Intervention mapping in the development of health promotion interventions for people with chronic conditions: a scoping review protocol. [Protocol].

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2023

Intervention Mapping in the Development of Health Promotion Interventions for People with Chronic Conditions – A Scoping Review Protocol

Landing Page

Intended use

This Generalized Systematic Review Registration Form is intended as a general-purpose registration form. The form is designed to be applicable to reviews across disciplines (i.e., psychology, economics, law, physics, or any other field) and across review types (i.e., scoping review, review of qualitative studies, meta-analysis, or any other type of review). That means that the reviewed records may include research reports as well as archive documents, case law, books, poems, etc. This form, therefore, is a fall-back for more specialized forms and can be used if no specialized form or registration platform is available. Below are some currently available specialized registration tools you may consider:

Specialized registration platforms

PROSPERO is a free database of health-related systematic review protocols for health-related outcomes.

Specialized guidance

Consider using the following guidelines when completing your registration:

The Non-Interventional, Reproducible, and Open (NIRO) Systematic Reviews guideline, which includes fields specific to non-interventional reviews: https://osf.io/f3brw/

Methodological Expectations of Cochrane Intervention Reviews (MECIR): CID: 20.500.12592/vxj0sb

Methodological Expectations of Campbell Collaboration Intervention Reviews (MECCIR): https://www.campbellcollaboration.org/meccir.html

Preferred Reporting Items for Systematic reviews and Meta-Analysis Protocols (PRISMA-P): https://doi.org/gcpzzq

Preferred Reporting Items for Systematic reviews and Meta-Analyses literature Search extension (PRISMA-S): https://doi.org/gh2z2k

Peer Review of Electronic Search Strategies (PRESS): https://doi.org/10.1016/j.jclinepi.2016.01.021

Relation to reporting guidelines

Many disciplines have developed reporting guidelines for specific types of reviews (e.g., ROSES: the RepOrting standards for Systematic Evidence Syntheses in environmental research, and PRISMA: the Preferred Reporting Items for Systematic Reviews and Meta-Analyses). Whereas reporting guidelines were optimized for application after conclusion of a systematic review, this form was optimized to publicly register ('freeze') the research plans (or to record adjustments to research plans) before (or during) a systematic review. These different end goals resulted in different choices regarding included items. For example, this form includes a number of questions about planning that are important for a registration but typically are not included in reporting guidelines.

Nonetheless, these reporting guidelines do partly capture the same information as registration forms. For each item in this form, we specified the corresponding PRISMA item (PRISMA items P1-P22 and P25-27 were applicable; P16-P23 cover reporting of results and P24 refers to registration forms like this). Researchers planning to use a specific reporting standard to report the results of their review, should enter the information required by that reporting standard in the corresponding (overarching) fields of this form.

Instructions for effectively using the form

To align with general use and open science best practice, all items are mandatory. Completion makes your registration more useful for readers, funders, and others, so check carefully whether you did not accidently omit an item. If an item asks about a procedure you do not plan to use or is not applicable, indicate that in the corresponding field (including, ideally, the underlying reason).

You should be transparent about any deviations from the preregistration and provide the rationale for these deviations in your final review. If you already foresee some deviations when filling out the form (e.g., you anticipate that you will not have enough studies in a moderator group), provide a contingency plan for these deviations in the relevant parts of the registration.

Planned improvements / extensions

The aim of this registration form is to be optimally inclusive (i.e., to be usable for registration of any systematic review, regardless of scientific discipline or review type). Because this aim precludes 1:1 correspondence with the existing reporting guidelines, this form is also intended as a basis to develop more specialized forms that do correspond closely to more specific reporting guidelines. Such specialized forms can include, for example, additional fields, added comments, and worked examples. Please contact the Center of Open Science at contact@cos.io if you would like to propose such a specialized version. Please do reach out if you want to be involved in any of these projects.

Citation

Van den Akker, O. R., Peters, G. Y., Bakker, C., Carlsson, R., Coles, N. A., Corker, K. S., Feldman, G., , Moreau, D., Nordström, T., Pickering, J. S., Riegelman, A., Topor, M., Veggel, N., Yeung, S., Mellor, D., & Pfeiffer, N. Generalized Systematic Review Registration Form. MetaArXiv.. https://doi.org/g5fj.

Review Methods

In this section, you register the general type, background and goals of your review.

Type of review

Scoping Review

Review stages

Preparation, Initial Limited Search, Search, Piloting Screening (50 hits), Screening, Piloting Extraction (10% sources), Extraction, Synthesis, Reporting

