

THE EFFECT OF HEALTH INFORMATION SYSTEMS ON SYSTOLIC BLOOD PRESSURE CONTROL IN STROKE PATIENTS

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ABSTRACT

Background: Information technology and mobile devices may be beneficial and useful in many aspects of stroke management. It enable transmission of messages and monitoring of patient outcomes and functional progress, as well as changes in the rehabilitation strategy and planning of outpatient visits. Awareness of stroke warning signs and responses to stroke could be enhanced by using mobile applications. The purpose of this study was to examine the potential effect of health information systems on systolic blood pressure control in stroke patients.

Subjects and Method: A meta-analysis study was conducted by formulating a research question by PICO, i.e Population (P)= stroke patients, Intervention (I)= health information system, Comparison (C)= without health information system, Outcome (O)= systolic blood pressure. Five electronic databases (MEDLINE/PubMed, Google Scholar, ProQuest, Science Direct, and Spinger Link) were systematically searched for full-text articles using keywords “stroke” OR “brain infarction” OR “transient ischemic attack” OR “cerebral hemorrhage” OR “subarachnoid hemorrhage,” “mobile applications” OR “telemedicine” OR “text messaging” OR “cell phone” OR “smartphone” OR “social media” OR “internet,” and “blood pressure” OR “hypertension”. Articles were screened using PRISMA flow diagram. Data was analyzed using the Revman 5.3 program.

Results: 9 studies (2 articles from United States, 2 articles from Canada, 2 articles from China, an articles from United Kingdom, an articles from Sweden, and an articles from Ghana). A forest plot resulted from the randomized controlled trials found that the use of health information system reduced systolic blood pressure in stroke patients 0.27 units compared to those without health information system and it was statistically significant (Standardized Mean Difference= -0.27; 95% CI= -0.37 to -0.17; $p < 0.001$).

Conclusion: The use of health information system can be used to control systolic blood pressure in stroke patients.

Keywords: health information system, systolic blood pressure, stroke patients

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