Original Article

Physical Activity and Self-Reported Hypertension among Health Professional in Kerala, India: A Cross-Sectional Study

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Abstract

Background: Hypertension remains a leading contributor to cardiovascular disease globally, with a growing burden in India. Regular physical activity is a well-established preventive measure; however, limited evidence exists regarding physical activity patterns among health professionals, who play a critical role in health promotion. The main objective was assessed the prevalence of self-reported hypertension and examined physical activity levels and associated determinants among health professionals working in tertiary-care hospitals in Thiruvananthapuram, Kerala.

Materials and Methods: This Cross-Sectional Study was conducted with 318 participants using a structured questionnaire incorporating the WHO Global Physical Activity Questionnaire.

Results: While the prevalence of self-reported hypertension was low (3.46%), physical inactivity was common, affecting over two-fifths of participants. No significant association was observed between physical activity level and self-reported hypertension. There was no significant association found between physical activity and self-reported hypertension as the prevalence of self-reported hypertension is very less (3.46%). Occupational constraints and environmental factors emerged as key determinants of physical activity behaviour.

Conclusion: These findings highlight the need for workplace-oriented strategies to promote physical activity among healthcare workers, with potential implications for both workforce wellbeing and preventive health counselling.

Key Words: physical activity, self-reported hypertension, health professionals, Kerala

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Introduction

Hypertension is one of the most prevalent non-communicable diseases worldwide and a major driver of cardiovascular morbidity and mortality. [1] Global estimates indicate that elevated blood pressure contributes substantially to disability-adjusted life years, particularly in low- and middle-income countries experiencing rapid demographic and lifestyle transitions, [2, 8] In India, the burden of hypertension has increased steadily over recent decades, reflecting population ageing, urbanisation, dietary change, and declining levels of physical activity [4]. Kerala presents a distinctive epidemiological profile within the Indian context. Despite favourable social and health indicators, the state reports one of the highest prevalences of hypertension nationally. This pattern is often attributed to advanced epidemiological transition, longer life expectancy, and widespread lifestyle-related risk factors [4]. Importantly, recent evidence suggests that hypertension is increasingly observed among younger and working-age adults, raising concerns regarding long-term cardiovascular risk accumulation [17].

Physical inactivity is a key modifiable risk factor for hypertension. International guidelines consistently recommend regular aerobic physical activity for the prevention and management of elevated blood pressure [3, 5]. The beneficial effects of physical activity extend beyond weight control and include improvements in endothelial function, autonomic regulation, and metabolic health [18]. Despite strong evidence, physical inactivity remains widespread across populations, including among individuals with high levels of health knowledge.

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Health professionals occupy a unique position within health systems. Beyond their clinical responsibilities, they influence patient behaviour through counselling and example. Prior studies have shown that clinicians who are themselves physically active are more likely to counsel patients on lifestyle modification. [7] However, healthcare work is often characterised by long hours, shift duties, and high occupational stress, which may limit engagement in regular physical activity. Indian evidence on physical activity and hypertension among health professionals remains limited, particularly in high-burden states such as Kerala. This study sought to address this gap.

Materials and Methods

A hospital-based cross-sectional study was conducted among health professionals working in three private multispecialty tertiary-care hospitals in Thiruvananthapuram district, Kerala, between March and June 2022. Eligible participants included medical and allied health professionals with formal professional training who were actively engaged in clinical or supportive care roles.

A structured, self-administered questionnaire was used for data collection. The instrument captured socio-demographic and occupational characteristics, self-reported hypertension status, awareness and perceptions regarding physical activity, and physical activity behaviour assessed using the WHO Global Physical Activity Questionnaire (GPAQ). Physical activity was quantified in metabolic equivalent (MET) minutes per week and categorised as low, moderate, or high according to standard GPAQ criteria.

Ethical approval no: **IEC/IIPH/2021/0065** was obtained from the Institutional Ethics Committee of the Indian Institute of Public Health–Delhi. Participation was voluntary, and informed consent was obtained from all participants prior to data collection.

Results

A total of 318 health professionals participated in the study. The mean age of participants was 30.99±7.41 years. Women constituted the majority of the sample (84.0%, n = 267), while men

Table-1 Distribution of socio-demographic and occupational characteristics of study participants (N = 318)

Variable	Category	n (%) / Mean ± SD
Age (years)	Mean ± SD	30.99 ± 7.41
Sex	Male	51 (16.0)
	Female	267 (84.0)
Profession	Medical	59 (18.5)
	Paramedical	259 (81.5)
Working hours/day	Mean ± SD	7.75 ± 1.60
Working experience (months)	Mean ± SD	81.76 ± 79.64
Body Mass Index (BMI)	Underweight	25 (7.9)
	Normal	163 (51.3)
	Overweight	95 (29.9)
	Obese	35 (11.0)
Self-reported hypertension	Yes	11 (3.46)
	No	307 (96.54)

Table-2 Physical Activity Levels Among Health Professionals Based on GPAQ (N = 318)

Physical activity category	Definition (GPAQ)	n (%)
Low	Does not meet WHO PA recommendations	133 (41.83)
Moderate	≥600 MET-min/week	65 (20.59)
High	≥1500–3000 MET-min/week	120 (37.58)
Total MET-minutes/week	Mean ± SD	3198.64 ± 4333.23
	Median	1290