Current review stage

Screening

Start date

01/03/2023

End date

30/06/23

Background

Chronic conditions present a major issue for world healthcare systems, with the findings of the Global Burden of Diseases, Injuries and Risk Factors Study 2017 (GBD) suggesting that 79.5% of years lived with disability can be associated with chronic conditions (Abate et al. 2018). The difference between the terms chronic condition, disease, or illness and another commonly used classification, non-communicable disease, as well as how long one must have a condition before it becomes chronic or long-term is under debate (Goodman et al. 2013; Bernell and Howard 2016). The Kings Fund (2023) defines long-term conditions as "conditions for which there is currently no cure, and which are managed with drugs and other treatment". The World Health Organization suggests non-communicable diseases or chronic diseases have a "long duration and are the result of a combination of genetic, physiological, environmental and behavioural factors" (WHO 2022) while the Center for Disease Control and Prevention proposes that chronic diseases "last 1 year or more and require ongoing medical attention or limit activities of daily living or both" (CDC 2022). Furthermore, documentation by the Australian government includes mental health conditions among its list of chronic diseases (AIHW 2022) but these are missing in the definitions from the above organisations. The current review will use the term chronic condition to refer to all the above terminologies.
The prevalence of chronic conditions is also dependent on the definition and methodological choices used by researchers (Hajat and Stein 2018), but recent statistical data suggests that 40% of people in England report having a chronic condition with 15-58% of them having more than one (Hajat and Stein 2018; OECD/European Observatory on Health Systems and Policies 2019).
According to the GBD study, low back pain, a condition under the umbrella of chronic pain, was the leading cause of years lived with disability between 1990-2017 (Abate et al. 2018). Pain itself is "an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage" (Raja et. al 2020 p.14) and it becomes chronic when the pain "persists or recurs for longer than 3 months" (WHO 2023). Chronic pain affects many aspects of daily life, limiting one's physical ability and leading to increasing psychological distress (Cohen, Vase and Hooten 2021). With up to 51.3% of people in the U.K. affected by chronic pain (Fayaz et. al 2016) and costing the country more than £14 billion a year in lost economic output and expense to the NHS (Rimpilainen 2016), chronic pain represents one of the major chronic conditions affecting the country.
Interventions for chronic pain have evolved in recent decades, with the biopsychosocial model (Engel 1977) promoting the management of all facets of pain. The result has been the development of multimodal and multidisciplinary interventions that target both physical and psychological symptoms through approaches such as Acceptance and Commitment Therapy alongside electrical physical modalities, pharmacological options, and social support, with the aim of empowering individuals to self-manage their pain (NICE 2021). A similarly wide approach has been taken to interventions for other chronic conditions, including mobile applications (Scott et al. 2018), self-management tools (Reynolds et al. 2018), and precision medicine using artificial intelligence (Subramanian et al. 2020) alongside lifestyle and behavioural change (Dean and Söderlund 2015). The development of these interventions involves the process of creating a programme or innovation to improve health and the aim of intervention development approaches, frameworks, or guides is to facilitate this process to minimise the risk of wasteful, unfeasible, or ineffective interventions being developed (O'Cathain et al. 2019). There are several approaches or methodologies available to intervention developers, from pragmatic techniques where users develop their own set of actions to complete in order to create their intervention (Croot et al. 2019), to formal approaches such as the recently updated Medical Research Council Framework (Skivington et al. 2021), Behaviour Change Wheel (Michie, van Stralen and West 2011) and the focus of this review, Intervention Mapping (IM) (Bartholomew Eldredge et al. 2016).
IM aims "to provide health promotion program planners with a framework for effective decision making at each step in intervention planning, implementation, and evaluation" (Bartholomew Eldredge et al. 2016 p.1). Bartholomew Eldredge et al. (2016) use the term health promotion to refer to "combinations of educational, political, regulatory, and organizational supports for behavior and environmental changes that are conducive to health" (Bartholomew Eldredge et al. 2016 p.1) and the authors of the current review will also use this term to refer to the interventions targeted by this review. IM is a six-stage process, with each stage containing between three to five tasks requiring developers to consider a broad range of factors throughout (Bartholomew Eldredge et al. 2016). IM is credited for being systematic, inclusive of stakeholders and holistic, from identifying a need to the implementation, adoption, maintenance, and evaluation of an intervention (Fernandez at al. 2019). IM also avoids the limitations of other frameworks (Crutzen 2014) and can be used to adapt previously developed interventions (Ibekwe et al. 2020). The other side of producing such a methodical, precise, and evidence- and theory-informed approach is that IM is sometimes criticised for being complex, time consuming and difficult to operationalise (Van Kesteren et al. 2006; Coté et al. 2008; Wight et al. 2016). Since the process is both iterative, encouraging users to move forwards and backwards through the stages, as well as cumulative, Kok and Mesters (2011) highlight the risk that a flaw at an earlier stage could produce a large effect by the conclusion of a project. There is also the possibility that a poorly constructed logic model could unknowingly confound a project in its early stages (Godin et al. 2007).
In an attempt to understand how the complexity of IM is operationalised in intervention development, this scoping review aims to map how IM has been used and reported by developers of health promotion interventions for chronic conditions. A previous scoping review of IM found that the execution of the approach to be heterogeneous, with low uptake of certain key components such as pre- or pilot-testing and vague details in areas such as the implementation plan (Majid et al. 2018). Majid and colleagues also highlighted the increasing number of studies employing IM in research and therefore the current review is well timed to provide an update on the new volume of literature. An exploratory search replicating Majid et al.'s strategy revealed almost 1,200 new results since they conducted their search in 2017. Furthermore, a preliminary search of MEDLINE, the Cochrane Database of Systematic Reviews, JBI Evidence Synthesis, Figshare, PROSPERO, and The Open Science Framework was conducted and no current or underway systematic reviews or scoping reviews on the topic were identified.
While Majid et al. provide a comprehensive outline of the application of IM in health literature, the nature of IM suggests a much more detailed analysis is required to understand the true fidelity of published research to the protocol developed by Bartholomew Eldredge et al. (2016). Therefore, this review will apply all literature that achieve the eligibility criteria to an extensive extraction tool to map how the IM process is followed by studies that use this approach to develop health promotion interventions for people with chronic conditions. The findings of this scoping review will inform a doctoral study to be conducted by the lead author of this review, which will use the IM process to plan and design a health promotion intervention for people with chronic pain.

Primary research question(s)

This scoping review aims to map the literature on health promotion intervention development for chronic conditions using Intervention Mapping (IM), in order to demonstrate how the IM approach as described by its authors translates to intervention development research.

Secondary research question(s)

The specific areas of intervention development that the review will address are:
- Which chronic conditions have been reported in intervention development research that uses IM?
- Which components (steps, subtasks, and core processes) of IM were reported in the development of the interventions?
- Who was involved in the development of the intervention and how?
- How were theories and/or evidence from the literature used to support the development of the intervention?

Expectations / hypotheses

Not applicable

Dependent variable(s) / outcome(s) / main variables

Not applicable

Independent variable(s) / intervention(s) / treatment(s)

Not applicable

Additional variable(s) / covariate(s)

Not applicable

Software

Refworks
Covidence
Microsoft Excel

Funding

Unfunded

Conflicts of interest

No conflicts of interest

Overlapping authorships

Not applicable

Search Strategy

In this section, you register your search strategy: the procedures you designed to obtain all (potentially) relevant sources to review (e.g., articles, books, preprints, reports, case law, policy papers, archived documents).

Databases

Databases: MEDLINE (EBSCOhost), CINAHL (EBSCOhost), AMED (EBSCOhost), APA PsycInfo (Ovid), Cochrane Library (Reviews), EMBASE (Ovid), Scopus (Elsevier), and Web of Science (Clarivate)
Trial registries: ClinicalTrials.gov, ISRCTN Registry, Cochrane Library (Trials) The Research Registry, EU-CTR (European Union Clinical Trials Registry), ANZCTR (Australia and New Zealand Clinical Trials Registry) and TRoPHI (Trials Register of Promoting Health Interventions)

Interfaces

See above

Grey literature

Grey literature databases: EThOS (British Library), EBSCO Open Dissertations, and Sherpa Services (see Appendix I).

