

## Review of the Knowledge about Hypertension among the Hypertensive and Normotensive Population

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Received March 31, 2020; Revised August 16, 2020; Accepted October 15, 2020

### ABSTRACT

The current study is a systematic review of a research article entitled “Knowledge about Hypertension among the Hypertensive and Normotensive Population”. Hypertension is a chronic non-communicable disease condition that accounts for a significant proportion of the global morbidity and mortality from cardiovascular diseases, renal disease and cerebrovascular events. A comprehensive knowledge about the condition of hypertension, among both the hypertensive and normotensive patients, is known to facilitate the effective prevention, management, and control of the condition. The results of the empirical investigation revealed that the knowledge about hypertension was found to be inadequate among both the hypertensive and normotensive participants. However, the hypertensive participants in the study were found to possess significantly higher levels of knowledge, regarding hypertension as compared to their normotensive counterparts. Older individuals and women were found to have significantly enhanced levels of knowledge, regarding hypertension as compared to younger individuals and men. The purpose of this review was to highlight the importance of designing and implementing culturally sensitive health education programs, tailored to the individual and personalized needs of socio-economically disadvantaged groups, children, adolescents, young adults, males and other vulnerable groups with the ultimate aim of fostering improved awareness, knowledge, medication and lifestyle regimen adherence and optimal blood pressure control among hypertensive and normotensive individuals at the community level.

**Keywords:** Hypertension, Knowledge, Health education, Interventions, Blood pressure control

### INTRODUCTION

Hypertension or high blood pressure is a global public health challenge, accounting for a significant proportion of morbidity and mortality from cardiovascular diseases, renal failure, stroke, and blood vessel damage. The World Health Organization posits that the prevalence of medication non-adherence, among hypertensive patients was found to be 50% to 70% with approximately 50% to 75% of patients, failing to achieve optimal blood pressure control [1,2]. Poorly controlled blood pressure levels have been found to be responsible for increased cerebrovascular events, cardiovascular events, and all-cause mortality among hypertensive patients.

A population-based survey conducted among 1.3 million adults from 27 states in India found the prevalence of hypertension to be 25% [3]. A systematic review of

population based epidemiological studies in India, has indicated the prevalence of hypertension in urban areas to range between 25% and 30%, and in rural areas to range between 10% and 20% [4].

The situation is dismal in a developing country like India, which is undergoing rapid socio-demographic, economic

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**Citation:** Oruganti R, Paidipati S & Dinaker M. (2023) Review of the Knowledge about Hypertension among the Hypertensive and Normotensive Population. J Psychiatry Psychol Res, 6(3): 527-531.

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and epidemiological transition, wherein 70% of the population resides in rural areas facing the constraints of untrained health care providers, inaccessibility of health care facilities and unaffordability of anti-hypertensive medication and medical care [5,6]. The rates of awareness, detection, and control of hypertension have been found to be the lowest in low-income countries. The low rates of adherence to anti-hypertensive medication, in the low-income countries has been found to be associated with rural residence and low education, reflecting the influence of socio-economic factors on accessibility to health care, knowledge of the complications of uncontrolled hypertension, and the affordability of medical care [7]. The impact and magnitude of poor treatment compliance is higher in developing countries due to inadequate health resources and inequities in access to medical care [1].

Empirical literature has indicated that comprehensive knowledge about hypertension is an important determinant of hypertension prevention, medication adherence, lifestyle modifications, control of raised blood pressure, and prevention of health complications [8-10].

The current article is a review of a research article entitled "Knowledge about Hypertension among the Hypertensive and Normotensive Population" by Oruganti, Paidipati, and Dinaker (2018) [11]. A community based cross-sectional descriptive study design was employed, to assess the level of knowledge about hypertension among 96 hypertensive patients and 104 normotensive participants, recruited from a primary care outpatient health facility, and from a community-based setting in Hyderabad, India. A standardized Hypertension Knowledge Schedule was used, to assess the level of knowledge about hypertension, among the hypertensive and normotensive participants. It was considered pertinent and relevant to conduct this review, to highlight the need for the implementation of sustainable and cost-effective population based strategies and health promotion interventions, that target medication adherence and lifestyle modifications, to prevent, control, and reverse the trend of the increasing burden of hypertension across the globe.

