

Prevalence of Hypertension in Patient with General Anxiety Disorder

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Abstract

Original Research Article

Background: People with hypertension are more likely to suffer from mental health illnesses such as depression and/or anxiety. Anxiety influences medication adherence in hypertensive patients and limits their treatment options. Worsens the prognosis and raises the death rate. **Objective:** To determine the prevalence of anxiety and its relationship to hypertension in hypertensive individuals. **Materials and Methods:** The study was a hospital-based descriptive cross-sectional study that took place at Sheba Susrusa Hospital in Dhaka from February 2022 to February 2023. All study participants provided written informed consent. In total, 165 patients with hypertension were included in the study. The patients with general anxiety disorders were selected by DSM 5 criteria. We included all patients, regardless of medication. The patient's demographic information, clinical presentations, and questionnaire were all completed. **Results:** The majority of patients (61.2%) were female, 45 (27.3%) were prehypertensive, 69 (41.8%) were stage I, 18 (10.9%) were stage II, and 33 (20.0%) were normal. There were 78 (47.3%) individuals with general anxiety disorders, 49 (56.32%) with hypertension stages I and II. The difference between the four groups was statistically significant ($p < 0.05$). **Conclusion:** There is a strong relation between generalized anxiety disorder and hypertension. Anxiety in patients with hypertension at younger ages has to be assessed because it may contribute to hypertension.

Keywords: Generalized anxiety, DSM 5, hypertension.

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INTRODUCTION

People who have hypertension are more likely to acquire mental problems such as depression and/or anxiety. However, there is a scarcity of data on comorbid depression and anxiety symptoms in hypertensive patients in research settings [1]. Hypertension affects over a billion people worldwide, making it a major public health problem. The problem is significant in both developed and developing countries. [2].

Chronic forms of morbidity, including mental disorders and hypertension, play a dominant role in determining a disease load in the developing world. [3]. People with hypertension are at an increased risk of mental health disorders, including depression and/or anxiety. [4].

Changes in appetite and weight, sleep and activity patterns, energy levels, feelings of guilt, difficulty thinking clearly and making decisions, and recurring thoughts of death or suicide are all symptoms that indicate depression. [5,6]. Anxiety is defined as the

existence of excessive worry about several events or activities on the majority of days, as well as somatic symptoms like muscle tension, irritability, difficulty sleeping, and restlessness. [6, 7] Depression likely causes a 5.7% increase in the global burden of diseases by 2020 and become the leading cause of disability worldwide by the year 2030. [8].

Depression comorbidity decreases the quality of life and increases the risk of myocardial infarction and stroke in people with hypertension. [9]. Anxiety influences medication adherence in people with hypertension and limits the feature treatment options worsens the prognosis and increases mortality. [10].

People with hypertension were more likely to have depressive and anxious symptoms. Being a woman, having a family history of depression, having no formal education, having another medical ailment, and having little social support were

All connected with depression. [3]. Hypertension and anxiety disorders both cause substantial morbidity to patients and

Cost to the health care system. The relationship of anxiety to the development of hypertension has been a subject of controversy with mixed findings in large-scale observational studies. [11].

Patients with chronic conditions like hypertension may experience many negative emotions which increase their risk for the development of mental health disorders particularly anxiety. Hypertension seems to be more strongly related to anxiety. Patients with hypertension manifested symptoms of anxiety, depression and stress. [12].

MATERIALS AND METHODS

The study was a hospital-based descriptive cross-sectional study was conducted in the department of Medicine, Sheba Susrusha Hospital, Dhaka during February 2022 to February 2023 two years. Written informed consent was obtained from all the study participants. Patients with a diagnosis of hypertension were included in the study. We included all the patients irrespective of the medications. Patient's demographic details, clinical presentations, and questionnaire were filled.

The outdoor patients with minor complaints and no h/o diabetes mellitus, or any other complaints pointing to any underlying stress (grief, fear) pathological condition as endocrinal/renal disorder or h/o of drug/alcohol induced hypertension were excluded and the other ones who were found hypertensive on general physical examination as per JNC 8 criteria (blood pressure more than 140/90 mm Hg) or already diagnosed as hypertensive a little time ago in age group of 18 -35 years were included and evaluated further for inclusion in study by following criteria.