Inclusion and exclusion criteria

Participants
Any studies that include adults (people aged 18 or above) with one or more chronic conditions. Other terms that will be accepted as they are often used interchangeably in the literature are “chronic disease”, “chronic illness”, and “non-communicable disease” as well as terms for chronicity such as “long-term”, “persistent”, and “prolonged”. Although as previously discussed there is no uniformly accepted definition of a chronic condition, this scoping review will consider but not limit the definition to that of “conditions for which there is currently no cure, and which are managed with drugs and other treatment” (The Kings Fund 2023). This will include, but not be limited to conditions such as diabetes, chronic musculoskeletal conditions such as arthritis, chronic pain, chronic respiratory diseases such as chronic obstructive pulmonary disease, early onset or mild stages of chronic neurological conditions such as multiple sclerosis, mental health disorders such as mood disorders and addiction, and cardiovascular diseases such as stroke. This will exclude cancers, severe mental health conditions and advanced neurological conditions such as late-stage dementia (people aged 65 and above diagnosed with dementia) as these conditions have specific management strategies that exceed the scope of health promotion interventions. For studies with mixed populations, if 75% of the population achieve the inclusion criteria or if the data is reported separately for different populations, these studies will still be included in the review.
Concept

The concept is the development of health promotion interventions as defined by Bartholomew Eldredge et al. (2016 p.1) as “combinations of educational, political, regulatory, and organizational supports for behaviour and environmental changes that are conducive to health” for chronic conditions using IM. Any study that explicitly uses at least one stage of the IM approach will be included. Studies that reference IM without using it in the process of developing an intervention, such as those that only use IM to adapt pre-existing interventions will be excluded.
Context
Any studies in any location as well as any intervention in any setting, including primary, secondary, and community care, and healthcare and non-healthcare settings that satisfy the other eligibility criteria will be considered for this review.

Query strings

MEDLINE
Wednesday, May 03, 2023
ID Search Hits
S1 (MH "Arthritis+") 294,069
S2 TX "Arthritis" 487,501
S3 (MH "Asthma+") 141,453
S4 TX "Asthma" 263,754
S5 (MH "Cardiovascular Diseases+") 2,699,408
S6 TX "Cardiovascular disease*" 400,525
S7 (MH "Liver Diseases+") 622,677
S8 TX "Chronic liver disease*" 29,035
S9 (MH "Respiratory Tract Diseases+") 1,700,985
S10 TX "Chronic respiratory disease*" 7,142
S11 (MH "Pulmonary Disease, Chronic Obstructive+") 66,197
S12 (MH "Renal Insufficiency, Chronic+") 133,297
S13 TX "Chronic kidney disease*" 88,601
S14 (MH "Diabetes Mellitus+") 502,172
S15 TX "diabetes *" 1,156,709
S16 (MH "Heart Diseases+") 1,260,780
S17 TX "heart disease*" 305,708
S18 (MH "HIV+") 107,133
S19 TX "HIV" 417,067
S20 (MH "Low Back Pain") 26,319
S21 TX "low back pain" 47,438
S22 (MH "Back Pain+") 44,576
S23 (MH "Lung Diseases+") 1,203,904
S24 TX "lung disease*" 176,948
S25 (MH "Chronic Pain") 21,949
S26 TX "Chronic pain" 67,383
S27 (MH "Pain, Postoperative+") 49,484
S28 (MH "Mental Disorders+") 1,422,513
S29 TX "mental health disorder*" 7,782
S30 (MH "Mental Health") 59,960
S31 TX "mental health illness*" 355
S32 TX "musculoskeletal condition*" 3,551
S33 (MH "Stroke+") 170,194
S34 TX "stroke" 542,556
S35 (MH "Chronic Disease+") 617,998
S36 TX "chronic disease*" 388,774
S37 (MH "Noncommunicable Diseases") 2,945
S38 TX "chronic illness*" 23,541
S39 TX "long-term*" 1,142,871
S40 TX "long term*" 1,142,871
S41 TX "chronic condition*" 28,869
S42 TX "persistent *" 307,086
S43 TX "prolonged *" 377,602
S44 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 9,669,308
S45 TX "Intervention mapping" 857
S46 S44 AND S45 462

CINAHL
Wednesday, May 03, 2023 1:20:54 PM
ID Search Hits
S1 (MH "Arthritis+") 86,202
S2 TX "Arthritis" 148,209
S3 (MH "Asthma+") 37,886
S4 TX "Asthma" 104,962
S5 (MH "Cardiovascular Diseases+") 670,451
S6 TX "Cardiovascular disease*" 178,797
S7 (MH "Liver Diseases+") 81,632
S8 TX "Chronic liver disease*" 8,577
S9 TX "chronic condition" 12,124
S10 (MH "Chronic Disease+") 72,859
S11 TX "chronic disease*" 168,929
S12 TX "chronic illness*" 45,622
S13 (MH "Chronic Pain") 25,883
S14 TX "Chronic pain" 59,326
S15 (MH "Chronic Pain (NANDA)") 13
S16 (MH "Chronic Pain Control (Saba CCC)") 1
S17 (MH "Chronic Pain (Saba CCC)") 1
S18 (MH "Pulmonary Disease, Chronic Obstructive+") 22,064
S19 (MH "Respiratory Tract Diseases+") 337,951
S20 TX "chronic respiratory disease*" 3,940
S21 (MH "Renal Insufficiency, Chronic+") 32,493

S22 (MH "Kidney Failure, Chronic+") 24,320
S23 TX "chronic kidney disease*" 38,353
S24 TX "Chronic obstructive pulmonary disease*" 37,829
S25 (MH "Diabetes Mellitus+") 185,917
S26 TX "diabetes" 444,904
S27 (MH "Heart Diseases+") 314,639
S28 TX "heart disease*" 149,891
S29 (MH "Human Immunodeficiency Virus+") 11,155
S30 TX "HIV" 187,699
S31 (MH "Low Back Pain") 22,324
S32 TX "low back pain" 41,345
S33 (MH "Back Pain") 11,907
S34 TX "long term *" 553,677
S35 TX "long-term *" 553,677
S36 (MH "Lung Diseases+") 214,256
S37 TX "lung disease*" 50,102
S38 (MH "Mental Disorders, Chronic") 2,080
S39 TX "chronic mental illness*" 1,635
S40 TX "chronic mental disorder*" 282
S41 TX "chronic musculoskeletal *" 3,787
S42 (MH "Noncommunicable Diseases") 1,373
S43 TX "noncommunicable disease*" 8,661
S44 TX "persistent *" 141,087
S45 (MH "Stroke+") 78,818
S46 TX "stroke" 245,634
S47 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 2,395,793
S48 TX "intervention mapping" 993
S49 S47 AND S48 699

