

ORIGINAL ARTICLE

Clinical features and comorbidities of depression among inpatients in a tertiary care centre

Ravindra N Munoli,¹ MBBS, MD, PSVN Sharma,² MBBS, MD, DPM, Sreejayan Kongasseri,³ MBBS, MD, Rajeshkrishna P Bhandary,⁴ MBBS, MD, Samir Kumar Praharaj,⁵ MBBS, MD, DPM

^{1, 4} Assistant Professor of Psychiatry, ² Professor of Psychiatry and Head, ^{3, 5} Associate Professor of Psychiatry, Department of Psychiatry, Kasturba Medical College, Manipal, India

ABSTRACT

Background: Background: There are few studies of depression in Indian population which have looked at depression comprehensively covering various facets in a sample population. The objective of the current study was to recognize the clinical features and comorbidities of depression among inpatients in a tertiary care centre.

Method: This was an observational study in which 50 patients admitted with ICD-10 diagnosis of depression were assessed for clinical symptomatology and comorbidity.

Results: The mean number of somatic symptoms was 11.44 (SD 6.66), and the mean number of stressful life events over lifetime and in past 1 year were 8.02 (SD 3.8) and 1.44 (SD 1.18), respectively. One fifth of the sample (20%) had personality disorder; among them, mixed personality disorder (12%) was the most common diagnosis. Most of the patients had suicidal ideation (62%) and 26% had attempted suicide during their lifetime. Majority (60%) had atleast one psychiatric comorbidity; the most common being anxiety disorder (46%). Physical comorbidity was present in 54% of the patients; the common diagnoses were hypertension (18%), diabetes mellitus (14%) and ischaemic heart disease (12%).

Conclusion: The current study found somatic symptoms and suicide ideation to be frequent in the sample. Also, comorbid conditions including personality disorders are frequent in patients with depression.

Keywords: Depression; comorbidity; somatic symptoms; melancholia

Date of first submission: 4/12/14 **Date of initial decision:** 10/12/14 **Date of acceptance:** 18/12/14

INTRODUCTION

Depression is a disorder of major public health importance, in terms of its prevalence and the suffering, dysfunction, morbidity, and economic burden of the individual and the family members. The prevalence rate of depression across studies in India varied from 1.7 to 74 per thousand population.^[1,2] In another population-based study, the overall prevalence was 15.1% after adjusting for age using 2001 census data.^[3]

Indian studies have reported depression to be more common in younger patients,⁴ in women,^[3,5-8] in patients hailing from poor economic background,^[3,7,9] and in those with poor nutritional status,^[9] in Muslims,^[6] in those who are widowed or divorced,^[3] those in nuclear families^[10] and in urban areas.^[1] Patients with depression were found to have significantly higher number of life events prior (6-12 months) to the onset of the illness than non-depressed patients.^[11-13] One study had found higher scores on the hardiness, a personality trait which correlated with lower scores on the depression scale, which suggest that its presence doesn't allow depressive feelings to

become more severe.^[14] However, no study has assessed personality disorder in detail. Most of the studies have reported high prevalence of somatic symptoms in patients with depression, and it has been suggested that somatic symptoms are the most common manifestation of depression in India.^[7,15-18]

Some studies have evaluated depressed patients with suicidal ideation in particular. Significantly higher scores in the severity of suicidal ideation, agitation and paranoid symptoms were found in suicide attempters; whereas, hypochondriasis and general somatic symptoms were more common in non-attempters.^[19] Also, depressed subjects who attempt suicide are at higher risk of indulging in further suicidal behaviour, compared to those who do not attempt.^[20] However, it has also been shown that presence of suicidal behaviour does not predict overall poor clinical outcome.^[21]

Subjects with depression have been reported to have lesser total sleep duration, longer sleep latency, frequent awakenings, greater wake-after-sleep onset and offset times, lesser sleep efficiency and tendency to wake up earlier than controls.^[22] Physical diseases involving the musculoskeletal, cardiovascular and ophthalmological systems were common and diagnoses, in order of frequency, osteoarthritis, hypertension and cataract were commonly seen in depressed elder population.^[23] Depression is reported to commonly occur in patients presenting with intentional self-harm, alcohol dependence syndrome, medical inpatients, neurological disorders, end stage renal disorders, cancers, chronic dermatological disorders, obsessive compulsive disorder. Depression leads to significant dysfunction, disability and poor quality of life.^[24-28]

