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Review Article

Education about Hypertension and Its Impact on Knowledge, Lifestyle Choices, and Blood Pressure Control in the UK: A Systematic Review

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Abstract

Background: Hypertension is a primary factor causing diverse cardiovascular diseases including aneurysms, stroke, and heart attacks. Unhealthy food habits, lack of physical activities, and various other factors lead to hypertension. It is determined as the third biggest factor causing various diseases in the UK and second largest factor globally. **Aims/Objectives:** This research aims to examine various impacts of healthcare education on lifestyle choices, knowledge, and blood pressure control measures in people aged 40 and above in the UK. **Methodology:** To determine the impacts of hypertension education on knowledge, lifestyle, and blood pressure management, an intervention and outcome-based analysis conducted using the PICO framework ,CASP scoring for RCT and PRISMA guidelines. **Results:** After a complete search of the database, eleven RCTs satisfied the inclusion criteria. The characteristics of the studies, participants, educational interventions and outcome measures have been described in a tabular form. **Conclusion:** High blood pressure develops gradually as a result of harmful lifestyle choices. High blood pressure damages vital organs like brain, heart and kidney. So, to control blood pressure, it is necessary to have a thorough understanding of hypertension as well as the effective ways to maintain a healthy diet and approach to life. This can be achieved by conducting appropriate awareness campaigns and teaching sessions. After analyzing the effects of hypertension education programmes on awareness levels of people, it can be concluded that people living in the UK can control this by taking specific precautions and by altering their behaviour and lifestyle choices.

Keywords: Hypertension; Educational intervention; Lifestyle choices; Blood pressure control

Abbreviations: MPH: Master of Public Health; RCT: Randomized Control Trials; BP: Blood Pressure; SBP: Systolic Blood Pressure; DBP: Diastolic Blood Pressure; CDC: Centers for Disease Control and Prevention; HTN: Hypertension; UK: United Kingdom; WHO: World Health Organization; NHS: National Health Service; CCG: Clinical Commissioning Group; HMOD: Hypertension-Mediated Organ Damage; MeSH: Medical Subject Headings; CASP: Critical Appraisals Skills Programme; CVD: Cardio Vascular Disease; JNC: Joint National Committee; PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses

Introduction

High blood pressure is the primary factor causing various cardiovascular diseases including aneurysm, stroke, and heart attack [1]. Unhealthy food habits, lack of physical activities and unhealthy lifestyle choices are some of the major contributors of hypertension. Around 75,000 deaths were encountered in

the UK in the year 2015. A report highlighted that around 10.7 million people died worldwide in 2015 due to high blood pressure [2]. Hypertension is one of the most important risk factors for cardiovascular disease and associated disabilities. According to the reports, around one out of three adults in the UK suffer from hypertension [3]. If individuals do not understand the causes of hypertension, it is very difficult to prevent and manage the health issue. As hypertension does not reflect any symptoms in the initial stages, measuring and managing the critical consequences associated with it is quite difficult [4]. It has also been identified that half of the population with hypertension issues remain undiagnosed as well as that they do not receive the required treatment [5]. Thus, targeting the affected individuals with an effective education program is important to control and mitigate the issue. However, assessing and understanding the impact of education campaigns is also important so that systematic and information campaigns can be designed to address behavioural issues and lifestyle choices of hypertension patients. All these aspects have been a motivation to carry out this research.

This research would examine various impacts of healthcare education on lifestyle choices, personal knowledge, and pressure control measures. Inadequate knowledge or awareness regarding hypertension is one of the key reasons for the current increasing rates. Educating people regarding the various causes for hypertension, preventing and managing the disease would help in reducing the mortality rate. Considering these aspects, the research will highlight the possible changes in the lifestyle and knowledge of affected people as well as other members of the community. As most people affected with hypertension are above 40 years of age, the population above 40 years of age is targeted in this study.

The objectives of this study are:

- To assess the effects of hypertension education programs on awareness levels, food habits, physical activities, and blood-pressure management measures among people, especially those aged 40 and above.
- To understand possible changes in the behaviour and lifestyle of hypertension patients.

Expected Significance of the Research

The research outcome and different concepts evaluated in the study will guide medical experts in developing better and more effective healthcare education policies and programs to spread awareness about hypertension. Thus, high blood pressure could be mitigated and managed effectively. The research is expected to have a positive impact on medical care, assisting academic and healthcare researchers benefitting the society. Besides, different aspects of hypertension including risks, causes and consequences will guide healthcare professionals to define treatment and prevention measures accurately in education programs. Thus, excellent informative campaigns could be designed to change the lifestyle choices of people residing in the UK. An analysis of the existing literature has been done to identify the gaps present.