AMED
Wednesday, May 03, 2023
ID Search Hits
1 TX "intervention mapping" 12

APA PsycInfo
<1987 to April Week 4 2023>
ID Search Hits
1 exp Arthritis/ 4437
2 Arthritis.mp. 7263
3 exp Rheumatoid Arthritis/ 1896
4 exp Asthma/ 4568
5 Asthma.mp. 7573
6 exp Back Pain/ 4281
7 Back Pain.mp. 6819
8 Cardiovascular Disease*.mp. 16015
9 exp Cardiovascular Disorders/ 66706
10 Cardiovascular Disorder*.mp. 10436
11 exp Cerebrovascular Accidents/ 23813
12 Cerebrovascular accident*.mp. 24103
13 exp Cerebrovascular Disorders/ 31460
14 Cerebrovascular Disorder*.mp. 4521
15 Chronic.mp. 164423
16 Chronic back pain.mp. 675
17 exp Chronic Illness/ 32935
18 Chronic Illness*.mp. 20309
19 Chronic liver disease*.mp. 286
20 exp Liver Disorders/ 4819
21 Chronic low back pain.mp. 1666
22 exp Chronic Mental Illness/ 1874
23 Chronic Mental Illness*.mp. 2460
24 Chronic Obstructive Airway Disease*.mp. 6
25 exp Chronic Obstructive Pulmonary Disease/ 1677
26 Chronic Obstructive Pulmonary Disease*.mp. 2716
27 exp Chronic Pain/ 15375
28 Chronic Pain.mp. 22875
29 exp "Chronicity (Disorders)"/ 3952
30 "Chronicity (Disorders)".mp. 3952
31 exp Diabetes/ 19804
32 Diabetes.mp. 35100
33 Heart Disease*.mp. 11156
34 exp Heart Disorders/ 15109
35 Heart Disorder*.mp. 10368
36 exp HIV/ 47077
37 HIV.mp. 60666
38 exp Hypertension/ 7454
39 Hypertension.mp. 18823

40 Hypertensive disease.mp. 52
41 exp Kidney Diseases/ 2585
42 Kidney Disease*.mp. 3517
43 Chronic Kidney Failure.mp. 25
44 Long term.mp. 149251
45 Low Back Pain.mp. 4340
46 exp Lung Disorders/ 5109
47 Lung Disorder*.mp. 2046
48 exp Musculoskeletal Disorders/ 19799
49 Musculoskeletal Disorder*.mp. 3988
50 exp Pain/ 62222
51 Pain.mp. 107195
52 Persistent.mp. 36496
53 Persistent Mental Illness*.mp. 1004
54 Prolonged.mp. 26913
55 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 584375
56 "intervention mapping".mp. 221
57 55 and 56 67

Cochrane Library (Reviews and Trials)
Date Run: 12/05/2023 04:37:56
ID Search Hits
#1 arthritis 30250
#2 MeSH descriptor: [Arthritis] explode all trees 20859
#3 asthma 37350
#4 MeSH descriptor: [Asthma] explode all trees 14957
#5 "cardiovascular disease*" 27676
#6 MeSH descriptor: [Cardiovascular Diseases] explode all trees 150105
#7 "Chronic liver disease*" 1654
#8 MeSH descriptor: [Liver Diseases] explode all trees 20344
#9 "Chronic respiratory disease*" 698
#10 MeSH descriptor: [Respiratory Tract Diseases] explode all trees 84556
#11 "Chronic kidney disease*" 9970
#12 MeSH descriptor: [Renal Insufficiency, Chronic] explode all trees 8533
#13 "diabetes *" 105258
#14 MeSH descriptor: [Diabetes Mellitus] explode all trees 45956
#15 "heart disease*" 24189
#16 MeSH descriptor: [Heart Diseases] explode all trees 71665
#17 "HIV" 32037
#18 MeSH descriptor: [HIV] explode all trees 3739
#19 "low back pain" 13109
#20 MeSH descriptor: [Low Back Pain] explode all trees 5778
#21 MeSH descriptor: [Back Pain] explode all trees 7161
#22 "lung disease*" 14775
#23 MeSH descriptor: [Lung Diseases] explode all trees 57684
#24 "Chronic pain" 12776
#25 MeSH descriptor: [Chronic Pain] explode all trees 4125
#26 "mental health disorder*" 161
#27 "mental health illness*" 31
#28 MeSH descriptor: [Mental Health] explode all trees 3532
#29 "musculoskeletal condition*" 124
#30 MeSH descriptor: [Musculoskeletal Diseases] explode all trees 56617
#31 MeSH descriptor: [Musculoskeletal Pain] explode all trees 2031
#32 "stroke" 81963
#33 MeSH descriptor: [Stroke] explode all trees 14721
#34 "chronic disease*" 23141
#35 MeSH descriptor: [Chronic Disease] explode all trees 38421
#36 "Noncommunicable Disease*" 315
#37 MeSH descriptor: [Noncommunicable Diseases] explode all trees 82
#38 "chronic illness*" 2830
#39 "long-term*" 119293
#40 "long term*" 119295
#41 "chronic condition*" 1054
#42 "persistent *" 28087
#43 "prolonged *" 35248
#44 {OR #1-#43} 676408
#45 "intervention mapping" 193
#46 (#44 AND #45) 74

EMBASE (NHS Knowledge Network)
Embase <1974 to 2023 May 02>
ID Search Hits
1 arthritis/ 78249
2 chronic arthritis/ 2077
3 rheumatoid arthritis/ 211518
4 arthritis.mp. 400316
5 asthma/ 268493

6 Asthma.mp. 337113
7 cardiovascular disease/ 339278
8 Cardiovascular disease*.mp. 510851
9 chronic disease/ 202006
10 "chronic condition*".mp. 40664
11 "chronic disease*".mp. 271182
12 "chronic illness*".mp. 28409
13 chronic kidney failure/ 144392
14 "chronic kidney disease*".mp. 136794
15 chronic liver disease/ 28673
16 "Chronic liver disease*".mp. 47007
17 mental disease/ 271972
18 "chronic mental disorder*".mp. 379
19 "chronic mental illness*".mp. 1067
20 musculoskeletal disease/ 34434
21 musculoskeletal pain/ 14898
22 "chronic musculoskeletal".mp. 3191
23 chronic obstructive lung disease/ 171624
24 "Chronic obstructive pulmonary disease".mp. 90166
25 chronic pain/ 76825
26 "chronic pain".mp. 102056
27 chronic respiratory tract disease/ 5854
28 "chronic respiratory disease*".mp. 6998
29 diabetes mellitus/ 687394
30 "diabetes".mp. 1324027
31 heart disease/ 125878
32 "heart disease*".mp. 470670
33 Human immunodeficiency virus/ 137192
34 "HIV".mp. 468042
35 low back pain/ 71178
36 "low back pain".mp. 79795
37 "long term".mp. 1458972
38 "long-term".mp. 1458972
39 lung disease/ 86941
40 "lung disease*".mp. 337455
41 non communicable disease/ 11442
42 "noncommunicable disease*".mp. 5386
43 "persistent".mp. 407154
44 "prolonged".mp. 486714
45 cerebrovascular accident/ 282370
46 stroke.mp. 560493
47 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 6486961
48 "intervention mapping".mp. 661
49 47 and 48 220

