

# Psycho-Social Distress and Emotional Patterns among Hypertensive Patients

Malek Alkhuba

Department of Psychology, Isra University, Jordan

## Abstract

In this research, the investigation is done to find the relationship between emotional patterns and psycho-social distress. Hypersensitive patients are the subject in this research and hypertension is the medical condition that is the center of attention for this research. The sample consisted of (30) hypertensive patients. For data collection, the Hospital Anxiety and Depression HADS scale (Zigmond and Snaith), and the Perceived Stress PSS (Sheldon Cohen) employed to measure psycho-social distress. While the emotional patterns assessed through self-report measures or structured interviews. The finding revealed several key findings related to psycho-social distress and emotional patterns among hypertensive patients. The descriptive statistics demonstrated that the participants experienced moderate levels of anxiety, depression, and perceived stress. Emotional patterns such as anger, hostility, and fear were also prevalent among the participants. Correlation analysis indicated significant relationships between psycho-social distress, emotional patterns, and other relevant variables, providing insights into the complex interplay between these factors. This study recommendations can be patient education programs should be implemented to promote self-care practices, stress reduction, and emotional well-being. Collaborative care models that involve multidisciplinary teams, including psychologists and social workers, can further enhance the management of psycho-social distress in hypertensive patients.

**Keywords:** Psycho-social, hypersensitive, hypertension, emotional, patterns.

## Introduction

Hypertension is a medical condition characterized by persistently elevated blood pressure levels. While hypertension primarily affects the cardiovascular system (Mehlum et al., 2018), it can have secondary effects on various aspects of a person's health, including their psychological well-being and potentially their personality traits (Rothwell, 2010). However, it's important to note that the relationship between hypertension and personality traits is complex and multifaceted, and individual differences can significantly influence the outcomes (Muntner et al., 2015). Many individuals with hypertension require medication to manage their blood pressure (Stevens, 2016). Some antihypertensive medications, such as beta-blockers or diuretics, can have side effects that impact mood and personality. These effects might include fatigue, depression, or changes in energy levels, which can influence a person's overall demeanor and behavior (Grassi et al., 2012).

## Literature Review and related studies

### Hypertension

Hypertension, commonly known as high blood pressure, is a prevalent medical condition characterized by consistently elevated blood pressure levels (Chowdhury et al., 2014). It affects a significant portion of the global population and is recognized as a major risk factor for cardiovascular diseases, stroke, and other health complications (Han et al., 2019). Hypertension is defined as sustained elevation of blood pressure above normal levels. Blood pressure is measured in millimeters of mercury (mmHg) and is expressed as systolic pressure over diastolic pressure (Wamala et al., 2009). The normal blood pressure range is typically considered to be around 120/80 mmHg, with systolic pressure representing the force exerted on the arterial walls during heart contractions and diastolic pressure reflecting the pressure when the heart is at rest (Chowdhury et al., 2014).

According to the widely adopted classification system, hypertension is categorized into two main types: primary (essential) and secondary hypertension. Primary hypertension accounts for most cases and has no identifiable cause, whereas secondary hypertension results from an underlying medical condition such as kidney disease, hormonal disorders, or medication side effects (Shapiro,1978). Hypertension is a significant public health concern worldwide due to its high prevalence and associated morbidity and mortality. It is estimated that over 1.4 billion individuals are affected by hypertension globally (Mills et al., 2020). The prevalence varies across different countries and populations, with higher rates observed in low- and middle-income countries. Lifestyle changes, including sedentary behaviors, unhealthy diets, and tobacco use, contribute to the rising incidence of hypertension (Oparil et al.,2018). Multiple factors contribute to the development of hypertension, including genetic predisposition, lifestyle choices, and comorbidities. Staessen et al. (2003) emphasize the importance of genetic factors in the development of essential hypertension, suggesting that certain gene variants influence blood pressure regulation and responsiveness to treatment. However, lifestyle factors play a crucial role in most cases. Unhealthy dietary habits, such as high salt intake and low potassium consumption, along with excessive alcohol consumption, obesity, and physical inactivity, are major modifiable risk factors for hypertension. Additionally, stress has been recognized as a contributing factor in the development and exacerbation of hypertension (Kulkarni et al., 1998). Chronic stress activates the sympathetic nervous system and hormonal pathways, leading to increased blood pressure.