Hypertension and Its Symptoms

Hypertension is one of the major contributors to cardiovascular disease and early death globally. This disease has become significantly more prevalent in both high-income and low-income nations [6]. The most prevalent risk factors for hypertension are high salt intake, obesity, inadequate potassium intake, an unhealthy diet, and drinking alcohol. The common presenting symptoms of hypertension include fatigue, nausea, vomiting, headaches, shortness of breath, and double vision. Individuals suffering from severe hypertension may have warning signs including early morning headaches, irregular heart rhythms, and nosebleeds [7]. High blood pressure cannot be permanently cured. However, medication can lower high blood pressure levels. A diagnosis of hypertension can be made when the blood pressure level is equal to or greater than 120/80 mm Hg [8]. Different kinds of multifaceted solutions are suggested for the management and prevention of hypertension. These include risk factor screening, education, counselling, and management aimed at monitoring the patient's adherence to medication, supported by doctors, nurses, and other professionals working in the healthcare industry [9]. Hypertension is becoming worse day by day and is poorly controlled and understood. Sociocultural factors play a vital role in the incidence of hypertension. Unhealthy lifestyle choices and irregular physical activity are the biggest factors causing hypertension. Therefore, the health sector should concentrate on improving the hypertension screening process and adopting preventative strategies to lower cardiovascular mortality and morbidity.

Effects of Hypertension on the Health of Individuals

Hypertension can harm several organs, particularly the kidney, heart, brain, and eyes [10]. High blood pressure can injure and damage the arteries and blood vessel walls. This condition is associated with several extremely serious complications, which can even result in death if not identified. Hypertension is also associated with impaired sexual health [11]. Furthermore, several challenges may occur during pregnancy, increasing maternal mortality and morbidity [12]. High blood pressure results in narrowing of the blood vessels making it difficult for the heart to receive blood. This decreased blood flow to the heart can lead to arrhythmias, heart attacks, chest pain or angina in a patient [13].

Prevalence of Hypertension

In the year 2015, hypertension accounted for approximately 10.7 million deaths worldwide [14]. Globally, one out of every

four adults have raised blood pressure levels. In addition, it has been projected that by 2025, more than 1.5 billion people will be affected by hypertension worldwide. The Clinical Commissioning Groups (CCGs) in Great Britain with the highest average prevalence of hypertension are found in the East and Southeast regions of the country. In the United Kingdom, elevated blood pressure accounts for 12% of the total General Practitioner appointments [15]. In young people, men developed hypertension nearly three times as commonly as women did. The incidence of hypertension did not differ much between men and women in the adult population. Living in an urban area, living below the poverty line, literacy levels, eating a lot of salt, or having diabetes were all factors to consider. Men, on the other hand, were discovered to be more physically inactive, have hypercholesterolemia and regularly use alcohol and nicotine. In the UK, blood pressure rises with age as in other industrialized nations [16,17].

Treatment and Methods of Control for Hypertension

According to the clinical blood pressure values, hypertension can be divided into three groups that serve as guidelines for treatment: Stages 1, 2 and 3 are mild (140-159/90-99 mm Hg) moderate (160-179/100-108 mm Hg) and severe (>180/110 mm Hg) respectively. Treatment is recommended in the UK for all individuals with stage 2 or stage 3 HTN; stage 1 HTN being determined based on the level of risk [18]. In comparison to other nations, especially the USA, patients with stage 1 HTN receive less intensive care in the UK [19]. Only those with stage 1 HTN with risk factors such diabetes, renal disease, or a greater predicted risk of CVD should use antihypertensive medication, according to the UK guidelines. Expert evaluations of these data revealed that UK recommendations encourage lifestyle improvement whereas those from Europe and America advocate pharmacological therapy in low-risk individuals with stage 1 hypertension [20].

Hypertension Education Programs and their Purpose

For patients with hypertension, health education and learning programs should be developed to support the adherence to a healthy lifestyle and antihypertensive medications [21]. The primary goal of this study is to evaluate how an education program about hypertension influences people with high blood pressure in terms of modifying their lifestyle. Lifestyle adjustments and patient awareness on hypertension appear to be crucial for controlling hypertension effectively. However, altering one's way of life is not always simple. The adherence to treatment increases when patients are actively involved in their treatment process Therefore, it is important for patients to actively participate in well-designed educational programs to increase their awareness, self-monitoring, and control of hypertension. The hypertension awareness programs should emphasize on the earlier trainings and include a description of hypertension, the course of the illness, the symptoms, home blood pressure monitoring, a healthy lifestyle, and healthy self-management approaches [22].

Impact of Hypertension Education Programs on Patients' Lifestyles

The assessments of educational needs of the patients and providers form the basis for most of the educational interventions for treating high blood pressure in individuals. The hypertension education program seeks to enhance the standard of healthcare services through the involvement of a multidisciplinary team of health professionals. Offering group classes on hypertension was a helpful patient care strategy. The development and evaluation of delivery methods for education that are long lasting yields effect over time and has a positive financial impact on the health system [23]. Among the hypertensive patients, half are unaware of their illnesses, only five percent of them are receiving medical treatment, and 75 percent of them do not receive treatment. There are reports of this problem in other industrialized nations as well [24]. To monitor and treat high blood pressure, it is essential to maintain or modify ongoing training to accommodate changing circumstances and patient demands. Through modifying one's lifestyle, one can enhance health and fend against disease depending on one's level of education, comprehension of the disease's risk factors, and desire to do so. The focus of health education and promotion has traditionally been on lifestyle. Lifestyle choices significantly influence a person's risk of developing hypertension [25]. Making healthy food choices, working out frequently, controlling stress, quitting smoking, maintaining a healthy weight, and getting enough rest and sleep are all critical lifestyle decisions [26]. The benefits of patient education and lifestyle changes in treating various diseases like diabetes are well documented, but less evidence supports the effective management of hypertension.