Scopus (Elsevier)
06/05/2023
ID Search Hits
1 ALL ("intervention mapping") 7,073
2 ALL ("arthritis") 1,249,019
3 ALL ("asthma") 726,243
4 ALL ("cardiovascular disease*") 1,442,469
5 ALL ("chronic liver disease*") 126,475
6 ALL ("chronic condition") 105,830
7 ALL ("chronic disease*") 892,510
8 ALL ("chronic illness*") 132,796
9 ALL ("chronic pain") 260,638
10 ALL ("chronic respiratory disease*") 34,311
11 ALL ("chronic kidney disease*") 294,049
12 ALL ("chronic obstructive pulmonary disease*") 242,841
13 ALL ("diabetes") 2,712,804
14 ALL ("heart disease"*) 1,323,552
15 ALL ("hiv") 1,333,691
16 ALL ("low back pain") 191,425
17 ALL ("long term *") 6,842,454
18 ALL ("long-term *") 6,842,454
19 ALL ("lung disease*") 544,072
20 ALL ("chronic mental illness*") 6,398
21 ALL ("chronic mental disorder*") 1,216
22 ALL ("chronic musculoskeletal *") 25,732
23 ALL ("noncommunicable diseases") 52,041
24 ALL ("persistent *") 1,534,392
25 ALL ("prolonged *") 1,308,758
26 ALL ("stroke") 1,540,714
27 (ALL ("stroke")) OR (ALL ("prolonged *")) OR (ALL ("persistent *")) OR (ALL ("noncommunicable diseases")) OR (ALL ("chronic musculoskeletal *")) OR (ALL ("chronic mental disorder*")) OR (ALL ("chronic mental illness*")) OR (ALL ("lung disease*")) OR (ALL ("long-term *")) OR (ALL ("long term *")) OR (ALL ("low back pain")) OR (ALL ("HIV")) OR (ALL ("diabetes")) OR (ALL ("heart disease*")) OR (ALL ("Chronic obstructive pulmonary

disease*")) OR (ALL ("chronic kidney disease*")) OR (ALL ("chronic respiratory disease*")) OR (ALL ("chronic pain")) OR (ALL ("chronic illness*")) OR (ALL ("chronic disease*")) OR (ALL ("chronic condition")) OR (ALL ("Chronic liver disease*")) OR (ALL ("Cardiovascular disease*")) OR (ALL ("Asthma")) OR (ALL ("arthritis"))) 15,129,502
28 (ALL ("stroke")) OR (ALL ("prolonged *")) OR (ALL ("persistent *")) OR (ALL ("noncommunicable diseases")) OR (ALL ("chronic musculoskeletal *")) OR (ALL ("chronic mental disorder*")) OR (ALL ("chronic mental illness*")) OR (ALL ("lung disease*")) OR (ALL ("long-term *")) OR (ALL ("long term *")) OR (ALL ("low back pain")) OR (ALL ("HIV")) OR (ALL ("diabetes")) OR (ALL ("heart disease*")) OR (ALL ("Chronic obstructive pulmonary disease*")) OR (ALL ("chronic kidney disease*")) OR (ALL ("chronic respiratory disease*")) OR (ALL ("chronic pain")) OR (ALL ("chronic illness*")) OR (ALL ("chronic disease*")) OR (ALL ("chronic condition")) OR (ALL ("Chronic liver disease*")) OR (ALL ("Cardiovascular disease*")) OR (ALL ("Asthma")) OR (ALL ("arthritis"))) AND (ALL ("intervention mapping")) 4978

Web of Science
Date Run: Mon May 08 2023 14:04:05
ID Search Hits
1 arthritis (All Fields) 454539
2 Asthma (All Fields) 265420
3 ALL=("Cardiovascular disease*") 326960
4 ALL=("Chronic liver disease*") 26953
5 ALL=("chronic condition*") 24106
6 ALL=("chronic disease*") 103213
7 ALL=("chronic illness*") 25064
8 ALL=("chronic pain") 58355
9 ALL=("chronic respiratory disease*") 5227
10 ALL=("chronic kidney disease*") 97833
11 ALL=("Chronic obstructive pulmonary disease*") 64672
12 ALL=("diabetes") 1068916
13 ALL=("heart disease*") 303349
14 ALL=("HIV") 450809
15 ALL=("low back pain") 55143
16 ALL=("long term *") 1579299
17 ALL=("long-term *") 1579299
18 ALL=("lung disease*") 87094
19 ALL=("chronic mental illness*") 879
20 ALL=("chronic mental disorder*") 274
21 ALL=("chronic musculoskeletal *") 3757
22 ALL=("noncommunicable disease*") 6429
23 ALL=("persistent *") 357349
24 ALL=("prolonged *") 362249
25 ALL=("stroke") 661605
26 #25 OR #24 OR #23 OR #22 OR #21 OR #20 OR #19 OR #18 OR #17 OR #16 OR #15 OR #14 OR #13 OR #12 OR #11 OR #10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1 5543376
27 ALL=("intervention mapping") 655
28 #27 AND #26 216

Clinical Trials
Monday, May 15, 2023
ID Search Hits
1 “Intervention mapping” 7

ISRCTN Registry
Monday, May 15, 2023
ID Search Hits
1 “Intervention mapping” 18

The Research Registry
Monday, May 15, 2023
ID Search Hits
1 “Intervention mapping” 0

EU-CTR
Monday, May 15, 2023
ID Search Hits
1 “Intervention mapping” 14

ANZCTR
Monday, May 15, 2023
ID Search Hits
1 “Intervention mapping” 3

Cochrane Trials (as Cochrane Library Reviews)
TRoPHi
Monday, May 15, 2023
ID Search Hits
1 “Intervention mapping” 13

