Prevalence and Risk factors of Major Depressive Disorder and Suicidal Attempts among Depressed Patients in Duhok City

Yousif Ali Yaseen*

* Psychiatrist, College of Medicine/University of Duhok, Email: yousif.ali@uod.ac

Abstract

Background and objectives: Major depressive disorder is a common and serious mental disorder. The aim of the study was to assess the prevalence and risk factors of major depressive disorder and to study the methods and risk factors of suicidal attempts among depressed patients. **Methods:** Through cross sectional study, (637) patients were selected randomly among those who consulted out-patient psychiatric clinic in Azadi Teaching Hospital in Duhok City from July 2008 to July 2009. Structured Clinical Interview for DSM-IV Axis I Disorders-Patient Edition (SCID-I/P) was applied to diagnose patients with major depressive disorder. **Results:** The prevalence of major depressive disorder was 23.9%, it was more prevalent among females 67.7% (p<0.001), youngest age group 38.2% (p<0.001), married 59.2% (p<0.001) and those who had < 6 children 64.6% (p=0.021) with statistically significant association. The prevalence of suicidal attempt among depressed patients was 12.5%, it was more common in females 89.5% (p=0.035) and youngest age group (p=0.047) with significant association. The commonest method of suicidal attempt was drug ingestion 68.4%, whole cases were female, while only 10.2 % of males attempted suicide and they used gun. **Conclusions:** The prevalence of major depressive disorder appeared high; the risk factors included female, young, housewives and those who had fewer children (<6). The prevalence of suicidal attempts among depressed patients appeared high too; female and young were only risk factors. Majority of the suicidal attempters were females and drug ingestion was the commonest method used.

Keywords: Major Depressive Disorder; Suicidal attempts; Duhok City.

Introduction

Major depressive disorder (MDD) is a common mental disorder, considers the leading cause of disability worldwide, and is a main contributor to the overall global burden of disease[1]. Major depressive disorder consists of low mood and/or loss of interest in usual daily activities, accompanied by psychomotor and cognitive symptoms, and representing deterioration from the individual's usual level of functioning[2]. Hippocrates used the terms melancholia to describe depression which literally means black bile[3]. The symptoms of MDD often exacerbate one another; they involve five areas of functioning: emotional, motivational, behavioral, cognitive, and physical, which cause impairment of occupational performance and the ability to sustain personal relations[4-5].The precise cause of MDD is not known, the etiology is a complex interplay of multiple factors, including genetic, biochemical, psychological, and socio-environmental. It includes functional disturbance in several neurotransmitter systems, in particular, the norep

inephrine,serotonin, and dopamine. Hormonal dysregulation and sleep disturbance are also implicated in the etiology[6-7]. The incidence of MDD is 10% in primary care patients and 15% in medical inpatients; the estimated lifetime prevalence of MDD (in adults) varies from 20 to 25% for women and 5 to 12% for men[8]. Thoughts of death, suicidal ideation and attempt viewed as important criterion symptom of the disorder, which should be asked in all patients[9-10]. Major depressive disorder carries high mortality; 15% suicide rate. In depressed patients, the mortality risk for suicide is more than 20-fold greater than in the general population[10-11]. Other serious consequences of MDD are marital problems like divorce, occupational problems like loss of job, academic problems like truancy and school failure and alcohol or other substance misuse, in addition to increase utilization of medical services[12].

This study aimed to assess the prevalence rate and risk factors of MDD in Duhok City, in addition to the assessment of prevalence, socio-demographic risk factors of suicidal attempts among depressed patients, and common methods of suicide used.

Patients and Methods

This cross sectional study carried out in psychiatric out patient clinic in Azadi Teaching Hospital in Duhok City from July 2008 to July 2009, in which (637) patients who were 18 years old and more of both genders were selected randomly. Structured Clinical Interview for DSM-IV Axis I Disorders-Patient Edition (SCID-I/P) (version 2.0) was applied to diagnose patients with MDD[13]. The socio-demographic data included the residence (urban and rural areas); in this study the centers of the districts in Duhok Governorate were regarded as urban areas only (Duhok, Zakho, Semel, Amedi, Akhre and Shekhan). Statistical Package for the Social Sciences (SPSS), version 21, was used for data analysis. Pearson Chi Square and Fisher's Exact Test were used to assess the association between two categorical variables. A p-valuen <0.05 was considered statistically significant.