Address for correspondence: Dr. Samir Kumar Praharaj, Associate Professor, Department of Psychiatry, Kasturba Medical College, Manipal-576104, Karnataka, India
Phone number: +918971026304
E-mail: samirpsyche@yahoo.co.in

How to cite this article: Munoli RN, Sharma PSVN, Kongasseri S, Bhandary RP, Praharaj SR. Clinical features and comorbidities of depression among inpatients in a tertiary care centre. AP J Psychol Med 2014; 15(2): 193-200.

Although these are many studies of depression in Indian population, few have looked at depression comprehensively covering various facets in a sample population. The current study was carried out with the objective to recognize the clinical features and comorbidities of depression.

METHODS

Study participants

It was a cross-sectional, hospital-based observational study carried out over 8 months from November 2010 to June 2011 at Kasturba Hospital, Manipal, which is a tertiary care centre situated in Udupi district of Karnataka state, India. Institutional ethics committee clearance was taken prior to the study. Sample comprised of 50 consecutive inpatients in age group 18-60 years, with a diagnosis of depressive disorder according to ICD-10 at the time of evaluation, of any severity, with or without any psychiatric or physical comorbidities, and able to read and write in English or Kannada language and were consenting to participate in the study.

Tools

A data sheet developed for the study was used to collect socio-demographic and clinical details. Mini International Neuropsychiatric Interview Plus (MINI PLUS)^[29] was used to diagnose depression and assess comorbid psychiatric disorders. Standardized Assessment of Personality-Abbreviated Scale (SAPAS),^[30] a clinician administered 8 items screening tool was used which has a scoring from 0 to 1 and total of >3 indicates personality disorder. Personality Disorder Questionnaire, 4th Revision (PDQ-4+),^[31] a 100 item, self-administered, true/false questionnaire that yields personality diagnoses consistent with the DSM-IV diagnostic criteria for the axis II disorders was used. To study life events, Presumptive Stressful Life Events Scale (PSLES)^[32] was used. It has 51 yes/no items and one additional others item, which can be rated by the clinician as lifetime events and events in past one year. It also generates scores for desirable, undesirable and ambiguous events. To assess the severity of depression, Structured Interview Guide for the Hamilton Depression Rating Scale (SIGH-D)^[33] was used. Initially it was designed to yield a total score based on 17 of the 21 items, but several investigators have used all the 21 items. To assess the anxiety symptoms, Structured Interview Guide for Hamilton Anxiety Rating Scale (SIGH-A),^[34] a 14 items clinician administered scale in which each item is scored on a scale of 0 (not present) to 4 (severe). It has a total score range of 0-56, where < 17 indicates mild severity, 18-24 mild to moderate severity, and 25-30 moderate to severe. Ratings are based on patients' past one week's experiences. The Kannada version of Inventory for Depressive Symptomatology - Self Rating Scale-30 (IDS-SRS30),^[35] a self-rated 30 item scale was used for assessing depression symptoms. The total score ranges from 0 to 84 and based on the scores patients can be divided into mild, moderate, severe and very severe categories. To assess suicidality, Columbia

Suicide Severity Rating Scale (CSSRS)^[36] was used. It has three parts, suicidal ideation, intensity of ideation and suicidal behaviour. To assess somatoform symptoms associated with the depressive disorder, Somatoform Symptoms Checklist (SSC)^[37] was used. It is derived from Somatoform Disorder Schedule (SDS) and was originally developed to arrive at ICD-10 diagnoses of somatoform disorders in the field trials. It is a clinician rated yes/ no tool evaluating 60 somatic symptoms. The symptoms are noted as present only in the absence of any physical cause for the particular symptom. CORE Questionnaire^[38] was used to identify melancholia or endogenous depression. It comprises of 18 signs (observable features) which are rated by the clinician or a trained observer at the end of a clinical interview. Each sign is rated on a four-point scale (0-3). A score of 8 or more indicates the presence of melancholic depression. Clinical Global Impression (CGI),^[39] a three-item scale was used to measure overall illness severity. To study the quality of life, 26-item Kannada version of World Health Organization Quality of Life BREF (WHO-QOL BREF)^[40] was used. It has four domains: physical health, psychological health, social relationships, and environment.

