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Research Article

EXPLORING THE SILENT SURGE: A COMPREHENSIVE SURVEY ON THE PREVALENCE OF HYPERTENSION, STRESS AND INSOMNIA AMONG YOUNG ADULTS

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Abstract:

Introduction: Hypertension, stress, and insomnia remain underexplored conditions among young adults. These conditions are often termed silent killers because they don't show any symptoms but pose significant risks to long-term health and well-being. This study aims to determine the prevalence of Hypertension, stress, and insomnia in young adults, provide personalized counseling sessions, and monitor progress through follow-up.

Materials and Methods: A longitudinal study was conducted in a community setting. The study sample consisted of adults aged 18-39 from different socio-economic backgrounds. Data was recorded based on a proforma. Stress and sleep patterns were assessed using validated questionnaires. Personalized counseling sessions were conducted for the participants with abnormal findings. Follow-up sessions were scheduled to monitor progress.

Results: Initially out of 250 participants 29 were hypertensive, 50 were prehypertensive, 51 had high stress levels and 162 had poor sleep patterns. After two consecutive follow-ups, it was seen that the number of participants with high stress levels and poor sleep patterns decreased to 16 and 95 respectively. Till the time of the second follow-up, 66 individuals had controlled blood pressure

Discussion: The findings indicate a significant rise in hypertension, stress, and insomnia among young adults, driven by factors such as high academic and work pressures, digital media consumption, and financial instability. The study underscores the necessity for comprehensive public health strategies and individualized intervention programs to mitigate these issues and promote healthier lifestyles.

Keywords: Hypertension, Stress, Insomnia, Young Adults, Prevalence, sleep quality index

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INTRODUCTION:

Hypertension is persistently elevated arterial Blood Pressure. It can be of two types: Primary or essential Hypertension (Resulting From an unknown cause) and Secondary Hypertension (Resulting from a specific cause). Hypertension is known as a silent killer because many people don't show any symptoms. In the past couple of decades, there has been an upsurge of worry regarding the surveyed rates of insomnia, hypertension, and elevated stress levels, especially amongst younger demographics.

Stress is defined as a state of mental tension or worry caused by certain situations. The age between 18-39 is a very critical period associated with numerous changes in one's life and hence there could be many conditions and complications that can increase stress levels.

Sleep is a state of rest and unconsciousness that allows the body and brain to recover. Young adults struggle to maintain proper sleep hygiene due to improper lifestyles and poor sleep patterns in the younger generation can lead to long-term health issues and complications including hypertension. Although there was a great amount of research conducted while keeping stress, sleep disorders, and hypertension in mind, a sizable amount of research still needs to be done because limitations corresponded with factors such as sleep and demographic specifics primarily. But looking into the effects these three factors have on young adults hasn't been innovated enough. Furthermore, if they're not appropriately addressed and tackled, these issues can worsen chronic diseases in young adults who are already underdeveloped states. To address this gap, a thorough analysis of the occurrence of deep-lying ignorance of the related factors for insomnia has since been needed.

MATERIALS AND METHODS:

Objectives : Investigate the prevalence of prehypertension hypertension among young adults and identify the underlying risk factors if any, To assess the stress patterns among young adults, To Examine the sleep patterns among young adults, To counsel the individual with hypertension or prehypertension on proper management of BP and sessions on stress management and advantages of proper sleep to be conducted, Timely follow up of those individuals.

Study design: This was a community-based longitudinal study focused on groups of young adults involving 250 Participants belonging to different backgrounds like Students, Employees, and Housewives from both rural and urban areas. The study was carried out for 6 months.

Participants: Young Adults Between the age of 18-39 years were recruited. Participants of either gender were included. Participants with or without comorbidities were included. Participants above 40 years, pediatrics and pregnant and lactating women were not included in this study

Methodology The data was collected according to the data collection form specifically designed for this study. The Blood Pressure of the individuals was measured by using a sphygmomanometer. First, the individuals were asked to remain in a seated position to establish a steady state, and then blood pressure was recorded. The three consecutive readings were taken to get an accurate result with a time interval of two minutes between two measurements. The participants are then classified as normotensive (120/80), pre-hypertensive (120-139/80-90), or hypertensive (140/90 and higher) as per their BP level according to the World Health Organization (WHO) guidelines. The stress patterns were assessed using the perceived stress scale, A validated questionnaire that measures the degree to which situations in one's life are appraised as stressful. According to scores, the stress levels of participants are classified as low (0-13), moderate (14-23), and High (24-40). The sleep patterns were assessed using the Pittsburgh Sleep Quality Index (PSQI). The participants with elevated blood pressure were instructed to consult a physician and also counseled about lifestyle changes, the importance of medication adherence, and sleep hygiene. The personalized counseling sessions were provided to the participants with elevated stress levels and poor sleep quality. Follow-up sessions of one-month durations, each with the duration of one month were conducted to monitor progress.

