

Proposal for DfE scholarship for the academic year 2020/2021

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Title. Cardiac rehabilitation in comorbid cardiovascular disease and diabetes (CarDia): a feasibility study

Background

There are 7.4 million people in the UK living with cardiovascular disease (CVD), 225,000 of whom are in Northern Ireland (NI),^{1,2} and around 3.7 million people in the UK diagnosed with diabetes,³ over 67,000 of whom live in NI, though this is expected to increase to over 94,000 by 2020.⁴ The prevalence of both CVD and diabetes is expected to increase,⁴⁻⁶ posing additional challenges for a health service already under pressure. The link between CVD and diabetes is well established with the latter being a key risk factor for the former and associated increased mortality.⁶⁻⁹ Approximately one-third of people living with diabetes are also affected by CVD,¹⁰ an alarming statistic, as diabetes is associated with an approximate two-fold increase in mortality, at 5 years, following a myocardial infarction (MI).⁹ What is less clear is the impact of diabetes as a comorbid condition on CVD management strategies employed within existing health systems. A cost-effective strategy such as cardiac rehabilitation (CR) which reduces cardiovascular and overall mortality, reduces hospital admission and improves quality of life^{11,12} among patients with CVD offers promise; though patients with comorbid CVD and diabetes, particularly females, are less likely to complete CR than those with CVD alone.¹³ However, anecdotal evidence gathered at a recent comorbidities workshop in WHSCT indicated CR services are increasingly seeing people with diabetes among their users. Discussions with a community CR nurse from BHSCT, CR co-ordinator from WHSCT and diabetes specialist dieticians from WHSCT highlight a potential gap in CR service provision for CR teams and their patients. CR teams are well versed in addressing the needs of patients following a cardiac event, but they lack confidence and clear guidance when developing treatment plans or advising patients who present with comorbid diabetes. A supportive resource for CR teams, which can be integrated into existing provision, is required to address the growing challenge presented by comorbid CVD and diabetes.

Aim

To co-design and feasibility test a supportive resource for cardiac rehabilitation nurses to address the challenges of comorbid CVD and diabetes

Objectives

1. Develop an evidence base to inform decision making
2. Co-design a supportive resource 'CarDia' for the CR team to improve knowledge, skills and confidence in addressing issues for those people (patients and families/carers) living with comorbid CVD and diabetes
3. Feasibility testing of the intervention, Cardia
4. Process evaluation of the development of Cardia

Research design

Use a mixed methods design with a staged approach

Stage 1: Build an evidence base. A systematic review and semi-structured interviews will be conducted to inform the design, content and format of the support resource. Interviews will be conducted among the CR team, diabetes nurse specialists and patients referred to CR with comorbid CVD and diabetes.

Stage 2: Co-design Cardia (support resource) with involvement of the CR team, diabetes nurse specialists and CR patients with co-morbid diabetes. The co-design process will begin with 'idea generation' through 'refinement and prioritisation' to development of a 'prototype' for feasibility testing.

Stage 3: Feasibility testing of CarDia will involve assessment of recruitment, retention, acceptability, access, uptake. CR clinicians and patients with comorbid CVD and diabetes will be recruited across two CR sites in NI. All members of the CR team will receive the supportive resource. Survey data will be gathered on all participant demographics (sample characterisation). Diabetes knowledge, skills and self-confidence will be measured among the CR nurses at baseline, 4-week and 3-month follow-up. Focus groups will be run to determine intervention acceptability.

Process evaluation will occur across Stages 2 and 3

Target group

Cardiac rehabilitation team members (e.g. nurse, dietician, physiotherapist). Participants will be drawn from two hospital sites in NI: Belfast (BHSCT) and Londonderry (WHSCT).

Intervention

The intervention will be a supportive resource "CarDia" for CR team members that can be easily integrated in CR programmes to address increasing levels of CVD and diabetes comorbidity. It is envisaged the resource will be delivered within a 3 to 4 week period, involving short interactive face-to-face information sessions (e.g. team discussion, case studies, role play) with an additional online resource designed to improve knowledge, self-efficacy and skills in addressing the needs of CR patients who present with CVD and diabetes.

Setting

The support resource, CarDia, will be delivered to CR teams in the workplace setting. Delivery will occur on a weekly basis during team meetings (10-15 minutes) to not add significantly to existing work burden and to allow for effective translation of new knowledge and skills into practice.

Expected outcomes

- a) Co-design of a support resource for or CR team members to address an increasing CVD and diabetes comorbid population
- b) Increase knowledge, skills and confidence among CR team members for management of patients with comorbid CVD and diabetes
- c) Evidence of intervention feasibility and process evaluation

