

PREVALENCE OF DEPRESSION IN PRIMARY SCHOOL STUDENTS IN MOSUL

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ABSTRACT

Major depressive disorder (MDD) is defined as having 5 of 9 DSM-related symptoms, one being depressed mood/irritability or anhedonia, at the threshold level for at least 14 days. Dysthymia is defined as having 3 of 7 symptoms, one being depressed mood/irritability lasting at least one year. A diagnosis of depression is defined according to the DSM-IV criterion as having 2 - 4 out of 9 symptoms, including at least one of the main criteria, for 14 days or longer. Short Brief Recurrent Depression is defined as a recurrent episode of at least 5 of 9 symptoms lasting less than 2 weeks. Untreated depression it is the number one cause of suicide today, among young people. The Aim of this study is to assess the prevalence of depressive disorders among sixth grade students attending public primary schools. That two hundreds was randomly selected, Boys=100 (50%), Girls=100 (50%) were subjected to (M.I.N.I.-KID) For Children and Adolescents, English Version 5.0, it shows that the prevalence of major depressive illness among primary school students was found to be (21%), (Boys 24%, Girls 18%) Statistically significant difference was found between age groups age > 12 years & not living with both parents were significant risk factors.

KEYWORDS: Depression, primary, school.

INTRODUCTION AND LITERATURE REVIEW

Background

Depression, which affects about 121 million people worldwide, At its worst, depression can result in suicide, with the loss of about 850,000 lives every year.^[1] Depression is the leading cause of disability and the fourth leading contributor to the global burden of disease in 2000.^[2]

It is estimated to be the second most common cause of disability in all ages worldwide by 2020.^[3]

This evidence means that depression generates a remarkable disease burden. In addition to its effects on individual health, depression also increases overall health-service costs.^[4]

Definition

Depression is a part of normal experience to feel unhappy at time of adversity, while “depressive disorder” (unipolar depression) are mental illness characterized by profound and persisting feeling of sadness or despair and/or loss of interest in things that once pleasurable.^[5]

Depression is an episodic, recurring disorder characterized by persistent and pervasive sadness or unhappiness, loss of enjoyment of everyday activities, irritability, and associated symptoms such as negative thinking, lack of energy, difficulty concentrating, and appetite and sleep disturbances.^[6] Manifestations can vary according to age, gender, educational and cultural background.^[7]

Depressive disorders in children and adolescents are among the most common and more disabling mental health problems.^[8] Depression is a major factor in adolescent suicide, substance abuse, and a common cause of school failure and school dropout, physical illness, early pregnancy, poor academic performance, impaired psychosocial functioning, and exposure to negative life events.^[9]

Although there are similarities, depression in children may manifest itself differently than depression in adults.

Many questions remain about the course and outcome of depression in children and adolescents. Only recently has research on juvenile depression emphasized standardized clinical assessment, clear diagnostic criteria, and

rigorous methods. Clearly, much more research about childhood depression is needed.^[10]

Epidemiology

Depression, in referred samples of school-age children, is about the same in boys as in girls, with some surveys indicating a slightly increased rate among boys.^[11] Among adolescents, reported rates of major depression range from 1 percent to about 6 percent in community samples, and the rate of depression among adolescent girls is double the rate in adolescent boys.^[12] Reported rates of dysthymic disorder are generally lower than those of major depressive disorder, with rates of 5 of 100,000 in prepubertal children compared with 1 percent for major depressive disorder.^[13] School-age children with dysthymic disorder have a high likelihood of developing major depressive disorder at some point after 1 year of the dysthymic disorder.^[14] In adolescents, as in adults, dysthymic disorder is reported to occur in about 5 of 1,000 adolescents compared with about 5 percent for major depressive disorder.^[15,16]

