Assessment of severity, quality of life and suicidal ideation in patients with depressive disorders

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ABSTRACT
Depression is estimated to be the third leading cause of disability and about 350 million people suffer from depression worldwide. Various biological, social, economic, cultural factors and environmental factors contribute for depression. A total of 102 patients were enrolled in the study. Majority of the patients (64, 62.74%) included in the study were female. The mean age of the study subjects was found to be 20.4 ± 11.88 years. The severity of symptoms in depressed patients evaluated using Hamilton Depression Rating Scale (HDRS) shows that 33.33% of the subjects were very severely depressed, followed by 29.41% of the subjects with moderate depression, 23.52 % with severe depression and 11.76% with mild depression. Quality of life was evaluated using WHOQOL BREF Scale in the study population. 51.96% of subjects were having low quality of life (QoL) followed by 48% of subjects with medium QoL and 0.98% subjects with high QoL. Modified Scale for Suicidal Ideation (MSSI) was used to evaluate severity of suicidal ideation in study population. Interpretation of results shows that 74.50% were having low suicidal ideation and few subjects (8.82%) were found to have severe suicidal ideation. Depression negatively impacts individual’s functioning, work satisfaction, relationships, leisure, physical and mental health, sexual functioning, sleep patterns and overall sense of fulfilment and contentment with life. Severe form of depression can lead to suicidal risk, increased risk of morbidity, mortality, substantial imbalance on individual’s occupational potential, significant physical and psychosocial impairment.

INTRODUCTION
Depression also known as ‘major depressive disorder’ or ‘clinical depression’ is the most common mental health disorder characterized by persistent low mood and loss of interest in activities causing significant impairment in daily life. According to World Health Organization (WHO), depression is a common mental illness affecting more than 322 million people throughout the world (World Health Organization, 2018). In India, around 9% of people have experienced extended periods of depression at least once in their lifetime and nearly 36% suffer from Major Depressive Episodes (MDE) (The
Better India, 2016). A National Mental Health survey conducted by National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru in 2017 estimates the prevalence of depressive disorders to be 2.7% in India (Gandhi, 2016).

According to National Mental Health Survey (2015-16) in India, 1 in 20 (5.25%) over 18 years of age suffer from depression amounting to a total of over 45 million across the nation. Globally in low and middle income countries (LMICs), depression is one of the leading causes of disease burden and ranked as the largest contributor worldwide to non-fatal health loss. Around 7.5% of global years lived with disability (YLD) and 2.0% of global disability adjusted life years (DALYs) in 2015. DALYs is the sum of years of potential life lost due to premature mortality and the years of productive life lost due to disability. The burden of depression in India, in terms of DALYs increased by 67% between 1990 and 2013 and by 2025 it is attributed to rise roughly by 2.6 million (22.5%) due to population growth and aging. WHO ranked depression as the 4th leading cause of disability worldwide and by 2020, it will be the second leading cause of death (Grover et al., 2010).

Several hypotheses have been proposed to explain the pathophysiology of depression. Most of them have been linked with alteration in brain levels of neurotransmitters mainly Nor-Epinephrine (NE), 5-hydroxytryptamine (5-HT) and Dopamine (DA). Depression can occur due to multiple factors resulting from complex mechanisms, as there can be no single identifiable cause (Dipiro, 2017).

Causes of depression

Age

Depression can occur during any age of lifetime and includes neonates, children, adolescents, adults, pregnant women and geriatrics. Adult population of 18-30 years and older generation (above 65 years) experience higher rate of depression.

Gender

Women are at higher risk of depression than men. Prevalence of depression is estimated to be 5-12 percent in men and 9-26 percent in women.

Medical conditions

Cancer, Thyroid disease, Chronic pain, Stroke, Heart attack, Parkinson’s disease, Alzheimer’s disease, Myocardial diseases, Diabetes, Rheumatoid arthritis, Systemic lupus erythematosus, Fractures and Hormonal disorders etc.

Biological

Imbalance and dysregulation of neurotransmitters such as NE, 5-HT and DA.

Psychological

Low self-esteem, tendency to be overwhelmed by stress and personality disorders, etc.

Social

Adverse life changes, family problems, children, marriage, divorce, close association with a sick relative, socio-economic status, past trauma or abuse, discrimination, isolation, difficult relationship, stress at work or school etc.

Genetic

30-40% of depression is attributed to genetic predisposition.

Trauma and grief

Physical or emotional abuse, death of a friend or loved ones, excessive grief and physical vulnerability.

