ISSN NO. 2320-5407

Journal homepage: http://www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH

RESEARCH ARTICLE

Depression and its associated factors in 13-19 years old rural adolescents

Farzana Islam Khan[1], Mithila Faruque[2], Rabeya Sultana[3], Nasreen Nahar[4] and Begum Rowshan Ara[5]
Department of Reproductive and Child Health (RCH), Bangladesh University of Health Sciences (BUHS), 125/1, Darus Salam, Mirpur, Dhaka-1216.

Manuscript Info

Manuscript History:

Received: 11 November 2013
Final Accepted: 29 December 2013
Published Online: January 2014

Key words:
Depression, Adolescent, Smoking.

Abstract

Purpose
There is a dearth of research on the prevalence of depression in adolescent from rural areas in the Bangladesh subcontinent. Therefore, the present study was aimed at assessing the level of depression and the associated risk factors in the rural adolescents in Bangladesh.
Methods
This was a cross-sectional, household-based epidemiological study involving only 151 adolescents from 13 to 19 years age group. The Center for Epidemiologic Studies Depression Scale (CES-D) was used to measure the presence of depression. Other risk factors were evaluated by a number of questions; a semi-structured interview was used to diagnose depression in this sample.
Results
Using CES-D scale, prevalence of depression was 53.6% (n = 151); smoking (OR 0.254, CI 1.730-2.273), domestic violence (OR 0.337, CI 1.590-2.061), and stressful events in life (OR 0.269, CI 1.666-2.132) emerged as significant predictors of depression; the model explained 24.1–32.3% of the variance in this sample.
Conclusion
The present study confirms the findings from previous studies that childhood depression is a distinct diagnostic entity affecting a significant number of adolescents.

Introduction

Depression is a serious health problem that can affect people of all ages, including children and adolescents. At any given time, up to 15 percent of children and adolescents have some symptoms of depression[1,2] and The incidence of depressive disorders markedly increases after puberty[3]. Adolescent depressive disorders often have a chronic, waxing and waning course, and there is a two to four fold risk of depression persisting into adulthood[4,5]. Depression impacts growth and development, school performance, and peer or family relationships, and it can be fatal. Major depressive disorder is a leading cause of youth suicidal behavior and suicide[6,7]. In the United States the prevalence has been shown to be as high as 8.3 percent. This is similar to findings in European countries[8-10].

It is well recognized that adolescence is a major transitional period in a person's life including unusually large cognitive, emotional, social, and physical changes[11,12]**.** Recent neurobiological research indicates that adolescents, around puberty in particular, may be overly sensitive to stress as compared with children and adults[13]. Adolescence has been described as a sensitive period due to brain development, a phase in the life-span where vulnerability towards development of depression is heightened[14]. In general, adolescents experience stressful situations such as those concerning family relations, school performance, interpersonal relationships (friends and romantic partners), and financial restraints[15,16]**.** If demands of these situations exceed the individuals' capacity to cope, there will be an increased risk of depression, anxiety, and/or drug and alcohol abuse. According to UNICEF report 2010; it is

estimated that around 20 per cent of the world's adolescents have a mental health or behavioral problem. Depression is the single largest contributor to the global burden of disease for people aged 15–19 in middle-to-high income countries[17]. Globally, an estimated 71,000 adolescents commit suicide annually, while up to 40 times as many make suicide attempts. The prevalence of mental disorders among adolescents has increased in the past 20–30 years; the increase is attributed to disrupted family structures, growing youth unemployment and families' unrealistic educational and vocational aspirations for their children.

Adolescents living in rural communities may experience unique stressors related to the socio-cultural context of rural environments, such as geographic isolation, loneliness, limited access to health services, and economic volatility related to heavy reliance on primary industries (e.g., agriculture, mining, and fishing)[18,19]**.** These distinctive characteristics may limit the generalizability of findings from urban and suburban samples to rural youth. For example, Atkins et al and Krantz et al[20] compared levels of stress in a sample of rural and urban youth and found rural and urban youth reported similar levels of overall stress; however, rural youth reported significantly more life event stressors than urban youth.

Adolescents living in rural communities may be at significantly higher risk than urban or suburban adolescents for engaging in health risk behaviors, such as early sexual initiation, tobacco, alcohol, and other drug use, and violent behavior (e.g., carrying a knife, club, or gun to school) (Atav & Spencer, 2002). Previous research has identified particular rural community characteristics, rather than rurality in itself, as relevant to mental health outcomes. These include: poorer physical health; rapid social change caused by globalization; higher poverty and unemployment compounded by higher priced commodities[21-25]; fewer educational opportunities[22]; fewer social opportunities and social exclusion for defying community norms[25]; unpredictable environmental issues (i.e. drought, bushfire); lack of facilities and specialists; risky and health practices (i.e. increased alcohol consumption and tobacco use)[24]; and socioeconomic status (SES)[26,27]**.**

So, this study aims at assessing the presence of depression in rural adolescents at 13 to19 years of age and secondly, to identify individual and family factors associated with adolescents' depressive symptoms.

