THE BENEFITS OF LIFESTYLE CHANGES IN THE MANAGEMENT OF HYPERTENSION : A REVIEW OF THE LITERATURE

ABSTRACT

High blood pressure is a global challenge in the health sector today. It is the principal predisposing factor of cardiovascular disease and is associated with death. The main aim of this study is to identify the positive effects of lifestyle changes in the management of hypertension in middle-aged adults. Although, some studies have treated hypertension in relation to lifestyle changes, this study involved a process of searching these relevant pieces of literature on lifestyle changes like diet and physical activities, as it relates to management of hypertension. In conclusion, there was evidenced that lifestyle changes is effective in the management of hypertension when applied appropriately.

Keywords : *Hypertension, Diet, Life changes, Exercise, Alcohol, sodium, obesity.*

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1.INTRODUCTION

High blood pressure is a global challenge in the health sector today[1] . An observation carried out in 2018 by the world health organization shows that 1.13billion persons globally have been diagnosed with hypertension and a prediction of 1.5billion rise in 2025. According to National Institute for Health and Care Excellence(NICE) hypertension remains the leading cause of death globally and in the United Kingdom, about 30% of cases in middle-aged adults are uncontrolled while 25% are diagnosed with high blood pressure[2]. Allam et al.in their study,stated that there is global concern about hypertension and the likely rise in years to come due to redundant lifestyle and diet-related habits of individuals.[3[It is the principal predisposing factor of cardiovascular disease and has contributed to the rise associated with cardiovascular death [4]. Elevated blood pressure is the principal cause of global premature death as a result of it

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relationship in the risk of developing other related organ diseases such as diabetic mellitus, kidney disease, stroke and heart failure [5]. Allam et al. states that inactivity and dietary lifestyles of individuals are contributing to the increase in the number of people with hypertension. [3].with conditions such as obesity, alcohol, and tobacco consumption predisposes people to hypertension [6]..Although hypertension is majorly the cause of cardiovascular problems, this, however, can be modified by a simple application of lifestyle changes which includes exercise, weight reduction and control, and reduction of sodium [7]. The adoption of modern ways of life such as the consumption of calorie food and sedentary lifestyle has been associated with the rise in hypertension which is one of the world's biggest challenges[8] . As a result of the above information, a gap was identified to find out how beneficial is lifestyle changes in the control of hypertension. In an attempt to find out the relevance of positive lifestyle changes in the regulation of hypertension, a review of the literature was adopted.

Although some studies have examined hypertension in relation to lifestyle changes, this study involved a process of reviewing relevant literature on lifestyle changes, such as diet and physical activities, as they relate to the management of hypertension. In conclusion, evidence suggests that lifestyle changes are effective in the management of hypertension when applied appropriately.

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The aim of the systematic review was to explore how positive lifestyle changes help in controlling blood pressure in adults between the ages of 45 to 65 years. The objectives were to identify the relationship between hypertension and lifestyle changes. To evaluate health promotion strategies that can be used to reduce blood pressure and to identify lifestyle changes that can be adopted in the management of hypertension.

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2. METHODOLOGY

The method employed in this study was a literature review, focusing on peer-reviewed articles, research papers, and journals. Databases such as PubMed, Medline, Cochrane, and Summon Library were used to search for relevant articles on lifestyle changes in managing hypertension.

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The PRISMA framework guided the systematic analysis, and the Critical Appraisal Skill Program (CASP) was used to assess the selected articles' strengths and weaknesses. The inclusion criteria included studies published between 2000 and 2021, written in English, and focused on lifestyle changes related to hypertension management. Exclusion criteria included non-English publications, studies published before 2000, and unrelated topics.

3. RESULTS

A total of 2207 articles were initially retrieved from various databases, including Medline, PubMed, Summon, and Cochrane. After removing duplicates and applying inclusion and exclusion criteria, 18 articles were further screened, and six were selected for final analysis. These articles focused on dietary and physical exercise interventions for managing hypertension. The data were analyzed using PRISMA guidelines and presented in a systematic format.