EThOS
Monday, May 15, 2023
ID Search Hits
1 “Intervention mapping” 46

EBSCO Open Dissertations
Monday, May 15, 2023 10:13:29 AM

ID	Search	Hits
S62	(TX "Intervention mapping") AND (S60 AND S61)	14
S61	TX "Intervention mapping"	56
S60	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59	89,417
S59	TX "prolonged *"	6,718
S58	TX "persistent *"	8,244
S57	TX "chronic condition*"	800
S56	TX "long term*"	34,887
S55	TX "long-term*"	34,887
S54	TX "chronic illness*"	1,052
S53	(MH "Noncommunicable Diseases")	15
S52	TX "chronic disease*"	2,369
S51	(MH "Chronic Disease+")	115
S50	(MH "Chronic Disease+")	115
S49	TX "stroke"	5,346
S48	(MH "Stroke+")	4
S47	(MH "Stroke+")	4
S46	TX "musculoskeletal condition*"	80
S45	TX "mental health illness*"	25
S44	(MH "Mental Health")	3,863
S43	TX "mental health disorder*"	313
S42	(MH "Mental Disorders+")	80
S41	(MH "Mental Disorders+")	80
S40	(MH "Pain, Postoperative+")	14
S39	(MH "Pain, Postoperative+")	14
S38	TX "Chronic pain"	1,258
S37	(MH "Chronic Pain")	368
S36	TX "lung disease*"	1,054
S35	(MH "Lung Diseases+")	43
S34	(MH "Lung Diseases+")	43
S33	(MH "Back Pain+")	21
S32	(MH "Back Pain+")	21
S31	TX "low back pain"	797
S30	(MH "Low Back Pain")	318
S29	TX "HIV"	5,911
S28	(MH "HIV+")	4
S27	(MH "HIV+")	4
S26	TX "heart disease*"	4,004
S25	(MH "Heart Diseases+")	37
S24	(MH "Heart Diseases+")	37
S23	TX "diabetes *"	11,062
S22	(MH "Diabetes Mellitus+")	5
S21	(MH "Diabetes Mellitus+")	5
S20	TX "Chronic kidney disease*"	1,174
S19	(MH "Renal Insufficiency, Chronic+")	41
S18	(MH "Renal Insufficiency, Chronic+")	41
S17	(MH "Pulmonary Disease, Chronic Obstructive+")	126
S16	(MH "Pulmonary Disease, Chronic Obstructive+")	126
S15	TX "Chronic respiratory disease*"	111
S14	(MH "Respiratory Tract Diseases+")	38
S13	(MH "Respiratory Tract Diseases+")	38
S12	TX "Chronic liver disease*"	258
S11	(MH "Liver Diseases+")	40
S10	(MH "Liver Diseases+")	40
S9	TX "Cardiovascular disease*"	5,731
S8	(MH "Cardiovascular Diseases+")	28
S7	(MH "Cardiovascular Diseases+")	28
S6	TX "Asthma"	3,981
S5	(MH "Asthma+")	11
S4	(MH "Asthma+")	11
S3	TX "Arthritis"	3,089
S2	(MH "Arthritis+")	51
S1	(MH "Arthritis+")	51

Sherpa
Monday, May 15, 2023

ID	Search	Hits
1	“Intervention mapping”	0

Search validation procedure

Not employed

Other search strategies

Not employed

Procedures to contact authors

If required, authors of papers will be contacted to request missing or additional data.

Results of contacting authors

Reported in the PRISMA flow chart

Search expiration and repetition

The search will expire one year after it is conducted.

Search strategy justification

This scoping review will consider all study designs that produce primary research data on intervention development using IM. This will mainly include intervention design reports but will also consider but not be limited to quantitative experimental and quasi-experimental study designs such as randomized controlled trials, non-randomized controlled trials, and before and after studies. In addition, analytical observational studies including prospective and retrospective cohort studies, case-control studies and analytical cross-sectional studies will be considered for inclusion.
Qualitative studies and mixed methods studies as well as pilot, feasibility and acceptability studies will only be considered if they provide data on the development of an intervention.
Grey literature such as trial registries and PhD theses and dissertations that utilised IM will be included if they report on the development process of their intervention. Conference proceedings will be excluded as they will not provide enough detail to extract a meaningful dataset.
As primary research literature is the target of this search, text or opinion pieces will not be included. Relevant systematic reviews that appear in the search will have their reference lists checked for additional primary studies but will not be included in the scoping review themselves.
The fourth edition of the IM e-book by Bartholomew Eldredge et al. (2016) as well as the IM website (http://interventionmapping.com/references) will also be hand searched for relevant reports.

Miscellaneous search strategy details

Studies published in English as well as any other language that can reliably and understandably translated by online translation software DeepL will be included. Studies published since the inception of the database will be included as to capture all possible studies.

Screening

In this section, you register your screening procedure: the procedure you designed to eliminate all irrelevant sources from the results of the search strategy (and retain the relevant sources).

Screening stages

De-duplication by Refworks
De-duplication by Covidence
First round: Title and abstract screening
Second round: Full text screening

Screened fields / blinding

No blinding

Used exclusion criteria

Mentions Intervention Mapping but article does not report on the development of an intervention.

Adapts a previously developed intervention.

Interventions where the receiver is entirely passive, such as a surgical or medication/drug intervention only (if these are part of a wider behaviour change intervention of multiple treatment modalities, then this is acceptable).

Children (<18 years old).

Cancer and late stage dementia (population 65+) are excluded conditions.

Severe mental health conditions are excluded. This includes psychosis, serious/severe bipolar disorder, personality disorder, eating disorders, severe major depression, or "mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities".

The language the article is published in cannot be translated accurately by language translation software such as Google Translate or DeepL Translate.

Grey literature, text and opinion papers.

Systematic/scoping/literature review. These should be tagged as "Systematic/Scoping/Literature Review" so their reference lists can be searched.

Not primary research.

Study protocol.

Intellectual disability is a disability not a chronic condition so cannot be included.

Screener instructions

No response

No files selected

Screening reliability

Two screeners at each stage, with independence managed through Covidence.

Screening reconciliation procedure

Any disagreements that arise between the reviewers at each stage of the selection process will be resolved through discussion, or with an additional reviewer/s.

Sampling and sample size

All sources will be included.

Screening procedure justification

This procedure following JBI guidelines.

Data management and sharing

Sources from databases extracted into RIS files.
RIS files imported into RefWorks for initial management and de-duplication.
Sources from Refworks extracted into RIS files.
RIS files imported into Covidence for de-duplication, screening and data extraction.

Miscellaneous screening details

No applicable.

Extraction

In this section, you register your plans for data extraction: the procedures you designed to extract the data you are interested in from the included sources. Examples of such data are text fragments, effect sizes, study design characteristics, year of publication, characteristics of measurement instruments, final verdicts and associated penalties in a legal system, company turnovers, sample sizes, or prevalences.

Entities to extract

All data on the use of Intervention Mapping to design an intervention that fulfils the inclusion criteria will be extracted.

Extraction stages

First, a pilot test of the extraction tool will be conducted using Covidence. Two reviewers will independently extract data from five of the studies or 10% of the studies, whichever is greater, that achieve the eligibility criteria. Following discussion between reviewers, amendments will be made as required, with further piloting conducted as necessary until the tool is finalised. Then, a further n=5 or 10% of studies will be extracted independently by two reviewers using the finalised tool. Any disagreements that arise between the reviewers will be resolved through discussion, or with an additional reviewer/s. If agreement between the reviewers achieves a high to excellent rating after this stage (90% agreement), then the lead author of the current review will complete the remaining data extraction with random checks by a second reviewer. If required, authors of papers will be contacted to request missing or additional data.

