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Depression, Anxiety and Stress Levels in Prehypertensive Males

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ABSTRACT

Background: As the pre-hypertension does not have symptoms, it may be missed in diagnosis usually. The interesting feature is its rate of progression which is very high and leads to development of hypertension. This is more applicable to those having blood pressure in the upper range of pre-hypertension.

Objectives: The current study was undertaken to observe the depression, anxiety and stress levels in prehypertensive males.

Materials and method: A total of 30 pre-hypertensive males and age matched healthy males were recruited for the study after obtaining written, informed consent. Depression, anxiety and stress levels were estimated by using DASS 42 questionnaire.

Results: Demographic variables are not statistically significant among the participants. There were significantly higher levels of stress, depression and anxiety in pre-hypertensive males when compared to healthy males.

Conclusion: The current study highlights the need of assessment of depression, anxiety and stress in patients with high blood pressure. We have observed significantly higher levels of depression, anxiety and stress in the patients with pre-hypertension when compared with healthy males. We recommend further detailed studies in this area to consider psychotherapy as a palliative care to the patients with hypertension for better prognosis.

Keywords: *Depression, Anxiety, Stress, Pre-hypertension*

INTRODUCTION

Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High BP defined that systolic BP (SBP) 130–139 mmHg or diastolic BP (DBP) 80–89 mmHg fall into the category of pre-hypertensive based on the evidence of a modest increase in cardiovascular risk among individuals with such levels [1]. As the pre-hypertension does not have symptoms, it may be missed in diagnosis usually [2]. The interesting feature is its rate of progression which is very high and leads to development of hypertension. This is more applicable to those having blood pressure in the upper range of pre-hypertension [3, 4]. Further, studies have reported close association of pre-hypertension with obesity, metabolic syndrome, dyslipidemia and chronic renal diseases [5-11]. Earlier studies reported that repeated exposure to stress causes elevation of blood pressure and leads to hypertension. This effect may be due to the secretion of the hormones during the stressful conditions or unhealthy life style like decrease in sleep duration and consumption of alcohol to cope up the stress. Studies also reported that individuals experiencing depression, anxiety are more prone to develop hypertension. Interestingly, somatic symptoms, lower quality of life,

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and role impairment and psychological distress are commonly observed in the patients with hypertension. Though several studies reported association of depression, anxiety and stress with high blood pressure, the prevalence was still unclear. Hence the current study was undertaken to observe the depression, anxiety and stress levels in prehypertensive males.

METHODOLOGY

Study design: The present correlational study will be conducted at Department of Physiology, Mahavir Institute of Medical Sciences,Vikarabad. A total of 30 pre-hypertensive males and age matched healthy males were recruited for the study after obtaining written, informed consent. The following criteria were used for selection of the cases.

Inclusion criteria:

- Willing participants
- Apparently healthy men age 25-40 yrs
- SBP 130–139 mmHg and DBP 80–89 mmHg

Exclusion criteria:

- Body mass index (BMI) >40 kg/m2
- current use of any medications or therapy including use of oral contraceptives
- Use of dietary supplements known to affect BP
- Any eye or ear diseases or vestibular disorders
- unwilling participants

Method: Depression, anxiety and stress levels were estimated by using DASS 42 questionnaire [12].

Data analysis: Data was analyzed by SPSS 20.0. Student t test was used the significance of difference in depression, anxiety and stress scores. P value less than 0.05 was considered as significant.

RESULTS

Results are presented in table no 1 and 2. Table no 1 explains the demographic data of the participants and table no 2 presents the depression, anxiety and stress scores of the participants. Demographic variables are not statistically significant among the participants. There were significantly higher levels of stress, depression and anxiety in pre-hypertensive males when compared to healthy males.

Table no 1: Demographic data of parameters

Parameter	Pre-hypertensive male (n=30)	Healthy males (n=30)	P value
Age (years)	32±6	29±8	0.1058
Weight (kg)	64±12	67±8	0.2592
Height (cm)	176±26	168±28	0.2562

Table no 2: Depression, anxiety and stress scores of the participants

Parameter	Pre-hypertensive male (n=30)	Healthy males (n=30)	P value
Depression	17±6	12±4	0.0004***
Anxiety	10±4	8±3	0.0325*
Stress	24±7	16±6	0.0001***

(*P<0.05, **P<0.01, ***P<0.001)

DISCUSSION

The present study was undertaken to observe the levels of depression, anxiety and stress in pre-hypertensive males when compared to healthy males. Significantly higher levels of depression, anxiety and stress were observed in pre-hypertensive males. Psychological factors contributes to increased blood pressure through direct and indirect mechanisms. Earlier studies reported the prevalence of depression in hypertensive patients is 21.3%. Depression decreases quality of life and increases dependence on medications and risk of mortality [13, 14]. In contrast some of the studies reported that depression was not associated with hypertension [15]. Earlier studies suggested that anxiety is another significant cause of increased BP and is an independent predictor of future hypertension [16]. Recent study reported that depressive symptoms were present in 10%, anxiety in 70%, and stress in 10% of patients [17]. Diagnosing as hypertensive itself increases stress in the patients. This will explain the association of mental stress with stress. Further, visiting the physician also cause stress in the patients and boost the increase in the blood pressure and consistent stress may leads to hypertension. Though there is a close association of mental disorders, most of the times they were not diagnosed. Interestingly, it was reported that the overall awareness in the hypertensive patients is satisfactory but the mental heal disorders were neither reported by the patients nor diagnosed by the clinicians. Diagnosing and treating the mental health disorders in these patients may help to boost the prognosis. The present study results are in accordance with earlier studies as we have observed significantly higher levels of depression, anxiety and stress in pre-hypertensive patients.

CONCLUSION

The current study highlights the need of assessment of depression, anxiety and stress in patients with high blood pressure. We have observed significantly higher levels of depression, anxiety and stress in the patients with pre-hypertension when compared with healthy males. We recommend further detailed studies in this area to consider psychotherapy as a palliative care to the patients with hypertension for better prognosis.

Conflicts of Interest: Nil

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