Results

The prevalence rate of MDD appeared to be 23.9% (152 cases) among the (637) patients who consulted out-patient psychiatric clinic.

Socio-demographic characteristics in MDD (Table 1):

Most of the cases were females 106(69.7%), with high statistical significant association between the gender and MDD (p<0.001). Youngest age group (18-25 years) comprised the majority 58(38.2%), the association of MDD to age appeared statistically significant (p<0.001). Regarding the educational level, most of the cases were illiterate 65(42.8%), the association of the education to MDD was statistically not significant (p=0.445). Majority of the cases were married 90(59.2%) followed by single 42(34%), the association between MDD and marital status appeared statistically significant (p<0.001). Seventy-five cases (49.3%) were housewives, high significant association between MDD and the occupation found (p<0.001). Thirty-two cases (32.3%) among married, widowed and divorced had 0-3 children and similar number had 4-6 children, statistically there was significant association between MDD and number of children the patients had (p=0. 021). Although 91(59.9%) patients were from urban areas, but statistically no significant association between MDD and residence found (p=0.373).

Table (1): Mean EBNA IgG titer according to the activity of MS.

Variables		MDD		Total	P- value
		Positive No. (%)	Negative No. (%)		
Gender	Female	106(69.7)	252(52)	358	<0.001
	Male	46(30.3)	233(48)	279	
Age (Years)	18-25	58(38.2)	261(53.8)	319	<0.001
	26-33	38(25)	119(24.5)	157	
	34-41	20(13.2)	55(11.3)	75	
	42-49	17(11.2)	21(4.3)	38	
	> 50	19(12.5)	29(6)	48	
Educational level	Illiterate (0 years)	65(42.8)	173(35.7)	238	0.445
	Primary (1-6 years)	37(24.3)	138(28.5)	175	
	Secondary (7-12 years)	36(23.7)	121(24.9)	157	
	Higher (>13 years)	14(9.2)	53(10.9)	67	
	Married	90(59.2)	218(44.9)	308	<0.001
	Single	52(34.2)	263(54.2)	315	
Marital status	Widowed	8(5.3)	0(0)	8	
	Divorced	2(1.3)	4(0.8)	6	

Occupation	Housewife	75(49.3)	123(25.4)	198	<0.001
	Student	27(17.8)	116(23.9)	143	
	Employed	21(13.8)	75(15.5)	96	
	Unemployed	18(11.8)	117(24.1)	135	
	Self-employed	10(6.6)	49(10.1)	59	
	Retired	1(0.7)	5(1)	6	
Number of Children	0-3	32(32.3)	112(49.6)	144	0.021
	4-6	32(32.3)	64(28.3)	96	
	7-9	29(29.3)	43(19)	72	
	>10	6(6.1)	7(3.1)	13	
	Urban	91(59.9)	281(57.9)	372	0.373
Residence	Rural	61(40.1)	204(42.1)	265	

Clinical characteristics in MDD: (Tables 3 ,2 and 4)

Among depressed patients 113 cases (73.3%) had death wishes, 51 cases (33.6%) had suicidal ideas while 19 cases (12.5%) attempted suicide, Table 2.

The commonest method of suicidal attempts was drug ingestions 13 (68.4%), all the cases were females. Two cases (10.5%) used burning for suicide (they were females) and 2 (10.5%) used gun (they were males). While one case (5.3%) attempted suicide by knife stabbing and one by hanging (both were females), Table 3.

Most of the suicidal attempters were female 17(89.5%), statistically the association between suicidal attempt and gender appeared significant (p=0.035).

Majority of the suicidal attempters 13(68.4%) were among the youngest age group (18-25), with significant association between suicidal attempt and the age (p = 0.047).

Although the suicidal attempts were more common among illiterate 5(26.3%), married 10(52.6) and housewives 7(36.8), but statistically no significant association between suicidal attempt and educational level, marital status and occupation were found (p= 0.084, 0.428 and 0.873 respectively), Table 4.

