








STUDY PROTOCOL

Facilitators and Barriers to Implementation of Financial Incentive Interventions for Health Behaviour Change: A Systematic Review Protocol [version 1; peer review: awaiting peer review]

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Abstract

Background

Health behaviours, whether protective or harmful in nature, significantly impact health outcomes. Nevertheless, it is recognised that adherence to a healthy lifestyle and enabling behaviour change remains a significant challenge. In efforts to optimise healthcare delivery to ensure positive health outcomes, behavioural economics has provided critical insights on various tools aimed at behaviour change, one of which is financial incentives. However, financial incentive programmes are complex, heterogeneous in design and context-dependant which renders them challenging to implement in real-life settings. Hence, careful consideration to facilitators of and barriers to their implementation to maximise their use is warranted.

Aim

This study aims to investigate the factors that influence the implementation of financial incentive programmes targeted at any behaviour change in real-life settings, as reported by key

stakeholders, to guide future implementation initiatives. We will also conduct a sensitivity analysis comparing smoking to other behaviours, given its significant detrimental impact on health outcomes and its role in widening health disparities.

Methods

A systematic review in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Rapid Review 2020 guidelines, as well as expert recommendations, will be undertaken, to identify stakeholder-reported challenges and enablers of implementation of financial incentive programmes globally. Seven electronic databases, including MEDLINE, EMBASE and CENTRAL, will be searched for papers published from inception to June 2024. A narrative synthesis of the findings will be presented and subsequently mapped to the Theoretical Domains Framework and the Behaviour Change Wheel. Sensitivity analysis comparing findings from smoking studies will be compared to other behaviours.

Ethics and dissemination

Ethical approval is not required for the review. The protocol and rapid review will be submitted to an open-access peer-reviewed journal for publication. The review findings will allow for the design of effective financial incentive interventions informed by theory, which are adaptable and applicable across various settings.

Keywords

Financial incentives, health behaviour change, implementation science

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Methods: A systematic review in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Rapid Review 2020 guidelines and expert recommendations will be undertaken to identify stakeholder-reported challenges and enablers of implementation of financial incentive programmes globally. Seven electronic databases, including MEDLINE, EMBASE and CENTRAL, will be searched for papers published from inception to June 2024. A narrative synthesis of the findings will be presented and subsequently mapped to the Theoretical Domains Framework and the Behaviour

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Introduction

Health behaviours have been defined as ‘...behavioral patterns, actions and habits that relate to health maintenance, to health restoration and to health improvement’^{1, p.3}. Such behaviours whether protective (e.g. exercise), or hazardous (e.g. smoking), in nature, significantly influence health outcomes²⁻⁴. For example, in 2019 tobacco consumption alone accounted for around 8.71 million deaths and 229,77 million Disability-Adjusted-Life-Years (DALYs), rendering tobacco a leading cause of ill-health and preventable mortality worldwide^{2,5-7}. Moreover, it is estimated that long-term smokers lose on average, 10 years of life in comparison to non-smokers^{8,9}. Nevertheless, it is recognised that enabling behaviour change, such as e.g. smoking cessation, remains a significant challenge¹⁰⁻¹⁴ despite mounting evidence underscoring the benefits of such on one’s wellbeing¹⁵⁻¹⁹. The field of behavioural economics offers critical insights into how public health interventions could be optimised to drive behaviour change through the utilisation of various techniques and mechanisms^{11,20,21}, one of which is financial incentive interventions^{20,22}.

Financial incentives are complex interventions that have been increasingly recognised as an effective tool to encourage the initiation of, and engagement in, healthier behaviours^{20,22,23}. As a result, efforts have been intensified to evaluate their effectiveness on various behaviours and identify the core elements of their design across different demographics^{22,24,25}. However, due to their complex and sometimes controversial nature, the application of financial incentive interventions remains challenging; possibly due to their dependency on contextual factors and significant heterogeneity in their design^{20,24,26,27}. Hence, financial incentive programmes require careful consideration of a wide range of potential barriers to their implementation, including, but not limited to, psychological factors, ethical and practical concerns^{20,26,28}. For example, barriers of acceptability to key stakeholders have been reported in a recent systematic review²⁷ where concerns over the potential for abuse of such schemes were reported. Practical and structural challenges to real-life implementation have also been highlighted. For example, the authors of the We Can Prevent Diabetes (WCPD) study²⁸ with Minnesota Medicaid beneficiaries, highlighted several challenges to their implementation. These included: the limited participation of primary care clinics in offering incentives; primacy of other competing initiatives; the additional need of training and support for intervention delivery; data access and collection difficulties, as well as cultural and language diversity among participants²⁸. It is therefore crucial to ensure thorough planning, proper design, and effective implementation of financial incentive programmes that the challenges and enablers of their application in real-life settings are rigorously identified^{20,24,26,27,29}.

