

# **The Effectiveness of Dietary Approaches to Stop Hypertension (DASH) Mobile Applications in Supporting a Healthy Diet and Controlling Hypertension in Adults: A Systematic Review**

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## **Background**

Hypertension is a key cause of cardiovascular disease and a leading cause of mortality. People with hypertension who do not adhere to the suggested treatment regimens have a higher risk of strokes and heart attacks. Dietary Approaches to Stop Hypertension (DASH) represent an established way to control blood pressure, and smartphones provide a practical tool to aid in the treatment of hypertension through the use of apps aimed at lifestyle management via DASH.

## **Objectives**

The aim of this research was to synthesise all available evidence in a systematic manner to determine the effectiveness of smartphone applications that enable self-management by improving DASH diet adherence, and as a consequence, lowering blood pressure. As well as assess user satisfaction, engagement, usability and acceptance of DASH mobile app use.

## **Methods**

The electronic databases EMBASE (OVID), Cochrane Library, CINAHL, Scopus, Web of Science and Google Scholar were utilised to conduct systematic searches for studies that

used DASH smartphone apps to promote self-management that were published between 2008 and 2021. The reference lists of the included studies were also checked.

## **Results**

Five studies (three RCTs and two pre-post studies) including 334 participants altogether examined DASH mobile apps. All studies found a positive trend related to the use of DASH smartphone apps, but the three RCTs had a high risk of bias, and one was unpublished, but under review. One pre-post study had a high risk of bias, the other had a low risk. All the apps appeared to be accepted and easy to use in all the examined studies.

## **Conclusion**

There is weak preliminary evidence of a positive effect of utilising DASH smartphone apps to enhance self-management to improve DASH diet adherence, and consequently, lower blood pressure. Further research is required to provide high-quality evidence that can determine the effectiveness of DASH smartphone apps.

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