



A Study on Depression among Hypertensive Patient Attending Outpatient Department of a Hospital in Rural Bengaluru

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ABSTRACT

Introduction: Depression is a significant contributor to the global burden of disease. The study was conducted to estimate the proportion of depression among hypertensives attending OPD and to determine its associated factors in rural area of a Medical college, Bengaluru.

Methodology: A cross sectional study was conducted on individuals aged above 30 years, diagnosed with hypertension attending OPD during September-October 2017 in rural area, Kansawadi. The sample size was found to be 206. Data was collected using a pre-designed Questionnaire which contained socio-demographic details and depression was assessed using Montgomery-Asberg Depression Scale after obtaining written informed consent. Statistical analysis was carried out using SPSS where descriptive statistics and Chi-square was calculated.

Results: Out of 206 hypertensive patients, the proportion of depression was 53.4%. Statistical significance for depression was seen in those who were divorced and separated, females and illiterates. Age, Religion, Occupation, BMI, Treatment adherence, Family history, personal habits were not found to be significant. Yet, 61.5% of those not taking treatment regularly were found to have Depression.

Conclusion: Marital status, gender, Education and Treatment adherence all play a role in the mental status of hypertensive patients. It is important to provide health education on mental health diseases to the Community.

Keywords: Depression, Hypertension, Rural, Montgomery-Asberg Depression Scale

INTRODUCTION

Depression is a significant contributor to the global burden of disease. One in Twenty people reported having an episode of depression according to the World Mental Health Survey. It was found that depression affects 350 million people around the world and is likely to increase by 5.7% of the total global burden of disease by 2020. Approximately one fourth of the adults were diagnosed with hypertension, and the proportion will reach about one third by 2025.¹

A study conducted by Mahmood et al found the prevalence of depression in 411 hypertensive patients to be 40.1%. They found that depression was largely seen in females and those who were unemployed. Other factors which had a significant association with depression in their study were age class, educational status, socio-economic status, physical activity, smoking, and family history of hypertension.²

Another study conducted by Prathibha et al revealed that the prevalence of depression was found to be 33.3%. They found that gender, duration of hypertension and uncontrolled BP, were

found to be significantly associated with depression. It was seen in their study that marital status played an important role in developing depression, with those married and living with spouse found to be protective against depression.³

In a study by Al-Lugmani E B, depression was significantly associated with lack of physical activity, family history of depression, low frequency of BP monitoring, uncontrolled BP and hypertension complications.⁴

Patients with chronic medical conditions, such as hypertension experience many profound emotions which increase their risk for the development of mental health disorders particularly anxiety and depression.

Hence this study was undertaken to evaluate depression in estimate the proportion of depression in hypertensive patients attending the OPD in the rural field practice area of a Medical College, Bengaluru and to determine the factors associated with depression hypertensive patients in rural areas, as limited studies have been conducted in rural settings.

METHODOLOGY

A descriptive cross sectional study was carried out in rural field practice area of a medical college and hospital, Bengaluru from September - October 2017. All Hypertensive's aged 30 years and above and on treatment for six months and more (according to PHC registers obtained from health workers), attending the OPD at RHTC, Kanaswadi during the study period after taking informed consent were included into the study. Hypertension was classified using JNC Classification and those with a single blood pressure reading of greater than 139/89 mmhg were taken into consideration. Only those Hypertensive patients who were diagnosed with mental illnesses and on treatment and those who were diagnosed as gestational hypertension were excluded from the study. Convenient sampling method was used till the desired sample size was reached.

Considering the prevalence of depression in hypertensive individuals as 66.7% as per a study by Al-Lugmani E B⁴, the sample size was calculated by the formula, $n=4pq/e^2$, where p was 66.7% and allowable error was 10%. The sample was calculated to be 206.

All the eligible Hypertensive individuals attending the OPD were explained about the purpose of the study and informed written consent was obtained.

Data was collected by clinical interview method using a interview schedule comprising of socio-

demographic details, factors such as Treatment adherence, family history of Hypertension and mental illnesses, Co-morbidities (Diabetes, CHD), addictive habits, Blood pressure, and BMI. Assessment of depression was carried out using Montgomery-Asberg Depression Rating Scale.⁶ Those found to have Depression were referred to a higher centre for further evaluation and management. Confidentiality was maintained throughout the study and written Informed Consent was obtained from all the participants. The study has obtained Ethical clearance from the Ethical Committee of SIMS&RC.

Montgomery Asberg Depression Rating Scale (MADRS), developed from Asberg's comprehensive psychopathological rating scale was used to assess the severity of depression.⁶

Usual cut off points for depression are:

- 0 to 6 - normal / symptom absent
- 7 to 19 - mild depression
- 20 to 34 - moderate depression
- >34 - severe depression

Statistical Analysis: The data was entered into Microsoft Excel and analysis of the data was carried out with the help of SPSS Version 20. Descriptive Statistics, such as frequencies and percentages was calculated. Chi Square with Fischer Exact Test was applied accordingly to assess association of different factors with depression.

RESULTS

The study population consisted mainly of Hindus (99%) and males (62.6%). The mean age of the participants was 66.2±11.8years. Around 55% were illiterate. Of which 196 (95.1%) of the study population were below poverty line (BPL) with only 10 (4.9%) belonging to APL Group. It was seen that 47.6% of the study population were farmers, 34% were unemployed, 7.8% were skilled workers, 5.8% were professional employees, and 4.9% were unskilled workers. Out of 206 participants, 92.7% of them were married and living together.