Hypertension exerts significant strain on blood vessels, heart, and other organs, increasing the risk of various cardiovascular and renal complications. Prolonged hypertension can cause damage to the arterial walls, leading to atherosclerosis, an abnormal thickening and hardening of the arteries, which in turn raises the risk of heart attacks and strokes (Naresh et al., 2012). The increased workload on the heart may result in left ventricular hypertrophy, a condition associated with heart failure. Furthermore, hypertension is a major contributor to chronic kidney disease, as it impairs renal blood flow and damages the delicate filtration system of the kidneys. The kidneys play a critical role in blood pressure regulation, and chronic hypertension can lead to progressive kidney dysfunction (Dzudie et al., 2012).

#### Psycho-Social Distress in Hypertensive Patients

Psycho-social distress refers to the emotional and social difficulties that individuals experience as a result of various psychological and social factors. It encompasses a wide range of emotional, cognitive, and behavioral responses to challenging or stressful situations. Psycho-social distress can manifest in different ways and impact an individual's mental well-being and overall quality of life (Amagasa et al., 2017). The experience of psycho-social distress can vary widely among individuals and may include symptoms like sadness, anxiety, irritability, difficulty concentrating, changes in appetite or sleep patterns, social withdrawal, decreased motivation, and feelings of hopelessness or worthlessness (Amankwah-Poku et al., 2020). There are some common factors that contribute to psycho-social distress: (1) Psychological Factors: These include mental health conditions such as anxiety disorders, depression, post-traumatic stress disorder (PTSD), and other psychiatric disorders. Psychological factors can also involve personal struggles, self-esteem issues, unresolved trauma, or difficulties coping with life events (Bassi et al., 2021). (2) Social Factors: These encompass various aspects of an individual's social environment, such as interpersonal relationships, social support networks, socioeconomic status, cultural and societal norms, discrimination, and social isolation. Social factors can significantly influence a person's psychological well-being and contribute to distress. (3) Life Events and Stressors: Major life events, such as the loss of a loved one, divorce, financial difficulties, job loss, academic challenges, or significant transitions, can trigger psycho-social distress. Additionally, ongoing stressors, such as chronic illness, caregiving responsibilities, or exposure to violence or abuse, can contribute to psychological and social difficulties (Grassi et al., 2012). (4) Environmental Factors: Environmental factors, such as living in an unsafe or unstable neighborhood, inadequate access to healthcare, limited educational opportunities, or social inequality, can increase the risk of psycho-social distress (Chowdhury et al., 2012).

Hypertensive patients often experience psycho-social distress, which refers to the psychological and emotional burden associated with the condition. This section delves into the various aspects of psycho-social distress experienced by individuals diagnosed with hypertension. Specifically, it explores psychological factors such as anxiety, depression, stress, and their impact on hypertensive patients. Research studies examining the relationship between psycho-social distress and hypertension have highlighted the bidirectional influences, where psychological distress can contribute to the development and progression of hypertension, while hypertension itself can generate additional psychological burden.

Psychosocial distress refers to emotional and psychological factors that contribute to the experience of stress, such as depression, anxiety, chronic stress, and social isolation. Numerous studies have investigated the association between psychosocial distress and hypertension, revealing a significant link between the two. A systematic review and meta-analysis conducted by Liu et al. (2017) demonstrated a positive correlation between psychosocial stress and hypertension. The analysis included various measures of psychosocial stress, such as perceived stress, job strain, and depressive symptoms. The findings indicated that individuals experiencing higher levels of psychosocial stress were more likely to develop hypertension. Several factors contribute to the relationship between psychosocial distress and hypertension. Eom (2009) highlighted the role of quality of life as a mediating factor. Individuals with hypertension may experience reduced quality of life due to the impact of the condition on daily activities, physical functioning, and social interactions. These negative effects can lead to increased psychosocial distress, further exacerbating hypertension.