Gaps in Literature

In this chapter, a wide range of literature has been reviewed. The study found that secondary research on hypertension awareness initiatives is limited in the United Kingdom, despite considerable information being obtained on its signs, causes, and effects. There is also limited data available on prevalence of hypertension in different age groups. Thus, there is a considerable gap in the existing literature. More research should be done in this area to increase awareness among the population. Even though there were well-intentioned previous attempts, the community outreach programs did not consistently show effectiveness in improving the control of hypertension, and, more critically, in reducing morbidity and death in the communities served. It is crucial that varied community outreach programs are developed and put into action based on thorough scientific data, especially considering the increasing financial constraints on health care. With the help of

secondary thematic data analysis, the current study will attempt to close this gap. Health education and learning initiatives for people with hypertension should be created to enhance adherence to a healthy lifestyle and antihypertensive medication.

There has already been some progress in lowering the prevalence of hypertension in the general population. However, when it comes to recognizing and managing high blood pressure, England remains well behind Canada and the United States [27]. Most educational interventions for the management of high blood pressure in ambulatory people are based on evaluations of patient and provider educational needs. By bringing together a varied team of medical professionals, the hypertension education programme should aim to raise the standard of healthcare services. The success of training programmes determines their significance, but their effectiveness needs further evaluation, in the presence of a strong theoretical foundation and that whether these programs could fulfil essential health requirements. One can change their lifestyle to improve their health and combat diseases, depending on their level of education, understanding of the risk factors for the disease, and willingness to do so.

Methodology

Search terms and Sources of data

To find all the relevant research papers, a set of keywords known as MeSH (Medical Subject Headings) terms were used. These include "hypertension", "educational intervention", "knowledge", "lifestyle choices" and "blood pressure control". Moreover, a targeted search was made for articles with the geographical region as the United Kingdom. The secondary data used in this study was gathered from a wide range of sources, including academic journals, case studies from historical and modern science, scholarly papers, official websites, and Multiple databases, including PubMed, Scopus, Medline and CINAHL. These Internet resources were selected because they include the greatest number of papers that are pertinent to the health sciences. Publications from the last twenty years from 2003 to 2022 were included for this research. A manual search of the references of the qualifying papers was done to see if there were any additional potential qualifying articles. The electronic databases were searched using a strategy combining a variation of the Cochrane Highly Sensitive Search Strategy for identifying randomized trials in MEDLINE with the already mentioned MeSH terms relating to hypertension.

Inclusion and Exclusion criteria

All the identified studies must meet the predetermined criteria to be included in the systematic review. This ensures that only high-quality evidence is included in the analysis, which will ultimately lead to more accurate results from the review itself. The inclusion and exclusion criteria for this research were developed with the help of the PICO framework [28]. The Population of interest was composed of adult patients over 40 years of age living in the United Kingdom diagnosed with essential hypertension either under treatment or not, in a primary care, outpatient or community setting. Individuals with either diabetes or depression as a comorbidity in addition to hypertension were also included. The primary objective of the intervention was to improve the blood pressure controls. The Interventions that were included are educational interventions aimed towards the patient through various forms like reminder systems by text and emails, self-monitoring, nurses who played a major role in taking care of hypertensive patients and one-to-one discussions. The primary emphasis was on randomized control trial studies with a concomitant Control group that compared the outcome of patients in the intervention group to either no intervention or a group of participants receiving routine health care. The studies that reported the Outcome as either a decrease in the mean systolic blood pressure and/or mean diastolic blood pressure, control of blood pressure among a proportion of patients followed up at the clinic were included. All the articles needed to be in the English language. The exclusion criteria include the studies in which the research participants were less than 40 years of age, presence of more than two comorbidities in a participant, study types other than RCTs, research written in languages other than English and the articles that were dated prior to 2003.

Study design and Data extraction

Studies show that the key to achieving long-term control of hypertension is educating patients about the condition and the advantages of lifestyle changes [29]. But altering one's way of life is not an easy task. When the hypertensive patients are physically active, the treatment adherence increases. Therefore, effective educational interventions including active patient engagement are required to improve awareness about hypertension, self-monitoring, and control (Figure 1).

Education-based efforts have a significant positive impact on lowering blood pressure and causing lifestyle improvements. Therefore, they take on a greater role in the treatment of patients with hypertension [30]. To determine the impacts of hypertension education on knowledge, lifestyle, and blood pressure management, an intervention and outcome-based analysis needs to be conducted. The second step of this process involves evaluating the different ways in which decisions are made by senior government officials that in turn affect the various elements of the education process for hypertension as well as the effect on healthcare and quality of life [31].

PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) is a reporting guideline that provides a set of standards for the transparent and complete reporting of systematic reviews and meta-analyses. The tool was designed to improve the quality of systematic reviews and to simplify their reporting. In Figure 1, the PRISMA chart illustrates the step-by-step process undertaken for selecting the articles necessary for the research topic.