The results of the study by Oruganti, Paidipati, and Dinaker (2018) have implications that are significant and manifold for both the health care providers and hypertensive patients [11]. Firstly, there were knowledge deficits among both the normotensive and hypertensive patients, regarding the condition of hypertension. This finding is dismal in light of the fact that accurate knowledge about hypertension, was found to be a major determinant of the effective prevention of the condition, positive health behavior change, control of risk factors such as lack of physical exercise, smoking and discontinuation of the medical treatment, improved medication and lifestyle regimen adherence, enhanced disease self-management, improved quality of life, and optimal blood pressure control among hypertensive patients

leading to reductions in co-morbidities, medical costs, and mortality [10,12,13].

Empowering patients with accurate knowledge, regarding the importance of treatment compliance and dismantling misconceptions rooted in cultural beliefs, have been found to improve adherence behaviors among hypertensive patients [14]. Patient health education has been found to positively impact the knowledge of hypertensive patients, thereby facilitating the control of the modifiable risk factors of hypertension, and reducing the health, social, and economic costs of the of the disease for the health care system and individual families [15].

Secondly, the knowledge about hypertension was found to be significantly higher, among the hypertensive patients as compared to their normotensive counterparts. This finding presents a dismal picture, as a significant proportion of hypertensive patients across the world have been found to be unaware of their hypertensive status, making them susceptible to the life-threatening health complications of the condition. A cross-sectional multi-national study conducted among 142042 hypertensive patients, from 3 high-income, 10 middle-income and 4 low-income countries found that, only 46.5% of hypertensive patients were aware of their hypertensive status, of those aware only 40.6% were on treatment for their condition and only 32.5% had their blood pressure under control [7]. The World Hypertension League data indicates that more than 50% of the hypertensive patients worldwide are unaware of their hypertensive status [16]. A nation-wide population-based health survey conducted by the Union Health Ministry in India, found that although one in every eight individuals had high blood pressure, a majority of them were unaware of their hypertensive status [17]. A similar population-based health survey, conducted among 1.8 lakh people from 24 states in India found that, although a huge proportion of the population were hypertensive, 60% of them were ignorant to the status of their condition, and 42% of hypertensive patients receiving treatment for hypertension had uncontrolled blood pressure levels, indicating the need for population-based preventive and control measures [18].

It is dismal to note that a major proportion of hypertensive patients worldwide, are unaware of their hypertensive status and have low health literacy levels, as health literacy has been found to be associated with higher levels of knowledge, positive health outcomes, behavioral change and effective utilization of the health care system among patients [15,19]. The high prevalence of hypertension and low rates of awareness and detection of the disease, across the world mandate the importance of implementing health promotion interventions, tailored towards controlling the preventable risk factors of hypertension, thus facilitating the primary prevention of the condition before disease onset. Targeted patient health education strategies, that improve knowledge regarding medication and lifestyle adherence,

among hypertensive patients have been successful in facilitating, reductions in stroke incidence by 31% to 45%, myocardial infarction by 20% to 25% and heart failure by more than 50% [20-22].

The third important finding of the study was that the older individuals were found to have significantly enhanced knowledge regarding hypertension, as compared to the younger study participants. This finding is alarming, in light of the younger ages of onset of primary hypertension, due to unhealthy dietary habits, sedentary lifestyle patterns, academic and social stress. The results of a nation-wide population-based study, conducted among 1.3 million Indians across 27 states in India have indicated that, the prevalence of hypertension is increasing among young adults, with approximately one in ten persons in the age range of 18 to 25 years, being afflicted with hypertension [3]. This finding is alarming as the most productive age group of the nation, is now faced with the life-threatening health complications of hypertension, resulting in a huge financial drain on the health care system and individual families. The situation is dismal in light of the limited health resources, and lack of awareness regarding hypertension, impeding medication and lifestyle regimen adherence among hypertensive patients, in a developing country like India. The statistics related to the incidence and prevalence of hypertension, among children in India have been found to be increasing astronomically, calling for urgent preventive and control measures from the perspective of predictable, preventable, and personalized medicine. A preventive health survey conducted among 980 school going children, in the age range of 5 to 18 years in the state of Telangana in India, has found that a significant proportion of children were found to be hypertensive, with the parents of these children being unaware of their child's hypertensive diagnosis [23]. The major preventable risk factors that were implicated in the development of hypertension, among children were found to be excessive intake of unhealthy food, lack of physical exercise, excessive use of gadgets, long study hours and academic stress [23].