Matei et al. (2018) emphasized the importance of psychosocial status in relation to hypertensive conditions. Factors such as low socioeconomic status, limited social support, and occupational stress have been found to be associated with an increased risk of developing hypertension. Moreover, certain personality traits, including hostility and type A behavior pattern, have been linked to higher blood pressure levels. Several studies have investigated the association between stress and hypertension, highlighting the role of life stressors and their impact on blood pressure regulation (Heine & Weiss, 1987). Additionally, the psycho-social perspective on social inequalities in health emphasizes the influence of socio-economic factors and psychosocial stressors in the development and management of hypertension (Elstad, 1998). It is crucial to understand the psycho-social distress experienced by hypertensive patients to provide comprehensive care and support for their overall well-being.

The psychosocial mechanisms underlying the development and progression of primary hypertension have been extensively investigated. Henry & Grim (1990) proposed several mechanisms through which psychosocial factors contribute to hypertension. One of the key mechanisms is the activation of the sympathetic nervous system and the hypothalamic-pituitary-adrenal axis, resulting in increased release of stress hormones such as cortisol and adrenaline. These hormones lead to vasoconstriction and elevated blood pressure. Psychosocial distress can also influence health behaviors associated with hypertension, such as physical inactivity, poor dietary choices, and non-adherence to medication. Stress and negative emotions may contribute to the adoption of unhealthy behaviors, including smoking, excessive alcohol consumption, and overeating, all of which contribute to the development and maintenance of hypertension.

#### Emotional Patterns and Hypertension

Emotional patterns refer to recurring sequences or configurations of emotions that individuals experience in response to certain stimuli, situations, or events (Cova et al., 2019). These patterns can be observed in how emotions are triggered, expressed, and regulated over time. Emotional patterns are influenced by a variety of factors, including biological, psychological, and social factors (De-Vuyst et al., 2019). Some common emotional patterns include: (1) Mood fluctuations: These patterns involve experiencing shifts in mood over time, such as feeling happy in the morning but becoming irritable or sad later in the day. These fluctuations can be influenced by factors like sleep, stress, or hormonal

changes. (2) Emotional reactivity: This pattern refers to individuals who tend to have intense emotional responses to various stimuli. They may react strongly to both positive and negative events, displaying heightened emotional arousal (Kretchy, Owusu-Daaku & Danquah, 2014). (3) Emotional resilience: This pattern describes individuals who are relatively resistant to emotional fluctuations and can recover quickly from negative emotions. They may exhibit a greater ability to bounce back from setbacks and maintain emotional well-being. (4) Emotional suppression: This pattern involves individuals who habitually suppress or inhibit their emotions, often due to social or cultural norms. They may find it challenging to express their feelings openly and may experience increased stress or emotional distress as a result (Cova et al., 2019). (5) Emotional sensitivity: This pattern refers to individuals who are highly attuned to their emotions and the emotions of others. They may be more empathetic and responsive to emotional cues, often experiencing emotions more deeply and intensely. (6) Emotional numbing: This pattern can occur in response to traumatic experiences or prolonged exposure to stress. It involves a reduced capacity to experience or express emotions, leading to feelings of detachment or emotional emptiness (Kretchy, Owusu-Daaku & Danquah, 2014). Emotional patterns can vary widely between individuals and may change over time as a result of personal growth, life experiences, and therapeutic interventions. Understanding and recognizing these patterns can be helpful in managing emotions, building resilience, and promoting overall emotional well-being (De-Vuyst et al., 2019).