The patient's blood pressure readings were taken by standard Germany made mercury sphygmomanometer on the non-dominant arm when the patient remained seated for at least 5 minutes. Resting

systolic & diastolic pressure is taken as mean of two measurement. Weight, Height, Body Mass Index Abdominal was included. Thyroid examination performed, history of cigarette smoking was taken.

The patients with general anxiety disorders were selected by DSM 5 criteria which differentiates other disorders as phobias, OCD and panic disorders from generalized anxiety disorders. According to these criteria we diagnosed anxiety with the following features. The presence of excessive anxiety and worry about a variety of topics, events or activities. Worry occurs more often than 6 months and is clearly excessive and it is difficult to control worries and the patient changes topics while talking.

The worry or anxiety is associated with three of the following physical or cognitive symptoms; Edginess or restlessness, tiring easily; more fatigued than usual, difficulty in concentration or feeling as though the mind goes blank, irritability (recognized by others), increased muscle aches or soreness, difficulty sleeping (due to trouble falling asleep or staying asleep, restlessness at night, or unsatisfying sleep), the patient feels difficulties in performing normal daily activities and responsibilities due to undue worries. These symptoms are unrelated to any other medical conditions and cannot be related to the prescription medication, alcohol, or recreational drugs and cannot be explained by another mental disorder.

RESULTS

Table 1 shows that mean age was found 46.4±12.7 years. Majority (61.2%) patients were female, 65(39.4%) patients completed graduate education, 43(26.1%) were housewives and 118(71.5%) were married. Table 2 shows that 45(27.3%) patients were prehypertension, 69(41.8%) were stage I, 18(10.9%) were stage II and 33(20.0%) normal. Figure I shows that 78(47.3%) patients were found in general anxiety disorders. Table 3 shows that 78 patients were found general anxiety disorders among them 29 patients were normal and prehypertension which was 37.17% and 49 were hypertension stage I and stage II which was 56.32%. The difference was statistically significant ($p < 0.05$) among four groups.

Table 1: Socio-demographic characteristics of the study patients (n=165)

Variables	Frequency	Percentage
Gender		
Male	64	38.8
Female	101	61.2
Mean age (years)	46.4	±12.7
Educational status		
Illiterate	19	11.5
Primary	58	35.2
Secondary	23	13.9
Graduate	65	39.4
Occupational status		
Student	32	19.4

Variables	Frequency	Percentage
Business	21	12.7
Service	41	24.8
Farmer	12	7.3
Housewife	43	26.1
Others	16	9.7
Marital status		
Married	118	71.5
Unmarried	42	25.5
Widow/Divorced	5	3.0

Table 2: Hypertension category of the study patients (n=165)

Hypertension	Frequency	Percentage
Normal	33	20.0
Prehypertension	45	27.3
Stage I	69	41.8
Stage II	18	10.9

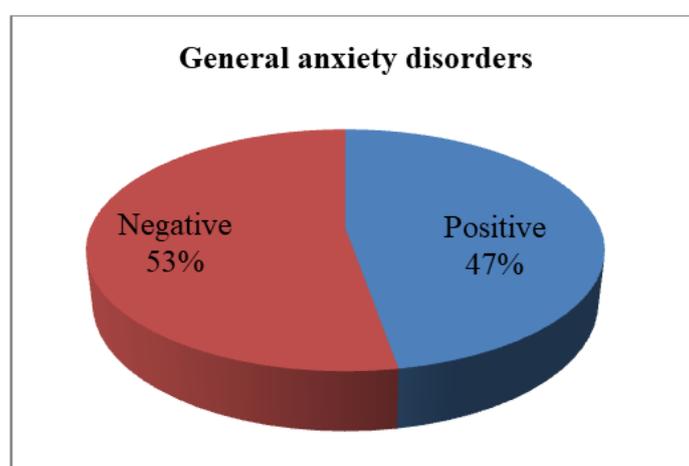


Figure I: General anxiety disorders according to DSM 5 criteria

Table 3: Association between stages of hypertension with general anxiety disorders

General anxiety disorders	Hypertension		p value
	Normal+ Prehypertension	Hypertensive	
Positive	29(37.17%)	49(56.32%)	0.01
Negative	49(62.82%)	38(43.67%)	
Total	78(100%)	87(100%)	

