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Exploring the factors that influence engagement with and experiences of integrated care for adults at risk of cardiovascular disease and mild-to-moderate mental health concerns in the UK (OptICS): a systematic review protocol

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Abstract

Background Cardiovascular disease (CVD) is one of the leading causes of premature death globally. CVD is expensive to treat and therefore carries a significant cost for public healthcare systems and the people in them. Those most likely to develop CVD often report co-occurring mental health concerns such as depression and anxiety, in addition to behavioural factors (e.g. physical inactivity) and physical health conditions (e.g. hypertension, high cholesterol, obesity and diabetes). Due to these inter-connecting issues, healthcare provision for CVD patients necessitates a joined-up care pathway providing holistic, person-centred support. Despite the rapid emergence and growth in attempts to deliver such care, evidence concerning how it is experienced and how to promote engagement is fragmented. This review aims to capture the experiences and factors that influence integrated care engagement, reported by adults with CVD risk factors and mild-to-moderate mental health concerns.

Methods This systematic review protocol will be reported according to the updated Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA-P) guidelines. Proposed database searches will include Emcare, MEDLINE, PsycINFO (via OVID), CINAHL and preprint databases for grey literature. Articles of interest will include adults' experiences of and factors that influence engagement with integrated care in the UK, specifically for support with CVD risk and mild-to-moderate mental health concerns. Any study design reporting qualitative primary data will be included (excluding conference abstracts). Data on study population (actors/targets), what they do (behaviours) care setting (context), care format (time) and participant experiences and perspectives will be extracted. Where appropriate, thematic synthesis of extracted data will be coded to the Theoretical Domains Framework (TDF), updated Consolidated Framework for Implementation Research (CFIR) and Action, Actor, Context, Target and Time (AACTT) framework.

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Discussion Findings from this review will provide foundation evidence for a behavioural systems map and recommendations for policymakers, commissioners and those involved or interested in integrated care for people at risk of CVD with mental health concerns. Such evidence can be used to develop future intervention strategies to assist the optimisation of integrated care.

Systematic review registration: PROSPERO (CRD42024554282.

Keywords Delivery of health care, Cardiovascular disease, Mental health conditions, Systematic review, Integrated care, Theoretical Domains Framework

Introduction

Globally, cardiovascular disease (CVD) is predicted to be one of the leading causes of premature death in 2025, responsible for up to 7.8 million deaths [1]. CVD has been identified by the National Health Service (NHS) in their long-term plan [2] as one of the key clinical conditions requiring urgent attention to save lives. Behavioural factors such as physical inactivity, smoking and alcohol misuse can increase CVD risk, alongside health conditions such as hypertension, high cholesterol, obesity, diabetes and a history or family history of heart disease [3]. Common mental health conditions such as anxiety and depression, referred to in the literature as "mild-to-moderate mental health concerns" [4], are frequently reported by people with CVD risk factors [5]. Furthermore, mental health problems can exacerbate CVD risk [6, 7] and adversely affect treatment outcomes [8]. For instance, medication prescribed for a mental health condition can predispose a person to poor physical health, and poor mental health can lead to behaviours that precipitate CVD risk (e.g. inactivity, high consumption of sugary/fatty foods). Holistic support for people with CVD risk factors and mental health concerns has historically struggled to gain traction, despite evidence of benefit [9], suggesting an area in need of further research [10].

Particularly in the wake of the COVID-19 pandemic, there has been increasing recognition that better connections within health and care services can support optimised functioning of the health system across Europe [11], which benefits the people and families using their services. As part of the Health and Care Act 2022 in the UK, the NHS announced significant changes in their delivery of physical and mental health services, including the establishment of 42 Integrated Care Systems (ICSs) across England [12]. ICSs are partnerships of organisations that come together to plan and deliver joined-up healthcare services to improve the lives of people who live and work in their area [13]. The related policy has a vision of pooling budgets, resources and guiding principles from the NHS, public health and adult social care to assist in joined-up services. While these are new organisational structures, the concept of integrated care has been around for some time. Variation in understandings of what integrated care is has been observed frequently in the literature [14]. Integrated care is often referred to interchangeably as holistic, coordinated or comprehensive care [15] and involves a range of connected health services including health promotion, disease prevention or management and rehabilitation [16]. For the integrated care system to "see the whole picture" when supporting people with physical and mental health conditions, it is important to understand the barriers experienced by those within the system, that prevents this from occurring.