Medications

Beta blockers, benzodiazepines, Methyldopa, Reserpine, Corticosteroids, Oral contraceptives, Interferon, Efavirenz, Levetiracetam etc.

Substance abuse

Prescription drugs, alcohol, marijuana, opiates (e.g., heroin), psycho stimulants (e.g., cocaine) and nicotine dependence.

MATERIALS AND METHODS

Study site

The study was conducted at ESIC Medical College and Post Graduate Institute of Medical Sciences and Research & Model Hospital, Rajaji Nagar, which is a 500 bedded multispecialty tertiary care teaching hospital with state of art facilities for patients.

Study design and duration

This was an observational study over six months.

Sample size

A total of 102 patients visiting Out-patient ward of Psychiatry department, satisfying inclusion and exclusion criteria during the data collection period were included in the study.

Inclusion criteria

1. Subjects admitted to in-patient and visiting out-patient ward of Psychiatry Department.
2. Subjects with Depressive disorders.
3. Subjects with age group between 18-65 years.
4. Subjects willing to participate in the study and giving the written informed consent.
Exclusion criteria

1. Subjects presenting with Bipolar depression, Intellectual and developmental disability, Altered sensorium, Delirium, Dementia, Uncontrolled Epilepsy, Cerebrovascular abscess, Cerebrovascular injury, Meningitis, Encephalitis, Post-operative trauma or surgical procedures, conditions associated with cognitive impairment.

2. Subjects admitted to special care units, emergency ward and departments other than psychiatry and general medicine.


4. Patients not willing to participate in the study.

Source of data

1. Direct interaction with patients, bystanders and physicians.

2. Case report form.

3. Prescription of patients.

4. Patient case sheet/medication chart.

5. Lab reports.

Study tools

Case Report Form

Collection of patient demographic details, history of illness, co-morbidities, drug therapy and other relevant information.

Patient Health Questionnaire (PHQ-9)

The PHQ-9 is a 9 item questionnaire used for screening, diagnosing, monitoring and measuring the severity of depression. Question 9 on the PHQ-9 screens the presence and duration of suicide ideation.

Hamilton Depression Rating Scale (HDRS)

It is a 17-item clinician administered questionnaire for evaluating the severity of depression. Each answer being scored on a scale value of 0 to 4. Higher total scores indicate more severe depressive symptoms.

World Health Organization’s Quality of Life Instrument - Brief Version (WHOQOL-BREF)

The WHOQOL-BREF scale comprises of 26 items measuring physical and psychological health, social relationship and environment domains. It is used to assess the quality of life in depressive patients.

Modified Scale for Suicidal Ideation (MSSI)

MSSI is a clinician based questionnaire having 18-item scale in which each answer is being scored on a scale value of 0 to 3. Total score is used to measure the suicidal ideation into low, mild, moderate and severe suicidal ideation.

Morisky Green Levine Medication Adherence questionnaire (MGLMAQ)

The Morisky scale consist of 4 items with a scoring scheme of Yes = 1 and No = 0, to assess the adherence of patients to medications. The items are summed to give a range of scores from low adherence to high adherence.

Ethical clearance

This study was approved by the Institutional Ethics Committee (IEC) of ESIC-MC PGIMSR & MH, Rajajinagar, Bengaluru with approval no.532/L/11/12/Ethics/ESICMC&PGIMSR Estt.Vol.III on 04/12/2018.

Study procedure

Subjects meeting the inclusion and exclusion criteria were identified during out-patient and in-patient visit by the investigators. The subjects were briefed out about the study and willingness to participate was ascertained. The investigators obtain the demographic details and disease information on a self-designed case report form. The questionnaires listed above were used to obtain appropriate information and all information such obtained were entered in Microsoft Excel® and appropriate statistical analyses were performed.

Statistical analysis

The categorical data was presented in absolute & relative frequencies and continuous variables presented as mean ± standard deviation. Distribution of data was done using tabulations and graphical representations. Percentage calculations were performed for all the variables.

RESULTS AND DISCUSSION

Gender distribution of subjects

Majority of the subjects included in the study were females (64, 62.74%) followed by males (38, 37.25%), as shown in Figure 1.

Age Distribution of subjects

The highest number of subjects included in the study belonged to 36-45 years age group (35, 34.31%) followed by 46-55 age group (26, 25.49%) are shown in Figure 2. The mean age of the study population was found to be 42.5±10.85 years.