P value reached from chi square test

DISCUSSION

In this study showed mean age was found 46.4 ± 12.7 years. Majority (61.2%) patients were female, 65(39.4%) patients completed graduate education, 43(26.1%) were housewives and 118(71.5%) were married. Gulzar *et al.*, [13] reported the mean age was found 28 years. Majority 21 patients were male and 15 were female. Shah *et al.*, also observed the mean age of study participants was 42.6 years (age range 18-92 years). Among the 260 respondents, 59.2% were female, while 40.8% were male. 68.1% (177) of patients were married, while the 28.8% (75) were unmarried, and the remaining (8) 3.1% participants were divorced. 23.5% (61) were dependent upon others with no occupation, followed by 23.1% (60) that were in service. Abdisa *et al.*, [1] reported the median age of respondents was 50

years, interquartile range (IQR, 40–75) with the age range of 18–90 years. Around half of them, 51.2% (241) and 57.1% (269) were men and married respectively. Aberha *et al.*, [12] also found the mean age of the respondents was 55.63 (SD=13.29) years. Among the respondents, the majority 129 (30.9%) were in age range of 48-57 years, around half 213 (51.1%) were male, most 299 (71.7%) were married and around half 225 (54%) were attended secondary education and above.

In this study we observed that 45(27.3%) patients were pre-hypertensive, 69(41.8%) were stage I, 18(10.9%) were stage II and 33(20.0%) normal. Abdisa *et al.*, [1] reported 260(55.2%) patients were controlled hypertension and 211(44.8%) were uncontrolled hypertension.

Current study showed that 78(47.3%) patients were found positive general anxiety disorder. Gulzar et al., [13] reported the prevalence of general anxiety disorder is found in 53% hypertensive cases.

Our study showed that 78 patients were found general anxiety disorders among them 29 patients were normal and prehypertension which was 37.17% and 49(56.32%) were hypertension stage I and stage II which was 56.32%. The difference was statistically significant ($p < 0.05$) among four groups. The prevalence of hypertension in anxiety patients was 37.9% vs 12.6% of patients without anxiety. [13], in a systemic review and meta-analysis of epidemiological studies the results of association of anxiety and hypertension were consistently found [14].

In this large meta-analysis some studies showed a very high relationship between anxiety and hypertension this may be due to use of different methods in the study as may be inclusion of even patients with phobias, obsessive compulsive disorders and panic disorders. Other studies point that hypertension awareness have an increased risk of anxiety disorders [13], so they may interact to affect patient's health [15].

This relationship is found in other international studies. [16, 17] Aberha et al., [12] reported revealed that the prevalence of anxiety was 28.5% (CI 23.9-33.0) among hypertensive patients. Anxiety is associated with hypertension, individuals with anxiety having a higher risk of hypertension than those without anxiety. [18]. Further, hypertension patients have a higher risk of anxiety than those without hypertension [19, 20].

Previous studies have also found that patients with hypertension awareness have an increased risk of anxiety disorders. [20, 21] Seifaei et al., [3] revealed the mean anxiety score was higher among patients with uncontrolled blood pressure, and a significant relationship was observed between the prevalence of GAD and blood pressure ($p < 0.0001$).

CONCLUSION

There is a significant link between hypertension and general anxiety disorder. Patients with hypertension at a younger age should be checked for anxiety, as it may be a cause of hypertension. This study suggests that only treatment of hypertension is not an intervention for the quality of life of patients but also screening of mental illness among chronically ill patients is necessary. Additional national research is needed to develop solutions for the prevention and control of psychological distress among chronic disease patients in our country.

REFERENCE

1. Abdisa, L., Letta, S., & Nigussie, K. (2022). Depression and anxiety among people with hypertension on follow-up in Eastern Ethiopia: A

multi-center cross-sectional study. *Frontiers in Psychiatry*, 13, 853551.