A growing body of evidence has been emerging on delivery and management of integrated care to support people living with complex conditions and multimorbidity. Previous research on healthcare professional experiences found direct barriers to seamless delivery of integrated care systems, which included lack of funding, poor relationships and limited information sharing between services [17]. People with chronic healthcare needs can also face multiple "invisible" barriers that indirectly affect their ability to utilise integrated care, including loss of confidence to engage with services and lack of interdisciplinary coordination between service providers [18]. To support optimal, ongoing delivery of integrated care services, exploring service user perspectives on what influences their experience and engagement is essential [19]. Broadening the evidence base on how integrated care can be used to support patients at risk of CVD and with mild-to-moderate mental health concerns, could help to inform the future delivery of integrated care more generally. To date, no systematic review has examined service user experiences associated with integrated care in the UK for physical and mental health using a behavioural science lens. Use of behavioural and social sciences can help target elements of service provision that work well and highlight areas that need attention.

Several theoretical approaches can help to guide investigations into influences of health experiences, service use and engagement. The Theoretical Domains Framework (TDF) can provide detailed insights into aspects of health-related behaviours that are advantageous for understanding implementation challenges [20, 21]. The TDF has 14 conceptual domains, namely: "knowledge", "skills" (cognitive/interpersonal and physical), "social/professional role and identity", "beliefs about capabilities", '"optimism", "beliefs about consequences", "reinforcement", "intentions", "goals", "memory, attention and decision processes", "environmental context and resources", "social influences", "emotions" and "behavioural regulation". A second framework that is beneficial for highlighting contextual factors that affect intervention implementation is the Consolidated Framework for Implementation Research (CFIR; 19). Finally, the Action, Actor, Context, Target and Time framework (AACTT; [22]) can also assist with identifying key behaviours of people within a system to inform intervention evaluation. The framework is used by defining components of an intervention, including *Action*: behaviours that can be changed such as referral to an exercise prescription; *Actor:* the person/people with the potential to enact behaviour change, such the NHS or a GP; *Context*: the location of the action, such as a GP clinic; *Target*: the people or group of people that action is intended for, such as adults experiencing CVD risk factors such as obesity/diabetes and low mood; and *Time*: when the behaviour occurs, such as during a routine blood pressure check). Here, triangulating these frameworks enables the synthesis and analysis of existing evidence to generate understanding spanning implementation challenges, the influence of context and potential points for intervention.

In sum, this systematic review will generate evidence to inform the development of a behavioural system map of key actors, actions, influence factors and settings in an integrated care system. It will use the TDF, CFIR and AACTT, to generate evidence from patient-centred research on the behavioural influences of their engagement with integrated care in the UK.

Review objectives

A systematic review will be conducted to achieve the following overarching objective of identifying and synthesising published literature reporting factors that influence UK-integrated care service use in adults with CVD risk factors and mild-to-moderate mental health concerns. The review aims to produce themes based on influences extracted from included studies and produce recommendations for the purpose of future behavioural systems mapping. These aims and objectives will be achieved by answering the following research questions:

1. What are the behavioural influences of adults' engagement with UK integrated care for CVD risk factors and mild-to-moderate mental health concerns?
2. How do these identified influences map to two behavioural and implementation science frameworks: the TDF [20, 21] and updated CFIR [23]?
3. Who and what are the key actors and/or behaviours involved in engagement with integrated care using the AACTT [22]?

Methods

This systematic review protocol has been developed according to Cochrane best practice guidelines [24] and the updated Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA-P) [25, 26]. The protocol has been registered on the International Prospective Register for Systematic Reviews (PROSPERO ID: CRD42024554282).

Eligibility criteria

Specific study inclusion and exclusion criteria were developed based on the population, intervention, context, outcome and study design (PICOS) criteria [27] for systematic reviews (see Table 1).

Population characteristics

The review will focus on experiences and perspectives regarding engagement with integrated care in the UK, reported by adults with CVD risk factors and mild-to-moderate mental health concerns (including their carers/family members where reported).