To date, despite there being several reported barriers to financial incentive implementation in the literature, there is no single review which consolidates barriers and facilitators aligned to behavioural sciences theory. Therefore, we aim to conduct a systematic review to identify and synthesis the evidence on

barriers and facilitators to financial incentive implementation targeting health behaviour change from the perspective of key stakeholders. The findings will be underpinned by the Theoretical Domains Framework (TDF)³⁰ and the Behaviour Change Wheel (BCW)³¹ to generate a practice-based theory which can best inform subsequent interventions to optimise implementation.

Review questions

This study addresses the factors that influence the implementation of financial incentive interventions aimed at any health behaviour change. Moreover, considering that stakeholders may view smoking as a behaviour more amenable to target given its addictive nature, high prevalence, as well as its detrimental impact on life span and widening health disparities^{6,8,32-34}, we will pay particular interest to the challenges related to executing financial incentive interventions aimed at smoking cessation. Therefore, we will aim to answer the following questions:

What are the stakeholder-reported facilitators and barriers to the implementation of financial incentives interventions designed to modify health-related behaviours?

How do the facilitators and barriers to the implementation of financial incentives interventions specific to smoking cessation compare to those of other health behaviours?

How do these barriers and facilitators align with behaviour change theory?

Methods

This protocol complies with the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocol (PRISMA-P) guidelines³⁵. The review will be undertaken in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) 2020 statement guidelines³⁶ and expert guidance on evidence synthesis^{37,38}.

Patient and public involvement

This research is part of a Health Research Board funded project, entitled “COMmunity PARticipation to set direction on design and implementation of financial incentives in Stop Smoking services in Ireland: COMPASS” (<https://compass-study.eu/>). Public/Patients were not specifically involved in the design of this review but were integral to the overall design and funding application. This study forms part of Work Package 1, which focuses on planning and co-design of financial incentives for smoking cessation.

Eligibility criteria

We will seek to identify studies that report stakeholder perspectives on factors affecting the implementation processes of financial incentive programmes. Included studies will focus on financial incentive interventions aimed at facilitating a change in any health behaviour (e.g. smoking cessation, physical activity, breastfeeding, etc.) regardless of the form of the incentives (e.g. cash, vouchers, etc.) being used. Stakeholders will include individuals involved in, or

affected by, any of the phases of the intervention implementation. This could include, but will not be limited to, service providers such as primary care practitioners, service recipients such as smokers or patient groups, administrative or management staff and policymakers. There will be no restrictions based on the presence or absence of a comparator group (if any), the age of the intervention participants, or the setting or delivery mode of the programme. This review does not aim to assess the effectiveness of the intervention, but rather has a prime focus on issues surrounding the implementation processes. Thus, articles will be selected for inclusion based on the main outcome of interest which is any stakeholder-reported barrier or facilitator to the implementation of financial incentives in real-world settings. Any peer-reviewed or grey literature study, regardless of its design, that fits the eligibility criteria will be included, except for conference abstracts, letters, news releases, reviews, and study protocols. Individual studies cited in relevant reviews will be included, but reviews in of themselves will not be considered.

Information sources and search strategy

Systematic searching of relevant electronic databases will be combined with supplementary search methods to enhance the identification of relevant research^{37,38}. An initial limited search of MEDLINE will be undertaken to inform the development of our search strategy. The final strategy will include the following concepts: Financial incentive interventions AND Implementation AND Health Behaviour change AND Barriers OR Facilitators, which will be tailored for each information source and further refined in consultation with a university library information specialist³⁷⁻³⁹. The following databases will be searched: MEDLINE, and the Cochrane Central Register of Controlled Trials (CENTRAL) via OVID, EMBASE, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO via EBESCO, Web of Science, and Health Business Elite from inception to June 2024. Moreover, supplementary search methods will be employed through scanning the reference lists of included studies or relevant reviews identified by the search, and by using the “cited by” functionality in Google Scholar. Key authors in the area will also be contacted for relevant information.

Screening and study selection

All retrieved studies will be imported into EndNote™ reference manager software⁴⁰ and duplicates will be removed using the automated software tool. At the beginning of the screening process, at least two reviewers including the lead author will screen a small number of studies and meet to discuss their screening decisions and resolve any disagreements. An additional author will be consulted if consensus cannot be reached. The remaining studies will then undergo detailed screening conducted in two phases; 1) Title and abstracts screening; 2) Full-text screening. In the first stage, titles and abstracts will be screened independently by at least two reviewers initially involved in the pilot test, against the eligibility criteria. Disagreements will be brought to another reviewer for resolution if needed. Full-text screening of all the selected studies will then be undertaken following a similar process. Finally, a PRISMA flow diagram will be generated to illustrate the

screening and inclusion/exclusion processes with rationales of exclusions at the full-text stage explicitly outlined³⁶.