Procedure

Subjects fulfilling inclusion criteria were recruited for the study. Written informed consent was taken from the patient in the presence of a witness. They were evaluated using MINI PLUS to generate the diagnosis of depression and psychiatric comorbidities. Socio-demographic and clinical details were collected using the data sheet. They were screened for personality disorder using SAPAS; those scoring >3 were assessed for personality disorder using English/Kannada version of PDQ4+. Psychopathology was assessed using SIGH-D, IDS-SRS30, SIGH-A, CORE, SSC, CSSRS and CGI-S. PSLES was used for evaluation of the life events (lifetime and in last one year). Quality of life was measured using WHO-QOL BREF.

Statistical analysis

The collected data was statistically analysed using Statistical Package for Social Sciences (SPSS) 16.0 for Windows. Descriptive statistics was used to summarize the data: Mean (SD) was used for continuous data and n (%) was used for categorical data.

RESULTS

Table 1 and 2 shows socio-demographic and clinical characteristics of the patients. The mean age of the patients was 37.94 (SD 12.83, range 18 to 59) and mean years schooling was 11.66 (SD 3.22). Females (54%) were slightly more than the males (46%). Majority was married (76%) and belonged to Hindu (86%) religion. Most of them were homemakers (40%), and nearly half of the patients were from rural (48%) area and were living in nuclear family (42%). Majority had first episode depression (60%). The mean age of onset of illness was 34.66 (SD 12.52) years. Mean episode duration was 12.98 (SD 10.39, range 1-64) weeks.

Table 1: Socio-demographic profile (N=50)

		Mean	SD
Age in years		37.94	12.83
Years of schooling		11.66	3.22
Family size		4.78	2.23
		n	%
Gender	Male	23	46
	Female	27	54
Marital status	Married	38	76
	Unmarried	10	20
	Separated	2	4
Religion	Hindu	43	86
	Muslim	2	4
	Christian	5	10
Occupation	Employed	18	36
	Homemaker	20	40
	Student	5	10
	Unemployed	7	14
Residence	Rural	24	48
	Semi-urban	17	34
	Urban	9	18
Individual income per month (rupees)	Nil	30	60
	<5000	2	4
	5001-10000	4	8
	>10000	14	28
Total family income per month (rupees)	<5000	5	10
	5001-10000	17	34
	>10000	28	56
Living Arrangement	Nuclear	21	42
	Joint	9	18
	Extended	13	26
	Alone	7	14
Head of the Family	Him/herself	17	34
	Others	33	66

Table 2: Clinical characteristics (N=50)

		Mean	SD
Age of onset in years		34.66	12.52
Total duration in weeks		184.36	290.49
Episode duration in weeks		12.98	10.39
Number of episodes		1.90	1.34
SIGH-D Score		27.06	5.75
SIGH-A Score		15.12	6.63
IDS-SRS30 Score		47.26	11.23
SSC Score		11.44	6.66
CORE Score		10.44	10.60
CGI-S Score		5.32	0.91
WHO-QOL BREF Domain Scores	Physical health	17.92	3.23
	Psychological health	15.48	3.42
	Social relationships	6.46	2.27
	Environmental	23.40	5.51
PSLES Score (Lifetime)	Total	8.02	3.80
	Desirable	2.32	1.06
	Undesirable	4.14	3.18
	Ambiguous	1.60	1.35
PSLES Score (Last 1 year)	Total	1.44	1.18
	Desirable	0.06	0.24
	Undesirable	1.14	0.93
	Ambiguous	0.24	0.55
		n	%
Diagnosis	First episode depression	30	60
	Recurrent depression	19	38
	Organic depression	1	2
Melancholia	Present	23	46
SAPAS	Positive	10	20
	Negative	40	80
Personality Disorder (PDQ4)	Present	10	20
Personality type (PDQ4)	Schizoid	2	4
	Borderline	2	4
	Mixed	6	12
Suicide Severity Rating	Suicidal ideation	31	62
	Suicidal behaviour	13	26
	Actual attempt	13	26