Materials and Methods

This cross sectional descriptive type of study was done purposively on 151 rural male adolescents between 13-19 years of age at Dhamrai Upazilla from January to June 2013, using a pre-tested semi-structured questionnaire and a standard depression scale. It was designed to include socio-demographic information, level of depression, information about depression and factors associated with depression. The socio-demographic data included age, religion, family type, number of family members, parents' education and occupation. Information about depression includes smoking habit of the respondents, domestic violence and stressful events in the recent year of the respondents. A written informed consent was taken from each of the respondents in maintaining full autonomy of the participants. Data were collected by using self administered questionnaire. Collected data were checked, edited and entered the coded questionnaire in SPSS 19.0 version (Statistical Package for Social science) for analysis. Frequency, mean, standard deviation, chi square test and logistic regression were used for analysis.

The Center for Epidemiologic Studies Depression Scale (CES-D) was used to measure the presence of depression. Smoking behavior, domestic violence and stressful events were measured by a number of questions.

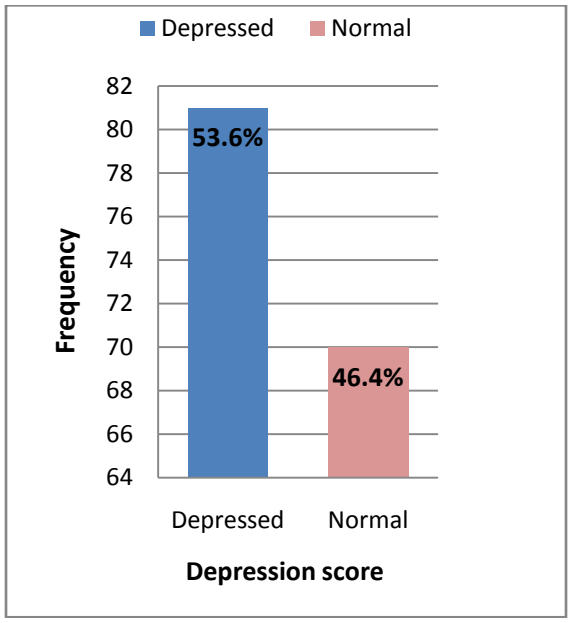
Results

Table 1: Socio-demographic features of the respondents (n=151)

Variables	**Mean±SD**	**Minimum-Maximum**
Age	16.8±1.9	13-19
Smoking Starting Age	14.3±1.8	10-18
Family size	6.7±2.6	3-15
	Frequency	**Percentage (%)**
Family type		
Nuclear Family	70	46.4
Joint Family	81	53.6
Parents alive		
No	10	6.6
Yes	141	93.4

Fathers education		
No or poor education	68	45.0
Some education	48	31.8
Good education	35	23.2
Mothers education		
No or poor education	96	63.6
Some education	43	28.5
Good education	12	7.9
Fathers Occupation		
Service	62	41.1
Business	68	45.0
Retired	21	31.9
Mothers Occupation		
Service	17	11.3
Business	23	15.2
Home maker	111	73.5

The respondents were from 13 to 19 years, with an average of 16.8±1.9 year, majority (73.5 %) of them were Muslims and more than half (53.0%) living in joint families with the highest 15 family members. Most (93.4%) of the respondents' parents were alive and 45% of their fathers had no or poor education followed by 31.8% had some education and 23.2% had Good education; on the other hand most (63.6%) of their mothers had no or poor education, 28.5% had some education and only 7.9% had good education. Most (45.0%) of their fathers were doing business, 41.1% were service holder and 31.9% were retired. And most (73.5%) of their mothers were home makers.



Among the total respondents 53.6% (81) were found depressed and 46.4% (70) had no signs of depression

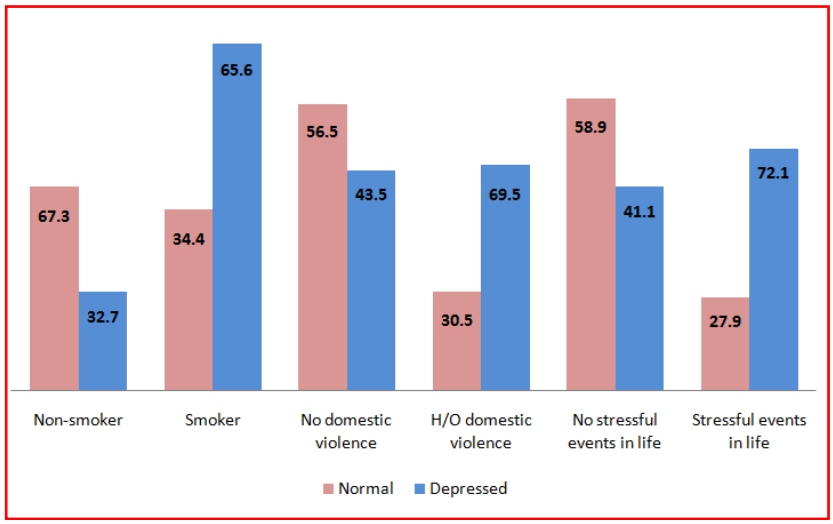
Fig 1: Proportion of adolescent with depression

