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Prevalence of Psychological Distress, Cognitive Functioning, and Health Literacy among Hypertensive Patients: A Descriptive Study

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Abstract

Background: Hypertension is a global health problem associated with cardiovascular, neurocognitive and psychological problems and it is possible that health literacy could have an impact in the problem management. **Objective:** To compare the prevalence of hypertension according to participants' levels of psychological distress, cognitive functioning, and health literacy. **Methods:** It is a cross-sectional, descriptive study with a sample of 200 people with hypertension, who were tested with the Kessler Psychological Distress Scale (K10), Montreal Cognitive Assessment (MoCA) and the standardized Health Literacy Scale. **Results** showed mean psychological distress 33.15 (SD=6.93), with 84% at severe psychological distress and health literacy 35.26 (SD=8.11), with 71.5% at health literacy inadequate (33–48) and none having the highest health literacy (49–86). In **conclusion**, severe psychological distress, pervasive cognitive deficits and poor health literacy were highlighted in hypertensive patients, and regular psychological screening and health literacy in hypertension would be warranted.

Keywords: Hypertension, psychological distress, cognitive functioning, health literacy, K10, MoCA

1. Introduction

According to the World Health Organization (WHO, 2023), hypertension is one of the most prevalent health conditions impacting adults, affecting about 1.28 billion people globally, and is a major risk factor for cardiovascular disease, stroke and death. In addition to the physical effects, there are growing links between hypertension and cognitive impairment and poor mental health outcomes (Fasnacht et al., 2023). Chronic hypertension can cause cerebral small vessel disease, white matter lesions, and decreased CBF, resulting in executive dysfunction, memory impairment, and impaired information processing (Katz et al., 2024).

In addition to cognitive risks, patients with hypertension often face psychological distress due to various factors such as living with hypertension for their entire lives, their expectations of complications, and their restrictions in lifestyle (Kario et al., 2024). Literacy understanding about proper health management and ability to use health information to make choices has come to be a recognized modifiable determinant. Poor adherence to medications, less than optimal blood pressure control and emergency department use are found to be related to low health literacy (Liu et al., 2025).

In spite of the recognized relationships between hypertension, cognition and mental health, there are only a few studies that have both quantified these domains with the same instruments and included them in the same data sample. Demographic characteristics of these factors should be understood to design integrated care models.

2. Literature Review

2.1 Psychological Distress and Hypertension

Longitudinal studies have shown an increased risk of hypertension for developing GAD and MDD by a factor of 2 for individuals with hypertension versus those with normal blood pressure (Lennon et al., 2024). Kessler Psychological Distress Scale (K10) has been a widely-used tool for screening for non-specific psychological distress. The figure of 62% of people with hypertension having K10 scores above 30 (severe distress) was much higher than the prevalence in the general population of 11% (Australian Bureau of Statistics, 2022). Mechanisms may involve common inflammatory pathways, hypothalamic–pituitary–adrenal (HPA) axis dysfunction and psychological impact of chronic disease (Zhou et al., 2021).

2.2 Movement Skills in Hypertension

The Montreal Cognitive Assessment (MoCA) is more sensitive than the Mini-Mental State Examination for detecting vascular cognitive impairment (VCI) (Nasreddine et al., 2005; Carson et al., 2018). Meta-analyses corroborate that hypertension during midlife is a powerful risk factor for late-life cognitive decline and for all-cause dementia (Zhang et al., 2025). Very young adult patients with hypertension (aged 40-60) exhibit some attention, processing speed, or executive function impairments (Jia et al., 2021). Current recommended MoCA cut off for abnormality is less than 26/30, but there may be education adjusted norms (Petrizzuoli et al., 2020).

2.3 Health Literacy and Hypertension Outcomes

Patients with chronic diseases always have low health literacy. In a systematic review, by Kebede et al. (2025), they report that 67% of hypertensive individuals in low- and middle-income countries do not have good health literacy, which pertains to the ability to read prescription labels and know how to calculate dosage. Low health literacy is a mediator between poor adherence and lower self-efficacy and

higher psychological distress (Garcia-Batist et al., 2020). However, the relationship between health literacy and cognitive ability in people with hypertension has been limitedly studied.