Table (2): Prevalence of death wishes, suicidal ideas and attempts in MDD

Variables	Frequency		Total No. (%)
	Positive No. (%)	Negative No. (%)	
Death wishes	113(74.3)	39(25.7)	152(100)
Suicidal ideas	51(33.6)	101(66.4)	152(100)
Suicidal attempts	19(12.5)	133(87.5)	152(100)

Table (3): Methods of suicidal attempts.

Methods	Both sexes No. (%)	Females No. (%)	Males No. (%)
Drug ingestion	13(68.4)	13(68.4)	0(0)
Burning	2(10.5)	2(10.5)	0(0)
Using gun	2(10.5)	0(0)	2(10.5)
Knife stabbing	1(5.3)	1(5.3)	0(0)
Hanging	1(5.3)	1(5.3)	0(0)
Total	**19 (100)**	**17(89.5)**	**2(10.5)**

Table (4): Association between socio-demographic characteristics and suicidal

Variables		Suicidal attempts		Total	P- value
		Positive No. (%)	Negative No. (%)		
Gender	Female	17(89.5)	89(66.9)	106	0.035
	Male	2(10.5)	44(33.1)	46	
Age (Years)	18-25	13(68.4)	45(33.8)	58	0.047
	26-33	2(10.5)	36(27.1)	38	
	34-41	2(10.5)	18(13.5)	20	
	42-49	0(0)	17(12.8)	17	
	50	2(10.5)	17(12.8)	19	
Educational level	Illiterate (0 years)	5(26.3)	60(45.1)	65	0.084
	Primary (1-6 years)	7(36.8)	30(22.6)	37	
	Secondary (7-12 years)	3(15.8)	33(24.8)	36	
	Higher (13 years)	4(21.1)	10(7.5)	14	
Marital status	Married	10(52.6)	80(60.2)	90	0.428
	Single	7(36.8)	45(33.8)	52	
	Widowed	1(5.3)	7(5.3)	8	
	Divorced	1(5.3)	1(0.7)	2	
Occupation	Housewife	7(36.8)	68(51.1)	75	0.873
	Student	4(21.1)	23(17.3)	27	
	Employed	3(15.8)	18(13.5)	21	
	Unemployed	3(15.8)	15(11.3)	18	
	Self-employed	2(10.5)	8(6)	10	
	Retired	0(0)	1(0.7)	1	
Total		**19(100)**	**133(100)**	**152**	

Discussion

In this study, the prevalence rate of MDD was (23.9%), is slightly higher than the rate of Ponnudurap et al study (17-20%), while this percentage is much lower than what reported by Salokangas et al study (50%), which is Scandinavian study conducted in Finland, their specific climate and special social and cultural characteristics may explain the difference[14-15]. The disorder was twice more prevalent among females than males with high significant association between MDD and gender, this is compatible with Al-Hamzawi et al, Ali et al, Samuelsson et al and Anthony et al studies[16-19]. Majority of cases were among youngest age group (18-25) 38.2%, high significant association found between MDD and age, this is in agreement with Al-Hamzawi et al, Lewinsohn et al and Kessler et al studies[16,20-21]. No significant association between MDD and educational level found, the result contradicts Salokangas et al, Kessler et al and Bjelland et al studies, methodological differences from study to study specially regarding population selection may explain this difference[15,21-22]. More than 50% of the cases were married with high significant association between MDD and marital status, this result goes with Al-Hamzawi et al and Kessler et al studies[16,21]. The widowed reported as risk factor according to Salokangas et al and Ali et al studies, while the separated and divorced according to Anthony et al and Weissman et al studies[15,17,19,23]. Nearly fifty percent of the cases were housewives; MDD significantly associated with the occupation, this could be explained by that most of the cases were females and most of them were married and both were risk factors for depression in this study, while Roy study indicated that unemployment is risk factor for depression[24]. The disorder was more prevalent among those who had ≤6 children (about two third of the cases), the association of MDD to the number of children appeared significant, which disagree with the result of Roy study, this difference could be explained by that in our culture the parents who have large number of children might find some sort of social support and help from their older children[24]. Although most of the patients were from urban areas but the association of MDD to the residence appeared not