Intervention

For the purposes of this review, the search strategy will focus on evidence from integrated care studies. Integrated care is defined as joined-up care pathways for people requiring more than one type of care, service or intervention for their physical and/or mental health.

Context/setting

The present review search strategy will focus on evidence gathered from people engaging with any form of

Table 1 Review inclusion and exclusion criteria

PICOS	Include	Exclude
Population	Adults aged 18 + who are experiencing CVD risk factors and mild-to-moderate mental health concerns	• Children/paediatrics • Adults diagnosed with a CVD
Intervention	Integrated care services for physical and mental health	Any other form of health or social care that is not linked within the same evidence source/publication
Context	Conducted in the UK	Conducted outside of the UK
Outcomes	Service users' own experiences, views, attitudes (including family and carers when this has been reported)	Healthcare professionals' experiences, views, or attitudes
	The study must include experiences of engagement (or not) with integrated care services	Participant perceptions of the following: • Trial protocols • In-patient services (e.g. end-of-life care, stroke unit)
Study design	Qualitative, peer-reviewed published scholarly articles, and/or preprint articles ("grey literature")	Studies containing only quantitative data. Conference presentations, letters, short reports, editorials, comments or discussion papers, systematic reviews

Other considerations

- Publications published in English only will be included
- Demographic characteristics in studies reporting a majority of participants with CVD risk and mild-to-moderate mental health concerns will be included. The cut-off percentage for inclusion is set at > 80% of the sample
- No restrictions on frequency of healthcare use or demographics (sex, ethnicity, etc.)
- No date restrictions

integrated care provided in the UK in primary care, secondary care, local authorities, third sector and voluntary services.

Outcomes of interest

The main outcomes of interest in the review are the factors that influence service user or public engagement with integrated care by those with CVD risk factors and mild-to-moderate mental health concerns. The secondary outcomes will be identification of the key actors (i.e. who is involved) and/or actions (i.e. what they do) involved with integrated care for adults living with CVD risk and mild-to-moderate mental health concerns.

Study type

The review will include qualitative and mixed-methods study designs reporting qualitative primary data on influences of adults' engagement and experiences of integrated care for CVD risk factors and mild-to-moderate mental health concerns. Solely quantitative study designs, editorials, opinion pieces, conference abstracts and systematic reviews will be excluded.

Information sources

Information sources will include searches within OVID (including MEDLINE, Emcare, PsycINFO), CINAHL, and searches for grey literature in PsyArXiv and the Healthcare Management Information Consortium (HMIC).

Search strategy

The search strategy has been developed from consultations with the research literature, subject librarian, and key stakeholders (see Appendix Table 2) and based on a previous review and research conducted by members of the team [28]. Key concepts will be combined using Boolean operators (AND between concepts and OR within concepts). A criterion paper has been identified [29] and will be used during search strategy pilots to ensure successful deployment of search terms within each database.

Data management and study selection

The researchers will use the Covidence platform [30] recommended by Cochrane for managing the review search process. All selection processes will be undertaken by one researcher, who will complete one full round of screening against the eligibility and inclusion criteria. Between them, two additional researchers will carry out screening of 100% of the list to review screening quality. As age is a non-modifiable risk factor for CVD [31, 32], studies that include primary data from participants aged over 65 with a mild-to-moderate mental health concern will be considered for inclusion even in the absence of reporting CVD risk factors.

Data extraction

A data extraction tool will be developed by the study team using Microsoft Excel. Data items for extraction will include the following: Publication details (such as authors/publication year/location), methods (including general study, population characteristics, setting), study findings (including influences on engagement, reported behaviours in the system conceptualised using the AACTT), and, if reported, any patient health outcomes (e.g. patient satisfaction, shorter waiting times). The findings of each included study will be extracted and transferred verbatim into a data extraction table. All text contained under the heading "findings" or "results" in included studies will be considered as data, including both participant quotations and author interpretations, in addition to information regarding study findings reported in the abstract or discussion. For mixed-method studies, only qualitative findings will be extracted. All extracted data will be imported into NVivo [33], a data management software programme that can support coding of qualitative research.