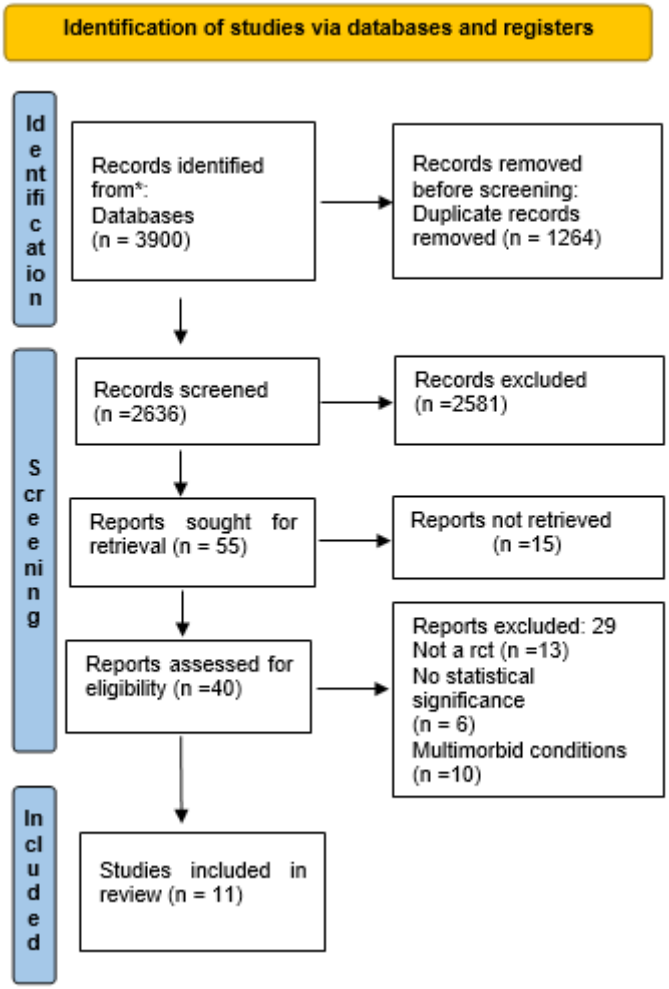

Figure 1: PRISMA Chart.

Results

Initially, 3900 articles were identified using database searches. A total of 2636 papers were screened for titles and abstracts after 1264 articles had been eliminated. Later, 40 of those articles remained for full-text and quality assessment. Eleven RCTs that met the criteria for inclusion are listed in Table 1. The tool used to assess the quality of all the selected papers is called the Critical Appraisal Skills Programme for RCTs.

The Critical Appraisal Skills Programme is the tool that assesses the quality of the articles. For randomized control trials specifically, it is evaluated under 11 subdivisions and given scores. The higher the score the better is the quality of the article. Here, seven of the articles have a score of 9, three of them have a score of 10 and one article has a score of 8 [32]. All the chosen articles were statistically significant and had a p value of <0.05, which provides evidence to strongly reject the null hypothesis [33]. The findings from the studies show that patient education regarding hypertension significantly influenced how effectively it was treated ($p< 0.05$). Systolic and diastolic blood pressure levels were relatively lower in participants having a higher level of understanding about hypertension and their complications

in comparison with individuals having moderate or poor understanding of the complications. A summary of the studies' objectives, participants, educational interventions, and findings can be found in Table 1.

Author & Date	Design	Aims	Sample size and data collection	Intervention	Ethics	Scoring (CASP) out of 11	Data analysis	Summary of findings
McManus RJ, et al. [37]	Randomised controlled trial.	To assess whether blood pressure control in primary care could improve and the impact of an intervention on health behaviours.	441 participants with pressure reading >/= 140/85 mm hg from eight primary care practices in Birmingham.	Monthly monitoring of blood pressure with regular visits to GP along with the provision of a sheet with self-help measures	Approved by South Birmingham and Sandwell local research ethics committees.	9	Statistical software SPSS	Significant reduction in blood pressure at six-month follow-up
Cheema E, et al. [35]	Multicentred randomised controlled trial	To determine the combined effect of a structured written and verbal education about high blood pressure its treatment.	64 hypertensive adults on medications from West Midlands were identified by a pharmacy.	Individually tailored information sheets containing structured advice on BP and medications.	Ethical approval was received, and informed consent obtained.	9	Cross tabulation	A significant improvement in the knowledge of the intervention participants regarding the risks of high BP
Nolan RP, et al. [38]	Double-blind randomized controlled trial	Evaluate the therapeutic benefit of e-counselling for behavioural changes in hypertension patients	264 patients diagnosed with hypertension	E-Counselling with multimedia and interactive tools to increase motivation and skill for exercise, diet, medication adherence, and smoking cessation	Approval by Research Ethics Boards	10	Analysed data with ANOVA	Significant differences between treatment groups in diastolic blood pressure
Denver EA, et al. [39]	Randomised control Trial	The effectiveness of a nurse-led hypertension clinic with conventional community care in general practice for uncontrolled hypertension in patients with type 2 diabetes	120 men and women outpatient attendees with type 2 diabetes and a blood pressure (BP) >=140/80 mmHg.	Nonpharmacological advice for healthy living and discussing the side effects of existing antihypertensive treatment	Approved by ethics committee of Whittington Hospital	9	Data analysed using SPSS	A target systolic BP less than 140 mmHg was achieved along with reduction in 10-year cardiovascular disease risk scores.