2.4 Rational of the Study

Previous studies have looked at health literacy, psychological distress and cognitive impairment among hypertension patients independently. To date, however, there is no study that describes simultaneously all three constructs by using validated instruments (K10, MoCA and a health literacy scale) in a single hypertensive sample. Hypertension and neuropsychiatric morbidity are common worldwide problems, so baseline descriptive data and distribution, patterns is a necessary step to be done before starting correlational or interventional study. This is where this study comes in.

2.5 Objectives

- To evaluate and determine the severity of psychological distress among participants as normal, mild, moderate and severe.
- For assessment of cognitive function and categorization of participants based on cognitive level (normal or cognitive decline).
- To measure health literacy and divide the subjects into quartiles according to their scores.
- To compare the prevalence of hypertension according to participants' levels of psychological distress, cognitive functioning, and health literacy.

2.6 Hypotheses

H1: The prevalence of hypertension is likely to be differs according to participants' levels of psychological distress, cognitive functioning, and health literacy.

H2: Psychological distress, cognitive functioning, and health literacy are likely to be significantly associated with each other.

3. Methodology

The study cohort consisted of patients attending cardiology and internal medicine outpatient departments in a tertiary hospital in the study period (July–December 2025) for a cross-sectional descriptive study. Patients with essential hypertension were selected from a convenience sample of 200 patients with an essential hypertension diagnosis of ≥ 6 months duration and > 30 years old, who did not have stroke, traumatic brain injury, a prior psychiatric diagnosis, and severe sensory impairment. The Kessler Psychological Distress Scale (K10), Montreal Cognitive Assessment (MoCA), and European Health Literacy Survey were employed to measure psychological distress, cognitive functioning, and health literacy, respectively. Following the approval of the institutions, research assistants with training in data collection used face-to-face interviews and cognitive testing to collect data in periods of 25-30 minutes per participant. Data were analysed on SPSS version 26 and descriptive statistics like mean, median, standard deviation, frequency and percentage were computed.

4. Results

Table 4.1 Descriptive statistics of Psychological Distress

	Mean	Median	Std. Deviation	Minimum	Maximum
Psychological Distress (KPD)	33.15	34.00	6.92	10.00	47.00

Note. KPD = Kessler Psychological Distress Scale

Table 4.1 shows, the mean psychological distress scale (M = 33.15) and median (Med = 34.00) psychological distress scale are almost the same. The standard deviation is 6.93, and the range (min-max) is 10.00 to 47.00.

Table 4.2 Level of Psychological Distress (N=200)

Scale	Category	F	%
Psychological Distress			
Healthy	10-19	11	5.5
Mild Distress	20-24	3	1.5
Moderate Distress	25-30	18	9.0
Sever Distress	30-50	168	84

Table 4.2 indicates the Victorian Population Health Survey (2001) cutoffs show that 84% of the hypertensive population are likely to experience severe psychological distress, 9% moderately, 1.5% mildly and 5.5% have no psychological distress (i.e. are healthy). If the cutoff value was used (normal $\geq 26/30$), 70% of the hypertensive participants had declines in cognitive functioning and 30% had normal functioning.

Table 4.3 Descriptive statistics of Cognitive Functioning (MOCA)

	Mean	Median	Std. Deviation	Minimum	Maximum
Cognitive Functioning	23.97	24.00	4.023	10.00	30.00

Note. MOCA = Montreal Cognitive Assessment

Table 4.3 show that the mean (M= 23.97) and median (Med= 24.00) of Montreal cognitive assessment are very similar, as illustrated in the table below. The means and standard deviation of this scale is 4.02369 and the minimum and maximum scores are 10.00 and 30.00 respectively.