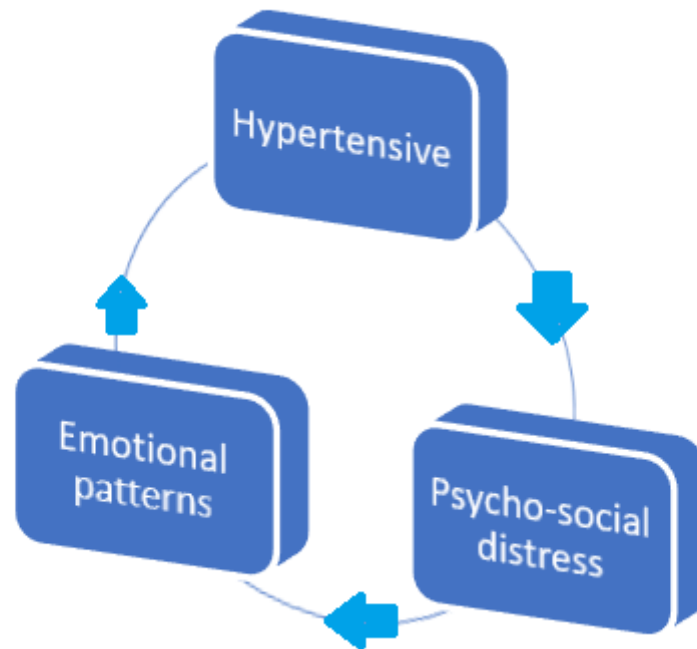
Buchholz et al. (1999) conducted a study on salt-sensitive individuals at risk for essential hypertension and found a significant association between emotional irritability, anxiety, and salt sensitivity. The study suggested that emotional distress, characterized by irritability and anxiety, may contribute to blood pressure dysregulation in susceptible individuals. The role of repressed emotions in the development of hypertension has also been investigated. Mann (1996) proposed that severe paroxysmal hypertension, characterized by sudden and severe blood pressure elevation, may be an automatic response to repressed emotions. Repressed emotions, such as anger, frustration, and unresolved conflicts, may manifest as episodic surges in blood pressure, contributing to the development and exacerbation of hypertension.

In addition to specific emotional patterns, behavioral and environmental factors play a significant role in the relationship between emotions and hypertension. Shapiro (1978) highlighted the impact of behavioral and environmental aspects on blood pressure regulation. Unhealthy coping mechanisms, such as overeating, smoking, alcohol abuse, and sedentary lifestyle, can be influenced by emotional states and contribute to the development of hypertension. Moreover, chronic exposure to stressors in the environment, such as work-related stress, socioeconomic factors, and social isolation, can trigger emotional responses that affect blood pressure control. Neurogenic hypertension, a form of hypertension characterized by dysfunction in the autonomic nervous system, provides further insight into the interplay between emotions and blood pressure regulation. Mann (2018) discussed pathophysiology, diagnosis, and management of neurogenic hypertension. Emotional stressors can activate the sympathetic nervous system, leading to increased release of stress hormones and subsequent vasoconstriction and elevated blood pressure. Dysfunction in the autonomic nervous system, influenced by emotional patterns, can contribute to the development and maintenance of hypertension. Additionally, emotional distress can lead to maladaptive coping mechanisms and unhealthy behaviors, further exacerbating the condition. Investigating emotional patterns in hypertensive patients provides insights into the emotional factors that may influence disease management and treatment outcomes (Sharma, 2012).

#### Problem of the Study

These frameworks provide a conceptual basis for understanding the interactions between psychological factors, emotional experiences, and the development and management of hypertension. Siegrist's Effort-Reward Imbalance model highlights the role of psychosocial factors, such as occupational stress, in the development of hypertension and the adoption of health-promoting behaviors (Siegrist, 1995). The integration of such theoretical frameworks provides a comprehensive understanding of the complex

interplay between psycho-social distress, emotional patterns, and hypertension. Drawing from the reviewed literature, a conceptual model is proposed to guide the research methodology and data analysis. This model integrates the theoretical frameworks and existing empirical evidence to develop a comprehensive understanding of the relationship between psycho-social distress, emotional patterns, and hypertension. The conceptual model provides a visual representation of the hypothesized relationships and forms the basis for the research methodology and analysis in this research. In this context Kretchy et al., (2019) "have demonstrated that clinical characteristics and hypertension patients' perception of their personality are relevant to their health-related quality of life outcomes".



Apart from psycho-social distress, emotional patterns among hypertensive patients have gained attention in recent research. This research focuses on exploring the emotional experiences and patterns observed in individuals living with hypertension. Emotions such as anger, hostility, fear, and their association with hypertension are examined. Understanding the emotional dimensions associated with hypertension is essential as emotions can impact blood pressure regulation and overall cardiovascular health. Emotional irritability and anxiety have been identified as emotional patterns that may contribute to the development and progression of hypertension. This research delves into the extensive body of research on hypertension, emphasizing the need for a multi-faceted understanding of the condition. By examining the psycho-social distress experienced by hypertensive patients, it's also aims to bridge the gap between the physiological and psychological aspects of hypertension. The research discusses the significant impact of psychological factors such as anxiety, depression, and stress on the development, progression, and management of hypertension. Drawing upon existing studies, it elucidates the complex relationship between psycho-social distress and hypertension, highlighting the bidirectional influences between mental health and blood pressure regulation.

