A DIGITAL APPROACH TO HYPERTENSION CONTROL SELF-MONITORING WITH MHEALTH APPS

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INTRODUCTION

- Hypertension affects over 1 billion people, increasing risk of heart disease and stroke, often undetected and poorly controlled.
- Traditional healthcare lacks long-term support for lifestyle changes.
- High hypertension costs, especially in the US, show the need for effective strategies.
- mHealth apps offer a solution by promoting self-monitoring, medication adherence, and healthy lifestyle changes via smartphones.
- **Purpose:** This study investigates the great potential for mobile health technologies to transform hypertension management
- ***Research Question***

How does mHealth apps improve user engagement and self-management of hypertension, leading to healthier behaviors and reduced healthcare costs ?

METHODS

A comprehensive search of literature was conducted

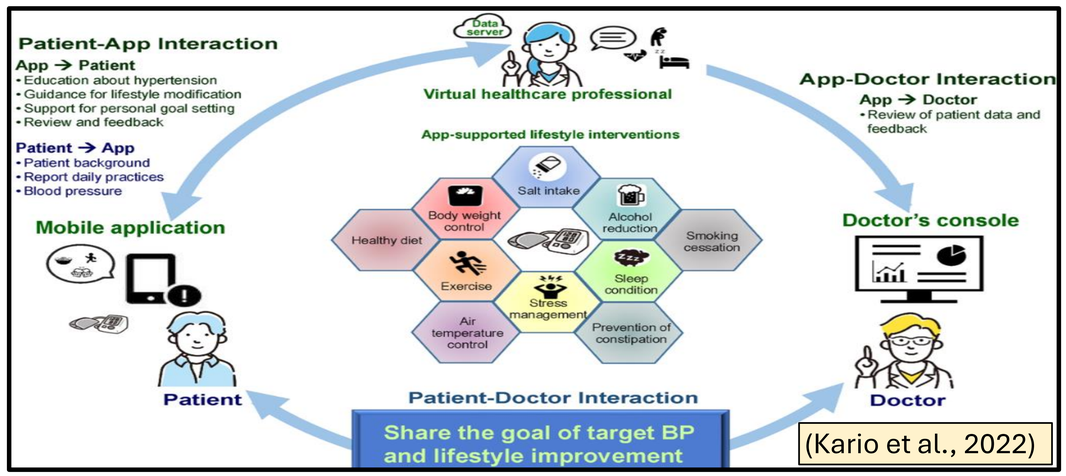
- **Databases Searched:** CINAHL, MEDLINE, and PubMed.
- **Search Terms:** Hypertension AND Mhealth apps AND Manage*or Monitor*
- **Selection:** 25 out of 122 peer-reviewed full-text articles from 2018 to 2024 were chosen.
- **Inclusion Criteria:**
  - Hypertension management with mHealth apps
  - Focus on various age groups,
  - Patient engagement & tools for education,
  - Monitoring, control, & cost-effectiveness.
- **Exclusion Criteria:**
  - Studies on other diseases,
  - Lack of proper data, & non-English studies were
- **Themes Identified:**

-Effective Intervention of Mhealth Apps
-Education & Self-managing of Healthy Lifestyle
-Adoption of MHealth Apps by Users
-Cost Effectiveness

RESULTS

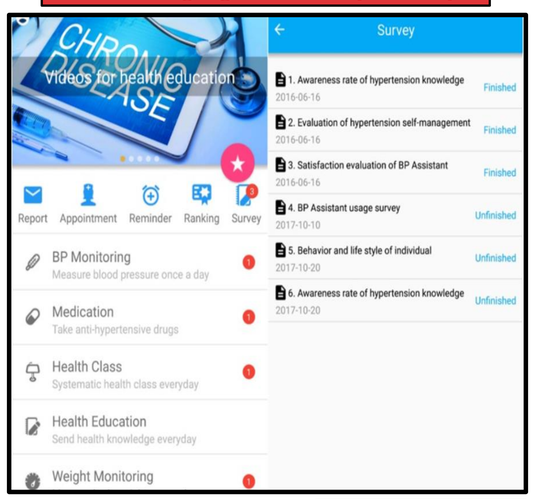
- The research showed a reduction of diastolic BP by 5 mm Hg and systolic BP by 10 mm Hg, which was linked to a 22% ↓ In **coronary heart failure** and a 41% ↓ in **stroke**.
- Significant improvements in medication adherence with 95% CI - 0.26 to 0.50, in 60% of app users achieving a overall10 mm Hg drop in systolic BP.
- Users showed improvements in dietary habits, and increased physical activity by 100 minutes weekly.
- The apps offered treatment info, medication reminders, supportive messages, and BP monitoring. More intensive interventions proved more effective, and scaling up reduced the cost per patient.

Adoption of MHealth Apps by Users



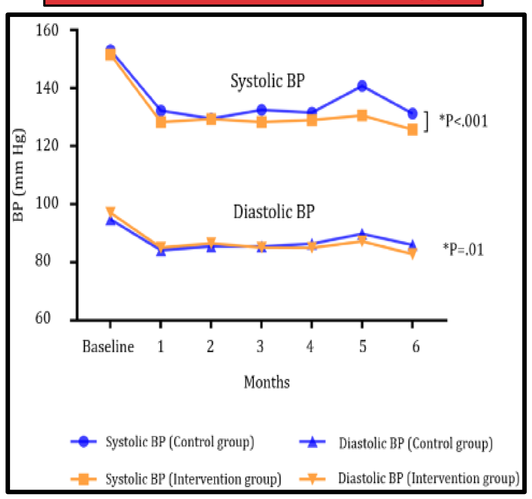
(Kario et al., 2022)

Self-managing of Healthy Lifestyle



(Liu et al., 2023)

Intervention of the Mhealth Apps



(Liu et al., 2023)

DISCUSSION

- The mHealth apps promote healthier lifestyles by assisting users with medication adherence, diet, and exercise, addressing key factors in blood pressure management.
- Automated feedback and remote monitoring offer quick and personalized advice, significantly improving blood pressure control and user empowerment.
- These apps are widely recognized, with features such as tailored messaging, interactive communication, and multifunctionality that lead to enhanced blood pressure control.
- Users feel empowered as they have a better grasp of hypertension and how to maintain healthy practices.

CONCLUSION

- The study shows mHealth apps with interactive features lower blood pressure, boost medication use, and promote healthy habits, keeping users engaged and in control.
- More research is needed on larger trials, personalization, wearables, AI, and tailoring apps for diverse users to ensure cost-effectiveness and better engagement.
- MHealth apps provide valuable data on patient behavior and health outcomes, informing policies, improving population health, and optimizing clinical practices.

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