McKinstry B, et al. [42]	Multicentred randomised controlled trial.	To determine the effect of an intervention consisting of telemonitoring and supervision by primary care clinicians on BP levels	401 people with uncontrolled blood pressure from 20 primary care practices in southeast Scotland.	Self-measurement of blood pressure and review by a health professional with automated patient decision support by text or email for six months.	Approved by the Lothian research ethics committee. Written informed consent was obtained.	10	STATA 12 was used for analysis of data	The intervention was effective in lowering daytime systolic and diastolic ambulatory blood pressure
McManus RJ, et al. [43]	Randomised controlled trial	To test a digital intervention for management of hypertension in primary care by combining self-monitoring of blood pressure with guided self-management.	622 people with treated but poorly controlled hypertension	The digital intervention provided feedback of blood pressure results to patients and professionals with lifestyle advice and motivational support.	Ethical approval was obtained	9	General linear modelling for data analysis	Better control of systolic blood pressure after one year than usual care.
Hassanein M, et al. [40]	Prospective randomised controlled study.	To assess the impact of a structured hypertension education program in subjects with type 2 diabetes	132 participants diagnosed with both Hypertension and Type 2 diabetes from a general hospital in UK.	Intervention included a once weekly education session for 4 weeks together with home blood pressure monitoring and dose changes in antihypertensives	Ethical approval has been obtained from North Wales Research Ethics Committee	8	IBM Statistical Package for the Social Sciences (SPSS)	Higher percentage of participants achieved the BP targets.
New JP, et al. [41]	Randomized controlled trial.	To determine the effectiveness of specialist nurse–led clinics for hypertension and hyperlipidemia.	1,407 patients with raised blood pressure (>/=140/80 mmHg), raised total cholesterol (>or=5.0 mmol/l), or both at Hope Hospital, Salford, U.K.	Lifestyle advice and titration of drug therapies were provided	Ethics committee approval was gained.	10	All analyses were conducted using SAS.	Nurse–led clinics can effectively improve the achievement of hypertension and cholesterol targets when added to care routinely.

Wilson GB, et al. [44]	2 parallel cluster randomized pilot trial	To assess the interventions to reduce excessive drinking in primary care patients with hypertension or mild to moderate depression.	1709 hypertensive patients and 1,044 depressive patients.	All patients received five minutes of structured advice and leaflets with information as an intervention.	Approved by County Durham and Tees Valley NHS Research Ethics Committee	9	Descriptive statistics	High AUDIT scores showed the necessity for the intervention. A significant decrease in blood pressure levels upon follow up.
Montgomery AA, et al. [45]	Randomised controlled trial	To evaluate two interventions to decide whether to start drug therapy for reducing blood pressure.	258 hypertensive patients	Computerised utility assessment interview with individualised risk assessment and decision analysis providing information through videos and leaflets about high blood pressure	Approved by The South and West Multi-Centre Research Ethics Committee	9	Data analysis was performed using Stata Statistical Software, version 7.	Significantly increased knowledge about hypertension with the video/leaflet intervention being more effective.
Dean SC, et al.	Randomized trial.	To evaluate the effect of a specialist nurse-led hypertension clinic with consultant backup on change in systolic blood pressure.	Three hundred and fifty-three patients with hypertension in London general practices.	After assessment at the clinic, nurses discussed any changes in the medications along with lifestyle review and necessary changes.	Royal Marsden Research Ethics Committee	9	Statistical analysis was performed using SPSS	Reduction in systolic blood pressure after 6 months.

Table 1: List of Articles.

Ethical Considerations

As part of this study, compliance with the law and preserving ethical standards were of utmost importance. The data for this study was obtained from secondary sources. The proper acknowledgment of all secondary sources is therefore crucial [34]. To acknowledge prior authors and researchers, citations have been done appropriately. This ensures compliance with the UK Data Protection Act. All information gathered will be used exclusively for research and development. One of the most significant ethical considerations when conducting research was the peer-reviewed status of the papers and journals used. As a result of proper citations, previous researchers will be honored for their achievements, which aided the passage of the Data Protection Act in the UK in 2010.

Discussion

The main objective of this research is to evaluate how hypertension education programmes affect an individual's awareness level, physical activity, and approaches to control blood pressure in those who are 40 years of age and above residing in the United Kingdom. After reviewing many research papers, only 11 of them were suitable for the purpose of this study and were chosen for detailed review and analysis. The outcomes of the awareness program will help the people living in the United Kingdom in understanding the necessary dietary habits and exercise regime they must follow to lower their blood pressure levels.

