Living with Hypertension: Exploring Self-Efficacy and Coping Strategies – A Cross-Sectional Study

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Abstract

Introduction: Hypertension affects millions globally, necessitating effective self-management techniques. Self-efficacy and Copingare crucial for controlling blood pressure. This study examines the relationship between these psychological aspects and hypertension treatment, enabling medical professionals to develop targeted therapies. **Objectives:** (1) To assess the level of self-efficacy and coping among patients with hypertension. (2) To correlate the level of self-efficacy and coping among patients with hypertension. (3) To find out the association between the level of self-efficacy and coping with their demographic variables among patients with hypertension. **Methods and materials:** This study used a descriptive cross-sectional research design to examine hypertension among 100 outpatients at SRM General Hospital, using semi-structured questionnaires based on the Modified Coping Inventory and Modified Self-Efficacy Scale. **Results:** According to the results, the average self-efficacy score was 6.74+2.13, and theaverage coping score was 29.75+8.69. With amoderately positive connection statistically significant at the $p<0.001$ level, Karl Pearson's correlation value of $r = 0.620$ makes it evident that individuals with hypertension had high levels of coping when their self-efficacy improved. **Conclusion:** Hypertension patients demonstrated mode rate self-efficacy and coping, according to the study. Thus, the study concludes that hypertension patients need non-pharmacological strategies to promote self-efficacy and coping.

Keywords: Hypertension, Blood Pressure, Self-Efficacy, Coping Behaviour, Adaptation, Stress

Introduction

Hypertension is a major global health problem and a leading cause of morbidity and mortality. It is one of the most prevalent chronic diseases worldwide and contributes significantly to the global burden of cardiovascular disease[1,2]. In 2000, approximately 972 million people were reported to have hypertension, representing 26.4% of the world's adult population. This number is projected to increase to 29.2% by 2025, with developing countries contributing the most to this rise due to rapid urbanization, lifestyle changes, and aging populations[3,4]

In India, hypertension has emerged as a pressing public health concern, with prevalence increasing in both rural and urban areas[4]. Lifestyle factors such as physical inactivity, obesity, poor dietary habits, stress, and harmful use of alcohol are major contributors. Despite the availability of pharmacological interventions, awareness, treatment, and control rates remain suboptimal[5,6]. Non-adherence to medication and poor engagement in recommended lifestyle modifications further complicate management and increase the risk of complications such as stroke, myocardial infarction, and renal disease[7,8].

Beyond its physiological impact, hypertension also influences mental and emotional health. Studies have shown that patients with hypertension are more vulnerable to developing depression and anxiety, which manifest through fatigue, restlessness, impaired concentration, irritability, and changes in sleep and appetite[9,10]. Such psychological distress negatively affects adherence to treatment and overall disease outcomes. Therefore, psychosocial factors need to be considered alongside clinical management strategies[11]

Self-efficacy, defined as an individual's confidence in their ability to perform specific health-related behaviors, plays a crucial role in chronic disease management. Patients with higher self-efficacy are more likely to adhere to treatment, engage in positive lifestyle changes, and effectively communicate with healthcare providers[12,13]. Similarly, coping strategies, whether task-oriented, emotion-focused, or avoidance-based, determine how individuals adapt to the challenges of living with a chronic illness. Effective coping strategies have been shown to improve treatment adherence and overall quality of life, while maladaptive coping may worsen disease progression[14,15].

Despite the global evidence highlighting the importance of self-efficacy and coping in hypertension management, limited research has been conducted in the Indian context to explore these psychological constructs among hypertensive patients. Understanding the levels of self-efficacy and coping, and their association with demographic factors, is essential to designing targeted interventions that can improve disease management outcomes.

The present study, therefore, aims to assess the level of self-efficacy and coping among patients with hypertension, examine the correlation between the two, and determine their association with selected demographic variables.