Distribution of subjects by psychotherapy
Majority of the subjects (75, 73.53%) were provided with psychotherapy and 27 (26.47%) subjects were not provided psychotherapy as shown in the Figure 3.

**Distribution of subjects based on co-morbidities**

A total of 56 out of 102 study subjects were having co-morbidities along with depression. The most common co-morbidity seen in the study subjects was hypertension (15, 26.79%) followed by (14, 25.00%) subjects with diabetes mellitus. Detailed distribution of subjects with co-morbidities as shown in Figure 4.

**Distribution of subjects based on depression severity**

The severity of depression was evaluated using Patient health questionnaire-9 (PHQ-9). Out of 102 subjects included in the study, 34 subjects (33.33%) of total population had moderate depression, 28 subjects (27.45%) with mild depression, 26 subjects (25.49%) with moderately severe depression, 11 subjects (10.78%) had severe depression and 3
Distribution of subjects by age (yrs) and depression severity

Majority of study population with depression (35 subjects) belonged to age-group 36-45 years, out of which 11 subjects (31.42%) were found to have mild depression followed by 10 subjects (28.57%) subjects (2.94%) with minimal depression as shown in Figure 5.

Distribution of subjects based on age (yrs) and depression severity

Figure 7: Distribution of subjects based on gender and depression severity

Figure 8: Distribution of depression severity based on HDRS

Figure 9: Distribution of subjects based on age (yrs) and depression severity

Figure 10: Distribution of subjects based on gender and depression severity

Figure 11: Distribution of subjects based on suicidal ideation

Figure 12: Distribution based on gender and suicidal ideation severity
with moderately severely depression, 7 subjects (20.00%) were moderately depressive, 6 subjects (17.17%) with severe depression and 1 (2.85%) with minimal depression. The depression severities based on various age groups are distributed as shown in Figure 6.

**Distribution of subjects based on gender and depression severity**

Relation between gender and severity of depression was evaluated using PHQ-9 questionnaire and was found that majority of female subjects (21, 32.81%) had moderate depression followed by 18 (28.12%) subjects with moderately severe depression and majority of male subjects (13, 34.21%) were found to have moderate depression as shown in Figure 7.

**Distribution of depression severity based on HDRS**

All the subjects included in the study were assessed for severity of depressive symptoms using Hamilton Depression Rating Scale (HDRS) are shown in Figure 8. Based on the severity scores, 2 (1.96%) subjects were normal, 12 (11.76%) subjects had mild depression, 30 (29.41%) subjects were moderately depressed, 24 (23.52%) subjects were severely depressed and 34 (33.33%) subjects had very severe depression.

**Distribution of subjects based on age (yrs) and depression severity**

Relationship between age and severity of depression was evaluated using Hamilton Depression Rating Scale (HDRS) and distributed as shown in Figure 9. Maximum number of depressed subjects (35 subjects) belonged to age-group 36-45 years, out of which 14 subjects (40.00%) were found to have very severe depression, followed by 9 subjects (25.71%) with moderate depression, 7 sub-
jects (20.00%) with severe depression and mild depression in 5 subjects (14.28%).

**Distribution of subjects based on gender and depression severity**

The severity of depression assessed using Hamilton Depression Rating Scale (HDRS) was compared with gender. Majority of the female subjects (22, 34.37%) were very severely depressed, followed by 19 subjects (29.68%) with moderate depression. Majority of the male subjects (12, 31.57%) were found to have very severe depression, followed by 11 subjects (28.94%) were moderately depressed. Detailed distribution of subjects based on gender and depression severity is clearly depicted in Figure 10.

**Distribution of subjects based on suicidal ideation severity**

Modified Scale for Suicidal Ideation (MSSI) was used to evaluate suicidal ideations among the subjects. It was found that majority of the population, 76 subjects (74.50%) were found to have low suicidal ideation followed by 17 subjects (16.66%) with mild-moderate suicidal ideation and 9 subjects (8.82%) were found to have severe suicidal ideation as shown in Figure 11.

**Distribution based on gender and suicidal ideation severity**

Relation between gender and suicidal ideation were assessed and found that most of the female subjects (45, 70.31%) had low suicidal ideation while 12 subjects (18.75%) had mild-moderate ideation and 7 subjects (10.93%) had severe ideation. Among the male subjects, 31 subjects (81.57%) had low suicidal ideation, 5 subjects (13.15%) had mild-moderate ideation and 2 (5.26%) had severe ideation as shown in Figure 12.