Summary of Findings

According to the RCT conducted in West Midlands, patients with high blood pressure were given well-structured written advice and verbal education regarding the importance of blood pressure and medications, leading to a significant improvement in their knowledge regarding the critical risks and complications that occur over a prolonged period of high blood pressure [35]. It is necessary to take blood pressure medications as over time it leads to cardiovascular complications. It reduces blood supply to the organs including the heart leading to its failure, to the brain causing stroke and the kidneys causing damage [36]. Upon evaluation of e-counseling's therapeutic benefits on hypertensive patients by providing advice on exercise, diet, medication adherence, and smoking cessation to increase motivation and skills for self-care, the blood pressure levels were significantly lower after 6 months of self-monitoring in the primary care setting [37]. Due to the advancement of the Internet, e-counseling is proving to be more beneficial than other forms of telemedicine. These interventions are providing results equivalent to the face-to-face interventions in the reach of preventing counselling for individuals with cardiovascular problems [38]. By giving non-pharmacological advice for healthy living, nurses were able to control systolic blood pressure less than 140 mmHg in individuals with both hypertension and diabetes [39]. In a similar study specialist nurses provided lifestyle advice and titrations of drug therapies for hypertensive patients with diabetes, achieving the desired blood pressure levels. A well-structured hypertension education program led to a significantly higher percentage of hypertensive and diabetic patients achieving their blood pressure targets [40]. The engagement of nurses, who primarily emphasize educating patients, blood pressure monitoring and surveillance, has developed as one of the most efficient methods for enhancing the control of hypertension [41]. In addition to their responsibilities, nurses play an important role in carrying out research within the community level in reducing cultural differences and developing patient centered interventions to address the factors that contribute to hypertension. This has emerged as one of the most effective ways to reduce the prevalence of hypertension. The implementation of tele monitoring by primary care clinicians and providing patient decision support by text or email for six months resulted in lower daytime blood pressure recordings in Scotland [42]. Within one year, the digital intervention group had better systolic blood pressure control than the conventional care group. The digital intervention gave patients and healthcare providers feedback on blood pressure readings, along with behavioral recommendations and motivational support to bring about changes in their lifestyle [43]. Motivation is necessary for patients as it helps to follow the advice given to them. Staying motivated increases, the adherence towards incorporating lifestyle changes that has been advised. As an intervention, hypertensive patients who consumed excessive amounts of alcohol were given structured advice and leaflets that contained information, resulting in a reduction in consumption of alcohol, and subsequently, a reduction in blood pressure levels [44]. These results state the importance of using various modes of spreading awareness among individuals and educating them so that they implement essential changes to stay healthy. The randomized control trial conducted in hypertensive patients in England showed that provision of informative videos and leaflets about high blood pressure significantly increased the knowledge about hypertension in the patients [45]. Overall, in all the 11 articles, after providing education in various forms, the patients benefited thereby necessitating that improving the knowledge of patients is an integral part of the management of hypertension.

Effectiveness of Education Programs on Creating Awareness about Hypertension

It is alarming how prevalent hypertension is in the UK and how many people are affected by it. Hence, it is crucial to educate individuals about hypertension because it teaches them how to control their blood pressure and what safety measures they need to take. Most patients with high blood pressure also take medications that their doctor prescribed. The effectiveness of these blood pressure medications can be increased by implementing the

previously suggested lifestyle changes. The results show that the condition should be monitored, and that there has been a moderate amount of progress in reducing blood pressure levels. The adoption of fact-based solutions by healthcare professionals can contribute to a shift in priorities in favor of prevention and reduction of hypertension. The results of this study have implications for treating hypertensive patients as well as for the public health of the United Kingdom [46]. To boost an individual's self-confidence and that of the educational system, the policymakers should start giving high level of importance to the implementation of policies favorable for better educational outcomes involving technological advances and appropriate theoretical protocols. The findings from the studies revealed that self-management education programs could improve blood pressure control in hypertensive patients by increasing their self-efficacy. Understanding the above-mentioned gaps in patient care and the evidence-based interventions recommended to help bridge these gaps may make it easier to understand the need to improve education about hypertension and any practical applications of the United Kingdom's hypertension program in the community setting. Developing a highly effective educational program on hypertension that is collaborative, tailored to patient's needs, and conceptually supported is crucial for improving the management of hypertension in communities. The side effects of medication should not be ignored and should instead be discussed with their doctor. A stroke or heart attack can be prevented if people understand the importance of controlling their blood pressure [47]. This increases adherence to antihypertensive therapy. The interventions included both patient centered one-on-one sessions and used a variety of media, including informational pamphlets and effective face to face communications. Education increases people's motivation to choose and maintain a healthy lifestyle and utilize antihypertensive medications as prescribed. Thus, by being aware of the problem, they may alter their lifestyles to lower it. In addition, the number of deaths due to complications of long-term hypertension may be reduced with effective management of hypertension. Educational programs must be well designed and involve active patient engagement to improve awareness about hypertension, self-monitoring, and control of the condition. The hypertension awareness classes should cover the problem, its symptoms, blood pressure monitoring, wellness, positive self-talk, and emphasize on being mentally prepared [48].