Methods

Study design and setting

A descriptive cross-sectional study was conducted among patients diagnosed with hypertension attending the outpatient department of SRM Medical College and Research Centre, Kattankulathur, Chengalpattu District, Tamil Nadu, India.

Participants

The study population included hypertensive patients who were receiving treatment for at least six months. Patients aged 40–60 years, of both sexes, who were able to read either Tamil or English, were eligible for inclusion. Patients with severe comorbid conditions or those unwilling to participate were excluded.

Sample size and sampling

A sample size of 100 was determined based on a single population proportion formula, using a prevalence of 93.1% from a previous study, a 95% confidence interval, and 5% margin of error. Participants were recruited using purposive sampling.

Sample Size Calculation

$$n = \frac{Z\alpha^2 pq}{d^2}$$

n=sample size
Zα=Normal distribution (1.96)
p=Previous study finding =93.1%=0.931
q=Remaining % of people =100 – 93.1 =6.9%=0.069
d0.05 (5%Marginerror)(95%CI)
Based on the sample size calculation, it is estimated to have 100 samples.

Data collection tools

Data were collected using a structured questionnaire consisting of three sections: (1) demographic characteristics; (2) the **Modified Self-Efficacy Scale** (Lorig et al., 1996), comprising five items rated on a four-point Likert scale; and (3) the **Modified Coping Inventory Scale** (Avero et al., 2003), comprising 18 items rated on a four-point Likert scale. Higher scores indicated greater levels of self-efficacy and coping, respectively.

Validity and reliability

Subject experts validated the instruments, and reliability testing demonstrated good internal consistency, with Cronbach's alpha values of 0.81 for the self-efficacy scale and 0.86 for the coping scale.

Data collection procedure

Data were collected through direct interviews after obtaining informed consent from each participant. On average, each interview lasted 20–25 minutes. Confidentiality and anonymity of the participants were maintained throughout the study.

Data analysis

Data were entered in Microsoft Excel and analyzed using SPSS. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to assess the level of self-efficacy and coping among hypertensive patients.

Results

Table 1: Frequency and percentage distribution of demographic variables of the patients with hypertension

N=100

DemographicVariables	Frequency (f)	Percentage (%)
Age		
40–45years	23	23
46–50years	38	38
51–55years	24	24
56–60years	10	10
60andabove	5	5
Gender		
Male	69	69
Female	31	31
Religion		
Hindu	78	78
Christian	14	14
Muslim	8	8
Others	-	-
Maritalstatus		
Single	8	8
Married	80	80
Widow	7	7

Divorced	5	5
Educationalstatus		
Primaryschool	2	2
Secondaryschool	11	11
Highersecondaryschool	71	71
Degree	10	10
Illiterate	6	6
Type of family		
Nuclear family	76	76
Joint family	19	19
Extended family	5	5
Family income		
Rs.10,000	5	5
Rs 10,000 – 15,000	64	64
Rs 15,000 – 20,000	20	20
Rs 20,000 and above	11	11
Duration of the treatment		
<6 months	21	21
6 months to 1 year	62	62
1 to 5 years	14	14
>5 years	3	3
Occupation		
Self employee	17	17
Private employee	65	65
Government employee	8	8
Housewife	10	10
Suffering from hypertension since		
<6 months	29	29
1 – 2 years	57	57
2 – 4 years	14	14
More than 4 years	-	-
Any other comorbid		
Diabetes mellitus	12	12
Stroke	3	3
Others (Specify)	85	85

The table 1 shows that most of the patients with hypertension, 38(38%) were agedbetween 46 – 50 years, 69(69%) were male, 78(78%) belong Hindu religion, 80(80%) weremarried,71(71%)hadhighersecondaryschooleducation,76(76%)belongedtonuclearfamily,64(64%)hadfamilyincomebetweenRs.10,000–15,000,62(62%)wereundertreatmentfor6monthsto1year,65(65%)wereprivateemployee,57(57%)weresufferingfromhypertensionfor1 –2 years and 85(85%)had other comorbid illnesses.