Data extraction and management

Data will be extracted from the included studies independently by at least two reviewers using a structured extraction form customised in Excel. The extraction form will be piloted on a small number of studies for usability and verification of data to prompt discussions within the review team which will inform the development of the final form³⁷. The data extraction will include information on but not limited to: study characteristics (authorship, year published, study type and methods); settings (country, site of intervention); context (stakeholder type, behaviour type and population); items from the framework for documenting on financial incentives²³; and the outcomes of interest (implementation barriers and facilitators). A random sample of articles will be verified within the team and any disagreements will be resolved with the consultation of an additional reviewer to reach consensus. Any changes to the data extracted will be recorded with explanations. Data will then be made ready for analysis.

Risk of bias (Quality) assessment

Given that the main interest of our study lies in reported barriers and facilitators to implementation, not in effect estimates of the intervention, high methodological quality is not of direct relevance to the interpretation of the study's main outcomes⁴¹. Therefore, risk of bias assessment will not be used to exclude studies but rather inform the analysis of the results as appropriate. The Mixed Methods Appraisal Tool (MMAT-version 2018)⁴²⁻⁴⁴ will be used to assess the quality of each of the included studies by two reviewers independently. The MMAT is considered a particularly good fit for process-oriented intervention research in public health context^{42,45}. A methodological rating of “yes”, “no”, or “can't tell” and domain descriptors will be assigned to different aspects of the included studies to produce an overall score with justifications provided^{42,44,46}. Assessment results will be discussed, and discrepancies will be resolved with the consultation of a third reviewer if necessary.

Assessment of confidence in the evidence

Following a similar approach to the quality assessment, we will use the Confidence in the Evidence from Reviews of Qualitative research (GRADE-CERQual) approach^{47,48} to assess the confidence we can place in findings from our study and evaluate if they are a reasonable representation of the phenomena of interest. In the GRADE-CERQual approach, findings are rated based on four domains: methodological limitations, coherence, adequacy, and relevance, prior to an overall assessment being made^{47,48}. GRADE-CERQual has been applied to previous work addressing barriers/facilitators⁴⁹.

Data analysis and synthesis

Study characteristics will be reported in a narrative and tabular format. Initially, data will be pooled and aggregated based on identified patterns of the reported barriers and facilitators of the intervention, in line with previous work^{49,50}. Supplementary sensitivity analysis will be sought as appropriate to explore relationships between the reported outcomes and other key factors (e.g. type of stakeholders, health behaviour

or study settings). A narrative synthesis of the findings that is structured around various aspects of the study's outcomes, e.g. the type of stakeholders and the target health behaviour as well as the financial incentive programmes' defining characteristics will be generated. The findings will then be mapped to the Theoretical Domains Framework (TDF) and the Behaviour Change Wheel (BCW) so that for each element reported it will be possible to design interventions aligning with the generated theory that can be used as a basis for evidence-based and theory-informed translation of the financial incentive interventions in different contexts^{30,31,49–52}. A sub-group analysis and synthesis will also be conducted to serve our second aim, comparing findings for financial incentive interventions targeted at smoking cessation against those for other health behaviours, which will allow for the consideration of smoking-specific barriers and facilitators.

Conclusion

Financial incentives have been increasingly acknowledged as a powerful tool for health behaviour change. However, implementation processes vary significantly from one setting to the other and thus unique barriers and facilitators to successful application may be present. Little is known about these factors; hence further investigation is warranted. This study will systematically evaluate and analyse the evidence base to help inform future financial incentives implementation practices through aligning practice findings to theory.

Ethics and dissemination

Ethical approval is not required for systematic reviews. The study findings will be used to inform co-design workshops for financial incentives for a smoking cessation project (<https://compass-study.eu/>). The authors will also ensure the findings are disseminated to key stakeholders through publication in a peer-reviewed open-access journal article and other channels of communications such as reports, conferences, and social media.

Data availability

Underlying data

No data are associated with this article.

Extended data

Zenodo Repository: PRISMA-P: Facilitators and Barriers to Implementation of Financial Incentive Interventions for Health Behaviour Change: <https://doi.org/10.5281/zenodo.12608273>⁵³.

Data are made available under the terms of the [Creative Commons Zero “No rights reserved” data waiver](#) (CC0 1.0 Public domain dedication).

Software availability statement

Instead of EndNote, an alternate open-access Reference manager software could be used e.g. [Mendeley](#) which performs equivalent functions.

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