

Pilot Study on Depression Among Secondary School Students in Selangor

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SUMMARY

A cross sectional descriptive study of 2048 subjects was conducted to determine the prevalence of depression and factors influencing depression among students in secondary school from urban and rural areas in the state of Selangor, Malaysia. The children's depression inventory (CDI) developed by Maria Kovacs was used in this study. Students who participated in this study come from two urban schools and three rural schools. It was found that in the yield for scores for five factors were 9.2% have negative mood, 5% have interpersonal problems, 8.3% have ineffectiveness, 9.8% have anhedonia and 10.6% have negative self esteem. Following the interpretive guidelines for the T-scores, it was found that 10.3% of the students were much above average in the depression scale. This study also found that: 1% of students were smoking, 1.6% of students were gum sniffing, 0.9% took drugs, 4.1% took alcohol and 9.9% took things from other people. Females were more depressed than males. The Chinese students were more depressed compared to Indian students. Students whose parents had no formal education or had only primary education were more depressed than students whose parents had secondary, college or university education. Depression increased with increasing number of siblings. Depression contributed to the habit of drug abuse, gum sniffing and stealing but not to smoking and alcohol abuse. Suicidal tendencies were more likely among the depressed students. It is imperative that not only caregivers but also teachers have to be equipped with the knowledge, attitude and skills to assist secondary school children cope with their emotions, handle conflicts and manage stress early so that a more productive society will develop in the future.

KEY WORDS:

Depression, Secondary School Students, Risk Factors, Substance Abuse

INTRODUCTION

Healthy children are understandably unhappy in distressing circumstances for example when a parent is seriously ill or a grandparent has died. Naturally sadness is part of the normal range of emotional reaction. Nonetheless, the symptom of depression is not synonymous with sadness or unhappiness. Even though unhappiness is an important component of the depressive mood state, the negative mood of depression may

be represented more by features such as emotional emptiness or a feeling of flatness. The symptom of depression occurs not only in psychiatric disorders but also in a variety of physical condition.

Childhood depression is a matter of major concern because of its prevalence, recurrence and impairment of functioning. Moreover, it is often not a transient phenomenon that children outgrow. Depressive episodes are recurrent if the contributing factors remain unabated. Early depressive episode is predictive of frequency and severity of depression in adulthood¹.

Depressive disorders occur in approximately 2% of primary school-aged children and 4% to 8% of adolescents². Nearly half (45%) of adolescents with major depression relapse in young adulthood³. Children and adolescents with depression are also at increased risk for suicide, substance use disorders, early pregnancy, poor academic performance and impaired psychosocial functioning⁴.

Although the psychosocial problems associated with being depressed are relatively well-known for adults, the extent to which these characteristics are also associated with depression in adolescents have received much less attention. Allgood -Merten *et al*⁵ and Hops *et al*⁶ found that many of the psychosocial characteristics associated with adult depression also characterize depressed adolescents, including other psychopathologies, stressful life events, depressotypic cognitive style, low self-esteem, increased self-consciousness, reduced social support and impaired coping skills.

Knowledge regarding the risk factors for depression in adolescence would seem to be especially important given that early onset depression appears to represent a more serious form of the disorder². Specifically, adolescents with mood disorder have been found to be at elevated risk for relapses⁷. Adolescent depression has also been shown to predict a variety of negative outcomes, including academic problems, marital difficulties, delinquency, unemployment, drug involvement, medical hospitalization, car accidents arrest, and criminal conviction⁸.

Although previous studies vary greatly in their methodology and have focused on adults more than on adolescents, sufficient convergence has emerged to implicate the

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following variables as potential risk factors for depression: (a) low self-esteem and body image⁵; (b) cigarette smoking⁵; (c) high self-consciousness⁶; (d) depression-related cognitions⁶; (e) previous history of depression⁹; (f) being female⁹; (g) living in a dysfunctional family¹⁰; (h) low parental education¹⁰; (i) stressful life events and low social support¹⁰; (j) school problems and reduced intellectual competence and coping skills¹⁰; (k) anxiety¹¹; (l) subclinical depression level¹¹; (m) physical disability and poor physical health¹¹; (n) early death of a parent¹¹; (o) suicidal behavior¹²; (p) excessive interpersonal dependence¹³; (q) problematic interpersonal behaviors^{14,15}, including conflict with parents and interpersonal attractiveness; and (r) early or late pubertal maturation¹⁶. It should be noted that although many risk factors have been proposed and studied, only a relatively small number have been examined together in any given study. Therefore, knowledge of the contribution of the risk factors in interaction with each other is limited.