Ethics Approval: This study was approved by the Ethics Committee of MESCO College of Pharmacy, affiliated with Osmania University [No: MCP/IEC/PD/PR/84]. Written informed consent was obtained from every participant.

RESULTS:

This study aimed to determine the prevalence of hypertension, stress and insomnia among young adults and to conduct follow-ups for monitoring the progress after successful counseling sessions.

The prevalence of prehypertension and hypertension was found to be 20% and 11.6% respectively. The number of participants with controlled hypertension gradually increased from 48 to 66 after the second follow up and 13 individuals remained with uncontrolled blood pressure as shown in Table 1.

Table 1 : Distribution of hypertension

Category	No.of pts (Initial)	Follow Up-1		Follow Up-2	
		Controlled BP	Uncontrolled BP	Controlled BP	Uncontrolled BP
Normotensive	171				
Prehypertensive	50	35	15	44	6
Hypertensive	29	13	16	22	7
Total	250	48	31	66	13

Bp : Blood pressure, No.of : Number of.

The main reasons for uncontrolled blood pressure were medication nonadherence, improper sleep patterns, sedentary lifestyle. Figure 1 illustrates the distribution of hypertension among survey participants, distinguishing between known and denovo cases. "Denovo" cases represent individuals who were unaware of their hypertensive condition until it was identified during the survey. This highlights the prevalence of undiagnosed hypertension within the sample group, underscoring the need for greater awareness and screening efforts to detect hypertension early.

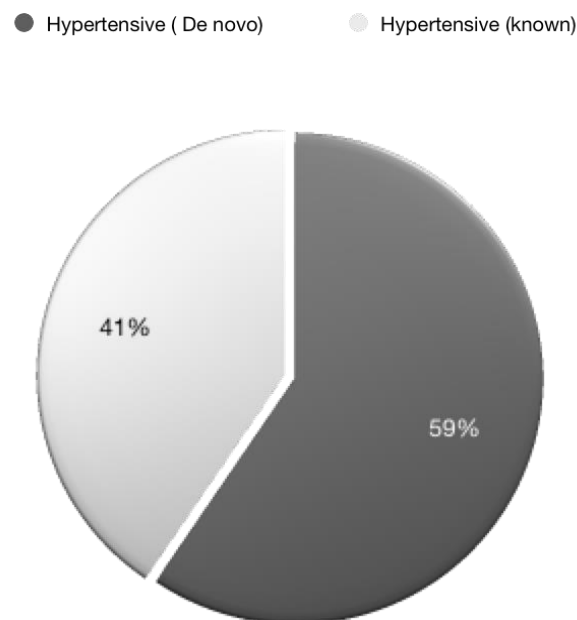


Figure 1: Distribution of hypertension

Stress levels of 250 individuals were measured by using a perceived stress scale. Initially, out of 250 individuals, 165 individuals had moderate to high stress levels. Out of the 165 participants who were assessed with moderate to high stress levels, 45 (27.2%) were in the 18-23 age range, 49 (29.6%) were between 23-28, 31 (19%) were aged 28-33, and 40 (24.2%) were in the 33-39 age group. The highest incidence of high stress was found in the 23-28 age group. Tone findings indicate Out of 162 participants, 51 (32%) were students, 65 (40%) were employees, and 46 (28%) were housewives, indicating employees had the highest stress levels. As shown in Table 2, initially, only 85 individuals had low stress levels, which increased to 130 at the time of the first follow-up and 184 by the second follow-up. This shows the positive impact of the counseling sessions and also shows that by developing a healthy lifestyle and maintaining good sleep hygiene, the stress levels of young adults can be controlled.

Table 2: Distribution of Stress

Category	No. of patients (Initial)	No of patients (Follow up-1)	No of patients (Follow up -2)	(%) Follow up 2
Low	85	130	184	73.6%
Moderate	114	84	50	20%
High	51	36	16	6.4%
Total	250	250	250	100%

No.of : Number of, %:percentage.

Similarly, the sleep patterns of 250 participants were assessed using the Pittsburgh quality index. And during initial assessment, 162 individuals had poor sleep quality. To accurately analyze the data, we categorized the participants based on their age and occupation. We found Out of 162 participants who had poor sleep patterns, 42 (26%) were within the age group 18-23, 49 (30%) were within the age group 23-28, 39 (24%) were within the age group 28-33, and 32 (20%) were within the 33-39 age

group. The prevalence of poor sleep was most common in the 23-28 age group. And out of 162 participants, 50 (30.3%) were students, 80 (48.5%) were employees, and 35 (21.2%) were housewives, indicating higher stress levels among employees. As shown in Table 3 initially there were only 88 individuals with good sleep patterns which increased to 124 at the time of the first follow-up and increased to 155 by the second follow-up . It shows the positive impact of the counseling sessions.