significant, which disagree with the result of Ali et al study and what mentioned by Azzam et al, the way of defining urban areas in this study which included the centers of the district only may explain the difference[17,25]. Majority of depressed patient (74.3%) had death wishes and this in agreement with what had been mentioned by Comer and Grover et al study (about two third). However, (33.6%) of the patients had suicidal ideas, this percentage is lower than what indicated by Sokero et al study (appeared 58%) and Grover et al study (appeared >50%) studies[26-27]. Nineteen patients (12.5%) attempted suicide; this percentage is slightly lower than what had been reported by Sokero et al (15%) and Srivastava and Kumer (16.6%) studies, the difference in methodology especially population involved and sample size, and cultural differences could explain this difference [26,28]. The commonest method used for suicide was drug ingestion (68%), whole cases were females, and this is compatible (to a degree) with what had been mentioned by Okasha (80%)[29]. While just 2 (10.5%) of males attempted suicide and they used gun.

Regarding the suicidal attempts, vast majority of the attempters were females (89.5%), this is compatible with what reported by Kessler et al study, Okasha and Nock et al study, while according to Van Gastel et al study no significant correlation between suicidal attempt and gender found[21,29,30-31]. More than two thirds of youngest age group (68.4%) attempted suicide, significant association between suicidal attempt and age was found, similar result reported by Kessler et al, Sokerto et al, Srivastava and Kumar, and Nock et al studies, but disagree with Narang et al study (no association found between below 30-year age group and suicidal attempts)[21,26,28,30-32]. Although suicidal attempt was more prevalent among low educational level, no significant association between suicidal attempt and educational level found; this is in agreement with Narang et al study.[32] However, poor education regarded as risk factor according to Kessler et al and Nock et al studies[21,30]. More than fifty percent of the suicidal attempters were married; the association of suicide and marital status appeared not

significant, this goes with the results of Van Gastel et al study.[31] However, unmarried regarded as risk factor in Nock et al study, while both Narang et al and (Srivastava and Kumar) studies regarded single men and married women as risk factors in their studies[28,30,32]. Most of the suicidal attempters were housewife, no association appeared between suicide and occupation, and this is compatible with Van Gastel et al study, while (Srivastava and Kumar) study reported that students were more likely to attempt suicide[28,31]. The vast differences among the results of various studies about the risk factors of suicidal attempts among depressed patients could be explained by methodological differences especially with regard to ways of diagnosis and characteristics of sample studied in addition to differences in cultures and social impacts.

Conclusions

The prevalence of MDD appeared high; the risk factors included female, young, housewives and those who had fewer children (≤6). The prevalence of suicidal attempts among depressed patients appeared high too; female and young were only risk factors. Majority of the suicidal attempters were females and drug ingestion was the commonest method used.

References

1. World Health Organization. Depression. Geneva: WHO; 2016. Available from: http://www.who.int/mediacentre/factsheets/fs369/en/.

2. Gunther CS. Depression. In Ferrando ST. Psychiatry in-Review Study Guide. USA: ETAS; 2009. p. 141- 149.

3. Sadock BJ, Sadock VA, Ruiz P. Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry. 11th ed. Philadelphia: Wolters Kluwer; 2015. p. 1151- 1266.

4. Comer JR. Abnormal Psychology. 8th ed. New York: Worth Publishers; 2013. p.223-255.

5. Moore, David P. Little Black Book of Psychiatry. 3rd ed. Burlington: Jones and Bartlett Publishers; 2006. p.176-202.

6. Wang WW. Comprehensive Psychiatry Review. New York: Cambridge University Press; 2010. p.110- 118.

7. Ebert MH, Loosen PT, Nurcombe B, Leckman JF. Current Diagnosis & Treatment: Psychiatry. 2nd ed. Columbus: McGraw-Hill Education; 2007.

8. Konrad SS, Yanofski J. Unipolar Depressive Disorders. In Azzam A, Yanofski J, Kaftarian E. First Aid for The Psychiatry Boards. USA: McGraw-Hill Companies, Inc; 2010. p.19-29.

9. Kay J, Tasman A. Essentials of Psychiatry. Chichester: John Wiley & Sons Ltd; 2006. p. 533-555.

10. Hahn RK, Albers LJ, Reist C. Current Clinical Strategies Psychiatry. 7th ed. USA: Current Clinical Strategies Publishing; 2006.