There is a need for this study because there is insufficient data or information pertaining to the mental health of Malaysian children. To make matters worse there is virtually none to highlight the possible factors influencing it. Consequently, it is not surprising that little has been mentioned regarding the services available to assist these children and their families who invariably form an integral part of the social support system.

A lot of emphasis has been placed on the physical health as far as health is concerned in Malaysia. This trend only changed in the 1980 to focus on the emotional as well as behavioral aspects of children¹⁷.

MATERIALS AND METHODS

Permission was obtained from the Ministry of Education and Selangor Department of Education. Copies of the letters of approval for the conduct of the study were sent to the headmasters of the schools involved.

A population of about 2,000 students from two urban schools (SMK Sri Permata and SMK Kelana Jaya, Petaling Jaya) and three rural schools (SMK Sungai Pelek Sepang, SMK Sri Tanjung Kuala Selangor and SMK Sultan Abdul Aziz, Kuala Selangor) participated in the study. Initial sampling was done at random for two schools, one in Petaling Jaya and another in Kuala Selangor. The other two schools were chosen by cluster sampling for logistic reason. The school in Sungai Pelek was chosen when the number of samples for the rural area fell below the expected due to unforeseen circumstances. All the students in form 2 and form 3 attending class on the day of the study were taken as respondents. The total number of students who participated was 2,048.

The headmaster and form teachers were briefed prior to the commencement of the study. They briefed the students one day before the study. They ascertained that the students did not discuss their answers during the administration of the questionnaire.

A self administered questionnaire was distributed to the students and filled up accordingly with the help of

facilitators. Questionnaires were made available in Bahasa Malaysia and English. The English version of this questionnaire was translated to the Bahasa Malaysia and then back translated to English for its use in subjects who could not understand English. Several revisions and back-translations were done to ensure that the translation was a fair one. In this study the reliability of Bahasa Malaysia version was found to be quite good with Cronbach's Alpha being 0.799. The validity of the questionnaire is yet to be established in the local context. Nevertheless, this is currently being carried out by other authors.

Students were briefed one day before to enable them to obtain the relevant socio-demographic data from their parents using a standard form accompanied with a letter of explanation on the study.

Data were entered using Microsoft Excel and analyzed using SPSS 12.0.1. All data were analyzed by the Data Processing Centre Universiti Teknologi MARA.

RESULTS

Out of 2048 students 50.7% were males and 49.3% were females. All the inventories were filled in properly. There were no students with missing items. The raw test scores are converted to *T*-scores which are standardized scores whereby each scale has a mean of 50 and a standard deviation of 10. *T*-scores above 65 are generally considered clinically significant when the child is from a "high base-rate" group such as all children in a clinical setting. When the child is from a "low base rate" group such as children without identified behavioral problems *T*-scores of 70 or 75 may be used. The *T*-score used in this study is above 65 since secondary school children in public schools are considered being in a pool of children who do have problems (poor performance or behavioral) because the better performing students (and better behaved) have been filtered out by the UPSR (primary school assessment exams)¹⁸.

There were 211 children (10.3%) with *T*-scores of 70 and above, meaning that they were suffering from depression at the time of the study (Refer Table I).

The CDI yields scores for the five factors or subscales, in addition to the total score. The results for the factors were negative mood 9.2%, interpersonal problem 5%, ineffectiveness 8.3%, anhedonia 4.6% and negative self esteem 10.6%.

The General Linear Models Univariate procedure was used to identify the variables that relate to the total *T* scores. Among the variables considered, four categorical variables (gender, race, parents education level, type of dwelling) and one metric variable (number of siblings) showed significant relationship with the outcome variable (refer Table II).

The *p*-values for all five variables were less than 0.05. The tests involving the four categorical variables give power of more than 90%. For number of siblings, the power of the test was 52%. In the assessment of the categorical variables, their effects were controlled for the covariates: number of siblings.

The mean *T*-score of 54.73 among the females were significantly higher than the mean *T*-score of 51.92 among the males. This implies that the females were more prone to depression compared to the males.

