

Hypertension Analysis and Model Evaluation

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Abstract

For patients seeking health care services in primary care clinics, this study indicated that one of the highly prevalent conditions is hypertension. Particularly, it was documented that effective blood pressure control depends on various factors and lifestyle behaviors, having gained insights from most of the previous scholarly studies. Thus, the main aim of the investigation was to determine some of the lifestyle modifications and factors linked to the control of blood pressure among patients using antihypertensive agents. The research design that was implemented involved the use of a survey technique. With the period of data collection stretching from July 2008 to June 2010 and that research context being Korea's 15 selected hospital-based family practices, prospective sampling and retrospective assessments were utilized. The number of patients assessed was 1,453. Whereas individual questions aided in gaining insight into the participants' lifestyles, a follow-up questionnaire that was administered in the later stages of the investigation strived to discern issues surrounding the control of the patients' blood pressure.

Introduction

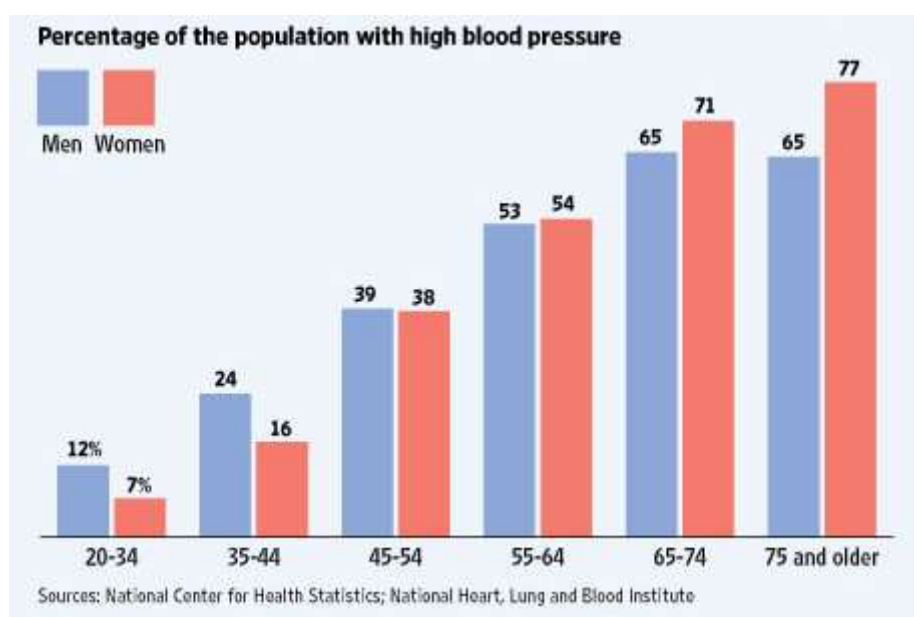
Beevers, Lip and O'Brien (2001) sought to unearth some of the factors that play a predictive role in shaping the prevalence and incidence of hypertension. Particularly, the study documented that some cases of hypertension have been attributed to parameters such as underlying adrenal or renal disease while others are yet to have their identifiable causes clarified; translating into a state of "essential hypertension." Despite the mixed outcomes in the literature surrounding the pathophysiology of hypertension, the authors concurred that the maintenance of normal blood pressure depends on various physiological mechanisms and any alteration or derangement could lead to "essential hypertension." Overall, the study suggested that in hypertensive patients, several interrelated factors cause an increase in blood pressure, but the reactions differ from one individual to another. Major predictive forces observed to account for the increase in the number of hypertensive patients were asserted to include neurovascular anomalies, intrauterine nutrition, low birth weight, endothelial dysfunction, renin-angiotensin system, insulin resistance and obesity, and salt intake. Hence, the results were insightful because they pointed to the need for health care providers and practitioners to engage in early interventions that target these predictors of hypertension, upon which the prevalence of the condition could be minimized.

Methods

Similar to the analysis by Bolívar (2013), This study documented that about 90 percent of cases of hypertension involve essential hypertension, yet the cause continues to be undermined. With the need to respond to this public health challenge, the researchers adopted a literature review approach and strived to determine the neurogenic pathophysiology and etiology of essential hypertension. Whereas humans' normal functioning requires an excretion and ingestion of less than one gram of sodium in each day, the study indicated that any failure by the kidneys to excrete the sodium that is

ingested could lead to essential hypertension, a trend only avoided via increased blood pressure. Hence, the results of this review demonstrated that essential hypertension emerges as a product of a pathophysiological characteristic that occurs in the form of abnormally high levels of pressure; with the latter attributed to alterations in the pressure natriuresis correlation. Hence, the findings were important because they paved the way for the analysis of possible dysfunctions in the patients' sympathetic nervous systems, which account for altered pressure natriuresis relationships, hence, essential hypertension. Overall, the results were informative because they increased understanding of relevant drugs through which essential hypertension could be treated.

