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Study Protocol

Enhancing Hypertension Diagnosis and Management Knowledge among General Practitioners in Pakistan: Evaluating the Impact of the Train the Trainer (TTT) Initiative.

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Abstract

Background: In Pakistan hypertension often coexists with illnesses such, as diabetes mellitus, cardiovascular disease and chronic kidney disease. This underscores the need for updated research to accurately represent how hypertension is diagnosed and managed. This study aims to assess the effectiveness of the Train the Trainer (TTT) program, an initiative in enhancing practitioners understanding of hypertension diagnosis and management.

Methodology: The TTT initiative will comprise workshops featuring audio-visual presentations on "Hypertension Essentials: A Comprehensive Guide/Course on Hypertension Management," facilitated by expert cardiologists. Certified cardiologists will serve as trainers, responsible for further educating general practitioners at home stations through subsequent training sessions. Pre- and post-workshop knowledge assessments will be conducted using a questionnaire regarding hypertension diagnosis and management.

Discussion: The study anticipates improved patient care by enhancing general practitioners' knowledge of hypertension diagnosis and management, potentially reducing morbidity and mortality associated with hypertension and cardiovascular diseases.

Keywords

Hypertension, Train The Trainer Initiative, Educational Intervention, General Practitioners, Diagnosis, Management, Healthcare Outcomes.

Introduction

Hypertension, characterized by persistently elevated systemic arterial pressure exceeding established thresholds, remains a subject of ongoing scrutiny and guideline updates. Various committees, including the American College of Cardiology and American Heart Association (ACC/AHA), the European Society of Cardiology and European Society of Hypertension (ESC/ESH), and the National Institute for Health and Care Excellence (NICE), continually reassess these thresholds based on clinical trial evidence. While these agencies generally provide similar advice, their defined blood pressure thresholds for diagnosing hypertension differ[1,2].

Globally, approximately 1 billion people live with hypertension, and it is estimated to increase to 1.56 billion by 2025, encompassing 29.2% of the global population[3,4]. In developed nations, 30% of adults are hypertensive, and projections indicate this figure could rise to 60% in the coming decades[5]. In Pakistan, epidemiological studies have reported varying rates of hypertension prevalence. For instance, based on the National Health Survey (1990–1994), a rate of 19.1% was reported[6], while a study in northern rural areas in 2001 found a rate of 14%[7]. According to a national health survey conducted in 2010, 33% of adults aged 45 years and 18% of all adults in Pakistan were hypertensive. Alarmingly, every third hypertensive individual aged 40 years and above was at risk of a wide range of diseases. This survey also revealed that only half of the diagnosed hypertensive individuals received any form of treatment, resulting in controlled hypertension being prevalent in just 12.5% of cases[8].

Hypertension stands as a modifiable risk factor associated with severe health conditions, including peripheral vascular disease, end-stage renal disease, stroke, myocardial infarction, and congestive heart failure. It is the primary cause of global mortality, accounting for approximately 45% of heart attack deaths and 51% of cerebrovascular incidents[9]. Uncontrolled hypertension significantly increases the risk of heart attack, heart failure, kidney disease, stroke, lifelong disability, and death[10]. While pharmacological treatments effectively reduce the risk of coronary heart disease and other cardiovascular complications, non-pharmacological interventions, such as lifestyle changes, play a crucial role in reducing morbidity and mortality among hypertensive patients[11].

Hypertension often coexists with cardiovascular disease, with several behavioral and socio-demographic factors linking the two[12]. Cardiovascular disease (CVD) is continuously evolving and is projected to become the leading cause of mortality by 2030[13]. However, there is a lack of attention directed towards preventing risk factors, including hypertension. Pakistan, as a populous South Asian nation, faces challenges in healthcare provision due to economic and political instability, exacerbating hypertension and cardiovascular disease rates[14].

Given the complex interplay of factors contributing to hypertension, including behavioral and socio-demographic elements, there is a need for updated surveys to accurately depict the prevalence and management of hypertension in Pakistan. National-level implementation strategies and cost-effective policies are crucial for preventing and controlling hypertension[15,16]. Consequently, a series of training sessions have been planned for general practitioners across Pakistan to enhance their knowledge regarding the diagnosis and management of hypertension.

Methodology

The objective of the Study

This study aims to evaluate the impact of an educational intervention on general practitioners' knowledge of hypertension diagnosis and management.