SAPAS: Standardized Assessment of Personality Abbreviated Scale; PDQ: Personality Disorder Questionnaire; PSLES- Presumptive Stressful Lifetime Events Scale; SIGH-D: Structured Interview Guide for Hamilton Depression rating scale; SIGH-A: Structured Interview Guide for Hamilton Anxiety rating scale, IDS-SR30: Inventory For Depressive Symptomatology-Self Rated; SSC- Somatoform Symptoms Checklist; CGI-S: Clinical Global Impression, Severity; WHO QOL BREF: WHO Quality of Life BREF

Table 3: Psychiatric and physical comorbidity (N=50)

		n	%
Psychiatric disorder		30	60
Psychiatric diagnosis	Anxiety disorder	23	46
	Tobacco dependence	7	14
	Alcohol dependence	6	12
	Others	12	24
Physical illness		27	54
Physical diagnosis	Hypertension	9	18
	Diabetes mellitus	7	14
	Ischaemic heart disease	6	12
	Dermatological illness	5	10
	CNS illness	5	10
	PNS illness	2	4
	Haematological illness	2	4
	Endocrinal illness	1	2
	Other	11	22

CNS=Central Nervous System, PNS=Peripheral Nervous System

The mean number of stressful life events faced by the patients over lifetime was 8.02 (SD 3.8) and in past 1 year was 1.44 (SD 1.18). One fifth of the sample (20%) was positive on screening for personality disorder using SAPAS. All of them were diagnosed to have personality disorder when evaluated using PDQ4+. Among them, mixed personality disorder (12%) was the most common diagnosis, followed by borderline (4%) and schizoid (4%) personality disorder. Most of the patients had suicidal ideation (62%) during the enrolment in study and 26% had attempted suicide during their lifetime.

Table 3 summarizes psychiatric and physical comorbidity among the patients. Majority (60%) had at least one psychiatric comorbidity; the most common being anxiety disorder (46%). Substance use disorder was present in one-fourth (26%) of the sample. Physical comorbidity was present in 54% of the patients; the common diagnoses were hypertension (18%), diabetes mellitus (14%) and ischaemic heart disease (12%).

DISCUSSION

Socio-demographic characteristics

Our sample had almost equal proportion of males and females as compared to other studies in which females are overrepresented. Almost three-fourth of the sample were married which is similar to previous studies.^[4,11,19,41-43] Majority of the sample belonged to Hindu religion (86%) which was similar to study by Bagadia et al.;^[7] this is a reflection of Hindu majority population in Karnataka. Nearly half of the sample was from rural area (48%), similar to the findings in Singh and Verma^[16] study. In the present study, patients from nuclear family comprised of 42%, which was lesser than the study by Raju (70%),^[41] Ponnudurai et al.

(59%),^[41] but was nearly similar to study by Ramachandran et al. (48%).^[8] The study by Sethi and Sharma^[10] did not support the theory of increased frequency of depression in nuclear family individuals. About 14% of patients in present study were living alone, which was nearly similar to Ramachandran et al.^[8]

Clinical characteristics

In our sample 38% had recurrent depressive disorder, which was higher than Bagadia et al.^[42] study. The mean age of onset of depressive illness was 34.66 (SD 12.52) years; in the study by Bagadia et al.,^[42] 66% of patients had onset between 26-45 years. The mean number of stressful life events over lifespan was 8.02 (SD 3.8), which is almost twice that reported in Satija et al.^[12] study. However, the mean stressful life event over last one year was less than previous Indian studies.^[11,44]

The mean depression scores (SIGH-D and IDS-SR30) were higher in our sample, which is a reflection of severity of illness in hospitalised patients. Melancholia was present in 46% of the patients, which was much higher than 12.8% reported in the study by Bagadia et al.^[42] This variance in melancholia rates can be attributed to the measure used to ascertain melancholic features. The present study used CORE of Parker et al.;^[38] whereas, older studies relied only on 'melancholic symptoms' in the classification, which has its limitations.