According to Literature review in depression show that 13.2% of primary school children were clinically depressed.^[14] Prevalence rates of various depressive disorders aged 14-16 years in were estimated for community residing adolescents Central Norway in Europe, the prevalence of major depression registered.^[18] 2.7% among 13-18-year old in the Netherlands.^[19] and 5.0% among 13-15-year old in Switzerland.^[20] ranges from a 1-year prevalence among 14 17-year old of 3.4% in Germany.^[16] and of 16-17-year old of 5.8% in Sweden^[17] to a 6-month prevalence of 1.9% among 15-year-olds in the UK.^[18]

Review of Literature					
No	Year	Country	Reference No	Age	Prevalence
1	2007	China	14	Primary school age	13.2%
2	2011	Central Norway	15	14-16 Years	2.6%
3	1999	Germany	16	14-17 Years	3.4%
4	1999	Sweden	17	16-17 Years	5.8%
5	2003	UK	18	15 Years	1.9%
6	1997	Netherlands	19	13-18 Years	2.7%
7	2003	Switzerland	20	13-15 Years	5.0%

Aims Of Study

The aim of this study is to determine the prevalence of depression in primary school students in Mosul city.

1.5 Specific objectives

To estimate the prevalence of depressive disorders among sixth grade students attending primary schools in Mosul city in Iraq.

To correlate sociodemographic variables and clinical data as a predictor risk for depressive illness.

PATIENTS AND METHODS

Study Setting

The study was conducted in Mosul province that is located in Northwestern Iraq. The province covers an area of 32,308 km² With 3,500,000 population.^[61] It is one of the biggest provinces of Iraq.

In Mosul city there is 495 primary schools, and the number of the students was 231,427.

The study was done in ten primary schools at different areas in Right & Left side in Mosul city, five schools for boys & five for girls

Study Design

This study is descriptive cross-sectional study was carried in order to achieve the objectives of the present study.

Period of study

The study started at November 20, 2017 to May 20, 2018 over six months period.

Study population

Study population was as sample of children and adolescent, (**at sixth grade**) who attend primary schools in Mosul City. This age group was Selected because they are more likely to understand and respond accurately to questions than younger children. The reason that students of the age > 12 years in the sixth grade probably due to different causes first because of war against ISIS, other causes such as bad security situation, or the students working through scholastic years due to poor socioeconomic status of their families.

Analysis of data

All the data were analyzed with (SPSS v 22.0) package software for windows.

Chi-square test was used to determine significance of association between sociodemographic factors and depression in a study sample.

Odds ratio was calculated by using the following equation:

$$OR = (axd) / (bxc)$$

P_ value < 0.05 was considered to be statistically significant prevalence rate have been calculated in order to describe the characteristic of the study population.

RESULTS

Distribution of depressive disorders in primary schools students according to gender

Table(1) Shows the distribution of depressive disorders according to gender, that demonstrate no statistically significant difference between male and females(P_ value <0.05),and female gender is protective factor at this age group against depression (OR<1).

Table (1): Distribution of depressive disorders in primary schools students according to gender.

Gender	MDD	Frequency	Percent	p-value	OR
Females	No	82	82	0.297	0.7
	Yes	18	18		

	Total	100	100.0		
males	No	76	76	0.297	1.44
	Yes	24	24		
	Total	100	100.0		

*chi square test was used

Distribution of depressive disorders according to age

Table(2) shows that twelve years old and younger have the lowest prevalence of depressive disorders, and that older age group more than twelve years old shows a statistically significant difference from the younger age group, and this younger age group more protective factor against depression (OR<1).

Table (2): Distribution of depressive disorders according to age.

Age (Years)	MDD	Frequency	Percent	OR	p-value
<=12	No	94	86.24	0.38	0.0059
	Yes	15	13.76		
	Total	109	100.0		
>12	No	64	55.0	2.64	0.0059
	Yes	27	45.0		
	Total	91	100.0		

*chi square test was used

Distribution of depressive disorders according to familial status of parents of the students

Table(3) shows that students living with both parents have the least prevalence of depressive disorders, and that students who live with single parent ,both parents

and other relatives shows a statistically significant difference,(P-value <0.05),but living with both parents is a protective factor (OR<1).

Table (3): Distribution of depressive disorders according to familial status of parents of the students.