Extractor instructions

No response

No files selected

Extractor masking

Not used.

Extraction reliability

Two extractors will be used at the piloting stage to improve the extraction tool. After a high level of agreement is reached (90%) one extractor will complete the data extraction process.

Extraction reconciliation procedure

Any disagreements that arise between the reviewers will be resolved through discussion, or with an additional reviewer/s.

Extraction procedure justification

The extraction tool was created using multiple sources on the Intervention Mapping protocol:
Bartholomew-Eldredge LK, Markham C, Ruiter RA, Fernandez ME, Kok G, Parcel G. Planning Health Promotion Programs: An Intervention Mapping Approach. 4th ed. San Francisco, CA: Jossey Bass; (2016).
Knittle, K. (2014) Fidelity in intervention delivery. The European Health Psychologist, 16, 190–195.
Kok et al. 2015 A taxonomy of behaviour change methods: an Intervention Mapping approach, HEALTH PSYCHOLOGY REVIEW, 2016 VOL. 10, NO. 3, 297–312 http://dx.doi.org/10.1080/17437199.2015.1077155
Kok et al. Methods for environmental change; an exploratory study, BMC Public Health 2012, 12:1037 http://www.biomedcentral.com/1471-2458/12/1037
Kok et al. Planning theory- and evidence-based behavior change interventions: a conceptual review of the intervention mapping protocol Psicologia: Reflexão e Crítica (2017) 30:19 DOI 10.1186/s41155-017-0072-x
Kok, G. (2014). A practical guide to effective behavior change: How to apply theory- and evidence-based behavior change methods in an intervention. The European Health Psychologist, 16, 156–170.
Peters, G.-J.Y. (2014). A practical guide to effective behavior change: How to identify what to change in the first place. Tge European Health Psychologist, 16, 142–155.

Ruiter RAC and Crutzen R (2020) Core Processes: How to Use Evidence, Theories, and Research in Planning Behavior Change Interventions. Front. Public Health 8:247. doi: 10.3389/fpubh.2020.00247

Data management and sharing

Data will be extracted as an XML file and imported into Microsoft Excel.

Miscellaneous extraction details

Draft data extraction instrument
Study Characteristics
Study ID
Title
Author/s
Publication year
Country of origin
Journal
Website link
Aim of study
Study design
Study duration
Chronic conditions involved
Total number of participants (stakeholders, experts, researchers, etc.)
Study context/setting
Study description

Step 1 – Logic Model of the Problem (Needs Assessment)
1) Was Step 1 included in the study? Yes No Not reported Other
2) Was a needs assessment and/or formative research conducted? Needs assessment Formative assessment Not reported Other
- Task 1: Establish and working with a planning group
1) Was a work group formed? Yes No Not reported Other
A) Who did this consist of? (E.g. community organisation, university research team, government agency , stakeholders such as community members, potential program implementers and/or adopters, program beneficiaries, etc.)
B) Was an expert on behavioural science consulted? Yes No Not reported Other
2) Was the need for a linkage system (a way to assure collaborative communications between the program developer and the user group to promote program use) discussed? Yes No Not reported Other
A) Who was involved in the linkage system? (E.g. program developers, implementers, participants, disseminators, health professional who work with the target population)
3) Were ground rules established for the work group? (e.g. member responsibilities, basic structure, decision-making process, timeline of project, one group or multiple splinter groups, leadership, goals and agendas – See table 4.2 Group Facilitation processes) Yes No Not reported Other
A) What ground rules were established?
4) Was “culture” considered in the work group? Yes No Not reported Other
A) How?
- Task 2: Conducting a needs assessment
1) Was a logic model created? Yes No Not reported Other
A) Which model template was used? (Usually modified PRECEDE [Green and Kreuter, 2005])
2) Were any of the core processes used to conduct the needs assessment? Yes Yes, but not by name No Not reported Other
A) Which processes were used? Posing Questions Brainstorming/Free association Reviewing existing literature Applying appropriate theories Identifying and addressing the need for new research Completing and assessing a list of possible answers (Use Other to describe the process if not used by name)
B) Who was involved in using the core processes?
C) What theory/ies were used?
D) Was new data required? Yes No Not reported Other
(a) If so, how was this gathered? (e.g. survey, questionnaire, focus groups, interviews, etc.)
E) Was a multidisciplinary approach taken to applying the core processes at this stage? Yes No Not reported Other
(a) Who was involved?
F) Were they used in order? Yes No Not reported Other
G) If not all core processes were used, what was the reason given?
3) What “quality-of-life” issues were identified in the needs assessment? (Impacts on life as a result of the health condition)
4) What was the “health problem” identified in the needs assessment? (Health problems that arise as a result of the behavioural risk factors)
5) Who was the “target population” identified in the needs assessment? (Can be identified before needs assessment)
A) Was the population targeted as a whole or a was an individual subgroup identified and selected? Population as a whole Subgroup Other
(a) What was the characteristic(s) of this subgroup that caused it to be selected? (E.g. age, gender, geographic location, education, cultural group, stage of development, stage of change , etc.)
6) Which of the following levels of environmental context were considered in the needs assessment:
A) Interpersonal? (Individuals or groups that have a close connection to the target population and can influence their health, e.g. family members, peers, healthcare professional)
B) Organisational? (Organisations with specific objectives with formal multilevel decision-making processes, e.g. schools, companies, clinics, hospitals)
C) Community? (Social groups with some commonality shared by individuals and may or may not have a geographic component)
D) Societal? (Larger groups, often geographical e.g. provinces, states, countries, or global corporations that can influence several aspects of the lives and development of their constituent systems)
(a) For all the above included environmental contexts, what definition was given to them?
7) Were environmental risk factors identified? Yes Yes, but not by name No Not reported Other
A) What factors were identified?
(a) Were the determinants (factors that modify the environmental risk factors, e.g. reasons why environmental agents create/maintain unhealthy environmental conditions for the target population) of these risk factors identified? Yes No Not reported Other
(i) What determinants were identified?
8) Were behavioural risk factors identified? Yes Yes, but not by name No Not reported Other
A) What factors were identified?
(a) Were the determinants (factors that modify the behavioural risk factors, e.g. why do members of the target population behave in a way that increases

their risk of a health problem?) of these risk factors identified? Yes No Not reported Other
(i) What determinants were identified?
9) What data sources were used for the needs assessment? (E.g. qualitative/quantitative formative research, archival data [e.g. census, statistics, public access information], empirical literature, etc.)
- Task 3: Describing the context for the intervention
1) Were the assets, capacities and abilities of the community around the target population assessed? Yes Yes, but not by name No Not reported Other
A) Which of the following assets were assessed ?
(a) Social? (social structures such as personal income, community groups, social cohesion, etc. that could support the program)
(b) Information? (existing communication channels that could be activated for the program)
(c) Policy/practice? (existing policies and practices that could be leveraged to support the program)
(d) Physical? (aspects of the natural or built environment that could be harnessed to support the program)
(e) Other
B) Was a setting for the program identified? Yes No Not reported Other
(a) What was the setting?
C) Was the community that the program would be provided in identified? Yes No Not reported Other
(a) What was the community?
- Task 4: Stating program goal
1) Were goals for the program identified? Yes No Not reported Other
A) What goals were set?
(a) How were these decided? (E.g. by greatest burden, by changeability or practicality, by rating of importance, etc.)
(b) What format did they take? (E.g. SMART, what, whom, how much, what time , etc.)