The mean number of somatic symptoms was 11.44 (SD 6.66) in our study. Previous studies have reported the prevalence of somatic symptoms ranging from 34 to 69% using items of HAM-D.^[4,8,42] In our study, using a checklist for somatic symptoms, we studied a wider range of symptoms, systematically.

Suicidal ideation was present in 62% of the patients in our study. Actual suicide attempters during their lifetime were 26% of the sample, which was higher than previous studies.^[45,46] In a study, Srivastava and Kumar^[43] recruited 60 depressed patients with suicidal ideation, but of them only 16.67% had attempted suicide. However, in the present study 40% of the sample of the group with suicidal ideation had attempted suicide, indicating the higher probability of patients attempting suicide when they had the ideation. Similarly in the study by Chatterjee et al.^[20] out of 20 depressed patients with suicidal ideation 50% had attempted suicide. Mean SIGH-A score at baseline was 15.12 (SD 6.63) indicating the presence of anxiety features in majority of the sample. The quality of life was poor across all the domains.

Comorbidity pattern

Most of the patients had psychiatric comorbidity (60%), which was similar to the finding in study by Bagadia et al.^[7] and that of STAR*D study.^[47] Comorbid anxiety disorder was present in 46% of the patients, which was similar to the findings of STAR*D study.^[47] One fifth present study sample had personality disorder, which was similar to previous studies.^[48,49] However, Bukhet al.^[50] reported a very high prevalence of comorbid personality disorder (>40%). Substance use disorders were found in 26%, which included tobacco and alcohol. Similar rates were observed in other studies,^[47,50] but in the study by Bagadia et al.^[7] it was higher (36.7%). Nearly half of the patients had physical comorbidity (54%), similar to findings in STAR*D study.^[51] The most common conditions found in our study included hypertension, diabetes mellitus and ischaemic heart disease.

This was a hospital based study and only inpatients were recruited, which limits generalizability to community population. Also, the sample size was small in our study. Nevertheless, using several measures for comprehensive evaluation of the patients makes our study findings robust as compared to previous studies. Further research in this area using outpatients, inpatients and community based patients will make the study more pragmatic and representative of clinical reality.

CONCLUSIONS

The current study found a wide range of somatic symptoms and suicide ideation to be frequent in the study sample. Also, comorbid conditions including personality disorders are frequent in patients with depression. Medical comorbidity is also frequently observed in patients with depression. This study highlights the usefulness of using structured instruments during clinical evaluation of patients with depression, which aids in identification of conditions such as personality disorders that are frequently missed in routine practice. Also, identification of medical comorbidities will result in holistic management of patients having depressive disorders.