Figure 1. Levels of self-efficacy among patients with hypertension (N=100)

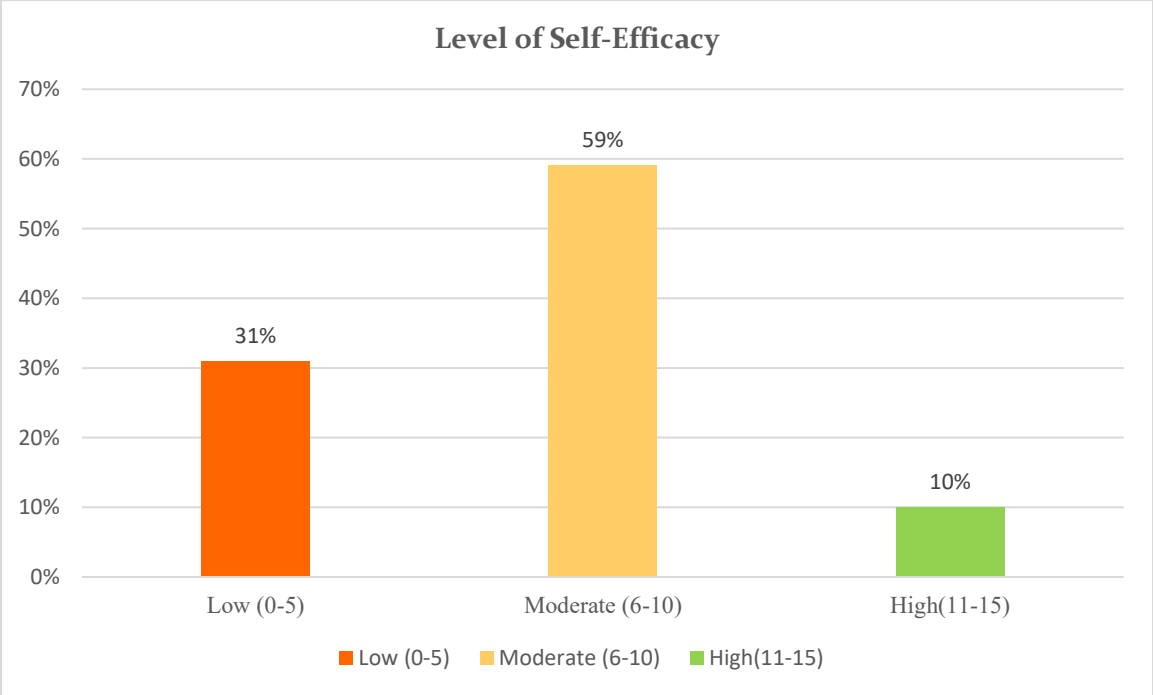

Figure 1 shows that among the patients with hypertension, 59(59%) had a moderate level of self-efficacy, 31 (31%) had a low level of self-efficacy, and 10(10%) had a high level of self-efficacy.

Figure2. Levels of coping among patients with hypertension (N=100)

