Effectiveness of behavior change and self-management theoretically-informed telehealth interventions for stroke secondary prevention: an overview of systematic reviews

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Background and Aim
Despite the increased use of telehealth interventions, low-level evidence supports their use for behavior change and self-management in stroke secondary prevention. Therefore, this overview of systematic reviews (SRs) critically appraises and consolidates the evidence about theoretically-informed telehealth interventions in stroke secondary prevention.

Methods
Two phases were conducted independently by two reviewers.

Phase 1
- Included SRs contemplating randomized controlled trials (RCTs) implementing telehealth interventions with post-stroke individuals, targeting cardiovascular events (primary outcomes), risk-reducing health behaviors (secondary outcomes) or physiological risk factors (tertiary outcomes)
- Best-evidence synthesis of published meta-analyses was carried out.

Phase 2
- Interrogated RCTs from these SRs that implemented theoretically-informed telehealth interventions.
- New meta-analyses of theoretically-informed telehealth interventions were conducted.

GRADE evidence was applied for both phases.

Fig 1 depicts the flowchart for the screening and selection of eligible studies across the two overview phases.

Results
Fig 1. Flowchart of the identification, screening, and selection of eligible studies in the two phases of the overview

Best-evidence synthesis identified telehealth interventions as effective in:
- Reducing recurrent angina and recurrent stroke rates (both with very low GRADE)
- Improving medication adherence (low GRADE) and physical activity participation (very low GRADE)
- Improving blood pressure targets (very low GRADE), reducing systolic blood pressure (SBP) (moderate GRADE) and low-density lipoprotein levels (very low GRADE)

New meta-analyses identified theoretically-informed telehealth interventions as effective in:
- Improving medication adherence (SMD: 0.38; 95% CI: 0.13-0.64; I²: 72%, low GRADE) (Fig 2) and healthy eating (SMD: 0.38; 95% CI: 0.15-0.60; I²: 38%, low GRADE) (Fig 3).
- Decreasing SBP (MD: -9.19; 95% CI: -5.49 to -12.89; I²: 0%, moderate GRADE) (Fig 4)

Conclusion
Telehealth demonstrates utility in stroke secondary prevention, notably in SBP reduction. High-quality RCTs are required given the lack of current evidence supporting theoretically-informed telehealth interventions addressing primary outcomes of secondary prevention, and the low certainty evidence identified for health behavior change.

References

Fig 2. Medication adherence outcome (telehealth interventions x usual care)

Fig 3. Healthy eating outcome (telehealth interventions x usual care)

Fig 4. Systolic blood pressure outcome (mmHg) (telehealth interventions x usual care)