Acknowledgments: None

References

1. Reddy VM, Chandrashekar CR. Prevalence of mental and behavioural disorders in India: a meta-analysis. *Indian J Psychiatry* 1998;40:149-57.
2. Nandi DN, Banerjee G, Mukherjee SP, Ghosh A, Nandi PS, Nandi S. Psychiatric morbidity of a rural Indian community. Changes over a 20 year interval. *Br J Psychiatry* 2000;176:351-6.
3. Poongothai S, Pradeepa R, Ganesan A, Mohan V. Prevalence of depression in a large urban South Indian population--the Chennai Urban Rural Epidemiology Study (CURES-70). *PLoS One* 2009;4:e7185.
4. Ponnudurai R, Somasundaram O, Balakrishnan S, Srinivasan N. Depression-a study of 80 cases. *Indian J Psychiatry* 1981;23:256-8.
5. Sethi BB, Prakash R. Depression in Industrial population. *Indian J Psychiatry* 1979;21:359-61.
6. Nandi DN, Banerjee G, Boral GC, Ganguli H, Sachdev S, Ghosh A, et al. Socio-economic status and prevalence of mental disorders in certain rural communities in India. *Acta Psychiatr Scand* 1979;59:276-93.
7. Bagadia VN, Jeste DV, Doshi SU, Shah LP. Depression: A clinical study of 233 cases. *Indian J Psychiatry* 1973; 15:224-30.
8. Ramachandran V, Menon MS, Arunagiri S. Socio-cultural factors in late onset depression. *Indian J Psychiatry* 1982; 24:268-73.
9. Mohandas E. Roadmap to Indian Psychiatry. *Indian J Psychiatry* 2009;51:173-9.
10. Sethi BB, Sharma M. Depressive disorders and family constellation. *Indian J Psychiatry* 1980;22:69-73.
11. Chatterjee RN, Mukherjee SP, Nandi DN. Life events and depression. *Indian J Psychiatry* 1981;23:333-7.
12. Satija YK, Advani GB, Nathawat SS. Influence of stressful life events and coping strategies in depression. *Indian J Psychiatry* 1988;40:165-71.
13. Rao VA, Nammalvar N. Life changes and depressive disease. *Indian J Psychiatry* 1976;18:293-304.
14. Sinha V, Singh RN. Immunological Role of Hardiness on Depression. *Indian J Psychol Med* 2009;31:39-44.
15. Teja JS, Narang RL, Aggarwal AK. Depression across cultures. *Br J Psychiatry* 1971; 119:253-60.
16. Singh G, Verma HC. Depressive equivalents -pain as a symptom of depression. *Indian J Psychiatry* 1971; 13:49-55.
17. Chaturvedi SK, Sarmukaddam S. Negative symptoms in depression. *Indian J Psychiatry* 1985;27:139-44.