Familial Status	MDD	Frequency	Percent	P-value	OR
Living with both parents	No	141	83.43	0.0003	0.24
	Yes	28	16.57		
	Total	169	100.0		
Living with single parent	No	11	55	0.0054	3.64
	Yes	9	45		
	Total	20	100.0		
Living with other relative	No	6	54.54	0.0405	3.42
	Yes	5	45.45		
	Total	11	100.0		

*chi square test was used

Distribution of depressive disorders according to economic status;

Table(4) shows that no statistically significant difference between high, moderate economic status but it is

statistically significant difference in in low economic status(p-value<0.05).

Table(4): Distribution of depressive disorders according to economic status.

Economic Status	MDD	Frequency	Percent	p-value	OR
High	No	46	83.64	0.321	0.66
	Yes	9	16.36		
	Total	55	100.0		
Moderate	No	92	80.70	0.781	0.91
	Yes	22	19.30		
	Total	114	100.0		
Low	No	20	64.52	0.031	0.031
	Yes	11	35.48		
	Total	31	100.0		

*chi square test was used

Distribution of depressive disorders according to educational score

Table(5) shows that no statistically significant difference between good and accepted educational score but there

is significant difference among those with weak educational score, it also demonstrate that good educational score is protective against depression (OR<1).

Table (5): Distribution of depressive disorders according to educational score.

Educational Score	MDD	Frequency	Percent	P-value	OR
Good	No	45	86.53	0.121	0.5
	Yes	7	13.46		
	Total	52	100.0		
Accepted	No	74	85.06	0.065	0.51
	Yes	13	14.94		
	Total	87	100.0		
Weak	No	39	63.93	0.00053	33.36
	Yes	22	36.7		
	Total	61	100.0		

chi square test was used*

DISCUSSION

Distribution of depressive disorders in primary schools students according to gender

Distribution of depressive disorders in primary schools students according to gender in this study shows that the rate in male is 24% and in females 18% with p value =0.398 (p >0.05) so it statistically not significant difference between male and females, with a male to female ratio of 1.3:1,so this study shows that male gender has more prevalence of MDD and this is not the same in studies done elsewhere which showed female gender to be a risk factor, as reported rates by gender tend to reveal a greater difference in prevalence rates in European surveys.^[21] For example, in Germany, a girls/boy's ratio of 1.9:1 was found.^[22] but in Sweden and in Switzerland, the corresponding rates were 4.1:1 and 8.9:1, respectively. Thus, the lower rates of

adolescent depression in Europe may reflect lower rates among boys.^[23]

Kandel and Davies show that depression delinquency increase among boys compared with girls.^[24] as in this study in Mosul city. Also, In Oman boys were unexpectedly (but non-significantly) more likely to have depressive symptoms than girls.^[25]

Research articles about depressive disorders mention unequal results, as Larsson et al and Garrison et al obtained equal rates between females and males.^[26] whereas Kessler & Walters and Olsson & von Knorring found higher rates in females compared to males, Anderson et al and Garrison et al obtained higher rates in males.^[27]

In the Alexandria set of data were significantly boys less likely to be depressed than girls^[28] unlike this study in

Mosul where boys more than girls, This could be explained by the fact boys exposed to much stress than girls due to problems of security situation which is the an important risk factor for the development of MDD in primary school students.

Distribution of depressive disorders in primary schools students according to age

This study showed that twelve years old and younger had the lowest prevalence of depressive disorders (13.76%), than that older age group more than twelve years old (45%) so this result shows a statistically significant difference from the younger age group, Analysis of the effect of age group showed that (>12y) group had statistically significant difference ($p=0.0059$ that is <0.05) as a risky factor, this is not the case in other studies which showed that older age group is more social & occupational responsibilities than younger age group.

