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Effectiveness of Phase III Cardiac Telerehabilitation on Functional Capacity, Adherence, Rehospitalization, and Quality of Life: A Systematic Review and Meta-Analysis Protocol

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ADMINISTRATIVE INFORMATION

Support - This study receives no external financial support and is conducted as part of a master's thesis.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 9 December 2025 and was last updated on 9 December 2025.

INTRODUCTION

Review question / Objective This review aims to determine whether phase III cardiac telerehabilitation is more effective than conventional rehabilitation or usual care in improving functional capacity, adherence, reducing rehospitalization rates, and enhancing quality of life among adult patients with cardiovascular disease.

Rationale Cardiovascular disease remains a leading cause of morbidity worldwide. Phase III cardiac rehabilitation focuses on long-term secondary prevention; however, participation and adherence to center-based programs remain low due to logistical and accessibility barriers. Telerehabilitation offers a promising alternative to improve access, continuity, and adherence. Recent studies have reported inconsistent findings regarding its effectiveness on functional capacity, adherence, rehospitalization, and quality of life. Therefore, a systematic review and meta-analysis are needed to synthesize current evidence and inform nursing practice and clinical decision-making.

Condition being studied Cardiovascular disease in adults participating in phase III cardiac rehabilitation following acute cardiac events such as myocardial infarction, coronary artery disease, or heart failure.

METHODS

Search strategy A comprehensive literature search will be conducted in PubMed, Scopus, Web of Science, Embase, and CINAHL from inception to the present. Keywords and MeSH terms will include "cardiac telerehabilitation," "telehealth rehabilitation," "phase III cardiac rehabilitation," "functional capacity," "adherence," "rehospitalization," and "quality of life." Reference lists of included studies will be manually screened.

Participant or population Adult patients (≥18 years) with cardiovascular disease eligible for or enrolled in phase III cardiac rehabilitation.

Intervention Phase III cardiac telerehabilitation programs delivered via digital or telecommunication technologies, including remote exercise training, education, monitoring, and behavioral support.

Comparator Conventional center-based cardiac rehabilitation, usual care, or no structured rehabilitation program.

Study designs to be included Randomized controlled trials and controlled clinical trials.

Eligibility criteria Studies involving adults with cardiovascular disease; phase III cardiac telerehabilitation interventions; comparison with conventional rehabilitation or usual care; reporting at least one relevant outcome. Non-English abstracts without full text and observational studies will be excluded.

Information sources Electronic databases, reference lists of relevant studies, and manual searches of grey literature.

Main outcome(s) Functional capacity measured by VO_2peak or six-minute walk test, and adherence to cardiac rehabilitation programs.

Additional outcome(s) Rehospitalization rates and health-related quality of life measured using validated instruments.

Data management Search results will be managed using reference management software. Duplicate records will be removed prior to screening. Data extraction will be performed using standardized forms.

Quality assessment / Risk of bias analysis The Cochrane Risk of Bias 2.0 tool will be used to assess methodological quality of included randomized controlled trials.

Strategy of data synthesis Meta-analysis will be conducted using a random-effects model. Continuous outcomes will be summarized using mean differences or standardized mean differences, and dichotomous outcomes using risk ratios with 95% confidence intervals. Statistical heterogeneity will be assessed using the I^2 statistic.

Subgroup analysis Subgroup analyses will be conducted based on type of telerehabilitation intervention, duration of intervention, and participant characteristics, if data permit.

Sensitivity analysis Sensitivity analyses will be performed by excluding studies with high risk of bias to assess the robustness of the findings.

Language restriction English.

Country(ies) involved Indonesia.

Other relevant information This review protocol is developed in accordance with PRISMA 2020 guidelines.

Keywords Cardiac telerehabilitation; Phase III rehabilitation; Functional capacity; Adherence; Quality of life; Rehospitalization.

Dissemination plans The findings will be disseminated through a master's thesis and submission to a peer-reviewed journal.

Contributions of each author

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