18. Gautam SK, Kapur RL. Psychiatric patients with somatic complaints. *Indian J Psychiatry* 1977;19:75-80.
19. Rao VA, Nammalvar N. Death orientation in depression. *Indian J Psychiatry* 1979;22:199-205.
20. Chatterjee A, Chakraborty R, Chaudhary S. Indicators of suicidal attempt in depression. *Indian J Psychiatry* 2006;48:276.
21. Malhotra K, Schwartz T, Hameed U. Presence of suicidality as a prognostic indicator. *J Postgrad Med* 2004;50:185-8.
22. Gupta R, Dahiya S, Bhatia MS. Effect of depression on sleep: qualitative or quantitative? *Indian J Psychiatry* 2009; 51:117-21.
23. Satapathy R, Kar N, Das I, Kar GC, Pati T. A study of major physical disorders among the elderly depressives. *Indian J Psychiatry* 1997;39:278-81.
24. Das PP, Grover S, Avasthi A, Chakrabarti S, Malhotra S, Kumar S. Intentional self-harm seen in psychiatric referrals in a tertiary care hospital. *Indian J Psychiatry* 2008;50:187-91.
25. Mishra SK, Mohapatra PK, Bhattacharya K, Gupta T, Agarwal JP. Prevalence of psychiatric disorder in asymptomatic or minimally symptomatic cancer patients on treatment. *J Cancer Res Ther* 2006; 2:136-9.
26. Sharma N, Koranne RV, Singh RK. A comparative study of psychiatric morbidity in dermatologic patients. *Indian J Dermatol* 2003;48:137-41.
27. Gupta A, Bahadur I, Gupta KR, Bhugra D. Self-awareness of depression and life events in three groups of patients: psychotic depression, obsessive-compulsive disorder and chronic medical illness in North India. *Indian J Psychiatry* 2006;48:251-3.
28. Tharoor H, Chauhan A, Sharma PS. A cross-sectional comparison of disability and quality of life in euthymic patients with bipolar affective or recurrent depressive disorder with and without comorbid chronic medical illness. *Indian J Psychiatry* 2008;50:24-9.
29. Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, et al. The Mini-International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *J Clin Psychiatry* 1998;59:22-33.
30. Moran P, Leese M, Lee T, Walters P, Thornicroft G, Mann A. Standardised Assessment of Personality - Abbreviated Scale (SAPAS): preliminary validation of a brief screen for personality disorder. *Br J Psychiatry* 2003; 183:228-32.
31. Hyler SE. Personality Questionnaire, PDQ-4+. New York: New York State Psychiatric Institute; 1994.
32. Singh G, Kaur D, Kaur H. Presumptive stressful life events scale (PSLES): a new stressful life events scale for use in India. *Indian J Psychiatry* 1984;26:107-14.
33. Williams JB. A structured interview guide for the Hamilton Depression Rating Scale. *Arch Gen Psychiatry* 1988; 45:742-7.
34. Shear MK, Vander Bilt J, Rucci P, Endicott J, Lydiard B, Otto MW, et al. Reliability and validity of a structured interview guide for the Hamilton Anxiety Rating Scale (SIGH-A). *Depress Anxiety* 2001;13:166-78.
35. Rush AJ, Gullion CM, Basco MR, Jarrett RB, Trivedi MH. The Inventory of Depressive Symptomatology (IDS): psychometric properties. *Psychol Med* 1996;26:477-86.
36. Posner K, Oquendo MA, Gould M, Stanley B, Davies M. Columbia Classification Algorithm of Suicide Assessment (C-CASA): classification of suicidal events in the FDA's pediatric suicidal risk analysis of antidepressants. *Am J Psychiatry* 2007;164:1035-43.
37. World Health Organization. WHO International Study on Somatoform Disorders: Study Protocol and Instruments. Geneva: World Health Organization; 1994.
38. Parker G, Hadzi-Pavloic D. Development and structure of the CORE system. In: Parker G, Hadzi-Pavloic D, editors. *Melancholia: A Disorder of Movement and Mood*. New York: Cambridge University Press; 1996. p. 82-129.
39. Guy W. ECDEU Assessment Manual for Psychopharmacology. Rockville, US: Department of Health, Education, and Welfare; 1976.
40. World Health Organization. WHOQOL User Manual. Geneva: World Health Organization; 1998.
41. Raju SS. Frequency of depressive disorders in psychiatric clinics in India: A comparative analysis. *Indian J Psychiatry* 1979;21:176-9.
42. Bagadia VN, Jeste DV, Doshi SU, Shah LP. Depression: a study of demographic factors in 233 cases. *Indian J Psychiatry* 1973;15:209-16.
43. Srivastava AS, Kumar R. Suicidal ideation and attempts in patients with major depression: Socio-demographic and clinical variables. *Indian J Psychiatry* 2005; 47:225-8.
44. Prakash R, Trivedi JK, Sethi BB. Life events in depression. *Indian J Psychiatry* 1980;22:56-60.
45. Park MH, Kim TS, Yim HW, Jeong SH, Lee C, Lee CU, et al. Clinical characteristics of depressed patients with a history of suicide attempts: results from the CRESCEND study in South Korea. *J Nerv Ment Dis* 2010;198:748-54.

46. Robins LN, Kulbok PA. Epidemiologic studies in suicide. In: Francis AJ, Hales RE, editors. American Psychiatric Press Review of Psychiatry, Volume 7. Washington, DC: American Psychiatric Press; 1988.
47. Howland RH, Rush AJ, Wisniewski SR, Trivedi MH, Warden D, Fava M, et al. Concurrent anxiety and substance use disorders among outpatients with major depression: clinical features and effect on treatment outcome. *Drug Alcohol Depend* 2009;99:248-60.
48. Casey P, Birbeck G, McDonagh C, Horgan A, Dowrick C, Dalgard O, et al., ODIN Group. Personality disorder, depression and functioning: results from the ODIN study. *J Affect Disord* 2004;82:277-83.
49. Scott AI, Freeman CP. Edinburgh primary care depression study: treatment outcome, patient satisfaction, and cost after 16 weeks. *BMJ* 1992;304:883-7.
50. Bukh JD, Bock C, Vinberg M, Gether U, Kessing LV. Differences between early and late onset adult depression. *Clin Pract Epidemiol Ment Health* 2011;7:140-7.
51. Yates WR, Mitchell J, John Rush A, Trivedi M, Wisniewski SR, Warden D, et al. Clinical features of depression in outpatients with and without co-occurring general medical conditions in STAR*D: confirmatory analysis. *Prim Care Companion J Clin Psychiatry* 2007; 9:7-15.

Conflict of interest: None declared

Source(s) of support: Nil