Study Design

A Quasi-Experimental Design will be employed with pre- and post-education intervention knowledge assessments focused on the diagnosis and management of hypertension.

Ethics

The study will be conducted as per the ethical principles of the Declaration of Helsinki. Ethical approval has been obtained from the Pakistan Medical Association committee (Reference no. BO/056/AMP/09). Participants will be informed about the research objectives, potential risks and benefits, and their rights, ensuring informed consent procedures. Emphasis will be placed on voluntary participation, and confidentiality measures will be rigorously maintained to ensure anonymity and secure storage of participant data. Participants can withdraw from the study without facing any repercussions.

Participants

This study will involve general practitioners from varied backgrounds across Pakistan who share similarities with family physicians or general practitioners in other countries. These professionals will play a crucial role in delivering comprehensive healthcare services, addressing the needs of individuals across all age groups, genders, and medical conditions affecting various body parts.

Eligibility Criteria

Participants meeting the inclusion criteria for this study are individuals aged between 20 to 75 years, irrespective of gender, who are currently employed as general practitioners in Pakistan and have attended a hypertension training workshop. In contrast, those who refuse to participate in the study will be excluded.

Intervention

The educational intervention will include a comprehensive workshop by expert cardiologists featuring audio-visual presentations on "Hypertension Essentials: A Comprehensive Guide/Course on Hypertension Management." The workshop's trainers will be responsible for disseminating the knowledge acquired to general practitioners at home stations.

Recruitment & Assessment Procedures

- **Enrollment:** Inviting general practitioners attending the hypertension training workshop to participate in the study voluntarily.
- **Assessment of eligibility:** Subject meeting eligibility criteria will be included in the study.
- **Study Questionnaire:** The questionnaire for assessing knowledge was adopted from a study by Chen et al[17]. It consisted of 18 multiple-choice questions regarding the diagnosis and management of hypertension.
- **Pre- and Post-Workshop Assessment:** Participants will be given time to complete a questionnaire before and after the workshop to assess their baseline and post-workshop knowledge, measuring the immediate impact of the educational intervention. The email addresses will be collected separately for follow-up purposes, and stringent security measures will prevent unauthorized access to data.
- **Follow-Up Assessments:** Additional assessments will be conducted 1 to 3 months later to evaluate the retention of knowledge gained from the intervention.
- **Data Collection:** Utilizing Google Forms for data collection to ensure confidentiality and anonymity of responses.
- **Statistical Analysis:** Pre & post-analysis will be conducted.

Outcome Measures:

The outcome measure will be the change in knowledge scores before and after the educational intervention. This will be assessed through a pre- and post-workshop questionnaire focused on hypertension diagnosis and management.

Sample Size:

The sample size calculation is based on an expected 10% increase in knowledge post-intervention, with a power of 80% and a significance level of 5%[17]. The calculated minimum sample size is 388, ensuring sufficient statistical power to detect meaningful changes.

Statistical Analysis:
Data analysis will be performed using SPSS Version 19, employing descriptive statistics and inferential tests such as the McNemar test to assess pre- and post-intervention knowledge. Confounding variables will be controlled through stratification, with a significance level set at ≤ 0.05 to determine statistical significance.

Discussion

The research will be conducted across Pakistan, a nation grappling with significant healthcare challenges, notably a high prevalence of hypertension coupled with limited resources for comprehensive medical education and training. Our study protocol aligns with prior research, uncovering persistent knowledge gaps among general practitioners (GPs) regarding hypertension management and diagnosis[18]. Despite the active involvement of the majority of GPs in the trainings related to hypertension management, literature reveals significant deficiencies in critical areas such as cuff size selection, identification of Kortokoff sounds, and adherence to recommended practices[19-22].

Previous studies have demonstrated the impactful role of educational interventions in enhancing BP monitoring practices among healthcare professionals[19,20,23,24]. This emphasizes the need of training sessions to ensure accurate hypertension diagnosis and management. Participation in the Train the Trainer initiative is anticipated to benefit general practitioners and healthcare professionals through enhanced knowledge and skills. This can potentially translate into increased professional satisfaction, and heightened confidence in managing hypertensive patients.

To disseminate our findings effectively, we will collaborate with medical institutions, associations, and organizations all over Pakistan. Additionally, we intend to develop concise policy briefs summarizing key findings and recommendations from our study, which will then be distributed to government health agencies, non-governmental organizations, and other relevant healthcare policy and regulation stakeholders.

Conflicts of Interest

None.

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