2. Solomon, M., Shiferaw, B. Z., Tarekegn, T. T., GebreEyesus, F. A., Mengist, S. T., Mammo, M., ... & Terefe, T. F. (2023). Prevalence and Associated Factors of Hypertension Among Adults in Gurage Zone, Southwest Ethiopia, 2022. *SAGE Open Nursing*, 9, 23779608231153473.
3. Seifaei, A., Askarnejad, A., Drissi, H. B., Abadi, A. K. H., Sasannia, S., Moghadami, M., ... & Bazrafshan, H. (2023). General Anxiety Disorder and Primary Hypertension: Is There a Link? *The Journal of Nervous and Mental Disease*, 211(7), 525-529.
4. Taneja, N., Adhikary, M., Chandramouleeswaan, S., & Kapoor, S. K. (2015). Prevalence of common mental disorders among patients with diabetes mellitus and hypertension in an urban east delhi slum—a cross sectional study. *Hindu*, 44, 43-46.
5. Sadock, B.J. Kaplan, & Sadock's (2007) Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry. *Alphen aan den Rijn*: Wolters Kluwer
6. Arlington, V. A. (2013). Association AP. Diagnostic and statistical manual of mental disorders. *Am. Psychiatr. Assoc*, 5, 612-613.
7. Sadock, B. J., & Sadock, V. A. (2007). *Kaplan and Sadock's synopsis of psychiatry*. New Delhi: Wolters Kluwer, 2007.
8. Chen, L., Li, Y., Chen, P., Hu, Y., & Li, Z. (2015). Prevalence of depression in patients with hypertension. *Medicine*, 94(31), e1317.
9. Saboya, P. M., Zimmermann, P. R., & Bodanese, L. C. (2010). Association between anxiety or depressive symptoms and arterial hypertension, and their impact on the quality of life. *The International Journal of Psychiatry in Medicine*, 40(3), 307-320.
10. Kretchy, I. A., Owusu-Daaku, F. T., & Danquah, S. A. (2014). Mental health in hypertension: assessing symptoms of anxiety, depression and stress on anti-hypertensive medication adherence. *International journal of mental health systems*, 8(1), 1-6.
11. Wu, E. L., Chien, I. C., & Lin, C. H. (2014). Increased risk of hypertension in patients with anxiety disorders: A population-based study. *Journal of psychosomatic research*, 77(6), 522-527.
12. Aberha, M., Gebeyehu, A., & Ayano, G. (2016). Prevalence and factors associated with anxiety among patients with hypertension on follow up at Menelik-II Referral Hospital, Addis Ababa Ethiopia. *J Psychiatry*, 19(4), 378.
13. Wu, E. L., Chien, I. C., & Lin, C. H. (2014). Increased risk of hypertension in patients with anxiety disorders: A population-based study. *Journal of psychosomatic research*, 77(6), 522-527.
14. Schmitz, N., Thefeld, W., & Kruse, J. (2006). Mental disorders and hypertension: factors associated with awareness and treatment of hypertension in the general population of

- Germany. *Psychosomatic Medicine*, 68(2), 246-252.
15. Bautista, L. E., Vera-Cala, L. M., Colombo, C., & Smith, P. (2012). Symptoms of depression and anxiety and adherence to antihypertensive medication. *American journal of Hypertension*, 25(4), 505-511.
 16. Adams, G. B., & Murcia, A. (2016). The association between obesity, depression, and anxiety: Evidence from a community health needs assessment survey. *Journal of the Georgia Public Health Association*, 5(3), 274-278.
 17. Leggio, M., Lombardi, M., Caldarone, E., Severi, P., D'emidio, S., Armeni, M., ... & Mazza, A. (2017). The relationship between obesity and hypertension: an updated comprehensive overview on vicious twins. *Hypertension Research*, 40(12), 947-963.
 18. Stein, D. J., Aguilar-Gaxiola, S., Alonso, J., Bruffaerts, R., De Jonge, P., Liu, Z., ... & Scott, K. M. (2014). Associations between mental disorders and subsequent onset of hypertension. *General hospital psychiatry*, 36(2), 142-149.
 19. Grimsrud, A., Stein, D. J., Seedat, S., Williams, D., & Myer, L. (2009). The association between hypertension and depression and anxiety disorders: results from a nationally-representative sample of South African adults. *PloS one*, 4(5), e5552.
 20. Hamer, M., Batty, G. D., Stamatakis, E., & Kivimaki, M. (2010). Hypertension awareness and psychological distress. *Hypertension*, 56(3), 547-550.
 21. Schmitz, N., Thefeld, W., & Kruse, J. (2006). Mental disorders and hypertension: factors associated with awareness and treatment of hypertension in the general population of Germany. *Psychosomatic Medicine*, 68(2), 246-252.