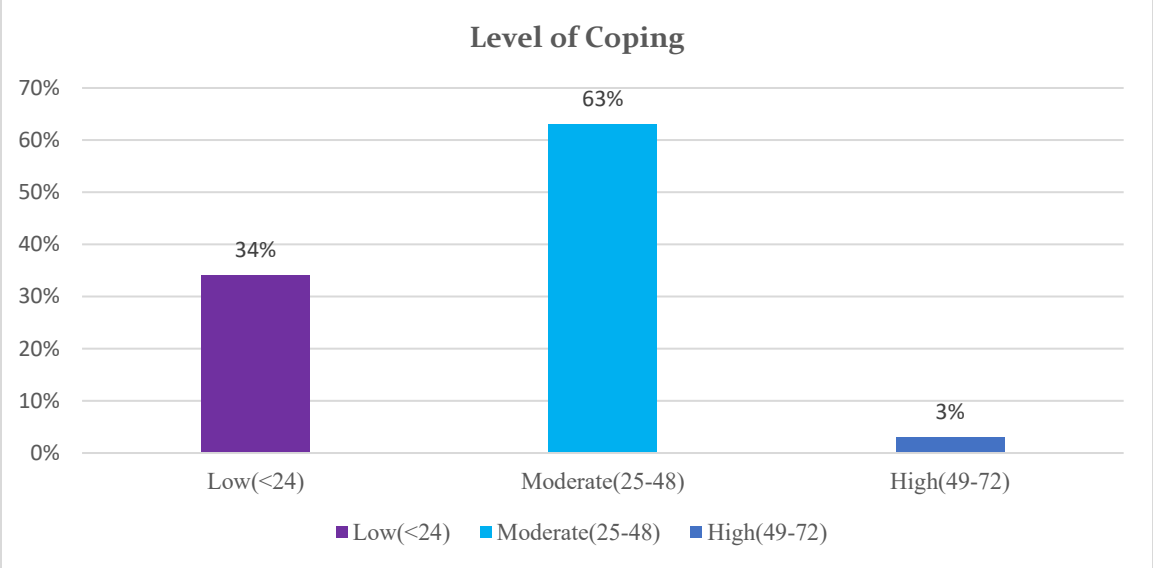

Figure 2 shows that among the patients with hypertension, 63(63%) had moderate coping, 34(34%) had low level of coping and 3(3%) had high level of coping.

Table 2: Association of the level of self-efficacy and coping among patients with hypertension with their selected demographic variables
N=100

Demographic Variables	Frequency	Chi-Square&p-value	
		Self Efficacy	Coping
Age		χ^2=10.452 d.f=8p=0.235N.S	χ^2=12.379 d.f=8p=0.135 N.S
40–45years	23		
46–50years	38		
51–55years	24		
56–60years	10		
60andabove	5		
Gender		χ^2=2.316 d.f=2 p=0.314N.S	χ^2=1.393 d.f=2 p=0.498 N.S
Male	69		
Female	31		
Religion		χ^2=4.731 d.f=4p=0.316N.S	χ^2=2.888 d.f=4p=0.577 N.S
Hindu	78		
Christian	14		
Muslim	8		

Others	-		
Marital status		χ^2=8.139 d.f=6p=0.228N.S	χ^2=9.283 d.f=6p=0.158 N.S
Single	8		
Married	80		
Widow	7		
Divorced	5		
Educational status		**χ^2=18.774 d.f=8p=0.016S***	**χ^2=16.016 d.f=8p=0.042 S***
Primary school	2		
Secondary school	11		
Higher secondary school	71		
Degree	10		
Illiterate	6		
Type of family		χ^2=3.492 d.f=4p=0.479N. S	χ^2=1.610 d.f=4p=0.807 N.S
Nuclear family	76		
Joint family	19		
Extended family	5		
Family income		χ^2=5.201 d.f=6p=0.518N.S	χ^2=3.399 d.f=6p=0.757 N.S
Rs.10,000	5		
Rs 10,000–15,000	64		
Rs 15,000–20,000	20		
Rs 20,000andabove	11		
Duration of the treatment		χ^2=0.748 d.f=6p=0.993N. S	χ^2=6.939 d.f=6p=0.326 N.S
<6months	21		
6to 1year	62		
1to 5years	14		
>5years	3		
Occupation		**χ^2=15.016 d.f=6p=0.020 S***	χ^2=5.014 d.f=6p=0.542 N.S
Self-employee	17		
Private employee	65		
Government employee	8		
Housewife	10		

Suffering from hypertension since		χ^2=1.202 d. f=4p=0.878 N.S	χ^2=5.590 d. f=4p=0.232 N.S
<6months	29		
1– 2years	57		
2– 4years	14		
More than 4 years	-		

Table 2 shows that educational status (χ^2=18.774, p=0.016) and occupation (χ^2=15.016, p=0.020) had a significant association with self-efficacy, while only educational status (χ^2=16.016, p=0.042) showed a significant association with coping among patients with hypertension (p<0.05). Other demographic variables were not significant.

