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A Study to Correlation of Socio-Demographic and Clinical Variables with Depression in Urban Population

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Abstract

Background: *Depression is disorder of enormous public health importance as it affects about 350 million people worldwide, by adversely impacting on their quality of life. Well-designed large scale community based research on the prevalence and socio demographic risk factors of depression in different regions of India is indispensable to formulate public health preventive programs and policy decisions. The present study was an effort to provide much needed information on the prevalence and correlates of depression in Sikkim, a North Eastern state of India where such data is scare.*

Methodology: *A cross-sectional study was done among adults in the urban metropolitan area of Tadong, in the capital city of Gangtok, Sikkim from May 2013 to August 2014. Systematic randomized sampling design was chosen with every tenth house selected for the study. Total number of subjects were 400 included in this study. Socio-demographic variables like age, gender, marital and socio-economic status were collected. Clinical variables that were collected include past history of psychiatric illness, substance abuse, family history of psychiatric illness and comorbid chronic pain symptoms. Depressive episode was diagnosed clinically using ICD -10 criteria. Severity of depression was assessed using Hamilton rating scale (17 items) for depression. Statistical analysis using Chi square test for determining the association between categorical variables was performed using SPSS software.*

Results: *A prevalence rate of 17.25% (n=69) with female to male gender ratio of 1.29:1 was found. This study estimated the prevalence of geriatric depression to be 18.75 (n=6). A significant association of depression with age (p=0.012) was found, with decreasing age associated with increasing prevalence of depression. A non- significant association was observed between depression and gender (p=0.322), marital status (p= 0.101) socio-economic status (p=0.063). Among the clinical variables assessed the results revealed a significant association of depression with family history of psychiatric illness (p=0.003) and chronic pain symptoms (p=0.010) and a non-significant association of depression with past history of psychiatric illness (p=0.006) and substance abuse (p=0.18).*

Conclusion: *We concluded that regular screening programs and medical camps in the community should include psychiatric services or psychiatric screening instruments to identify patients with depression, especially patients with chronic somatic pain.*

Keywords: *Depression, Socioeconomic status, Psychiatric comrbidities, Chronic pain.*

Introduction

Depression is known to mankind since more than 2500 years. It is one of the first psychogenic illnesses which is recognized and identified as an entity.[1] Depressive disorders bother one of five women and one of ten men at some occasion during their lives.[1] Despite the accessibility of effective treatments, people with mood disorders continue to be disabled, and rates of suicide (which occurs in roughly 15 percent of depressive patients) still remain are elevated in the young.

The emotions of feeling cheerless, unhappy or disappointed are the natural experience of a human existence, and are experienced by everyone nearly on a daily basis. On the other hand, there are times when this state of sadness or unhappiness persists to such a degree and to such a extent of time that it far outweighs the importance of the precipitating factor. The sufferer continues to be in an extended state of sadness and withdrawn from his/her personal, social and occupational activities. In such circumstances, a diagnosis of depression is to be considered. Despite these alarming trends there have been no systematic epidemiological studies on the prevalence and socio-demographic correlates of depression in the community.[2] Such comprehensive studies with standardized psychiatric assessment instruments and well planned methodology will provide the impetus for policy makers to take note and formulate optimal decisions that will benefit the mental health of the citizens. The aim of this study to evaluated the association of significant socio-demographic and clinical variables with depression in the urban population.

Material & Methods

The community based cross sectional study was conducted on an urban community sample in Tadong municipal ward in the capital city of Gangtok, Sikkim which is 500 meters from Sikkim Manipal Institute of Medical Sciences. The present study was conducted on approximately 7500 population with an electoral registry of 3798 people.[3]

Gangtok is a municipality, the capital and the principal town of the Indian state of Sikkim. It also is the headquarters of the East Sikkim district. Gangtok is located in the eastern Himalayan range, at a height of 1,650 m (5,410 ft). The town's population belong to different ethnicities such as Nepali, Lepchas and Bhutia.[3] The Gangtok Municipal Corporation has been estimated to be 98,658. Males constituted 53% of the populace and females 47%. Gangtok has an average literacy rate of 82.17%, superior than the national average of 74%: male literacy is 85.33%, and female literacy is about 8% of Gangtok's population live in the nine notified slums and squatter settlements, all on Government land. Of the total urban population of Sikkim, Gangtok Municipal Corporation has a share of 55.5%. [3]

Inclusion Criteria

All adults aged above 18 years in the Tadong ward of Gangtok during the study period from May 2013 to August 2014.

Exclusion Criteria

Subject not willing to participate in the study.

subject not present in the household during the study.

Ethical and Research Committee Approval

The study protocol was submitted to Institutional Ethical committee of Sikkim Manipal Institute of Medical Sciences for clearance, before commencement of the study and was cleared on May 2013. The permission to conduct the community survey was obtained from the Municipal authorities and the Medical Superintendent of the Government Hospital of Gangtok.