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Show the six selected articles and convey the results of their critical appraisal

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4.LITERATURE REVIEW

4.1 Obesity

Hypertension is commonly associated with obesity, and weight loss programs can effectively lower blood pressure [8,9]. Research by Allender & Rayner indicates a significant correlation between obesity and hypertension-related comorbidities in the UK.[10].Additionally, the NHS found an increase in overweight middle-aged adults from 29% in 2017 to 64%.[11] A survey by the National Health and Nutrition Examination revealed a predisposition to hypertension in individuals with a BMI over 30 [12]. Regulating blood pressure in overweight individuals is challenging due to the compressive effects of adipose tissue on the kidneys, resulting in elevated blood pressure[13]. Barriers such as low motivation, excessive weight loss, and substance

relapse can impede lifestyle changes for hypertension management [9]. Literature suggests that younger patients aged 20-44 years are less compliant with lifestyle changes than middle-aged counterparts. The CDC indicates that while middle-aged adults adhere better to health regimes, comorbidities like arthritis and diabetes hinder compliance in individuals aged 45-65 [14]. Hence, Park in his study, emphasized the importance of health education and follow-up in ensuring compliance.[15]. Hypertension management involves multiple disciplines, including cardiologists, nutritionists, physiotherapists, and nurses [15] , with nurses playing a critical role in observation and health education across various healthcare settings [16]. Collaborative efforts among health professionals are essential for effective care [17].

4.2 Nutrition.

Sodium is essential in the diet, with salt being a primary source and preservative as stated by Hinderliter et al., [18]. In America, sodium intake averages 3400 mg per day, surpassing the recommended 2300 mg [19]. High sodium intake correlates with hypertension due to increased water retention and arterial pressure [20]. Whelton asserts that excessive sodium intake adversely affects cardiovascular and renal systems[21], while reduced intake can mitigate hypertension in middle-aged adults [22]. Verma et al.in their opinion, recommended home-cooked meals to manage sodium intake, as processed foods typically contain higher sodium levels[23].

Appel et al. highlight the benefits of fruits, vegetables, and unsaturated oils for heart health, emphasizing low sodium consumption as a practical recommendation [24]. It was found by Sacks et al. that consumption of red meat, wine, and processed potatoes elevates blood pressure due to high saturated fat and sodium content [25]. They advocated the intake of vegetables, eggs, and yoghourt to effectively lower systolic blood pressure. Increased dietary intake of lean proteins like poultry, fish, and low-fat dairy have also been shown to effectively reduce blood pressure and mitigate hypertension when properly integrated into the diet.[26]

4.3 Exercise

Numerous studies underscore the significance of exercise for fitness and healthy living [26,18]. Exercise is advantageous in managing hypertension by regulating blood pressure and mitigating

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cardiovascular risk [9] .The primary physiological benefit of exercise is the enhancement of cardiac functional capacity [27] .It was observed by Hamer that increased inactivity may lead to hypertension affecting a significant portion of the global population.[28]. Exercise is recognized as the most efficacious non-pharmacological intervention for hypertension [18,9]. Research by Moraes et al. demonstrated that a 12-week exercise regimen in middle-aged men resulted in a notable reduction in systolic and diastolic blood pressure [29]. Engaging in moderate weekly exercise, such as 150 minutes of walking, alleviates stress and anxiety, further contributing to lower blood pressure [30]. Additionally, Murtaugh et al. have also associated exercise with weight reduction.[31]

5.4 Tobacco Cessation

Tobacco contains nicotine which increases the activities of the nervous system leading to increase in oxygen demand in the myocardium which will eventually result to raise in blood pressure . According to Warburton et al., cessation from smoking do not only regulate blood pressure but reduces mortality rate.[32] Although not very much study has been done about tobacco smoking and hypertension, a research by verma et al., states that the nicotine content in tobacco has a negative effect in the blood vessels and when nicotine use it is reduced or stopped , there is associated reduction in blood pressure [23]

4.5 Alcohol Consumption

According to Klatsky & Gunderson , alcohol consumption increases the level of blood pressure, due to the pathological effect in the rise renin level which further results in narrowing of blood vessels[5] .In a study by verma et al., a lifestyle changes of reduction of alcohol intake in heavy drinkers results in a subsequent lowering of blood pressure within a short period. [23] This is said to occur as a result of decrease in the stimulation of endothelia following alcohol cessation which will further result to vasodilatation [18]

While studies have shown that there is relationship between high blood pressure and alcohol intake, a clinical trial confirms that reduction in alcohol consumption can bring about 5mmHg decrease in systolic and 3mmHg reduction in diastolic blood pressure within four week[23]

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5. CONCLUSION AND RECOMMENDATIONS

Hypertension is a leading cause of cardiovascular diseases, and this study shows that lifestyle changes, such as dietary modifications, regular exercise, and cessation of smoking and alcohol, can effectively manage blood pressure. Further prospective studies using various lifestyle interventions as research parameters are recommended to explore their comparative advantages.

LIMITATIONS OF THE STUDY

This study is based on a literature review rather than prospective or quantitative analysis, which limits the findings to already established data. Additionally, only English-language articles were reviewed, potentially omitting relevant studies in other languages.

ETHICS

No ethical issues were encountered in this study, but all articles used were critically appraised to ensure ethical considerations were addressed.. Ethical principles such as informed consent, confidentiality, and anonymity were considered.

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