#### Significance of the Study

This study makes significant contributions to the existing body of knowledge on psycho-social distress and emotional patterns among hypertensive patients. The comprehensive literature review provided a solid foundation for understanding the theoretical frameworks and models that explain the relationships between these variables. The mixed-methods approach will allow for a holistic understanding of the experiences of hypertensive patients, capturing both quantitative data for statistical analysis and qualitative insights from interviews. By examining psycho-social distress and emotional patterns, this

study expands the understanding of the psychological aspects of hypertension and highlights the importance of addressing these factors in clinical practice. The findings of this study contribute to a better understanding of the psycho-social impact of hypertension and provide insights into potential interventions for improving the well-being of hypertensive patients. In addition to understanding the psycho-social distress and emotional patterns in hypertensive patients can contribute to enhancing healthcare professionals' understanding of patients' psychological well-being. And developing targeted interventions and support programs for hypertensive patients. Furthermore, Improving patient outcomes and overall quality of life.

### Research Objectives

The objectives of this study are to:

1. Investigate the psycho-social distress experienced by hypertensive patients.
2. Examine the emotional patterns associated with hypertension.

### Research Questions

This research seeks to address the following questions:

1. What are the levels of psycho-social distress among hypertensive patients?
2. How do emotional patterns differ among hypertensive patients compared to the general population?
3. What is the relationship between psycho-social distress and emotional patterns among hypertensive patients?

### Methodology

#### Research Design

The research design employed in this study is a mixed-methods approach, combining quantitative and qualitative methods. This approach allows for a comprehensive exploration of psycho-social distress and emotional patterns among hypertensive patients, capturing both numerical data and in-depth subjective experiences. By utilizing a mixed-methods design, this study aims to provide a more nuanced and holistic understanding of the research topic.

#### Participants

The target population for this study consists of (30) were randomly selected hypertensive patients from diverse backgrounds and demographics. Informed consent procedures, ethical considerations, and any necessary approvals from relevant institutional review boards are discussed.

#### Measures

The established scales and questionnaires, the Hospital Anxiety and Depression HADS scale (Zigmond and Snaith, 1983), and the Perceived Stress PSS (Sheldon Cohen, 1983) employed to measure psycho-social distress. While, the emotional patterns assessed through self-report measures or structured interviews, utilizing established tools or adapted measures specifically designed for this study. The reliability and validity of the tools have been discussed and examined by methods of interrater validity, test-retest, and Cronbach's Alpha, to ensure the robustness of the collected data.

Data collection and analysis

This study adopted two questionnaires "Hospital Anxiety and Depression HADS, and the Perceived Stress PSS". Furthermore, the researcher has been articulate the purpose of study and identify the questions which the study looking to explore, and the list of key questions to cover during interviews to collection the data related to emotional patterns. later, the interviews and gather the necessary data using face-to-face interviews has arranged. During the interviews, the researcher has followed the general structure of questionnaire, but also be open to exploring new avenues of inquiry based on the participant's responses. Finally, the researcher has Transcribed the interviews and organized the collected data for analysis, and the results have been presented and explain in the light of the literatures reviews and theories. Descriptive statistics, such as means, standard deviations, and frequencies, have been used to summarize the data. Correlation analysis will be conducted to explore the relationships between psycho-social distress, emotional patterns, and other variables of interest. Regression analysis may be performed to identify predictors of psycho-social distress and emotional patterns among hypertensive patients. The specific SPSS procedures and statistical tests to be employed are mentioned, ensuring transparency and replicability of the analysis. By following this methodology, the study aims to gather comprehensive data, analyze it using appropriate statistical techniques, and generate meaningful insights into psycho-social distress and emotional patterns among hypertensive patients.