Among the races, Malays, Chinese, Indians and Others, the Chinese recorded a significantly higher mean *T*-score compared to the Indians. There was no significant difference between other races compared pairwise, using Dunnette's T3 Post Hoc Test.

For parents level of education there were five responses: none, primary, secondary, college and university. On the basis of Dunnette's T3 Post Hoc Test, there were two definite subgroups. Students whose parents either had no formal education or had only primary education showed significantly higher mean *T*-scores compared to the students whose parents had secondary, college or university education. Thus, parents' education level was an important determinant of level of depression.

Students' type of dwellings comprised bungalows/condominium, semi-detached, terrace, flats and slum. Mean *T*-score for students from semi-detached houses was the highest, while, mean *T*-score for students living in flats was the lowest. Dunnette's T3 Post Hoc Test showed that there was no difference in mean scores between those living in semi-detached houses and those living in flats.

There was a positive relationship between number of siblings and the *T*-score. Further analysis showed that for every unit increase in number of sibling, the *T*-score increased by 0.632 units.

The 95% confidence intervals for all the relationship factors and the level of depression were above the value of one (refer Table III). Thus, depression did make relationships more undesirable.

Table IV shows depression in relation to undesirable habits. Except for smoking and alcohol abuse, the 95% confidence

intervals for all other bad habits are above the value of one. Therefore, depression contributed to the habit of drug abuse, gum sniffing and stealing but not to smoking and alcohol abuse.

There was no significant association between parents' death and levels of depression. Similarly, there was no association between parents' divorce and depression. There was no significant difference in depression scores between urban and rural school students ($p = 0.804$).

Cross tabulation of the answer to suicidal tendencies and depression state showed that there was a significant difference (Chi Square 262.9, $P < 0.05$). Therefore, those who were depressed were more likely to think about suicide compared to those who were not depressed.

DISCUSSION

This study found that there were 211 children (10.3%) suffering from depression at the time of the study. This finding was almost similar to two studies in Scandinavia and Italy. In the Scandinavian study, it was found that 10% of the children were depressed as indicated by the cut off score of 15. There were significant differences in scores between grades but not between sexes¹⁹. In the Italian study involving 685 students it was found that 10% of the participants scored higher than the clinical threshold of 20.

Studies conducted elsewhere found the depression level to be much higher²⁰. In a study conducted in Brazil, using a cut off score of 19, 20.3% of the sample demonstrated clinically significant rates of depressive symptoms. Age had no significant effect on scores. Significantly, more females than males had scores above the cut off score (72.3% versus 27.7%). Results suggest a high level of depressive symptoms, particularly among females and an age of onset concentrated around the ages of 12 to 15²¹. A study conducted among Chinese secondary school students aged 13-17 years with a cut off point of 20, found that 24% were classified in the depressed range²².

Table I: Distribution of students based on CDI score

Category	Frequency	Percent
Very much above average (<i>T</i> -score above 70)	96	4.7
Much above average (<i>T</i> -score of 66 to 70)	115	5.6
Above average (<i>T</i> -score of 61 to 65)	206	10.1
Slightly average (<i>T</i> -score of 56 to 60)	331	16.2
Average (<i>T</i> -score of 45 to 55)	901	44.0
Slightly below average (<i>T</i> -score of 40 to 44)	305	14.9
Below average (<i>T</i> -score of 35 to 39)	60	2.9
Much below average (<i>T</i> -score of 30 to 34)	2	0.1
Very much below average (<i>T</i> -score of below 30)	32	1.6
Total	2048	100.0

T-scores of above 65 is considered positive

Table II: Tests of Between-Subjects Effects

Source	Sum of Squares	Df	Mean Square	F	Sig.	Power
Corrected Model	12904.7	14	921.8	8.991	<0.001	>0.999*
Intercept	152860.8	1	152860.8	1491.066	<0.001	>0.999*
Gender	3353.0	1	3353.0	32.707	<0.001	>0.999*
Race	1835.3	3	611.8	5.967	<0.001	0.958*
Parents' Education	2346.4	4	586.6	5.722	<0.001	0.982*
Type of dwelling	1651.1	4	412.8	4.026	0.003	0.913*
Number of Siblings	412.4	1	412.4	4.022	0.045	0.518*
Error	171409.8	1672	102.5			
Corrected Total	184314.5	1686				