Discussion

This study examined the levels of self-efficacy and coping among patients with hypertension and explored their association with selected demographic variables. The findings indicate that most participants reported moderate levels of both self-efficacy and coping. These results suggest that while patients are partially confident in managing their condition, significant gaps remain in their ability to sustain long-term self-management behaviors.

Our findings of predominantly moderate self-efficacy and coping among hypertensive patients are consistent with recent evidence highlighting the central role of psychological constructs in chronic disease management[16]. A multicenter study in cardiovascular patients reported that self-efficacy significantly influenced adherence to lifestyle modifications and was associated with improved clinical outcomes, underscoring its importance in secondary prevention strategies[17,18]. Similarly, a population-based study demonstrated that psychosocial resources, including coping skills, were strongly linked to better hypertension control and overall health-related quality of life, reinforcing the need to address psychological as well as biomedical factors in management[19,20].

The significant association we observed between educational status and both self-efficacy and coping further supports findings from global studies that emphasize the importance of health literacy in enabling effective self-management[21,22]. Individuals with higher educational attainment are more likely to comprehend the chronic nature of hypertension, engage in preventive health behaviors, and utilize adaptive coping mechanisms. Comparable findings were documented in a systematic review on hypertension self-care, where education and patient empowerment interventions were shown to improve both treatment adherence and blood pressure control[23].

Interestingly, occupation emerged as a significant factor influencing self-efficacy in the present study, with private employees reporting higher scores. This aligns with previous literature indicating that structured routines, workplace health awareness initiatives, and access to healthcare services contribute to more effective disease self-management[24]. However, no significant associations were found with age, gender, marital status, or treatment duration. This finding diverges from earlier reports where sociodemographic factors shaped coping and self-management patterns, suggesting that cultural and contextual differences, particularly in the Indian setting, may influence these relationships.

The predominance of moderate coping levels indicates that many patients attempt to manage the stress of hypertension but may rely on maladaptive strategies, such as avoidance or resignation, which undermine long-term disease control. Evidence from recent research suggests that problem-focused coping is more effective in promoting adherence and quality of life, whereas emotion-focused or avoidant coping exacerbates psychological distress and fatigue. Thus, the current findings highlight the need for interventions that strengthen adaptive coping alongside clinical management.

The findings have several implications for practice. First, educational interventions should be tailored to patients with lower educational attainment, who appear more vulnerable to poor self-efficacy and ineffective coping. Second, healthcare providers, particularly nurses, should integrate psychosocial assessments into routine care to identify patients with low self-efficacy or maladaptive coping styles. Third, structured self-management programs that combine self-monitoring, lifestyle counseling, and coping skills training, as demonstrated by Patil et al. (2024), should be adapted within Indian healthcare settings to improve patient outcomes.

Strengths and Limitations

The study contributes to the limited evidence on psychological constructs in hypertension management within the Indian context. The use of validated tools with strong reliability adds to the robustness of findings. However, several limitations must be acknowledged. The purposive sampling strategy and modest sample size limit generalizability. The cross-sectional design precludes causal inferences, and reliance on self-reported measures may introduce recall or social desirability bias.

Future Directions

Future research should adopt longitudinal and interventional designs to better establish causal relationships between self-efficacy, coping, and clinical outcomes such as blood pressure control and quality of life. Incorporating measures of illness perception, stress, and regulatory fatigue would provide a more comprehensive understanding of psychological determinants in hypertension management. Furthermore, context-specific

interventions, culturally tailored to Indian populations, should be developed and tested for scalability.

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