Around 38.3% were found to be diabetic and 81.1% of the study sample informed that they were regularly taking hypertensive medications. Family history of hypertension was seen 40 (19.4%) of the study sample and 205 (99.5%) of the study sample informed that they did not have a family history of depression.

Around 73 (35.4%) of the study sample gave history of smoking and 49 (23.8%) gave a history of alcohol consumption. It was seen that 44.2% of them were obese and 33% were overweight.

Table 1- Association of demographic and risk factors with depression (N=206)

Variable	Depression according to Montgomery scale (N=206)		Total (%)	p value
	Present (%)	Absent (%)		
Age				
Gender				
Male	62 (48.1)	67 (57.1)	129	<0.05
Female	48 (62/3)	29 (37.7)	77	
Religion				
Hindu	108 (52.9)	96 (47.1)	204	0.184
Muslim	2 (100)	0 (0)	2	
SES				
APL	6 (60)	4 (40)	10	0.66
BPL	104 (53.1)	92 (46.9)	196	
Educational status				
Illiterate	69 (61.06)	44 (38.9)	113	<0.05
Literate	41 (44.1)	52 (55.9)	93	
Marital status				
Married & living together	98 (51.3)	93 (48.7)	191	<0.05
Divorced and widow	12 (80)	3 (20)	15	
BMI				
Normal	85 (53.5)	74 (46.5)	159	0.97
Above normal	25 (53.2)	22 (48.8)	47	
Taking medications regularly				
Yes	87 (51.8)	81 (48.2)	168	0.32
No	23 (60.5)	15 (39.5)	38	
Family H/O HTN				
Yes	1 (100)	0 (0)	1	0.34
No	109 (53.2)	96 (46.8)	205	
Family H/O Depression				
Yes	19 (47.5)	21 (52.8)	40	0.481
No	91 (54.8)	75 (45.2)	166	
Smoking				
Yes	36 (48.6)	74 (56.1)	74	0.31
No	38 (51.4)	58 (43.9)	132	
Alcohol				
Yes	24 (48)	26 (52)	50	0.41
No	86 (55.1)	70 (44.9)	156	

The proportion of depression among the hypertensive patients was found to be 53.4%. Out of those with depression, it was found that 50.5% of the participants had mild depression, 46.6% had moderate depression and 2.9% had severe depression.

It was seen that 48 (62.3%) of females, 23 (60.5%) of those not taking medications regularly, 85 (53.5%) of those above normal BMI (over weight & obese) and 101 (54.3%) of those ≥ 50 years had some features of depression.

Marital status (divorced and separated), gender (females) and Education (illiterate) was found to be significantly associated with depression (Table 1). Other factors (Age, Religion, Occupation, BMI, Treatment adherence, Family history, smoking and alcohol consumption) were not found to be significant ($p > 0.05$).

DISCUSSION

The proportion of depression among the 206 hypertensive patients was found to be 53.4%. It was

found that Marital status, Gender, Education and irregular intake of medications all play a role in the mental status of hypertensive patients.

This study revealed that depression was observed more in females and those above 50 years of age. This was highlighted in other studies which showed increased risk of stroke among older patients with hypertension and high levels of depressive symptoms, particularly in women.⁷ This could be due to the fact the females are more likely to face stress due to both domestic and work related issues much more than their male counterparts.

This study was similar to a study conducted by Prathibha et al, which showed that marital status plays an important role in developing depression, with those married and living with spouse found to be protective against depression.³ Another study conducted by Mahmood et al also found that depression was largely seen in females and those who were unemployed.² This could be to the fact the life partners play a supportive role in the health

of their respective spouses and their intake of medications.

A Study by Rubio- Guerra AF et al found that depression is associated with poor control of blood pressure with 21 out of 23 patients with hypertension had uncontrolled blood pressure. ⁸ Though no significant association was found in this study, treatment adherence did play a role with mental status of the participants. As chronic conditions are more associated with modifiable risk factors such as stress and lifestyle habits, adhering to treatment, normal blood pressure and depression go hand in hand. This is addressed in a study carried out by Huh Shinn E et al where they found that those with higher BMI had higher systolic blood pressure and more likely to have hypertension at follow up visits.⁹

As various factors play a role in the pathophysiology of depression and hypertension, they are co-related. Even though in this study substance abuse was not found to be significantly associated with depression, according to Korhonen P, depression may act as a barrier to the adoption of healthy lifestyle and studies showed increased rates of smoking, alcohol intake, physical inactivity, and obesity in these patients.¹⁰

In this study it was also seen that treatment adherence and taking treatment regularly also played an important role, which was similar to a study done by Gehi A et al.¹¹ Hence it is important to evaluate the mental status of those having chronic diseases, to prevent complications and provide better care.

LIMITATIONS

The limited sample size may have affected the results. Participants may have been reluctant to answer the questions which might affect results. Bias may be introduced as it was a facility based study

CONCLUSION

It can be seen in this study that females were more prone to depression and marital status plays a positive effect to overcome mental health disorders as it provides support and care to the patient. It is important to provide health education on mental health diseases to the community and to monitor those with chronic diseases. Screening for depression in hypertensive patients is a simple and cost-effective method to improve the quality of life and health outcome of those with hypertension.

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Dr. Shruthi Shetty conceived the study, designed the statistical analysis, interpreted the results and drafted the manuscript. Dr Divya collected the data, interpreted the results and drafted the manuscript. Dr Maheswaran participated in the design and coordination of the study. Dr Nikhil collected the data and interpreted the results. All authors read and approved the final manuscript.

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