Table-3 Reported Barriers and Facilitators of Physical Activity Among Participants (N = 318)

Determinant	Response	n (%)
Lack of time	Yes	207 (65.1)
Obtaining sufficient PA through work	Yes	126 (39.6)
Lack of motivation	Yes	109 (34.2)
Caregiving responsibilities	Yes	115 (36.1)
Health-related problems	Yes	26 (8.1)
Access to PA facilities in neighbourhood	Yes	36 (28.1)
Perception of neighbourhood safety	Yes	43 (33.6)
Received formal training in PA counselling	Yes	97 (30.5)
Belief that PA reduces chronic disease risk	Yes	214 (67.2)

accounted for 16.0% (n = 51). Paramedical professionals formed over four-fifths of the participants (81.5%, n = 259), whereas medical professionals comprised 18.5% (n = 59).

The mean reported working duration was 7.75 ± 1.60 hours per day, and the average work experience was 81.76 ± 79.64 months **(Table-1).**

Based on self-reported height and weight, 51.3% (n = 163) of participants had normal body mass index (BMI). Nearly two-fifths of the participants were classified as overweight (29.9%, n = 95) or obese (11.0%, n = 35), while 7.9% (n = 25) were underweight. The prevalence of self-reported hypertension was 3.46% (n = 11), with the vast majority reporting no history of hypertension (96.54%, n = 307) **(Table-1).**

Physical activity levels assessed using the Global Physical Activity Questionnaire (GPAQ) revealed that 41.83% (n=133) of participants did not meet the World Health Organization recommended physical activity levels and were classified as having low physical activity. Approximately one-fifth (20.59%, n = 65) were categorized as moderately active, achieving at least 600 MET-minutes per week. A further 37.58% (n = 120) achieved high physical activity levels, reporting ≥1500–3000 MET-minutes per week. The mean total physical activity was 3198.64 ± 4333.23 MET-minutes per week, with a median of 1290 MET-minutes per week, indicating substantial variability in activity levels among participants **(Table-2).**

Reported barriers and facilitators influencing physical activity are summarized in **Table-3.** Lack of time was the most frequently reported barrier, identified by 65.1% (n = 207) of participants. Over one-third reported caregiving responsibilities (36.1%, n = 115) and lack of motivation (34.2%, n = 109) as additional barriers. Health-related problems limiting physical activity were reported by 8.1% (n = 26). Environmental and structural factors were also noted; 28.1% (n = 36) reported limited access to physical activity facilities in their neighbourhood, and 33.6% (n = 43) expressed concerns regarding neighbourhood safety.

Regarding facilitators, 39.6% (n = 126) reported obtaining sufficient physical activity through occupational activities. Nearly one-third (30.5%, n = 97) had received formal training in physical activity counselling. A substantial proportion (67.2%, n = 214) believed that physical activity reduces chronic disease risk, reflecting high awareness of the health benefits of physical activity among participants **(Table-3).**

Discussion

This study provides insight into physical activity patterns and self-reported hypertension among health professionals in Kerala. The prevalence of self-reported hypertension was considerably lower than estimates reported for the general adult population in the state [4]. This likely reflects the relatively young age distribution of participants and the reliance on self-reported disease status, which may underestimate true prevalence.

Despite low reported hypertension prevalence, physical inactivity was common. More than two-fifths of participants did not meet recommended physical activity levels, a finding consistent with prior studies among healthcare workers in India [7]. This underscores a persistent gap between knowledge and practice, even among health professionals.

The absence of a statistically significant association between physical activity level and self-reported hypertension should be interpreted cautiously. Cross-sectional design limitations, low event prevalence, and potential underdiagnosis among younger adults may have contributed to this finding. Evidence from longitudinal studies suggests that the protective effects of physical activity on blood pressure may accumulate over time and may not be readily observable in younger cohorts [18].

Occupational and environmental determinants played a prominent role in shaping physical activity behaviour. Time constraints related to work schedules, perceived adequacy of work-related physical exertion, and environmental factors such as neighbourhood safety emerged as key influences. These findings align with broader public health evidence emphasising that physical activity behaviour is shaped by structural and contextual factors rather than individual motivation alone [8].

From a health systems perspective, these findings have important implications. Health professionals who are physically inactive may be less likely to engage in lifestyle counselling, potentially weakening preventive health messaging [7]. Addressing physical activity among healthcare workers therefore has relevance not only for individual wellbeing but also for the quality and credibility of preventive care delivery.

Workplace-based interventions may offer a practical pathway forward. Organisational strategies such as flexible scheduling, designated wellness programmes, and improved access to physical activity facilities could help overcome structural barriers. Such system-level approaches are increasingly recognised as essential components of high-quality health systems [8-9, 20].

Conclusion

Although self-reported hypertension was uncommon in this cohort of health professionals, physical inactivity was prevalent. Occupational and environmental barriers appear to play a central role in limiting physical activity. Interventions aimed at promoting physical activity among healthcare workers should prioritise workplace and systems-level strategies. Strengthening the health behaviours of health professionals may yield benefits that extend beyond individual wellbeing to broader preventive health efforts.

Conflict of Interest: None

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Authors' Contributions

AAB: Manuscript writing, revising critically for important intellectual content. Author approved the final version to be submitted and to publish the article.

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