Assessment of depression, anxiety, and stress levels in prehypertensive females

Syamala Devi Bandaru
Professor & Head, Department of Physiology, Konaseema Institute of Medical Sciences, Amalapuram, Andhra Pradesh, India.

Soumya Mishra
Associate Professor, Department of Physiology, Kalinga Institute of Medical Sciences, KIIT Deemed to be University, Bhubaneswar, Orissa, India.

Sivakumar Manivasagam
Assistant Professor, Department of Anatomy, Thiruvannamalai Medical College, Tamil Nadu, India.

Rahmath A
Reader, Department of Physiology, Malabar Dental College and Research Centre, Kerala, India.

Sai Sailesh Kumar Goothy*
Associate Professor, Department of Physiology, R.D. Gardi Medical College, Ujjain, Madhya Pradesh, India.
* Corresponding author

Anita Choudhary
Professor & Head, Department of Physiology, R.D. Gardi Medical College, Ujjain, Madhya Pradesh, India.

Abstract---Background: it is needed to assess the depression, anxiety, and stress in these individuals as a part of the intervention. Earlier studies in this area assessed only with less sample size. Objective: The present study was undertaken to assess depression, anxiety, and stress in the prehypertensives with large sample size. Materials and methods: A total of 100 cases with pre-hypertension and 100 controls of similar ages and gender were recruited in the present study. Depression, anxiety, and stress are negative emotional states. They can be assessed using DASS 42 questionnaire which is a standard questionnaire and available freely to use. Results: Age is significantly different between the groups. Other demographic data were not significant between the cases and controls. Depression, anxiety, and stress scores were significantly high in the cases when compared with...
the control group (P<0.001). Conclusion: The study highlights that negative emotional states like depression, anxiety and stress are significantly high in the prehypertensive when compared with healthy controls.

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

**Introduction**

Hypertension is the leading cause of death throughout the world. Prehypertension is defined as systolic blood pressure between 120-139 mmHg and diastolic blood pressure between 80-89 mmHg. Thus, an individual with prehypertension is more prone to develop hypertension. No medical treatment is required for individuals with prehypertension, but the lifestyle must be modified to a holistic lifestyle. Negative emotional states like depression, anxiety, and stress are more common in prehypertensive individuals.\(^1\) Hence, it is needed to assess the depression, anxiety, and stress in these individuals as a part of the intervention. Earlier studies in this area assessed only with less sample size. Hence, the present study was undertaken to assess depression, anxiety, and stress in the pre hypertensives with a large sample size.

**Materials and Methods**

**Study design:** Case-control study

**Study participants:** A total of 100 cases with pre-hypertension and 100 controls of similar ages and gender were recruited in the present study. Cases were recruited by the following criteria.

**Inclusion criteria:** Willing males and females with pre-hypertension, within the age group 0f 30-40 years and not following any therapy or treatment were included in the study.

**Exclusion criteria:** Participants with any severe complications were excluded from the study.

**Assessment of depression, anxiety, and stress:** Depression, anxiety, and stress are negative emotional states. They can be assessed using DASS 42 questionnaire which is a standard questionnaire and available freely to use.

**Ethical consideration:** The current study protocol was approved by the institutional human ethical committee.

**Statistical analysis**

Data was analyzed using SPSS 20.0 version. A student t-test was used to observe the significance of the difference between the groups. P value less than 0.05 was considered significant.
Results

Results were presented in table no 1. Age is significantly different between the groups. Other demographic data were not significant between the cases and controls. Depression, anxiety, and stress scores were significantly high in the cases when compared with the control group (P<0.001).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Cases</th>
<th>Controls</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>34±0.3</td>
<td>35±0.2</td>
<td>0.0061**</td>
</tr>
<tr>
<td>Height (cm)</td>
<td>164±3.50</td>
<td>166±3.80</td>
<td>0.6991</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>72±2.60</td>
<td>76±2.20</td>
<td>0.2416</td>
</tr>
<tr>
<td>Depression score</td>
<td>16±0.20</td>
<td>7±0.30</td>
<td>0.0001***</td>
</tr>
<tr>
<td>Anxiety Score</td>
<td>14±0.30</td>
<td>6±0.20</td>
<td>0.0001***</td>
</tr>
<tr>
<td>Stress Score</td>
<td>25±0.90</td>
<td>12±0.40</td>
<td>0.0001***</td>
</tr>
</tbody>
</table>

Data were presented as mean and SEM. **P<0.01 is significant, ***P<0.001 is significant.

Discussion

The present study was undertaken to assess depression, anxiety, and stress in the prehypertensives with large sample size. Age is significantly different between the groups. Other demographic data were not significant between the cases and controls. Depression, anxiety, and stress scores were significantly high in the cases when compared with the control group (P<0.001). The study highlights that negative emotional states like depression, anxiety, and stress are significantly high in the prehypertensive when compared with healthy controls. The prevalence of depression, anxiety, and stress was reported to be high in pre-hypertensive individuals. Increase in negative emotions has an adverse effect on the quality of life as well as it also causes the pre-hypertension to hypertension. In contrast, other studies reported that there is no relation between depression, anxiety and stress, and prehypertension. As negative emotions cause adverse effects, they should become part and parcel of the clinical examination in the diagnosis of prehypertension. Earlier diagnosis helps to adopt effective management techniques that can be prevented the development of hypertension in these individuals.

Conclusion

The study highlights that negative emotional states like depression, anxiety and stress are significantly high in the prehypertensive when compared with healthy controls.

Conflicts of interest: None declared

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References