

Hypertension among Health Workers in Nepal: The Health of Health Guardians, 2005-2019

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ABSTRACT

Background: Hypertension as the iceberg disease is the major public health concern of this era where global population, especially in low and middle-income countries, are facing its escalating burden. The working-age group population is the principal victim of the morbid and deceased state due to hypertension. The vital workforce of the nation, the health workers are not spared from the thunder of hypertension means several studies around the world piled up the evidence of their vulnerability for hypertension. **Objective:** The aim of this study was to do a systematic review of literature related to hypertension among health workers in Nepal. **Methods:** The systematic review of articles and information related to hypertension among health workers in different countries including Nepal published from 2005-2019 using PubMed, PMC, Google scholar and Google was done. The data on prevalence of hypertension, risk factors of hypertension, impact of hypertension, health system and policy in relation to hypertension among general people and health workers were extracted from databases for the systematic review. **Results:** As other nation's health workers, health workers of Nepal are shading under the environment which encloses the liable risk factors of hypertension. With the reason of lacking health information of health workers in Nepal, the health system of Nepal is still in the mirage that the health of their health workers does not deviate and not of priority concern. In addition, health workers of Nepal are overlooking their health by practicing unhealthy behaviors knowingly or unknowingly leading to the genesis of hypertension. **Conclusion:** In conclusion, the health workers of Nepal are in the potential risk of hypertension as similar to another workforce as well as the general population. Therefore, this hidden truth needs to be investigated, uncovered and addressed accordingly by the health system of Nepal and health workers themselves.

Keywords: Hypertension, Health Workers, Nepal

Introduction

Hypertension, also known as the silent killer, is an emergent public health issue accountable for massive global morbidity and mortality [1,2]. The concealed burden of hypertension is escalating and devouring the world as a submerged portion of the iceberg. Non communicable disease (NCD) is one of the significant burning issues of this era especially in the low and middle-income countries [1]. The four major NCDs i.e. cardiovascular diseases (CVDs), cancer, chronic respiratory disease, and diabetes are responsible for 82.0% of total NCD deaths in which cardiovascular disease embrace in an uppermost rank (17.9 million deaths; 44.0% of all NCD deaths and 31.0% of global

deaths) [1, 2]. More than half (9.4 million) of deaths among total CVD deaths are due to complications of hypertension which is higher than all deceases from communicable diseases combined [3].

The problem of hypertension is growing at an alarming rate mainly in the working-age population. Around 12.2 million people of active working age, mostly in the least developed countries die each year due to non-communicable diseases comprising hypertension [4]. Workers are fall in the age group of the adult population who were suffering from 75.0% of high premature deaths from NCDs including hypertension worldwide [4,5]. Health workers are the essential cohort or workforce of the nation whose services are precious

for fostering the better health of the population and being on the front line of direct contact with the patient, their family, and communities [6]. This population is thought and supposed to be healthy in almost all circumstances in the communities. However, several occupational risk factors along with the common risk factors were identified in their life and work settings which put them susceptible to the acquisition of hypertension [7].

Nepal is a brick-shaped low-income country located in the South-East Asia Region currently in the state of epidemiological transition. With the striving to control the communicable diseases, the health of Nepalese people is devastating by the burgeoning burden of NCDs; mainly hypertension [8]. Unevenly distributed health workers of Nepal has the core responsibility to control and prevent hypertension among the general population [9]. Nonetheless, these health guardians of Nepal can also be in the probable risk of hypertension because of their working status in the unsound environment with limited resources [9-12]. To understand this situation, this study aims to systematic review of literature concerning hypertension among health workers in Nepal.

Methods

The systematic review study design was applied to review the literature related to hypertension among health workers of Nepal in this study. No other population was involved to design or conduct this review. The inclusion criteria in this systematic review were articles, reports, web information with citation published in 2005-2019 which was extracted from databases (PubMed, PMC, and Google scholar) and Search engine (Google). All the articles about hypertension among children, elder population, and workforce other than health workers were excluded during the process of literature review. The keywords used to search the records in the databases and search engine were prevalence, risk factors, health policy and

program-related hypertension, impact, health workers, Nepal. A protocol was followed in the information identification for systematic review as mentioned in figure 1.

Then the information was reviewed systematically after its categorization into different sections; hypertension in the general population, hypertension in health worker, risk factors of hypertension among health workers, impact of hypertension among health workers, and health system, health policy, and health workers of Nepal in relation to hypertension.