Data synthesis

Data synthesis will primarily be carried out by a small core research team, and findings will be discussed with the wider research team to ensure the synthesis appropriately reflects the original data. Data will be analysed and framed using the TDF and CFIR as a guiding set of frameworks, based on work conducted by the research team on a similar topic [34].

Data synthesis will be carried out in the following steps:

1. Extracted data will be deductively mapped to the TDF [20, 21], CFIR [23] and AACTT [22] by three authors, each independently coding a sample of studies. At least 20% of the data will be double coded by two researchers for accuracy. The three authors will meet once completed to discuss mapping agreement until consensus is reached.

The authors will present the mapped data to the immediate research team to ensure accuracy and agreement before sharing with the wider research team. Discrepancies will be discussed and tweaks made until 100% agreement is reached that justifies the data.

2. The finalised TDF [20, 21], CFIR [23] and AACTT [22] data reporting factors that influence service user engagement with integrated care will be presented to colleagues with experience in behavioural science, healthcare and policy partners supporting this research. Feedback from this final step will be taken into consideration in the final write-up of the data synthesis.

Quality assessment in individual studies

The researchers will use the Critical Appraisal Skill Programme qualitative research checklist [35]. Three researchers will divide the included articles, and 20% of the papers will be independently evaluated by two researchers, with consensus meetings held and any disagreements resolved through discussion. Although no studies will be excluded based on the quality assessment results, this will serve as a useful tool to assist with data interpretation (e.g. where contradictory findings could be a result of poor-quality studies), and quality of the evidence base will be reflected upon when considering overall study implications.

Patient and public involvement

This work is being undertaken by the NIHR-funded Policy Research Unit in Behavioural and Social Sciences (PRU BaSS), which is supported by a Patient, Public Involvement and Engagement (PPIE) Strategy Group, made up of patient and public representatives. All projects including this review are discussed by the PPIE Strategy Group at their monthly meetings. Group feedback on the progress of this review will be sought during these monthly meetings and reported to the research team. Additionally, a dedicated PPIE expert member works within the study team as an equal contributor and co-author. They will provide input and advice regularly throughout the review as any other member of the research team, based on their lived experience. For instance, during protocol development, a decision was made to use the phrasing "mental health concerns" instead of "illness" or "diagnosis". This is because in practice, many people experiencing symptoms relating to anxiety or depression may not receive a formal diagnostic label but can equally be affected on a day-to-day basis by their experience. This decision was made to be as inclusive of these experiences as possible in this evidence review. Our policy partners who form part of the PRU-BaSS oversight group and OptICS advisory group have also had to opportunity to feedback on this work, and will be consulted during the review process.

Discussion

The recent introduction of integrated care systems within the NHS represents one of the biggest changes of the past 10 years [12], meaning the provision of robust evidence concerning its effective implementation and operation is timely. There is a pressing need to provide evidence-based, joined-up care for people with comorbidities, which will also result in savings for the healthcare system as a whole. To the authors' knowledge, this will be the first review investigating influences of adults engaging with integrated care for CVD risk and mild-to-moderate mental health concerns. The review will include an evidence synthesis using well-established empirical tools for implementation research, including the TDF, CFIR and AACTT. The aims of this research are to identify influences of engagement with integrated care for CVD risk and mild-to-moderate mental health concerns, so as to inform policy and future implementation efforts in this area. The findings can be used by policymakers, commissioners, healthcare professionals, researchers and the public concerned with the optimisation of physical and mental health care for complex conditions.

Appendix 1

Table 2.

Search strategy. Database: OVID (Emcare 1995-present, MEDLINE 1946–Sept 2024, PsycINFO 1806–Sept 2024)