Reinherz et al in the US, found a rate of 21% in primary schools students aged 13 -16 years old (>12years old)^[29] that is less than this study in Mosul primary schools students. Charman in Britain obtained a rate of 8% in 286 students aged 12 to 16(>12years old)^[30] that is also less than this study in Mosul primary schools students. Curatolo in Brazil, studying 578 students aged 7 -12(<12 years old), with a rate of 21.2%.^[31] that is also less than this study in Mosul primary schools students more than twelve years old. Therefore, the age factor in adolescent depression is according to what was observed in the data presented still a controversial issue and open to further research.

Distribution of depressive disorders in primary schools students according to familial status of parents of the students.

This study shows that students living with both parents have the least prevalence of depressive disorders that show low percentage as(16.75)%, in compared with students who live with single parent (45%) ,So there is statistical significant difference from those who live with both parents,& Thus living with a single parent or other relatives can result from divorce of parents or may due to death of one or both parents after the war Mosul city ,This study is similar to a study in Norway done at 2010 in primary schools, shows a statistical significant difference from those who live with both parents in compared to whom not living with two biological parents.^[32] In China a study done in primary schools in 2012,which revealed higher prevalence of MDD in children living with other relatives (65%) that is higher than this study in Mosul that revealed the percentage (45.45)%, China's special national conditions determine that there is only one child in one Chinese family, most of parents try their best to love the only child. So ,the poor relationship between parents could reduce the care of the child and cause depression.^[33] It is likely that negative psychosocial factors resulting from parental divorce such as decreased income, moving, custody

conflicts, and a burdened situation with parents often lacking time and resources to monitor and support adolescents, may contribute to the development of depressive symptoms.^[34]

Distribution of depressive disorders according to economic Status

Low economic status is generally associated with high psychiatric morbidity, disability, and poor access to health care. In countries where comparable epidemiologic studies have been carried out⁽³⁵⁾. This study showed statistically significant difference in low economic status(P value <0.05). According to Morgan as cited in Shahnazi, 2008, poverty and race may put children and adolescents at risk of depression, that revealed high percentage (58%)^[36] that is higher than the percentage in our study that show (35.48%).

A study of (Blakely, Collings, &Atkinson, 2003) over two thousands New Zealand children and adolescents in primary schools over a three years period showed that severe depression was more strongly associated with parents working in primary industry that is in low socio-economic class compared with higher socio-economic class^[37] that is similar to our study that revealed high percentage of depression in low socio-economic state (35.48%) in compared to higher socio-economic is (16.36%).

Distribution of depressive disorders in primary schools students according to educational score

Educational score has also been considered as a relevant factor to affect the development of depression among children and adolescent in primary schools.^[41] The result of this study showed that good & accepted.

Educational score are protective against depression ($OR<1$),and also showed that the highest percentage of depression (36.7)% among weak Educational Score, and the least percentage of depression is among good Educational Score (13.46%),also our study demonstrated that no statistically significant difference between depression and educational score of the students, this study is inconsistent with study in Erbil 2013 about the relation of depression and educational score of children and adolescent in primary schools, that shows statistically significant difference between depression and educational score of the students, but also shows high percentage of depression among whom with weak educational score.^[42]

Conclusions & Recommendations

1. The findings of the current study revealed that depression was common in primary schools students.
2. It was found that depression predominated in older age group more than 12 years,& in students who lived with single parent or with other relative.

3. It was found that Being younger or equal to 12 years or living with both parents all were protective factors (OR<1).
4. It was concluded that, this study adds to other studies the possibility of high rates of major depressive disorder, dysthymia, suicidality among students in primary schools that needs the attention of the specialists& the families plus the stake holders to take action.

RECOMMENDATIONS

1. Performing more studies about the prevalence and risk factors for mental illness in primary schools students.
2. Similar studies is recommended to be done for students of secondary schools, institutes and universities.
3. Advise to do psychiatric assessments in any suspected students for any mental disorders that may affect the prognosis and compliance with treatment.
4. If communities want to do something positive on this issue they can look at how mental health screening and services are being provided in the schools, ensure that there are enough school support staff (social workers, counselors, school psychologists) to assist students, and check to see if mental illness is included in the health curriculum. It can ensure that there are policies in place to assist students and that mental health services are available, including a 24 hour hot line.

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