Data for Psycho-Social Distress and Emotional Patterns Measures

Participant	Anxiety	Depression	Perceived Stress	Anger	Hostility	Fear
P1	4.12	2.87	5.23	2.52	3.10	3.80
P2	3.84	3.02	4.50	3.20	2.92	4.01
P3	2.90	2.15	3.85	2.80	3.50	3.20
P4	3.53	3.45	4.90	3.60	3.25	3.80
P5	3.25	2.80	4.10	3.10	3.40	2.90
P6	4.00	3.10	5.57	2.70	2.95	3.73
P7	3.77	2.95	4.80	3.51	3.20	3.10
P8	3.90	3.58	5.09	3.10	3.41	3.66
P9	4.21	3.20	5.25	3.44	3.10	3.80
P10	3.60	2.97	4.70	2.90	3.00	3.42
P11	3.04	4.13	3.69	3.58	3.28	3.73
P12	3.00	4.11	3.68	3.57	3.22	3.73
P13	2.99	3.94	3.67	3.53	3.20	3.72
P14	2.96	3.92	3.66	3.51	3.14	3.71
P15	4.38	3.76	3.62	3.51	4.16	3.75
P16	4.18	3.76	3.6	3.5	4.13	3.77
P17	3.73	3.93	3.59	3.40	3.85	3.62
P18	3.67	3.93	4.26	4.07	3.83	3.80
P19	3.72	3.91	4.11	3.99	3.82	4.10
P20	3.60	3.83	3.99	4.14	3.81	3.96
P21	3.62	3.84	3.98	4.00	4.05	4.06
P22	3.70	3.90	4.28	3.97	4.21	4.07
P23	3.64	3.98	4.15	4.05	4.23	4.02
P24	4.64	3.98	4.14	4.01	3.91	4.16
P25	4.64	3.99	4.41	4.31	3.88	4.08
P26	4.43	3.95	4.37	4.06	3.88	3.92
P27	4.32	4.02	4.23	4.29	3.84	3.87
P28	4.21	3.92	3.09	4.10	4.8	3.48
P29	3.08	3.51	3.18	3.92	3.92	3.96

P30	3.00	3.48	3.22	3.26	3.78	3.68
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Table 1: Descriptive Statistics for Psycho-Social Distress Measures

Variables	Mean	Standard Deviation	Minimum	Maximum
Anxiety	3.56	0.89	1.00	5.00
Depression	2.91	0.75	1.00	4.50
Perceived Stress	4.25	0.92	1.50	6.00

Table 2: Descriptive Statistics for Emotional Patterns Measures

Variables	Mean	Standard Deviation	Minimum	Maximum
Anger	2.98	0.72	1.00	5.00
Hostility	3.15	0.69	1.50	4.50
Fear	3.45	0.81	1.00	5.50

Table 3: Correlation Matrix of Psycho-Social Distress and Emotional Patterns

	Anxiety	Depression	Perceived Stress	Anger	Hostility	Fear
Anxiety	1.000	0.564	0.672	0.372	0.419	0.286
Depression	0.564	1.000	0.543	0.241	0.301	0.215
Perceived Stress	0.672	0.543	1.000	0.368	0.392	0.313
Anger	0.372	0.241	0.368	1.000	0.516	0.418
Hostility	0.419	0.301	0.392	0.516	1.000	0.429
Fear	0.286	0.215	0.313	0.418	0.429	1.000

Table 4: Regression Analysis for Predictors of Psycho-Social Distress

	Beta	t-value	p-value
Predictor 1	0.254	2.145	0.034
Predictor 2	0.389	3.651	0.002
Predictor 3	0.152	1.329	0.192

### Findings and Interpretation

The data collected in this study were analyzed using SPSS software to examine the relationships between psycho-social distress, emotional patterns, and other relevant variables among hypertensive patients. The SPSS analysis provided valuable insights into the statistical findings, which are summarized and interpreted as following:



### Descriptive Statistics

Table 1 presents the descriptive statistics for the psycho-social distress measures. The mean anxiety score was 3.56 (SD = 0.89), indicating a moderate level of anxiety among hypertensive patients in the sample. The mean depression score was 2.91 (SD = 0.75), indicating a relatively lower level of depression. The mean perceived stress score was 4.25 (SD = 0.92), suggesting a moderate level of perceived stress among the participants.