Impact of Awareness on Blood Pressure Control among Individuals Aged Above 40

Higher standards of medication in clinical recommendations for hypertension may be partially responsible for the poor awareness, treatment, and control rates in various nations [49]. The treatment cut-off was just recently decreased to 140/90 mm Hg in the UK, which has a lower rate of therapy and control. Depending on the guidelines, different actions are advised for those with blood pressures between 140/90 mm Hg and 160/100 mm Hg and mild levels of many other risk factors [50]. Patients adhere to their treatment plan better and are better informed about the characteristics of their clinical condition and prognosis when they are more knowledgeable about their own health. People are greatly influenced by the understanding that high blood pressure can be reduced by making changes to their daily routines and taking medications as needed. The treatment necessitates ongoing monitoring and consultations with the doctor, especially if they have concomitant medical conditions like diabetes. Secondly, by altering their lifestyles, adults can help prevent and control high blood pressure as well as maintain a healthy weight. Regular exercise, such as walking or swimming, can help lower high blood pressure [51]. A nutritious diet that contains carbohydrates, proteins, milk, fruit, and vegetables, comparable to the Dietary Approaches to Stop Hypertension eating plan, can control the blood pressure levels [52]. It is understood that the impact of awareness in people over 40 years old has a long-lasting influence on blood pressure. People feel better and find it easier to make other meaningful changes if they frequently practise stress-relieving activities like breathing exercises, mindfulness training, and sporting activities. The patients with elevated blood pressure levels who meditate have a lower risk of heart attack and stroke [53]. The key role of health surveillance is observing these patient's general health condition and the development of this illness. Monitoring blood pressure is done to determine whether treatment interventions are working and whether the recommended actions are being followed. However, the management of symptoms and the implementation of an intervention aimed at them both much rely on the surveillance consultations [54].

The health care system is facing significant financial burdens associated with hypertension because of its high incidence, poor control, and high financial costs. The healthcare industry will need to adopt innovative approaches to ensure regular follow-ups and improve patient education [55]. Hypertensive patients are more likely to comply with their medication regimen when they receive verbal educational interventions. In addition to improving patient involvement and participation, frequent verbal education can support awareness and adherence to medication. It can be expected that patients with higher literacy levels have greater health awareness would be more concerned about their health status, show more worry, and be more mentally prepared for health issues in general. Another important observation of this study is that education needs to be sustained over a long period to be beneficial for hypertensive patients. This helps people manage their blood pressure levels better as well as enhances the previously learned information. Overall, therapeutic education has demonstrated significantly improved knowledge in patients, resulting in lower blood pressure readings as well.

Changes in Lifestyle and Nutrition among Patients

Alcohol abuse has long been linked to elevated blood pressures, and studies have shown a direct correlation between alcohol use, blood pressure readings, and the prevalence of hypertension in the general population. It is widely acknowledged that salt consumption affects extracellular fluid volume, arterial pressure, and neuroendocrine systems. The clinical studies show that severe proteinuria, renal fibrosis, and increased left ventricular mass are all linked to excessive salt consumption [56]. Continuous monitoring and training have been found to be an essential component of managing high blood pressure, and it may be kept up to date or changed to consider the changing circumstances and patient requirements. One can enhance health and prevent illness by changing their lifestyle, depending on their level of education, comprehension of the illness's risk factors, and willingness to do so. Maintaining a healthy weight, giving up smoking, exercising frequently, managing stress, eating a balanced diet, and getting adequate rest and sleep are all important lifestyle choices. Detecting, evaluating, and treating high blood pressure place a major focus on lifestyle changes in terms of illness prevention because stress causes hypertension by raising blood pressure levels repeatedly and by causing the neurological system to produce high levels of the vasoconstricting hormone, which raises blood pressure. Hence, People can lower their blood pressure by modifying their lifestyle and reducing stress levels [57].

Comparison with Other Studies

Several studies have been conducted worldwide with education as an intervention for hypertensive patients. The inadequate management of hypertension places a significant cost burden on the healthcare system. On the other hand, studies have demonstrated the benefits of public participation in healthcare and the high efficacy of self-management programs. We could persuade patients to practice better self-care to control the disease by using participatory education methods.

Studies have shown that hypertensive patients would benefit from an intervention that consisted of a 20–30-minute appointment to discuss about the possible changes that could be implemented, the sending of informative and motivational brochures to patients, the delivery of accurate and specific information regarding the control of hypertension, and the distribution of appropriate materials to the patients [58]. The adults with hypertension in communities will benefit from a combination of health education at home and interventions by skilled general practitioners in maintaining their blood pressures.

The interventions aimed at increasing patient's medication awareness have the greatest potential therapeutic value for improving adherence to antihypertensive therapy [59]. Several studies have been conducted globally by researchers in the past, but the major drawback is that education was a part of the mixed intervention. Hence the effect of education alone on hypertensive patients could not be studied effectively. Recently, researchers have started to understand the importance of having adequate knowledge regarding hypertension as it would help to reduce blood pressure levels in the long term. The major reason behind this intervention is that individuals must realize the detrimental long-term consequences if hypertension is untreated or if adequate steps are not taken to keep the blood pressure levels under control. However, self-monitoring and shared decision making by physicians also play their roles to a certain extent. The physicians who took part in a study agreed that self-monitoring of blood pressure was a beneficial but an underused intervention [60]. Therefore, from various studies and research papers, it has been revealed that although medical management of hypertension is the most important mode of treatment, increasing patient education also plays a significant role in improving the quality of an individual's life.

