore only students in Form 1, 2 and 4 were allowed participate as students in Form 3 and 5 had to sit for the public examinations (PMR and SPM). Due to this reason, we were not allowed to distract their classes. The next limitation is the design of cross-sectional study, which is not suitable to clarify the cause-and-effect relationships between the variables. Hence, longitudinal studies are more suitable for use to investigate relationships between variables deeply.

CONCLUSIONS

In conclusion, the current study revealed some association between the demographic factors of adolescents and also their parents with psychosocial problems. The results showed that the prevalence of anxiety was higher among adolescents in Pasir Gudang, followed by depression and stress. The findings of this study can help design programs and strategies to curb and reduce psychosocial problems among adolescents in Pasir Gudang, Johor and subsequently for all adolescents in the whole of Malaysia. In addition, these findings may also help health professionals to prevent and/or cure the psychological disorders among adolescents.

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