Table 4.4 Levels of Cognitive Functioning (N=200)

Scale	Category	F	%
Cognitive Functioning			
Decline	10-25	140	70
Normal	26-30	60	30

Table 4.4 indicates that 140 respondents are in the range of 10-25 while 60 is in the range 26-30. The cutoff score of MOCA is (Normal ≥ 26 / 30). According to the cut off scores 70% of the hypertensive participants have declined cognitive functioning and 30% of the population have a normal cognitive functioning.

Table 4.5 Descriptive statistics of Health Literacy (HL)

	Mean	Median	Std. Deviation	Minimum	Maximum
Health Literacy	35.26	37.00	8.11	16.00	51.00

Note. HL = Health Literacy Scale

Table 4.5 show that mean ($M=35.265$) and median (median=37.00) of health literacy scale are almost equal. This scale has a minimum score of 16.00, a maximum score of 51.00 and a standard deviation of 8.11.

Table 4.6 Levels of Health Literacy (N=200)

Scale	Category	F	%
Health Literacy	16-32	51	25.5
	33-48	143	71.5
	49-64	6	3.0
	65-80	0	0

Table 4.6 shows that 71.5% of participants ($n = 143$) score between 33–48, 25.5% score 16–32, and only 3% score 49–64. None of the participants got a score in the highest range (65–80). Observed participants have health literacy scores ranging from low (16) to mid (51) score in the range of 16-80.

5. Discussion

This study is the first to present a descriptive portrait of both psychological distress and cognitive functioning in a 200-patient sample of hypertensive individuals and links both to measures of health literacy. The results highlight three public health issues.

First, of those who participated, 84% indicated severe psychological distress ($K10 \geq 30$). This prevalence is significantly greater than the range of 11-30% generally seen in people with hypertension (Liu et al., 2025; Lennon et al., 2024). This might be due to the chronicity of hypertension for this sample, the presence of coexisting conditions and other unseen socioeconomic stressors. Any individual experiencing such unpleasantness or distress should be immediately referred for mental health screening and/or counselling.

Second, 70% had worse cognitive performance (as per MoCA score < 26). This is consistent with recent research demonstrating the ability of the hypertension to speed up the cognitive aging by 3–5 years of life (Islam et al., 2023; Zhang et al., 2026). The mean MoCA score of 23.97 is in the range of mild vascular cognitive impairment. Notably, that the lowest score observed is 10 shows how some individuals have very severe deficits, potentially affecting them in everyday medication management.

Third, the health literacy level was fairly low; only 71.5% fell in the range of 33–48, and none scored 65–80, which is the level of optimal health literacy. A mean score of 35.26 (out of 80) indicated that most patients find it difficult to understand prescriptions and understand blood pressure, or access or navigate health systems. These patients have uncontrolled hypertension despite treatment, and low health literacy is known to be a driver of poor adherence, which could contribute to this poor adherence (Garcio-Batist et al., 2020; Liu et al., 2025; Nutbeam et al., 2025).

This vicious cycle, characterized by poor literacy leading to compromised self-management, unacceptable blood pressure control, and additional distress, and compromised literacy from cognitive deficits, contributes to difficulties in adopting new health information (Carson et al., 2018; Zhang et al., 2025). Healthcare providers should use universal precautions for health literacy: plain language, teach-back, and visual aids, should do routine screening on K10 and MoCA with all HTN patients >50 years.

5.1 Limitations

The study was a descriptive study with limited generalizability since it was conducted in one center, with a convenience sampling. It is impossible to draw conclusions of causality. Furthermore, no information regarding blood pressure control was gathered, nor the adherence to medication nor about some sociodemographic factors that should be considered for future analytical studies (education, income).

6. Conclusion

In the group of hypertensives, the psychological distress is alarmingly high (84%), cognitive decline (70%) and lack of health literacy (71.5% was <49/80 score). These are probably all interconnected and are linked to poor disease outcomes. Psychological distress and cognitive impairment need to be included in the standard care for hypertension in international recommendations, alongside communication strategies that take into account health literacy levels. There is an immediate need for future interventional studies to examine the efficacy of interventions to improve health literacy that can positively impact on both reducing distress and slowing cognitive decline in this vulnerable population.

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