* α taken as 0.05

Table III: Depression rating against relationship with parents, siblings, schoolmates and teachers

Relationship	Above Average		Below Average		OR	95% CI for OR
	Not Good	Good	Not Good	Good		
Parents	13.9%	86.1%	2.9%	97.1%	5.42*	[2.99, 9.78]
Siblings	20.0%	80.0%	7.3%	92.7%	3.15*	[1.94, 5.14]
Schoolmates	11.3%	88.7%	3.5%	96.5%	3.50*	[1.87, 6.54]
Teachers	20.9%	79.1%	8.6%	91.4%	2.79*	[1.73, 4.49]

* odds ratio significant at 0.05 level

Table IV: Depression rating against undesirable habits of smoking, gum sniffing, drug abuse, alcohol abuse and stealing

Habits	Above Average		Below Average		OR	95% CI for OR
	Yes	No	Yes	No		
Smoking	7.0%	93.0%	7.1%	92.9%	0.97	[0.46, 2.04]
Gum sniffing	4.3%	95.7%	1.4%	98.6%	3.09*	[1.17, 8.16]
Drug abuse	3.5%	96.5%	0.8%	99.2%	4.61*	[1.50, 14.11]
Alcohol abuse	5.2%	94.8%	4.0%	96.0%	1.33	[0.57, 3.11]
Stealing	15.7%	84.3%	9.6%	90.4%	1.75*	[1.04, 2.97]

* odds ratio significant at 0.05 level

In the United States, the prevalence of major depressive disorder is approximately one percent preschoolers, two percent of school-aged children and 5 to 8 percent of adolescents²³. The prevalence of depression appears to be increasing in successive generations of children with onset at earlier ages²⁴.

This study found a significant difference on depression between boys and girls. Girls were significantly more depressed than boys and this was the same finding in the Italian study²⁰ and Brazilian study²¹. In another study by Chartier and Lassen, it was found that girls endorsed significantly more depressive symptoms than boys but the magnitude of the effect was minimal²⁵. However, the Scandinavian study¹⁹ found no significant difference between the sexes. Other studies found that boys were significantly more depressed than girls. In a study by Finch *et al*²⁶, it was found that boys scored significantly higher (more depressed) on the CDI than did girls ($F=12.83, p<0.001$). Huntley *et al*²⁷ found that boys had higher CDI scores than girls ($F=5.37, p<0.025$).

This study found no significant difference between parent's death and the level of depression. In a study by Siegel *et al*²⁸ it was found that the terminal phase of a parent's illness may be the period of greater psychological vulnerability, in comparison with the period following the actual loss. A study by Mattison *et al*²⁹ on 105 children aged 8 to 16 entering a residential school for economically limited children who

had lost one or both parents due to death, divorce or separation found that 31.4% were depressed.

This study found that those who were depressed were more prone to suicidal thoughts compared to those who were not depressed.

In a study conducted by Jellinek *et al*²³, it was noted that suicide has become a growing public health concern as successive generations have shown a parallel increase of suicide and depression in the pediatric age group.

A study by Marciano *et al*¹² conducted on 79 male and 44 female aged 6-13 inpatient children, it was found that suicidal ideators reported significantly greater depression and hopelessness and lower self esteem than did control children. Depression as measured by CDI was the single best predictor of suicidal ideation and attempt. Further, Kazdin *et al*³⁰ found that CDI scores were positively correlated with suicidal intent ($r=2, p<0.06$).

CONCLUSION

This study revealed that 10.3% of secondary school students suffered from depression.

This study has also managed to identify some of the significant risk factors for depression among secondary school students in the State of Selangor in Malaysia. Among

them are being female from the Chinese ethnicity with parents having no formal education or only primary education as well as increasing number of siblings in the family. Moreover, it was noted that depression significantly contributed to the habit of drug abuse, gum sniffing and stealing. Additionally, depressed students were more likely to have suicidal tendencies and the accompanying risk of loss of life.

Consequently, it is vital that caregivers, childcare providers and teachers have the knowledge, attitude and skills to help these children cope with their emotions, handle conflicts and manage stress early. If these measures fail the likelihood of rising population of mentally-troubled youth will occur. Thereafter, these youth will develop into adults with more severe problems.

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