Results

Out of total articles and information searched from the different database and search engine, we have selected 56 articles, reports, and web page information which was reviewed consequently after categorization as follows:

Hypertension in the general population

The global prevalence of hypertension in the adult population (aged ≥ 18 years) was around 22.0% [13]. It was found that the number of the hypertensive adult population was increased from 594 million in 1975 to 1.13 billion in 2015 with the main upsurge in low income and middle-income countries [14]. In addition, it has been projected that by 2025, about 75.0% of the world's hypertensive population will be in developing countries [15]. The burden of hypertension in the South East Asia Region (SEAR) was worse where hypertension accounts for 1.5 million deaths each year and found that one in three adults has high blood pressure. Furthermore, the prevalence of hypertension in the adult population aged >25 years in the countries of SEAR ranged from 19.0% to 42.0% [16,17]. The prevalence of hypertension in Nepal was found to be highest (33.8%) as equated to other SAARC Countries [18].

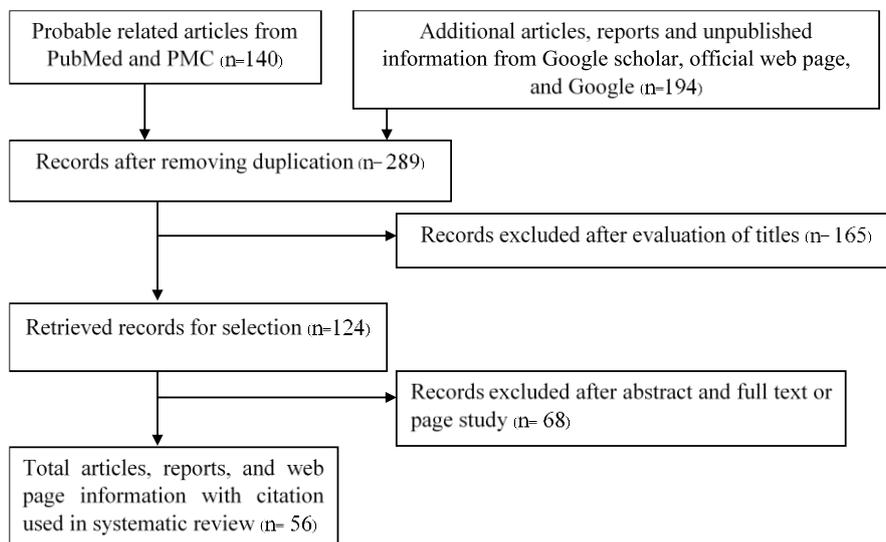


Figure 1 Protocol followed during information identification for review

Latest national step survey reveals that 1/4th (25.7%) of the Nepalese adult were suffering from hypertension where tobacco use, alcohol consumption, physical inactivity, low fruit, and vegetable consumption as risk factors of hypertension were substantially high [19]. The evidence of mushrooming of hypertension was surplus by the repeat cross-sectional study which reveals the three-fold increment of hypertension rate among the same population of Kathmandu district in between the period of 25 years [20]. The pooled analysis of the prevalence of hypertension in different geographical areas of Nepal was ranged from 15.1% to 38.9% [21-24].

Hypertension in health workers

Several studies have been conducted in various parts of the world presented the general inclination of CVD risk factors including hypertension among health workers than other occupational groups [25]. The global health worker scarcity is expected to worsen, due to the aging and prevalence of chronic diseases such as hypertension within this group higher with the general population in some studies [6,25-29]. There were limited studies happened before related to hypertension among health workers, nonetheless previous studies done among varieties of health workers in South Africa (nurses), India (doctors and nurses), Indonesia (hospital workers), Taiwan (physicians), Nigeria (health care workers), and Brazil (health care workers), shows the prevalence of hypertension as 52.0% [29], 21.6% [30], 14.2% [31], 21.7% [28], 41.9% [32], and 33.0% [33] respectively. However, there is no report has been published yet on the prevalence of hypertension among health workers in Nepal.

Impact of hypertension among health workers

Hypertension among health workers does not impact only as of the loss of their life, but also accountable for their deprived quality of life, altered mental health, disability, the indirect burden to the national financial expenditure and altered health service delivery system or reduced productivity due to absenteeism in their workplace [3,13,34-36]. Almost US \$ 500 billion annual lost economic output in low and middle-income countries are due to cardiovascular disease including hypertension [3]. The impact of hypertension on the mental health of the hypertensive population are substantial; they experience anxiety, depression, and stress due to known hypertension [36]. Hypertension is the top one risk factor contributing to about 211.8 million of the global disability-adjusted life years (DALYs) in 2015 [37]. Based on the Centers for Disease Control and Prevention's (CDC's) workplace safety data, hospital workers have an 18.0% greater chance of dying from the hypertensive disease as someone in the general population [38,39]. In addition, a white paper shows the high chronic illness rate; hypertension is one of the top 10, high health care cost, and high service utilization rate among hospital workers

than general workforce [34]. Health workers in patient health education regarding lifestyle modifications have a vital role in the control of hypertension [40]. The efficiency of patient education may be improved by attending health workers having healthy behaviors. Studies uncovered that the health workers who have adopted healthy behaviors (physical activity, no tobacco use, weight management, drank less alcohol) helps to make them a role model and probability of high success rates in patient management [40-43]. Therefore, the health status of general people can be directly or indirectly determined by the lifestyle, health behaviors and health status of health workers. So it is important to maintain the health of health workers for the sake of health workers themselves as well as for the general people.