Table 3: Distribution of Sleep

Category	No of patients (initial)	No of patients (follow up-1)	No of patients (Follow up-2)	% Follow up 2
Poor	162	126	95	38%
Good	88	124	155	62%
Total	250	250	250	100%

No.of : Number of, %:percentage.

DISCUSSION:

This was a longitudinal study which was carried out over six months. This study focused on young adults (18-39 years).The study aimed to investigate the prevalence of prehypertension and hypertension among young adults, stress and sleep patterns. For this purpose, the Pittsburgh Sleep Quality Index (PSQI) and the Perceived Stress Scale (PSS) were used to assess sleep quality and stress levels, respectively.

Initially, out of 250 participants, 29 (11.6%) had hypertension, and 50 (20%) had prehypertension. The prevalence was similar to that observed by Zachariah Geevar, Mangalath Narayanan Krishnan, et al. (2022)¹⁶. Out of 79 hypertensive patients, 47

were identified as de novo cases. The High proportion of de novo cases shows that hypertension in most cases goes undiagnosed until specifically screened. Hence it indicates the importance of routine blood pressure checkups.

In our study, the sleep patterns of 250 participants were examined by utilizing the Pittsburgh Sleep Quality Index. Out of 250 participants, 162 (64.8%) had poor sleep, and 88 (35.2%) had good sleep.

To accurately analyze the data, we categorized the participants based on their age and occupation. We found Out of 162 participants who had poor sleep patterns, 42 (26%) were within the age group 18-23,

49 (30%) were within the age group 23-28, 39 (24%) were within the age group 28-33, and 32 (20%) were within the 33-39 age group. The prevalence of poor sleep was most common in the 23-28 age group. And out of 162 participants, 50 (30.3%) were students, 80 (48.5%) were employees, and 35 (21.2%) were housewives, indicating higher stress levels among employees.

We assessed stress levels in 250 participants using the Perceived Stress Scale. And we found 85 (34%) had low-stress scores, 114 (45.6%) had moderate stress scores, and 51 (20.4%) had high-stress scores. Out of the 165 participants who were assessed with moderate to high-stress levels, 45 (27.2%) were in the 18-23 age range, 49 (29.6%) were between 23-28, 31 (19%) were aged 28-33, and 40 (24.2%) were in the 33-39 age group. The highest incidence of high stress was found in the 23-28 age group. Tone findings indicate Out of 162 participants, 51 (32%) were students, 65 (40%) were employees, and 46 (28%) were housewives, indicating employees had the highest stress levels.

The Results also indicated that participants with low-stress levels have better health habits, and a healthy lifestyle compared to the individuals with high-stress levels. This finding is similar to the study by Gretchen E. Fogle And F. Pettijohn (2013)²⁴.

Two follow-up studies were also conducted one month after providing comprehensive health education and counseling to participants to validate the findings of the initial study. These interventions focused on stress management, improving sleep quality, and promoting a healthy lifestyle.

The number of prehypertensive participants with uncontrolled blood pressure decreased from 15 initially to 6 after the second follow-up. Similarly, the number of hypertensive individuals with uncontrolled blood pressure dropped from 16 at the start to 7 after the second follow-up, indicating a significant improvement

The number of individuals with moderate to high stress in the initial study decreased from 165 to 120 after the first follow-up and further reduced to 66 after the second follow-up. Likewise, the number of participants with poor sleep patterns decreased from 162 in the initial findings to 126 after the first follow-up and to 95 after the second follow-up. Indicating the positive impact of our counseling sessions

Interventions such as social engagement, time management, and emotional regulation can effectively lower stress levels and enhance sleep

quality. This finding is similar to the study by Amjed Abojedi, Judy Basmaji, et al. (2023)¹⁴.

CONCLUSION:

Our study concluded that the rise in cases of insomnia, stress and hypertension was particularly apparent amongst youngsters, and was caused by certain factors like academic work, families, professional pressure, necessitous issues and even relationships. The study also sheds light on the proportion of cases of Hypertension that were undiagnosed as well as the levels of stress and quality of sleep which were particularly poor among 23- to 28-year-old employees. Our study also emphasizes the need for comprehensive health strategies and tailored interventional programs to address such issues and foster a healthy lifestyle among the young generation.

DECLARATIONS

Acknowledgements

None

Ethics Approval

This study was approved by the Ethics Committee of MESCO College of Pharmacy, affiliated with Osmania University [No: MCP/IEC/PD/PR/84]. Written informed consent was obtained from every participant.

Competing Interests

None declared.

Availability of Data and Material

All data are available in the manuscript

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