Study Instruments

The study questionnaire consisted of following parts.

Part A: A semi structured data collection tool (see enclosures) to assess socio demographic data like

1) Age
2) Gender
3) Marital status - results were categorized as

single, married, widowed, divorced, in relationship (unmarried).

4) Socio-demographic status was assessed using Prasad B.G. Modified Socioeconomic Status Scale[4] that classified SES into 5 classes from Class 1 (highest) to Class V (lowest) in that order based on per capita income calculation.

Part B: Questionnaire to assess clinical data and associated variables like

1) Family history of psychiatric illness
2) Past history of psychiatric illness
3) Current substance abuse (harmful use) and dependence
4) Chronic somatic pain symptoms.

Part C: A diagnosis of depression was made clinically by the investigator after the psychiatric interview and mental status examination in accordance with ICD-10 criteria[5] with depressive episode.

Severity of depression was assessed using Hamilton Rating Scale for Depression (HAM-D)[6]. HAM-D is considered the gold standard for rating depression severity in clinical research and is the most widely used and administered depression rating scale. The total score is arrived by summing up the individual score for 17 items (range from 0 to 54). Score of 0 to 7 is generally considered to be in normal state. Scores of 8-16 was taken as mild depression, scores of 17-23 was taken as moderate depression and scores of > 23 was taken to indicate severe depression[7].

Test–retest reliability for the HAM-D has been reported to be as high as 0.81, even among minimally trained raters from multiple disciplines.

Validity of the HAM-D has been reported to range from 0.65 to 0.90 with global measures of depression severity, and to be highly correlated with clinician-rated measures [8].

Data Analysis

Data analysis was performed using SPSS (statistical package for social science version 16), continuous variable like age and HAM-D scores were converted into categorical variables. To test for association of depression with various socio-demographic and clinical variables, Chi square test was used.

Results

The present study observed that with increasing age there was a trend towards decreasing prevalence of depression (table 1). Higher prevalence of was observed in females n= 42 (19.17%) compared to males n=27 (14.91%) (figure 1). The present study found the female to male ratio of depression to be 1.29:1. Statistical analysis using Chi Square test did not reveal a significant (P=0.1008 & P=0.628) association between marital status and socioeconomic status with Depression in the sample (table 3 & 4).

The present study estimated the prevalence of depression among subjects with a past history of Psychiatric illness to be 30.15% (n=19), Family History of Psychiatric Illness to be 29.11% (n=23), Substance Abusers to be 20% (n=39) and Chronic pain to be 12.5% (n=27). The substance abusers were no significant (P=0.1980), rest of clinical variables was significant (table 5).

Table 1. Table depicting the association of Depression with the Age group categories

Age group	Number of subjects	Depression present	Depression Absent
18-27	143 (35.75%)	18(12.58%)	125
28-37	105 (26.25%)	17(16.19%)	88
38-47	76 (19%)	16(21.05%)	60
48-57	44 (11%)	9(20.45%)	35
58-67	24 (6%)	5(20.83%)	19
68-77	7 (1.75%)	4(57.14%)	3
78-87	1 (0.25%)	0(0%)	1
Total	400 (100%)	69	331

p value=0.0120 (significant)

Table 2: Association of Gender with Depression in the sample

Depressed	Male	Female	Total
Yes	27 (14.91%)	42 (19.17%)	69(17.25%)
No	154 (85.09%)	177 (80.4%)	331(82.8%)
Total	181 (100%)	219 (100%)	400 (100%)

Table 3: Table showing the Association of Marital Status and Depression in the sample

Status	n	Depression present	Depression absent
Single	107 (26.75%)	20	87
Married	231 (57.75%)	37	194
Divorced	08 (2%)	4	4
Widowed	12 (3%)	3	9
In relationship not married	42 (10.5%)	5	37
Total	400 (100%)	69	331

Table 4: Association of Socio-economic status with Depression in the sample population

S.E.S.	Number	Depression present	Depression absent
Class I	40	4	36
Class II	89	23	66
Class III	194	28	166
Class IV	62	13	49
Class V	15	1	14
Total	400	69	331

Table 5: the proportion of Depression among the sample with a clinical variables

Clinical Variables	Number	Depression present	Depression absent	P-value
Past history of psychiatric illness	63	19	44	0.0056
Family history of psychiatric illness	79	23	56	0.0032
Substance abuse	195	39	156	0.198
Chronic pain	216	27	189	0.0096

Discussion

Cross sectional epidemiological studies conducted by the WHO have reported a prevalence ranging from 1.6% to 18% across various centres.[9] This wide variation has been attributable to difference in methodological designs, interviewer experience (lay vs. professional), structured vs non-structured vs. semi-structured assessment instruments for depression, and inclusion of dysthymia and depressive disorder NOS categories. The above artifacts might explain the observed variation in prevalence of depression between the studies. It is imperative thus, to design studies that minimize the impact of such artifacts, to understand the true prevalence of depression in community.