Search line	Sub-heading	Results	Comments	Hits
	Cardiovascular disease	("Cardiovascular disease risk"or"CVD").mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, bt, nm, fx, ox, px, rx, ui, sy, ux, mx, tc, id, tm]	MeSH: cardiovascular diseases	97,150
	Cardiovascular disease risk factors	("Physical inactivity"or"Sedentary behaviour").mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, bt, nm, fx, ox, px, rx, ui, sy, ux, mx, tc, id, tm]	CVD behavioural risk factors (Lacombe et al., 2019). MeSH: *sedentary behaviour, smoking*	30,231
		("Smoking"or"Smoker"or"Smoke*"or"tobacco smoking").mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, bt, nm, fx, ox, px, rx, ui, sy, ux, mx, tc, id, tm]		686,285
		("*Alcohol*"or"High alcohol*"or"Alcohol problems"or"alcoholic" or"alcoholism").mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, bt, nm, fx, ox, px, rx, ui, sy, ux, mx, tc, id, tm]	(Consumption/intake) — classified as *alcohol problems* in MeSH	896,475
		"Unhealthy diet".mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, bt, nm, fx, ox, px, rx, an, ui, sy, ux, mx, tc, id, tm]	Modifiable risk factors for CVD (NICE, 2023)	3744
		("Diabetes Mellitus"or Diabetes or Diabetic).mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, bt, nm, fx, ox, px, rx, an, ui, sy, ux, mx, tc, id, tm]	CVD risk factors (Kwapong et al., 2023). MeSH: diabetes mellitus, hypertension, obesity, coronary disease, hypercholesterolemia	1,314,344
		("Hypertension"or"hypertens*"or"high blood pressure").mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, bt, nm, fx, ox, px, rx, an, ui, sy, ux, mx, tc, id, tm]		931,203
		("Obesity"or Obese).mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, bt, nm, fx, ox, px, rx, an, ui, sy, ux, mx, tc, id, tm]		758,721
		("Coronary Disease"or"coronary heart disease"or"heart disease"or"Family history of coronary heart disease").mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, bt, nm, fx, ox, px, rx, an, ui, sy, ux, mx, tc, id, tm]		464,854
		("Hypercholesterolemia"or"high cholesterol").mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, bt, nm, fx, ox, px, rx, an, ui, sy, ux, mx, tc, id, tm]		79,321
	Mild-to-moderate mental health concerns	("*Mental illness*"or"Mental ill*health"or"Mental health*"or"low mood"or Depress* or Anxi* or"low mood"or"*psychological wellbeing,"or"common mental disorder*"or"common mental illness*").mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, bt, nm, fx, ox, px, rx, an, ui, sy, ux, mx, tc, id, tm]	(I.e. "common mental illness"/illnesses)	2,579,418
	Integrated care	("Integrated care*"or"Co*ordinated Care"or"Collaborative Care"or"Seamless Care"or"Case*Management"or"Person-centred Care"or"Holistic*"or"Joined*up*"or"Integrated health*"or"Multi*disciplinary care"or"Joint care"or"Co*ordinated care"or"Collaborative care"or"Seamless care"or"Case management"or"Person*centred care"or"Patient*centred* Place*based partnership*"or"Provider collaborative*"or"Local authorit*"or"Multi*strategy approach").mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, bt, nm, fx, ox, px, rx, an, ui, sy, ux, mx, tc, id, tm]	Different terms for integrated care, inspired by Lia pi et al	214,082
	UK	Add UK filter	Informed by the following: Ayiku L., Levay P., Hudson T., Craven J., Barrett E., Finnegan A., and Adams R. The MEDLINE UK filter is as follows: development and validation of a geographic search filter to retrieve research about the UK from OVID MEDLINE *Health Information and Libraries Journal*, 2017 34 (3): 200–216	
		Total		
		Remove duplicates		
		Limit to studies published in English		

Not all components of the review PICOS are planned for use in the search strategy. This decision was made with consultation with a librarian with expertise in review methodology and in consideration of the variable definitions of integrated care in the literature

Abbreviations

AACTT	Actor, Action, Context, Target and Time
CFIR	Consolidated Framework for Implementation Research
CVD	Cardiovascular disease
TDF	Theoretical Domains Framework

Supplementary Information

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Supplementary File 1

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Authors' contributions
This review forms part of the study entitled Optimising Integrated Care Services (OptICS), a PRU-BaSS project led by AMC. AMC, FL, DO, AoD, EO, IV, MK, FFS and SM conceived the study design and funding acquisition. AMcK wrote the first draft of this manuscript, with contributions from VA, NH, FL, LMcG, AMC, AO, EO, MK, CK, SM, YP, GR, EM and NA. All authors reviewed and commented on the final draft of this manuscript.

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Data availability
Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate
Not applicable.

Consent for publication
Not applicable.

Competing interests
The authors declare that they have no competing interests.

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