Review article

Patients' perceptions and experiences of cardiovascular disease and diabetes prevention programmes: A systematic review and framework synthesis using the Theoretical Domains Framework

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ABSTRACT

Background: This review provides a worked example of 'best fit' framework synthesis using the Theoretical Domains Framework (TDF) of health psychology theories as an a priori framework in the synthesis of qualitative evidence. Framework synthesis works best with 'policy urgent' questions.
Objective: The review question selected was: what are patients' experiences of prevention programmes for cardiovascular disease (CVD) and diabetes? The significance of these conditions is clear: CVD claims more deaths worldwide than any other; diabetes is a risk factor for CVD and leading cause of death.
Method: A systematic review and framework synthesis were conducted. This novel method for synthesizing qualitative evidence aims to make health psychology theory accessible to implementation science and advance the application of qualitative research findings in evidence-based healthcare.
Results: Findings from 14 original studies were coded deductively into the TDF and subsequently an inductive thematic analysis was conducted. Synthesized findings produced six themes relating to: knowledge, beliefs, cues to (in)action, social influences, role and identity, and context. A conceptual model was generated illustrating combinations of factors that produce cues to (in)action. This model demonstrated interrelationships between individual (beliefs and knowledge) and societal (social influences, role and identity, context) factors.
Conclusion: Several intervention points were highlighted where factors could be manipulated to produce favourable cues to action. However, a lack of transparency of behavioural components of published interventions needs to be corrected and further evaluations of acceptability in relation to patient experience are required. Further work is needed to test the comprehensiveness of the TDF as an a priori framework for 'policy urgent' questions using 'best fit' framework synthesis.

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1. Introduction

Substantial advances in methodology for reviewing and synthesizing qualitative evidence have been made (e.g. Pope et al., 2007; Shaw, 2011) and clear arguments exist for including non-trial, context-sensitive evidence within reviews of effectiveness; this offers a route for patient perspectives to be incorporated into good practice guidance if methods for qualitative evidence synthesis are taken up (Kelly et al., 2009; Shaw et al., 2014; SIGN, 2011). However, qualitative evidence synthesis can be labour intensive and requires a high level of expertise in qualitative methodology. The recent development of 'best fit' framework synthesis (Carroll et al., 2013) offers an alternative systematic methodology based on framework analysis (Ritchie and Spencer, 1994). It adopts an a priori theoretical framework to guide data extraction and synthesis making it more efficient and accessible as an approach for reviewing and synthesizing 'policy-urgent' questions without

sacrificing theory.

This paper offers a novel application of framework synthesis using the Theoretical Domains Framework (TDF; Cane et al., 2012; Michie et al., 2005). The TDF was chosen as the theoretical framework for this review because it was developed following a systematic review and synthesis of health psychology theories (Michie et al., 2005), thus completing the initial step in 'best fit' framework synthesis (Booth and Carroll, 2015). The review identified 14 theoretical domains and 84 component constructs (Michie et al., 2005). These were then validated (Cane et al., 2012) and have been used to explain implementation problems, to develop theory-informed behaviour change interventions, and to assess which theoretical domains are relevant to particular interventions (e.g. French et al., 2012; Francis et al., 2009; McKenzie, O'Connor, Page et al., 2010). Using the TDF as an a priori framework to guide the synthesis enabled insights from a wider range of theoretical constructs than using one theory alone. This is the first review of which we are aware that brings together the TDF with 'best fit' framework synthesis to offer a rigorous and theoretically informed method for synthesizing qualitative research studies.

The 'policy urgent' review question selected was: What are patients' experiences of prevention programmes for cardiovascular disease (CVD) and diabetes? These conditions were selected because they feature in many public health programmes around the world (see for example: Holland et al., 2013). One reason for both conditions being the focus of prevention programmes is that they are related. CVD, including coronary heart disease and stroke, account for more deaths globally than any other diseases (WHO, 2011a); in 2008, 30% of deaths worldwide were attributed to CVD (WHO, 2011b). Diabetes is a risk factor for CVD and the World Health Organisation (WHO) predicts diabetes will be the seventh leading cause of death globally by 2030 (WHO, 2011a). Furthermore the incidence of type 2 diabetes mellitus globally is rising, specifically in younger age groups (Alberti et al., 2004). Lifestyle changes can reduce the risk and prevent further complications of CVD and diabetes and evidence suggests that early detection may lead to better health outcomes (NICE, 2010).