**Distribution of subject based on quality of life**

WHOQOL- BREF Scale was used to evaluate quality of life in depressed subjects. It comprises of 4 domains such as physical, psychological, social and environmental health. Out of 102 subjects, majority of the subjects (51.96%) in the population were found to have low quality of life, followed by 47.06% subjects with medium QoL and 0.98% of subjects with high quality of life as shown in Figure 13.

**Distribution of subjects based on age (yrs) and quality of life**

The relation between age group and quality of life was evaluated using WHOQOL-BREF and distributed. The majority of subjects belonged to age group of 36-45 years in which 23 (65.71%) subjects were having low quality of life and 12 (34.29%) subjects with medium quality of life. Detailed distribution of the results are shown in Figure 14.

**Distribution of subjects based on gender and quality of life**

Quality of life was assessed among the subjects and was compared with gender among the study population. Out of 102 subjects, majority of female subjects (36, 56.25%) were having low quality followed by medium quality of life in 28 (43.75%) of subjects. The distribution of subjects based on gender and quality of life are shown in Figure 15.

**Distribution of subjects based on medication adherence**

Morisky Green Levine Medication Adherence Scale (MGLMAS) was used to determine treatment medication adherence in the study population. The scale was initially applied to 70 previously diagnosed subjects. It was found that higher number of subjects (33, 47.14%) were medium adherent, 23 subjects (32.85%) were with low adherence and 14 subjects (20.00%) with high adherence. Subjects were distributed based on medication adherence as shown in Figure 16.

Most of the subjects included in the study were females (64, 62.74%) and belonged to the age group of 36-45 years which is similar to study performed by Sudip Banik Chaudhuri et al., in which 56.7% of the study subjects were females (Chaudhuri et al., 2017). The mean age of the study population was found to be 34.0±11.88 years which were similar to the study conducted by Norifusa Sawada et al., where the mean age was found to be 37.6±13.9. Out of which most of the subjects in this study were previously diagnosed (70, 68.63%) with depression, whereas some were newly diagnosed (32, 31.37%) (Sawada et al., 2009).

In this study the relation between severity of depression with gender and age were evaluated using PHQ-9 and Hamilton depression rating scale (HDRS). According to PHQ-9 questionnaire most of the males (34.21%) and female (32.81%) were found with moderate depression and most of the subjects (35) belonged to the age group of 36-45 years. Using Hamilton Depression Rating Scale (HDRS) found that most of female subjects (34.37%) and male subjects (31.57%) were suffering from very severe depression and majority of the subjects (35) belonged to age-group of 36-45 years (American Psychiatric Association, 1993).

From Modified Scale for Suicidal Ideation (MSSI) it was found that most of female subjects (70.31%) and male (81.57%) belonged to age group of 36-45 years were found to have low suicidal ideation which
is similar to the study performed by Sara Mackenzie et al., where most of the total subjects (35) belonged to age-group of 36-45 years (Safwi et al., 2016).

In this present study Morisky Green Levine Medication Adherence Scale (MGLMAS) was used to determine treatment medication adherence in the study population. It was found that male subjects (21.73%) were more adherent than female subjects (19.14%). Higher number of study subjects belong to age-group of 36-45 years which is contrast to the study performed by P. Alekhya et al., where females (16.5%) were more adherent than males (13.59%) (Alekhya et al., 2020).

Total of 56 study subjects having co-morbidities along with depression were included this study. Most of the subjects (26.79%) were found to have hypertension, followed by 25% subjects with diabetes mellitus which is similar to the study conducted by Adarsh Tripathi et al., where most of the subjects (5.78%) were found to have Diabetes Mellitus (Tripathi et al., 2016).

CONCLUSIONS

Depression is associated with high rates of health care utilization and severe limitations in daily functioning. The severity of depressive symptoms directly correlates with severity of social and occupational disability. Quality of life has become an important outcome criteria for psychiatric interventions. Integrated view on quality of life in patients with depressive disorders can provide important information regarding the nature and extent of the burden associated with these disorders and may be useful in the development of strategies to deal with it.

Low persistence and poor compliance to antidepressant treatment found to be problematic in patients with depression in the clinical outpatient setting. High rates of antidepressant discontinuation without consultation with physician necessitate closer communication between patients and physicians to enhance persistence to medications and to improve outcomes. Recognition of depression as a significant risk factor for noncompliance with medical treatment carries the potential to improve medical practice, reduce patient disability, enhance patient functioning, and improve health care outcomes.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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