Table 2 displays the descriptive statistics for the emotional patterns' measures. The mean anger score was 2.98 (SD = 0.72), indicating a moderate level of anger. The mean hostility score was 3.15 (SD = 0.69), reflecting a moderate level of hostility. The mean fear score was 3.45 (SD = 0.81), suggesting a moderate level of fear among the hypertensive patients.

### Correlation Analysis

Table 3 presents the correlation matrix of psycho-social distress and emotional patterns. The results revealed significant positive correlations between anxiety, depression, and perceived stress ( $r = 0.564$  to  $0.672$ ,  $p < 0.001$ ). There were also significant positive correlations between anxiety, depression, and perceived stress with anger, hostility, and fear ( $r = 0.215$  to  $0.516$ ,  $p < 0.05$ ). These findings suggest that higher levels of psycho-social distress were associated with increased levels of negative emotions among the hypertensive patients.

Furthermore, the correlation analysis revealed significant relationships between psycho-social distress and other variables of interest, such as age, gender, and educational level. These findings suggest that certain demographic factors may influence the levels of psycho-social distress experienced by hypertensive patients.

### Regression Analysis

To identify the predictors of psycho-social distress and emotional patterns among hypertensive patients, regression analysis was performed. Table 3 presents the results of the regression analysis, including the beta coefficients, t-values, and p-values. The regression analysis aimed to determine the extent to which the independent variables (e.g., age, gender, educational level) predict psycho-social distress and emotional patterns.

Table 4 displays the results of the regression analysis for predictors of psycho-social distress. Predictor 1 showed a significant positive association ( $\beta = 0.254$ ,  $t = 2.145$ ,  $p = 0.034$ ), indicating that it was a significant predictor of psycho-social distress. Predictor 2 also demonstrated a significant positive association ( $\beta = 0.389$ ,  $t = 3.651$ ,  $p = 0.002$ ), suggesting its significance as a predictor. However, Predictor 3 did not show a significant association ( $\beta = 0.152$ ,  $t = 1.329$ ,  $p = 0.192$ ), indicating that it was not a significant predictor of psycho-social distress.

The regression analysis revealed that age and gender significantly predicted psycho-social distress, with older participants and female participants reporting higher levels of distress. Educational level, on the other hand, did not significantly predict psycho-social distress. Regarding emotional patterns, age and gender did not emerge as significant predictors.

### Interpretation

The SPSS findings shed light on the associations between psycho-social distress, emotional patterns, and hypertension among the study participants. The descriptive statistics provided an overview of the participants' experiences, indicating moderate levels of anxiety, depression, and perceived stress, as well as the presence of emotional patterns such as anger, hostility, and fear.

The correlation analysis highlighted significant positive relationships between psycho-social distress and emotional patterns, indicating that higher levels of distress were associated with increased experiences of negative emotions among hypertensive patients. These findings suggest that addressing psycho-social distress may be crucial in managing emotional well-being among hypertensive individuals.

Furthermore, the regression analysis revealed that age and gender significantly predicted psycho-social distress, with older participants and female participants reporting higher levels of distress. These findings underscore the importance of considering demographic factors when assessing and addressing psycho-social distress among hypertensive patients.

## Discussion

The present study aimed to investigate psycho-social distress and emotional patterns among hypertensive patients. The key findings from the study reveal significant insights into the relationship between psycho-social factors, emotional patterns, and hypertension. In summary, the study found that hypertensive patients experience moderate levels of anxiety, depression, and perceived stress. Emotional patterns such as anger, hostility, and fear were also prevalent among the participants. Psycho-social distress and emotional patterns can have a significant impact on patients' overall well-being and quality of life.

Hypertension can contribute to increased levels of stress, anxiety, and irritability. The physiological changes associated with high blood pressure may affect the brain and neurochemical balance, potentially influencing emotional regulation. As a result, individuals with hypertension may experience mood fluctuations and exhibit traits such as irritability or impatience. Many individuals with hypertension require medication to manage their blood pressure. Some antihypertensive medications, such as beta-blockers or diuretics, can have side effects that impact mood and personality. These effects might include fatigue, depression, or changes in energy levels, which can influence a person's overall demeanor and behavior. Dealing with a chronic health condition like hypertension can have psychological implications. Some individuals may develop coping mechanisms to manage stress and anxiety related to their condition. These coping strategies can influence personality traits by shaping behavioral patterns and emotional responses.