The prevalence of depression of 17.25% in our study is on the higher side than most epidemiological surveys conducted in India and abroad. The possible explanation of such a high prevalence rate can be due to the urban sample that was used. Studies have shown that prevalence of depression in urban samples is almost one and half times that of the rural population[10-14].

The present study estimate prevalence of geriatric depression (age>64) at 18.75% (n=6). In contrast, prevalence of depression among adults in our study (ages 18-64) was 17.11% (n=63). People in the geriatric age are theoretically more susceptible to depression owing to greater physical comorbidity by way of chronic medical and surgical illness, declining cognitive capacity, greater dependence on caregivers for their activity of daily living, finances, decreasing mobility and loss of peers and significant others in their life time. Community based studies have reported the

prevalence of geriatric depression from 21.7% to 45.9 %.[15,16] Older studies from gero-psychiatric clinics reported a prevalence of depression ranging from 13 to 22.2 %.[17,18]

This study estimated the prevalence of depression in females to be 19.17% (n=42) and males to be 14.91% (n=27), with the female to male ratio of 1.29:1. This finding is contrary to the prevailing research literature which is roughly 2:1 and is consistent cross-culturally.[19,20] The results of the present study (lower gender ratio 1.29:1) is in agreement with landmark study of conducted on 25,445 subjects in Chennai by Poongothai et al.[21] which also quotes the lower gender ratio of female to male ratio of 1.17:1. The lower gender ratio could be explained by artifactual and methodological issues.

The present study estimated the prevalence of depression to be most common in divorced 50% (n=4) and widowed 25% (n=3) subjects and least common in married 16.01% (n=37) the In-relationship (unmarried) 11.90% (n=5) subjects. The association of divorced and widowhood on depression has been consistent across several studies and has been interpreted as risk factor for depression.[21-23] Such simplistic association cannot be drawn from cross sectional epidemiological studies without a few caveats. The cause and effect relationship can falsely confound the observed association. Rather than being a cause, divorce can frequently be the effect of undiagn-osed depression in marriage. Only longitudinal studies can truly enlighten us regarding the affects of marital status on depression.

The present study did not find a significant association of depression between upper socioeconomic status (class I=10%, class II=25.84%) and lower SES (class IV=20.97%, class V=6.67%). These findings are in conflict with generally prevailing association of psychiatric illness including depression with lower SES class[24]. Low socio economic status has been traditionally associated with high psychiatric morbidity and poorer quality of life. Andreade L et al in a cross national comparison of the

prevalence and correlates of mental disorders concluded that the lowest social and educational group had a higher prevalence of psychiatric morbidity[25].

This study found a significant association of depression with a past history of psychiatric illness. In our sample 30.15% (n=19) of subjects with past history of psychiatric illness has depression (p value=0.0056). Past mental illness has been strongly associated as a risk factor for the development of depression in later life[26]. The explanations range from biological to psychological to social. Biological explanation posit that psychiatric illness alter the neuro-chemical milieu of the brain and making it vulnerable to develop psychiatric illness in later life.

The present study found a non significant association between depression and substance abuse (n=39). 20% of the subjects with substance abuse had comorbid depression (p value=0.1980)**.** The findings in this study are contrary to the prevailing research literature which shows substance abuse to be a significant risk factor for depression. However studies that have concluded the association between depression and substance abuse have been conducted in non community samples[27-29].

In the present study 79 subjects had a Family History of Psychiatric Illness. Depression was found in 29.11% (n=23) of subjects with family history of mental illness. Family studies consistently reported an association of depression with family history of psychiatric illness[30-32]. The significance of the association between family history of mental illness could be explained by genetic, shared family environment, child rearing styles. Epidemiological studies like the present study cannot answer which of the above factors are truly responsible for this significant association.

The present study estimated the prevalence of Depression among subjects with chronic pain to be 12.5% (n=27). Statistical analysis revealed a significant association between Depression and

chronic pain symptoms (p value= 0.0096 significant). This observation is in concordance with studies carried out in pain clinics which report a prevalence of depression ranging from 21% [33] to 83% [34]. The trend that is obvious from these studies that there is gradual increase in the prevalence of depression in chronic pain as we move from the community towards the hospital and specialised pain clinics. This can be explained by the confounding factor of pain severity. Patients who attend specialised services (psychiatric clinic, pain centres) tend to have more severe pain, more physical and psychiatric comorbidity, treatment resistance all of which are independently associated with depression.

Conclusion

We concluded that regular screening programs and medical camps in the community should include psychiatric services or psychiatric screening instruments to identify patients with depression, especially patients with chronic somatic pain.

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