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## Original Article

# Depression among Urban Adolescent Students of Some Selected Schools

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**Abstract :**

To determine the factors related with depression among adolescent students, 165 male adolescent students aged 15 to 19 years from 2 urban schools and colleges were interviewed with semi-structured questionnaire during January to June 2012.The socio demographic details, smoking and depression histories were recorded. The Center for Epidemiologic Studies Depression Scale (CES-D) was used to measure the presence of depression. Smoking behavior was measured by a number of questions. Almost 49% respondents were depressed and 66% were smokers. Most of the respondents started smoking around the age of 14.3 years (54.1%) by the influence of their friends. Among the smokers 82.7% were depressed while 17.3% were depressed among nonsmokers ($\chi^2$=19.69, p=<0.001). Parental smoking affected 62.5% respondents for depression against 59.4% normal respondents whose parents were non smokers ($\chi^2$=7.52, p=.006). Domestic violence ($\chi^2$=18.4, p=<0.001), familial disharmony ($\chi^2$=18.44, p=0.001), stressful events in the life ($\chi^2$=21.38, p=<0.001), failure in love ($\chi^2$=12.6, p=0.002) also played roles for depression. After adjusting the non significant factors in logistic regression, familial disharmony (p<0.001), smoking (p=0.005) and stress (p=0.04) became significant factors associated with depression. Depression level was higher among adolescent smoker than nonsmoker students.

**Key words:** Depression, Adolescent, Student, Smoking.

**Introduction :**

Depression is a common mental disorder that presents with lowered mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-esteem, disturbed sleep or appetite, poor concentration, anxiety leading to suicide at its worst[1]. WHO identifies adolescence as the period in human growth and development from ages 10 to 19 as the peak age of depression[2]. Childhood depression was thought to be masked by conditions unnoticed though it can be widely recognized by the physicians and psychiatrists who consider depression as a serious condition affecting both adolescents and young children[3].

Young people can become depressed for many reasons starting from genetic predisposition to a positive parental or family history, chronic illnesses such as diabetes, asthma, or heart disease. Even the hormonal changes during puberty can bring about a depressive episode. Childhood neglect or abuse, physical, emotional or sexual abuse, low academic performance, poverty, death of a loved one, difficult parental relationships, and even failure in affair are also important risk factors for depression[4]. Depression may lead the girls and boys to indulge at risky behaviors[5] like initiation of smoking or drug addiction. Data from the "Global Adult Tobacco Survey: Bangladesh Report 2009"[6] found that 23.0% of adult aged 15 years or above currently smoke tobacco in Bangladesh which is also the peak age of depression in adolescents. Once the adolescents are depressed, their self-esteem becomes low which in turn increase their depression level while they experience stressful events[7] and they indulge into activities like smoking, drinking to get rid of the situation of mental stress. Once they have started smoking, the symptoms of depression gradually increased pushing them into a vicious circle[8,9,10] to the point of no return.

This study was carried out to assess the situation of depression among adolescent students so that measures could be taken to avoid the problems to enable the adolescents have a better future. The finding could also give us light on how to initiate strategic plans during the adolescent life of school children to provide them a congenial developmental ground.

**Materials and Methods:**

This cross sectional study interviewed 165 urban adolescent male students of two schools between 15-19 years from January-June 2012 with selected criteria using a pre-tested semi-structured questionnaire and depression scale. Institutional permission was taken

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from the school authority prior to conducting the study. A written informed consent was taken from each participant explaining the purpose. The socio-demographic factors included age, religion, family type, number of family members, education and occupation of parents. Data on smoking habit, smoking starting age, smoking of parents, friends or others family members and inducer of smoking were smoking related factors. Parent's marital status, domestic violence, stressful events in the last year, familial disharmony and affair disruption were the factors related to depression. The Center for Epidemiologic Studies Depression Scale (CES-D) was used to measure the presence of depression.

After data collection, data were checked and edited manually before entering into statistical software package. Education of the parents was converted into no or poor education for those who were illiterate or could sign only, some education was coded for those who went up to class 8; the parents who completed SSC or graduation were coded as having good education. Depression score from CES-D was added up to total depression score and was categorized as normal for score $< 22$ and as depressed for score $\geq 22$. The socio demographic variables and factors related with smoking along with depression were assessed by univariate analysis. The statistically significant variables were finally put to logistic regression model for stepwise exclusion of non-significant variables from the model and keeping the significant variables only to assess the significant factors related with depression. A p value of $<0.05$ was decided to be significant.

The respondents were from 15 to 18 years from 9th to 11th grade, with an average of 17.0±1.1 years, mainly Muslims (97 %) and mostly living in nuclear family (78.8%) consisting of a least number of 3 members while 21.2% came from joint family with a highest 23 members. Most of the respondents' fathers were well educated (58.2%) followed by 35.8% some education; on the other hand most their mothers had some education (64.2%) followed by 26.7% good education. As described in Table I, 66.1% were smokers and nearly (49.1) half were depressed with about 39% of smoking parents.