Risk factors of hypertension among health workers

Health workers have a dual responsibility to control and prevent hypertension among people and themselves. Besides their role as a guardian of the health of the people, unfortunately, this group is exposing with varieties of stressors in their workplace such as work overload, deprived sleep, repeated exposure to emotionally changed states, dealing with difficult patients, and conflicts among staffs, psychological stress, long hours of work, shift duties, and unhealthy that may act as an inducer for hypertension [4,30,34,44-46]. Few studies around the world have been identified the significant associated factors of hypertension in health workers such as increasing age, gender, smoking, physical activity level, marital status, unhealthy diet, educational level, increased body mass index (BMI), history of diabetes, stress, less sleep duration, shift work, long work duration, and employment status [25,31,44,46-50]. However, the problem among this population still remained unchanged in most of the developing countries. Despite the high health related knowledge among health workers and their proximity to the health care service delivery point, they are often practicing unhealthy behaviors and overlooked in health screening activities which puts them to the high-risk group for hypertension as compared to other workforce [7,29].

Health system, health policy, and health workers of Nepal in relation to hypertension.

The paradigm of the health system in Nepal is changing with the time period where health workers always act as a significant pillar of Nepal's health system. As Nepal progress towards three-level federalized health system i.e. federal, provincial, and local, the deployment of health workers in three levels are considered to be the great challenge where their responsibility to outline structure and give life to the health care system under federalism is crucial [51,52]. Until now, the health workers are disproportionately distributed and working in the three different tiers of the health system of Nepal i.e. primary level, secondary

level, and tertiary level [53]. The health system of Nepal is guided by an umbrella national health policy 2014 followed by other specific health related policy and programs [54]. Among them, Nepal Package of Essential Non-Communicable Diseases (PEN) program is the only one specific program; one of the action areas of the multisectoral action plan for the prevention and control of NCD (2014 to 2020) that works in the field of hypertension control among Nepalese population. The Nepal PEN program that provides training to the health workers in order to control the non-communicable disease among the general population is limited only to primary health care level of selected districts in Nepal [55,56]. Many of the health workers in other districts and other tiers of the health system are unaware of this national PEN protocol that deprives them of the opportunity to get NCD specific training [55, 56]. In addition, health workers working especially in secondary and tertiary level hospitals are supposed to have a high burden of workload, less leisure time, inadequate sleep duration, and shift work [10,11] that can be additional significant drivers for factors associated with hypertension and hypertension itself.

Discussion

It is the first review on hypertension among health workers in Nepal. This study reviews the numerous articles along with web information to encounter the objective of the study. Even of high health related knowledge and closeness to the health organization, the review reveals the high prevalence of hypertension among health workers ranged from 14.2% to 52.0% in different geographical areas in the world such as Nigeria, South Africa, India, Taiwan, Indonesia, and Brazil [28-33]. Similarly, the trembling information about risk factors and the impact of hypertension in health workers were dug out though this review [25,44,46-50]. During the information identification and process of review, we found that no article has been published yet which directly demonstrates the figures related to hypertension among health workers in Nepal. However, some studies from other countries and Nepal added up evidence as the health workers of Nepal are equally susceptible for hypertension because of inadequate health policy alongside altered lifestyle in unhealthy work setting [10,11,55,56].

Much of the information shown in the results section helps to presume that the health workers of Nepal are also one of the key vulnerable groups for hypertension. However, Nepal lacks the health information of their health workers. Till date, there is no routine health screening and reporting program related to hypertension for the health workers. The health of health workers is often neglected by health workers themselves and the health system as well where it is pretended that their health cannot deviate because they are thought to be keen to maintain their health. If the health of health workers is found deviated, they are known to be incapable to treat their patients.

Thorough review thrust to the concept that health workers are equally susceptible to the genesis of hypertension as compared to the general population as well as another workforce. It is time to think about the health of our health guardian. In Nepal, health workers are treated as a god where they spend their life to maintain the health of the people. Even of their miracle works to uplift the health of the people, sometimes we should need to contemplate that they are also liable to their health deviation because of the several stressors in their workplace and life. The health workers themselves and the health system of the nation should be fretful to prevent and control hypertension among health workers with the account that their role to upgrade and sustain positive health of the people is remarkably concerned. The routine health screening program along with further research is needed to explore the veiled truth; hypertension among health workers of Nepal.

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