Table-2: Association between Depression and other factors

Analyzing factors	Depression Score (%)		Total (%)	P Value
	Normal (%)	Depressed (%)		
Smoking history				
No	37(67.3) 52.9	18(32.7) 22.2	55(100) 36.4	χ^2=15.21<0 .001
Yes	33(34.4) 47.1	63(65.6) 77.8	96(100) 63.6	
Domestic violence				
No	52(56.5) 74.3	40(43.5) 49.4	92(100.0) 60.9	χ^2=9.78 0.002
Yes	18(30.5) 25.7	41(69.5) 50.6	59(100.0) 39.1	
Stressful events in life				
No	53(58.9) 75.7	37(41.1) 45.7	90(100.0) 59.6	χ^2=14.06<0 .001
Yes	17(27.9) 24.3	44(72.1) 54.3	61(100) 40.4	
Parents Smoking				
No	42(51.3) 60.0	40(48.8) 49.4	82(100) 54.3	χ^2=1.69 0.193
Yes	28(40.6) 40.0	41(59.4) 50.6	69(100.0) 45.7	
Total	70(46.4) 100	81(53.6) 100	151 100	

Various factors were analyzed to check the association pattern with depression (Table 2). Depression was significantly related (p=<0.001) with smoking of the respondents, two-third (65.6%) of the smokers were depressed compared to non-smokers. The rate of depression was higher among the respondents with H/O domestic violence (p= <0.002), stressful events in the life (p= <0.001). No significant association was found with parents' smoking.

Fig 2: Smoking and family factors related to depression



This figure shows that depression is higher among the respondents who were smoker and had a history of domestic violence and stressful events in life.

Table-3: Effects of different factors on depression

Plausible factors	OR (95% CI)	P value
Smoking	0.254(1.730-2.273)	<0.001
Domestic violence that lead to leave home	0.337(1.590-2.061)	<0.001
Stressful events in the life	0.269(1.666-2.132)	<0.001

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 domestic violence were independent predictors to have been associated with depression (Table 3).

Discussion

This was a cross sectional study based on depression status of rural adolescent students aged 13 to 19 years at Dhamrai Upazilla. The Center for Epidemiologic Studies Depression Scale (CES-D) was used to measure the presence of depression. Smoking behavior and other factors were measured by a number of questions. The study was aimed to find out the factors related to depression among the rural adolescents.

In this study mean age of the respondents was 16.8±1.9 year (age range 13 to 19) that means class 9 to class 12 students. Majority (73.5 %) of them were Muslims and more than half (53.0%) came from joint families with the highest 15 family members. Only 23.2% of their fathers and 7.9% of their mothers had Good education; and most (73.5%) of their mothers were home makers. Smoking starting age was found 14.3± 1.8 years, which represents the Global Adult Tobacco Survey 2009 in Bangladesh, earlier showed nearly 19 percent smokers started smoking between 10 and 15 years of age, while 25 percent between 15 and 16 years[28].

Depression in early childhood has become evident through studies. More than half of the respondents (53.6%) in this study were depressed which is higher than another study in Kenya, where depressive symptoms (not depressive diagnoses) have been found to be as high as 43.7% [29] with similar figures found in other studies across the globe[30-31]. Depressive disorders have been shown to occur in approximately 2% of primary school going children, and 4% to 8% of adolescents[32-33]. In this study it was found that among the 151 respondents 96(63.6%) were smoker and depression level was double (65.6%) in smoker than non smoker (32.7%), this association was statistically significant (p <0.001). On other study shows, among respondents, 22% were smokers and 33% had depressive symptoms. The prevalence of depressive symptoms was significantly higher in smokers (42.9%) than in nonsmokers (29.5%). Respondents with depressive symptoms had increased odds of smoking even after adjusting for socioeconomic and cultural factors (OR = 2.68, 95% CI = 1.45-4.97)[34].

There were other factors which came out to be associated with depression other than smoking, like domestic violence, stressful events in life were significantly (p<0.001) associated with depression. Among the depressed 50.6% had a history of domestic violence and the rest did not give any history of domestic violence. More than half (54.3%) of the depressed adolescents gave the history of occurrence of stressful events in life. Studies[35-37] 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. However, in this study no relation was found between parents smoking and depression.

Conclusion

Regardless the limitations, this study identifies factors related to depressive symptoms in a little sample comprising rural adolescent at 13 to 19 years of age, from a nonclinical population. We consider that the prevalence of depressive symptoms found in our study (53.6%) calls for the awareness of public health professionals and politicians and justifies being alert to adolescents' own indications of distress, already in the early phase of adolescence. Besides this, as the course of adolescents' depressive symptoms has been noticed to resemble that of major depression, using self-reported screening questionnaires may help identifying these adolescents in order to guide them to appropriate helping interventions.

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