Various factors were analyzed to check the association pattern with depression (Table I). It was found that depression was significantly related with smoking ($\chi^2$=19.69, p=<0.001) of the respondents as well as their parents smoking ($\chi^2$=7.52, p=0.006), domestic violence ($\chi^2$=18.4, p=<0.001), stressful events in the life ($\chi^2$=21.38, p=<0.001), failure in love ($\chi^2$=12.6, p=0.002), and familial disharmony ($\chi^2$=18.44, p=0.001).

**Table I:** Comparison of outcome of large chalazion between two procedures.

| Socio-demography | Mean±SD | Minimum-Maximum |
|---|---|---|
| Age | 17.0±1.1 | 15-18 |
| Family size | 5.5±2.3 | 3-23 |
| Smoking Starting Age | 14.3±1.7 | 10-17 |
| Family type | Frequency | % |
| Nuclear Family | 130 | 78.8 |
| Join Family | 35 | 21.2 |
| Fathers education | | |
| No or poor education | 10 | 6.1 |
| Some education | 59 | 35.8 |
| Good education | 96 | 58.2 |
| Mothers education | | |
| No or poor education | 15 | 9.1 |
| Some education | 106 | 64.2 |
| Good education | 44 | 26.7 |
| Smoker | 109 | 66.1 |
| Parents smoker | 64 | 38.8 |
| Depressed | 81 | 49.1 |

**Table II:** Analysis of different factors with depression

| Analyzing factors | Normal (%) | Depressed (%) | Total (%) | p |
|---|---|---|---|---|
| Smoking history | | | | |
| No | 42(75.0) | 14 (25.0) | 56 | <0.001 |
| Yes | 42(38.5) | 67 (61.5) | 109 | |
| Parents Smoking | | | | |
| No | 60(59.4) | 41(40.6) | 10 | 0.006 |
| Yes | 24(37.5) | 40(62.5) | 64 | |
| Domestic violence | | | | |
| No | 69(62.7) | 41(37.3) | 110 | <0.001 |
| Yes | 15(27.3) | 40(72.7) | 55 | |
| Stressful life | | | | |
| No | 64(66.0) | 33(34.0) | 97 | <0.001 |
| Yes | 20(29.4) | 48(70.6) | 68 | |
| Failure in love | | | | |
| No | 32(54.2) | 27(45.8) | 59 | 0.002 |
| Yes | 19(33.3) | 38(66.7) | 57 | |
| Not applicable | 33(67.3) | 16(32.7) | 49 | |
| Familial disharmony | | | | |
| No | 71(66.4) | 36(33.6) | 107 | <0.001 |
| Yes | 13(22.4) | 45(77.6) | 58 | |

All the variables were put to logistic regression model to check the effects of them on depression. It was found that smoking history, stressful life and family disharmony were independent predictors to have been associated with depression (Table III).

**Table III:** Logistic regression to assess the effects of factors on depression

| Plausible factors | OR (95% CI) | p |
|---|---|---|
| Smoking history | 0.295 (0.128-0.679) | 0.004 |
| Stressful life | 0.426 (0.195-0.928) | 0.03 |
| Family disharmony | 0.171 (0.077-0.380) | <0.001 |

**Discussion:**

Depression in early childhood has become evident through studies. Nearly half of the students in this study were depressed within 15-18 years of age. Also nearly two third of them already started starting age was about 14.3±1.7 years ranging from 15 to 19 years. The Global Adult Tobacco Survey 2009 in Bangladesh revealed[6] 15-16 years to be the peak age of depression in adolescents. Patton et al[11-14] found gradual increase of depressive status in adolescents with increasing age from around 11 years. These studies also found co-existence of smoking initiation around 12 to 16 years (13.5±0.6 years). This is the age when the children actually begin to mingle with their friends creating a circular bunch where there is ample scope of co-morbid association of depression and smoking.

There were other factors which came out to be associated with depression other than smoking. Smoker parents, domestic violence, familial disharmony, stressful life, unsuccessful affair were significantly associated with depression. Studies[15-17] from different countries revealed that depression is associated with smoking of parents and violence in family or with friends which ultimately lead to smoking of adolescents hence further enhancing the depressive mood even lead to abstinence from taking food[18] which can also increase the risk of hypertension[19] in adolescents. Domestic violence[20] and stressful life events[21] were revealed in studies to be associated with depression in adolescents. Similar studies revealed[22] parental depressive symptom and parental negative attribution lead to adolescent depression.

**Conclusion:**

Though past history of smoking, stressful life event and familial disharmony were associated with depression, there is scope for deciding on the causative factor/s with further longitudinal studies as the causative role of smoking on depression can't be asserted solely on the basis of a cross-sectional study.

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