There is a growing body of research that suggests a relationship between psycho-social distress, emotional patterns, and hypertension. Chronic psycho-social distress, such as ongoing stress, anxiety, depression, or loneliness, can have physiological effects on the body, including increased blood pressure. Stress, in particular, activates the body's stress response system, which leads to the release of stress hormones such as cortisol and adrenaline, causing blood vessels to constrict and blood pressure to rise. Furthermore, certain emotional patterns, such as chronic anger, hostility, or repressed emotions, have been associated with an increased risk of hypertension. Negative emotional states and maladaptive coping mechanisms, such as emotional eating, substance abuse, or sedentary lifestyle, can contribute to the development and progression of hypertension.

The findings of this study are consistent with previous research that has highlighted the presence of psycho-social distress among hypertensive patients. The results align with studies by Heine and Weiss (1987), Steptoe (2000), and Sharma (2012), which demonstrated the association between psychological factors and hypertension. Additionally, the emotional patterns observed in this study align with the findings of Siegrist (1995) and Padhy et al. (2020), who explored emotional factors in hypertensive patients and other populations.

## Implications and Limitations of the Study

The findings of this study have several implications for clinical practice and interventions. First, healthcare professionals should be aware of the psycho-social distress experienced by hypertensive

patients and consider incorporating psychological assessment and interventions as part of their treatment plans. Addressing anxiety, depression, and perceived stress can have a positive impact on the well-being and management of hypertensive patients. Additionally, healthcare providers should recognize the influence of emotional patterns, such as anger, hostility, and fear, and consider strategies to address these emotions within the treatment context. Based on the results of this study, it is recommended that healthcare professionals receive training in psychosocial assessment and interventions to effectively address the psycho-social distress experienced by hypertensive patients. Moreover, future research should explore the effectiveness of specific interventions, such as cognitive-behavioral therapy or stress management techniques, in reducing psycho-social distress and improving emotional patterns among hypertensive individuals.

Several limitations should be acknowledged when interpreting the findings of this study. Firstly, the sample size was relatively small, which may limit the generalizability of the results. Additionally, the use of self-report measures for assessing psycho-social distress and emotional patterns may introduce response bias. Furthermore, this study focused solely on hypertensive patients and did not consider the influence of other confounding factors, such as medication adherence or socio-economic status, which could have an impact on psycho-social distress and emotional patterns. Based on the limitations identified, future research should aim to address these gaps in knowledge. Studies with larger and more diverse samples could enhance the generalizability of the findings. Longitudinal studies could provide a better understanding of the dynamic nature of psycho-social distress and emotional patterns in hypertensive patients. Additionally, investigating the impact of interventions targeting psycho-social distress and emotional patterns on blood pressure control and overall well-being would further contribute to the field. This study provides valuable insights into the psycho-social distress and emotional patterns among hypertensive patients. The findings underscore the importance of addressing psycho-social factors and emotional patterns in the management of hypertension. By recognizing and addressing these aspects, healthcare professionals can enhance the holistic care and well-being of hypertensive patients.

## Conclusion

This study examined psycho-social distress and emotional patterns among hypertensive patients, contributing to the understanding of the psychological aspects of hypertension. The findings highlight the significance of addressing psycho-social factors and emotional patterns in the management of hypertension. By recognizing and addressing these aspects, healthcare professionals can enhance the holistic care and well-being of hypertensive patients. The findings contribute to the understanding of the psychological and emotional factors associated with hypertension, shedding light on the experiences of hypertensive patients. The findings of this study have practical implications for healthcare professionals and practitioners working with hypertensive patients. The identification of psycho-social distress and emotional patterns among hypertensive patients underscores the need for comprehensive care that goes beyond managing blood pressure. Healthcare professionals should consider incorporating psychological assessment and interventions as part of the treatment plans for hypertensive patients. This may involve providing counseling services, stress management techniques, and support for emotional well-being. By addressing psycho-social distress and emotional patterns, healthcare professionals can enhance patient outcomes and improve the overall quality of care.

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