Previous reviews of prevention programmes have considered reduction in risk measurements and cost-effectiveness or years of life added as outcomes (Ebrahim et al., 2011) but have not considered behavioural aspects. A recent review by Holland et al. (2013) focused on behaviour change elements within coronary heart disease (CHD) and diabetes prevention programmes and revealed mixed benefits. They found that feedback regarding risk level, an evidence-based behaviour change technique (Michie et al., 2011), prompts successful behaviour change (e.g. Robertson et al., 1992). Furthermore, those at higher risk have been shown to be more likely to change their behaviour following dialogue (Craigie et al., 2011; Koelewijn-van Loo et al., 2010). Nevertheless, despite ongoing research in the field, it is not clear why prevention programmes do not have more reliable effects on behaviour change. A review of patient perspectives and experiences of such programmes may help to answer this question.

2. Method

This review adopted the methodology endorsed by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) Statement (Moher et al., 2009) and followed the step-by-step procedure for 'best fit' framework synthesis (Booth and Carroll, 2015).

2.1. Study inclusion criteria and search strategy

2.1.1. Inclusion criteria

Qualitative research studies reporting evaluations of existing early detection or prevention or screening programmes for CVD or diabetes; in primary care or in the community; for adults; including patients' perspectives; using qualitative methods; since 1990; in English. Search terms were adapted from Holland et al. (2013) and included the qualitative methods filter (qualitative, findings, interview*; Grant, 2004) identified as an efficient method for identifying qualitative research (within the restraints of limited subject headings in bibliographic databases for qualitative methods; Shaw et al., 2004). Web of Knowledge and PubMed were searched and reference chaining of relevant studies conducted. The full search strategy is included in Additional File 1.

2.2. Quality assessment of studies

Studies were appraised using prompts (Dixon-Woods et al., 2004) devised specifically to determine the quality of qualitative research which focus on transparency, a key indicator of trustworthiness (Carroll et al., 2012; Lincoln and Guba, 1985). A rating system, adapted from Dixon-Woods et al. (2007), was then used to categorise original studies. In the revised system only studies to be included were appraised; no studies were excluded on grounds of quality.

2.3. Data extraction and synthesis

Data were extracted from the results sections of included studies directly into the a priori framework, i.e. the TDF, using a deductive process. This included themes or categories of findings presented by authors, primary data extracts, and author commentary about those data. Subsequently, an inductive (data-driven) thematic analysis (Braun and Clarke, 2006) was conducted in order to code any data that did not fit into the TDF to ensure nothing was missed.

Concepts from the TDF and inductive thematic analysis were then clustered and synthesized into a final set of themes representing the whole dataset. This involved interpretative work to identify relationships between themes and mediating factors between individual-societal-organisational based aspects within them. All stages of analysis were discussed within the review team until consensus was reached.

2.4. Sensitivity analysis

It has been argued that the transparency of reporting of qualitative studies is crucial to their utility in secondary analysis (Carroll et al., 2012). 'Thin' descriptions of people's views, with inadequately reported research questions or methods, cannot be relied upon and so the strength of secondary analyses rests on the quality of included studies (Harden et al., 2004). A sensitivity analysis (Carroll et al., 2012) was conducted with and without the poorer quality studies to determine the impact on coding against the TDF and the generation of inductive themes. Further analysis was conducted to examine whether the presence/absence of (a) the theoretical domains from the TDF and (b) the inductively generated themes affected the final set of themes and conceptual model in order to ensure the synthesis of findings was not skewed in favour of either the TDF or the inductive thematic analysis.