11. Lépine JP, Briley M. The increasing burden of depression. Neuropsychiatr Dis Treat. 2011; 7(1): 3–7.

12. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 4th Edition, Text Revision. Washington, DC: American Psychiatric Association; 2000.

13. First MB, Spitzer RL, Gibbon M, Williams JBW. Structured clinical interview for the DSM-IV axis I disorders: SCID-I/P, version 2.0. New York: Biometrics Research Dept., New York State Psychiatric Institute. 1996.

14. Ponnudurap R. Somasundaram O, Balakrishnan S, Srinivasan N. Depression A study of 80 cases. Indian J. Psychiat. 1981; 23(3):256-258.

15. Salokangas RKR, O. Poutanen O, Stengård E, Jähi R, Palo-oja T. Acta Psychiat. Scand. 1999; (93), 6: 427–433.

16. Al-Hamzawi AO, Bruffaerts R, Bromet EJ, AlKhafaji AM, Kessler RC. The Epidemiology of Major Depressive Episode in the Iraqi General Population. PLOS ONE. 2015. doi: http://dx.doi.org/10.1371/journal.pone.0131937.

17. Ali M, Javad MS, Sepideh OS, Mahmood T, Akram H, Tahereh R. Depression in Iran: A systematic review of the literature (2000-2010). PAYESH. 2013; 12 (6): 567- 594.

18. Samuelsson G, McCamish-Svensson C, Hagberg B, Sundström G, Dehlin O. Incidence and risk factors for depression and anxiety disorders: Results from a 34-year longitudinal Swedish cohort study. Aging & Mental Health. 2005; 9(6):571-575.

19. Anthony, James C, Petronis, Kenneth R. Suspected Risk Factors for Depression among Adults 18-44 Years Old. Epidemiology. 1991; 2 (2):123-132.

20. Lewinsohn PM, Hoberman HM, Rosenbaum M. A prospective study of risk factors for unipolar depression. J. Abnorm. Psychol. 1988; 97(3); 251-264.

21. Kessler RC, Borges G, Walters EE. Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. Arch Gen Psychiatry. 1999; 56 (7):617-26.

22. Bjelland I1, Krokstad S, Mykletun A, Dahl AA, Tell GS, Tambs K. Does a higher educational level protect against anxiety and depression? The HUNT study. Soc Sci Med. 2008; 66(6):1334-45.

23. Weissman MM, Bland RC, Canino GJ. Cross-National Epidemiology of Major Depression and Bipolar Disorder. JAMA. 1996; 276(4):293-299.

24. Roy A. Five risk factors for depression. Br. J. Psychiatry.1987;150 (4): 536-541.

25. In Azzam A, Yanofski J, Kaftarian E. First Aid for The Psychiatry Boards. USA: McGraw-Hill Companies, Inc; 2010.

26. Sokero TP, Melartin TK, Rytsälä HJ, Leskelä US, Lestelä-Mielonen PS, Isometsä ET. Suicidal ideation and attempts among psychiatric patients with major depressive disorder. J Clin Psychiatry. 2003; 64(9):1094-100.

27. Grover S, Dutt A, Avasthi A. An overview of Indian research in depression. Indian J Psychiatry. 2010; 52(1):178–S188.

28. Srivastava AS, Rakesh Kumar. Suicidal ideation and attempts in patients with major depression: Sociodemographic and clinical variables. Indian J Psychiatry. 2005; 47(4): 225–228.

29. Okasha A. Focus on psychiatry in Egypt. Br J Psychiatry. 2004, 185 (3) 266-272; DOI: 10.1192/bjp.185.3.266.

30. Nock MK, Borges G, Bromet EJ, Alonso J, Angermeyer M, Beautrais A, et al. Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. Br J Psychiatry. 2008 Feb;192(2):98-105. of suicidal intent in depressed patients. Acta Psychiatr Scand. 1997; 96(4):254-9.

31. Van Gastel A, Schotte C, Maes M. The prediction of suicidal intent in depressed patients. Acta Psychiatr Scand. 1997; 96(4):254-9.

32. Narang PL, Mishra BP, Mohan N. Attempted suicide in Ludhiana. Indian J Psychiatry, 2000, 42 (1), 83-87.