The prevalence of pre-hypertension and hypertension among 1611 college students, in the age group of 17 and 25 years randomly selected from two colleges in the Moinabad area of Hyderabad, were found to be 26.95% and 4.86% respectively [24]. The modifiable risk factors for the development of hypertension include poor diet comprising of high salt intake and fatty food, lack of regular physical exercise, harmful alcohol intake, tobacco use, obesity, and chronic stress. There is a dire need for implementing health promotion and education interventions in schools, colleges, workplaces, primary care facilities, and the IT industry to facilitate the prevention, management and control of hypertension among the younger population of a nation. The most important barriers to the awareness and detection of hypertension were found to be knowledge barriers relating to the necessity for hypertension screening [25]. Improving

knowledge and awareness about hypertension, through primary prevention initiatives such as large scale population based screening, initiation of preventive care clinics in primary health care facilities, and the implementation of health education programs at the community level, will serve to curtail the sharply rising trend of this chronic non-communicable pandemic and its associated disability, morbidity and mortality.

The fourth significant finding of the study was that women were found to have significantly higher levels of knowledge regarding hypertension, and its associated risk factors as compared to the men in the study sample. This finding has been supported by research evidence which has indicated that, women are more concerned about their health and are more likely to engage in health seeking behaviors, such as consulting primary care physicians and adhering to their treatment regimen, to control the modifiable risk factors of hypertension and improve their health outcomes [26]. As women have been found to be more responsible for their health, they have also been found to be more receptive to health education interventions targeted at improving their knowledge, adherence and self-management behaviors, for optimal hypertension prevention and control outcomes [26]. A significantly higher proportion of men as compared to women have been diagnosed with hypertension in India, indicating the urgent need to implement health education interventions to increase awareness and knowledge about the modifiable risk factors of hypertension in this vulnerable sub-group, thereby reducing the risk of cardiovascular morbidity and mortality [27]. The gender differentials in the health and help seeking behaviors of men and women, can be attributed to the socialization processes wherein it has been deemed as socially acceptable for women to seek help and support related to their health, whereas the gender roles for men have warranted strong and dominant personalities, wherein seeking help for one's health has been tied to weakness and inadequacy. A study conducted among college students in Hyderabad, has indicated that the prevalence of pre-hypertension and hypertension among males, was found to be 35.29% and 6.64% as compared to 9.64% and 1.18% respectively in females [24].

Several studies conducted across the world have found that accurate knowledge about hypertension, among hypertensive patients was associated with significantly higher adherence to pharmaceutical and non-pharmaceutical treatment, whereas low levels of knowledge about the disease was associated with inadequate adherence to medication and lifestyle recommendations, leading to poor hypertension control [10,28]. Poor knowledge about hypertension was found to constitute an important barrier, to the effective prevention, treatment and control of the condition among patients [29,30]. The knowledge, perceptions and attitudes of patients towards hypertension, were found to significantly influence lifestyle modifications,

thus facilitating the control of the modifiable risk factors of hypertension [15].

Research has shown that health education programs had beneficial effects on the knowledge, treatment compliance, self-management behaviors, lifestyle changes and control of blood pressure among hypertensive patients [2,31]. The health education interventions should be practice oriented, tailored to the needs of the socio-economically disadvantaged groups, young adults, males and rural populations, target the modifiable lifestyle-related risk factors and repeated at regular intervals to reinforce the desired knowledge and turn learnt information into practice [15, 32]. Scientific evidence has indicated that health promotion interventions that are patient-centred evaluate specific barriers and facilitators to medication adherence and tailor the education to suit the socio-cultural background and personal characteristics of patients, are successful in fostering medication adherence and behavioral change among hypertensive patients [33-35].

There is an urgent need for collaborations between global and local stakeholders, to implement health promotion interventions that will help hypertensive patients, overcome their perceived barriers, enhance accessibility and affordability of health care and anti-hypertensive medications, and improve adherence to the pharmaceutical and non-pharmaceutical treatment regimen to combat the epidemic of hypertension globally [36,37].

Multi-sectorial collaborations between the government, public health personnel, health care providers, health psychologists, nurses, and community health workers in the design and implementation of public health policies, health education interventions and door to door screening initiatives for chronic non-communicable diseases, will serve to mitigate the deleterious health complications of hypertension across the globe.

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