Results



In Ali et al. (2018), the main aim of the study was to examine recent trends in hypertension management, with particular emphasis on insights from the 2017 Hypertension Clinical Practice Guidelines. From different cardiovascular disorders, the investigation indicated that one of the most prevalent clinical symptoms that emerge is hypertension. Some of the secondary effects with which the authors associated the condition include congestive heart failure (CHF) and acute coronary artery disease. It was documented further that hypertension accounts for about 12 percent (or 7.5 million) of deaths in each year, pointing to a high contribution to human mortality. In the context of the U.S., the authors noted that about 35 percent of adults experience high blood pressure, yet hypertension remains a manageable condition (through non-pharmacological and pharmacological approaches. Therefore, the study employed a literature review technique to gain insight into some of the recent management techniques that have been adopted. From the results, especially those that were gained from previous clinical trials, it was observed that improvements in the control and treatment of the condition are likely to be felt if health care practitioners employ individualized approaches that seek to respond to the patients' needs. Indeed, the results were informative because they emphasized the criticality of patient-centeredness as a predictor of successful hypertension treatment and control.

From Buford (2016), given many health risks with which hypertension continues to be associated, this investigation strived to unearth the relationship between the incidence and prevalence of the condition and the factor of aging. The author acknowledged that most of the previous literature had emphasized cardiovascular disease' risks and associated attributes, but attention on collateral effects of hypertension (such as fractures or falls, physical disability, and risks for dementia) is yet to receive in-depth analysis. For biologic aging, the study indicated that some of the key mechanisms with which the process is associated include endothelial dysfunction, oxidative stress, and inflammation. Hence, the development of hypertension in aging populations was seen as a product of such mechanisms. Conducted from a literature review perspective, the specific objective of the study was to establish some of the multi-dimensional risks linked to hypertension in adult populations, upon which insights would be given into some of the treatment strategies that are worth adopting. From the results, it was affirmed that due to key mechanisms associated with biologic aging, there is a direct relationship between aging and the incidence and prevalence of late-life hypertension. Indeed, the results aided in understanding the importance of engaging in early interventions that target the perceived key mechanisms that affect aging populations (such as endothelial dysfunction and oxidative stress), upon which late-life hypertension could be prevented. In turn, such a form of early intervention could yield beneficial effects such as reduced healthcare costs, increased life expectancy, and reduced mortality rates – and associated comorbidities.

In Chen S. (2012), whereas chronic blood pressure elevation is linked to essential hypertension, this study indicated that the etiology of essential hypertension is yet to receive in-depth analysis, a debate proving inconclusive. Indeed, it was observed that essential hypertension accounts for about 95 percent of cases of hypertension around the world, with the role of genes linked to almost 50 percent of such cases. In the context of the U.S., it was observed further that over 65 million adults have been diagnosed with essential hypertension. Therefore, the main aim of the study was to determine some of the tertiary effects of sub-optimally treated, untreated, or undiagnosed hypertension (such as target organ damage) and some of the feasible solutions that various healthcare systems at the national and local levels ought to adopt to assure future preparedness. From the findings, the author documented that a lack of clarity in the pathogenesis of essential hypertension accounts for the largely empiric nature of treatment options that have been embraced. For healthcare providers and organizations, the study becomes important whereby it points to the criticality of tailoring treatment to the underlying etiology, as well as engaging in follow-up and lifelong care efforts; eventually reducing healthcare expenses in a context such as the U.S.

From Freeman et al. (2017), despite the prevalence of hypertension, this study noted that the condition is yet to be combated satisfactorily. Hence, the central purpose of the investigation was to review some of the recent emerging therapies and clinical advances in relation to the treatment of hypertension. Particularly, the study strived to inform cross-disciplinary teams about some of the treatment modalities that have been adopted and the efficacy of different techniques relative to the characteristics of hypertensive patients to which the treatments are applied. From a literature review perspective, findings demonstrated that the majority of the emerging therapies and newer drugs (such as brain RAS inhibitors, protective arms of the renin-angiotensin system, and renal

denervation) are useful because they reduce chances of hypertension-related target organ damage and also reduce blood pressure. However, it is worth indicating that the findings were important because they sensitized health care providers regarding the need to adopt the emerging therapies and newer drugs but failed to give insight into the cost-effective nature, if any, of the proposed approaches.

Conclusion

In the results of this study, the researchers established that factors that shaped the success of blood pressure control included co-morbidity, salt intake, and sex. Therefore, it was concluded that in Korea's selected hospital-based family practices, inadequate blood pressure control accrues from high salt intake, physical inactivity, and weight gained. Indeed, these findings proved informative because they sensitized relevant healthcare authorities and community members about some of the factors and lifestyle behaviors operating as barriers to successful blood pressure control, eventually paving the way for early interventions that could restore health among the affected community members and families.

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