

Impact of Diet Consultation on adherence to Heart-healthy Diet in Cardiac Rehabilitation Patients

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Introduction

Cardiovascular disease (CVD) remain a global health issue, causing 17.9 million deaths annually and significant economic costs, with individual medical care averaging \$19,000 per year (Patel & Paratz, 2021). CVDs, including coronary heart disease and strokes, are often triggered by blood flow blockages (WHO, 2023).

Cardiac rehabilitation (CR) aims to improve heart health post-surgery through exercise, diet, and lifestyle education (Cleveland Clinic, n.d.). While diet is crucial, having a dietitian may lead to better adherence to heart-healthy eating, lowering cholesterol, blood sugar, and blood pressure (Cleveland Clinic, 2022). However, many patients lack consistent access to dietitians after CR, which may hinder long-term recovery (Ma et al., 2010).

This forms the basis for my PICO question*: “In cardiac rehab patients, does dietitian consultation, compared to standard care, improve adherence to a heart-healthy diet?”

Purpose

This Critically Appraised Topic (CAT) explores whether dietitian consultations in cardiac rehabilitation (CR) improve adherence to a heart-healthy diet compared to standard care.



*A PICO question is a framework used to create a focused research question by breaking it down into four key components: Population/Patient, Intervention, Comparison, and Outcome. It helps structure clinical questions to guide evidence-based practice and research. This approach allows for a clear and concise exploration of the relationship between an intervention and its effects on a specific population.

Methods

Databases: PubMed

Keywords: cardiac rehabilitation, dietitian consultation, standard care, adherence, heart-healthy diet

Inclusion Criteria: Articles were included if: 1) the article focused on cardiac rehabilitation, 2) the intervention involved dietitian consultation, 3) the comparison was standard care, 4) the outcome measured was adherence to a heart-healthy diet, and 5) the article was written in English. Articles were excluded if: 1) they focused on populations outside of cardiac rehabilitation, 2) the content was unrelated to dietitian consultation or standard care, 3) they were duplicates, or 4) full-text articles were unavailable.

Appraisal of Studies: Studies were appraised using the Critical Appraisal Skill Programme (2018), specifically using relevant checklists for systematic reviews and controlled trials. All studies were rated at level one or level two evidence on the Strength of Recommendation Taxonomy (SORT) scale.

Results

Author (Year)	Study Design	Population	Intervention/ Comparison	Outcome Measures	SORT Level of Evidence
Hummel et al. (2018)	Randomized Controlled Trial (RCT), pilot study, 12 weeks long	66 adults (≥55 years old) hospitalized for acute heart failure at 3 U.S. medical centers	To assess whether home-delivered, sodium-restricted DASH meals improve quality of life and reduce readmissions after heart failure hospitalization	- Kansas City Cardiomyopathy Questionnaire (KCCQ) - 30-day readmission rates - Hospital days - Cardiac biomarkers (BNP, troponin I, CRP) - Adverse events	Level 2 (SORT scale) – Small RCT with trends toward benefit but not statistically significant for primary outcomes
Ross et al. (2019)	Systematic Review and Meta-Analysis of 10 randomized controlled trials (RCTs)	Adults (≥18 years old) at high risk for cardiovascular diseases (CVDs) receiving in-person dietitian consultations	To evaluate the effectiveness of dietitian consultations on improving blood lipid levels and reducing CVD risk	- Total cholesterol (TC) - Low-density lipoprotein (LDL) - Triglycerides (TG) - Meta-analysis of lipid level changes	Level 2 (SORT scale) – Moderate support from high-quality RCTs, though with variability in study quality and outcomes
Bakırhan & Irgat (2023)	Cross-sectional observational study of 1,446 healthy adults in Turkey	1,446 healthy adults in Turkey assessed for CVDs risk and dietary patterns	To examine the relationship between Mediterranean/heart-healthy diets and CVDs risk	- CVD risk scores (SCORE, ASCVD) - MEDFICTS score - Mediterranean Diet Adherence Score (MEDAS) - Phytochemical Index - Anthropometrics	Level 3 (SORT scale) – Moderate observational evidence linking diet to CVDs risk, but causality not confirmed
Novaković et al. (2022)	Prospective observational intervention study over 12 weeks (non-randomized) at a cardiac rehab program	121 recent heart attack patients (average age 55; 27% women) in Slovenia attending cardiac rehab	To evaluate if CR improves adherence to the Mediterranean lifestyle and health markers after MI	- Medlife Index (Mediterranean lifestyle adherence) - Fasting glucose - HbA1c - Cholesterol profile (HDL, LDL, triglycerides)	Level 2 (SORT scale) – Non-randomized intervention showing positive changes, though with limitations on generalizability and bias
Vanzella et al. (2021)	Systematic Review of 16 studies (qualitative and observational) on barriers and facilitators to dietary adherence in CR	Diverse CR participants from 16 studies in English, Portuguese, and Spanish-speaking countries	To identify barriers and facilitators to dietary adherence in CR at individual, provider, and system levels	Identification of barriers (motivation, provider support, access) - Facilitators (self-monitoring, counseling) - Thematic analysis using the socio-ecological model	Level 2 (SORT scale) – Systematic review of mostly observational studies with useful insights but limited by study quality and generalizability

Conclusion

After reviewing evidence from four level 2 articles and one level 3 article, a grade B recommendation is given. This suggests that including dietitian consultations in CR programs improves adherence to heart-healthy diets compared to standard care. The evidence is consistent and of moderate quality. Dietitian consultations should be integrated into the CR process, starting before discharge, and continuing through follow-ups via outpatient visits or telehealth. This approach promotes long-term dietary changes, reduces cardiovascular risk factors, and lowers recurrent cardiac events. While the findings are promising, more high-quality research is needed to confirm these outcomes and optimize the use of dietitian services in CR programs.

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