Strengths and Limitations

The major strength of this research is that randomized control trials were a major part of the inclusion criteria while searching for articles. They carry an added advantage of removing any population bias provided that the randomization is good. In comparison to observational studies, it is easier for blinding. The results could be analyzed using statistical tools. The participants are usually clearly identified in RCT [61]. Randomized controlled trials are regarded as the best available research methodology. This type of study helps in minimizing confounding variables [62]. The Randomized Controlled Trials (RCTs) were assessed for the risk of bias using the updated Cochrane risk-of-bias tool. Four of the articles in this study had a low risk of bias, five had some risk, and two of them had a high risk. Due to unblinding, which resulted in performance and detection bias, there was a high risk of bias in two of the chosen articles [63].

It is believed that poor blood pressure control is related to poor antihypertensive medication adherence [64]. The relationship between medication adherence and blood pressure regulation was only briefly addressed in a few trials. The study participants in three of the selected articles had diabetes along with hypertension as a diagnosis. Another problem is that some RCTs were not blinded, which increases performance and detection bias. In all the chosen articles, the number of participants recruited did not last till the end. The number of participants assessed after the designated timeframe slightly decreased due to different factors, including participant withdrawal, loss of follow-up, and participant deaths due to complications, which had an impact on the overall results of the study. Even though these figures were quite small, including

them would have led to better outcomes.

Hypertension may be easily and affordably diagnosed and treated. But still, it is one of the leading causes of death in the adults more than 40 years of age. Special attention is needed for better control and early treatment of hypertension. A linear correlation exists between cardiovascular problems and high blood pressure. In the United Kingdom, most preventable deaths are caused by smoking and high blood pressure [65]. The effectiveness of education programs in promoting awareness about hypertension has been examined in this research. The study findings can assist the inhabitants of the United Kingdom in understanding the suitable dietary habits and exercise regimens they should adhere to lower their blood pressure. The impacts of hypertension on adults aged 40 and above in terms of lifestyle, diet, and knowledge have been included in the study as well. With this attempt to close the gap in the existing literature, the study findings and results show that educating hypertensive patients regarding the importance of adherence to medications and by making healthy lifestyle choices they can efficiently control their blood pressure levels and avoid severe complications of hypertension.

Conclusion and Recommendations

High blood pressure develops gradually because of harmful lifestyle choices, such as skipping enough regular exercise. When blood pressure rises over the usual range, it is known as hypertension, a serious medical disease. Heart failure, stroke, and several diseases of the kidney, brain, and other organs are made more likely by this condition. Therefore, to control blood pressure, it is necessary to have a thorough understanding of hypertension as well as the effective ways to maintain a healthy diet and approaches to life. After analyzing the effects of hypertension education programs on awareness levels, eating habits, physical activity, and blood-pressure management measures among people, especially those aged 40 and older, in the literature part, it is possible to draw the conclusion that people in the UK can control this by taking specific precautions and by altering their behavior and lifestyle choices.

High blood pressure increases an individual's risk for various health issues, including heart disease, stroke, and high blood pressure. The section of the methodology and data collection for this study also looked at the perspectives of a suitable framework for assessing how hypertension affects knowledge, lifestyle choices, and blood pressure control by looking at the factors that have an impact on how successfully the process of controlling hypertension is carried out. Section 4 discusses the incidence of hypertension in individuals over 40 years old and the treatment options. It can be concluded that the success of education campaigns is crucial for raising awareness of hypertension among UK residents. Finally, it is determined that including a varied team of healthcare professionals in the hypertension education program enhances the quality of healthcare services. Their effectiveness defines the efficiency of training programs, but these programs are more effective when they have a strong theoretical foundation and meet fundamental health requirements. One can change their lifestyle to improve their health and battle sickness, depending on their level of knowledge, understanding of the risk factors for the disease, and motivation to do so.

To control the blood pressure levels, individuals must be educated about the various behavioral changes, blood pressure management modalities and adopting suitable lifestyle choices. People should routinely check their blood pressure at home since it is a wise strategy to keep track of their blood pressure. Second, discussing lifestyle factors such as dietary habits, exercise routines, and any other concerns with their doctor would also be beneficial. People with hypertension or raised blood pressure can lower their blood pressure by decreasing the amount of salt they consume to maintain normal blood pressure readings that are less than 120/80 mmHg. People need to consume more fruits and vegetables which help in maintaining a healthy body. Being obese or overweight increases the risk of acquiring diabetes, high blood pressure, and cardiovascular disease. People who are overweight or obese might have a significant decrease in blood pressure with even minor weight loss. Therefore, it is essential for health care professionals to promote and implement education towards patients to reduce the prevalence of hypertension.

Implications and Future Research

People may better comprehend the effects of hypertension awareness and education on lowering blood pressure levels after reading this study of secondary data sources and its conclusions, which may have significant ramifications for future research and investigations. One can learn in the future about the effects of hypertension education programs on awareness levels, eating habits, physical activity levels, blood-pressure management practices among people, and the potential changes in the behavior and lifestyle of hypertension patients if new research is used that is more accurate, efficient, or significantly less expensive than existing methods. Additionally, based on these findings, individuals may benefit by implementing some of these changes in their lives. In the future, community awareness programs should be based on evidence-based approaches to ensure that the goals, results, and long-term effects of interventions are effectively understood. This will prevent the exploitation of human resources and financial resources in the health care industry.

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