Step 2 – Program Outcomes and Objectives – Logic Model of Change
1) Was Step 2 included in the study? Yes No Not reported Other
2) Was the original work group involved at this stage? Yes No Not reported Other
A) If the work group changed, who was involved at this stage?
- Task 1: Stating behavioural and environmental outcomes (behaviours to be accomplished by individuals or environmental agents as a result of the program)
1) Were behavioural outcomes (what behaviours the individual needs to change/be added to achieve the program goal[s]) stated? (e.g. exercise 30 minutes a day) Yes Yes, but not by name No Not reported Other
A) What were the outcomes?
2) Were environmental outcomes (what behaviours the environmental agent needs to change/be added to achieve the program goal[s]) stated? Yes Yes, but not by name No Not reported Other
A) What were the outcomes?
B) At what levels were these stated for?
(a) Interpersonal? (Actions by social systems that change over time, such as families, schools, e.g. parents/caregivers support pre-schoolers to reduce sitting time)
(b) Organisational? (Norms, policies, practices, and facilities, e.g. the transport possible stroke victims to ER at highest priority)
(c) Community? (Large scale social structures, such as employment, housing, healthcare, recreational resources, health ordinances, and social problems like drug addiction and violence, e.g. off-premise alcohol outlets comply with underage drinking laws)
(d) Societal? (Legislation, enforcement, regulation, and resource allocation as well as policies, programs, facilities of large political and geographic groups, e.g. country wide indoor smoking ban)
- Task 2: Specifying performance objectives (what sub-behaviours do program participants or environmental agents need to do to achieve the behaviour change stated in the behavioural or environmental outcomes?)
1) Were performance objectives identified for each behavioural outcome? Yes Yes, but not by name No Not reported Other
A) Was the practicality of objectives considered? Yes Yes, but not by name No Not reported Other
B) Were any of the core processes used to identify the performance objectives? Yes Yes, but not by name No Not reported Other
(a) Which processes were used? Posing Questions Brainstorming/Free association Reviewing existing literature Applying appropriate theories Identifying and addressing the need for new research Completing and assessing a list of possible answers (Use Other to describe the process if not used by name)
(b) Who was involved in using the core processes?
(c) What theory/ies were used?
(d) Was new data required? Yes No Not reported Other
(i) If so, how was this gathered? (e.g. survey, questionnaire, focus groups, interviews, etc.)
(e) Was a multidisciplinary approach taken to applying the core processes at this stage? Yes No Not reported Other
(i) Who was involved?
(f) Were the core processes used in order? Yes No Not reported Other
(g) If not all core processes were used, what was the reason given?
C) Were the performance objectives validated? Yes No Not reported Other
(a) How? (e.g. surveying/interviewing potential program participants, searching empirical literature and theories, observation of behavioural outcomes, etc.)
2) Were performance objectives identified for each environmental outcome? Yes Yes, but not by name No Not reported Other
A) Was the environmental agent identified (or indicated if unknown at that time) for each objective? Yes No Not reported Other
(a) Who was/were the environmental agents identified?
B) Were any of the core processes used to identify the performance objectives? Yes Yes, but not by name No Not reported Other
(a) Which processes were used? Posing Questions Brainstorming/Free association Reviewing existing literature Applying appropriate theories Identifying and addressing the need for new research Completing and assessing a list of possible answers (Use Other to describe the process if not used by name)
(b) Who was involved in using the core processes?
(c) What theory/ies were used?
(d) Was new data required? Yes No Not reported Other
(i) If so, how was this gathered? (e.g. survey, questionnaire, focus groups, interviews, etc.)
(e) Was a multidisciplinary approach taken to applying the core processes at this stage? Yes No Not reported Other
(i) Who was involved?
(f) Were the core processes used in order? Yes No Not reported Other
(g) If not all core processes were used, what was the reason given?
C) Were the performance objectives validated? Yes No Not reported Other
(a) How? (e.g. surveying/interviewing potential environmental agents, searching empirical literature and theories, observation of behavioural outcomes, etc.)
- Task 3: Selecting personal determinants (factors that rest within the target population or environmental agents that are subject to their direct control or

influence , e.g. cognitive factors such as knowledge, attitudes, beliefs, values, self-efficacy, and expectation, and capabilities such as skills . Factors out with the individual's control are environmental conditions [see some of the above environmental outcomes from the organisational level and above])
1) Were personal determinants for behavioural performance objectives identified? Yes No Not reported Other
A) Were any of the core processes used to identify the determinants? Yes Yes, but not by name No Not reported Other
(a) Which processes were used? Posing Questions Brainstorming/Free association Reviewing existing literature Applying appropriate theories Identifying and addressing the need for new research Completing and assessing a list of possible answers (Use Other to describe the process if not used by name)
(b) Who was involved in using the core processes?
(c) What theory/ies were used?
(d) Was new data required? Yes No Not reported Other
(i) If so, how was this gathered? (e.g. survey, questionnaire, focus groups, interviews, etc.)
(e) Was a multidisciplinary approach taken to applying the core processes at this stage? Yes No Not reported Other
(f) Were the core processes used in order? Yes No Not reported Other
(g) If not all core processes were used, what was the reason given?
B) Were the determinants verified through discussion with the target population? Yes (part of the work group) Yes (outside of the work group) No Not reported Other
C) Were experts consulted on the theories for the specific behaviours in the target population? Yes (within the work group) Yes (out with the work group) No Not reported Other
(a) Who was consulted?
2) Were personal determinants for environmental performance objectives identified? Yes Yes, but not by name No Not reported Other
A) Were the core processes used to identify the determinants? Yes Yes, but not by name No Not reported Other
(a) Which processes were used? Posing Questions Brainstorming/Free association Reviewing existing literature Applying appropriate theories Identifying and addressing the need for new research Completing and assessing a list of possible answers (Use Other to describe the process if not used by name)
(b) Who was involved in using the core processes?
(c) What theory/ies were used?
(d) Was new data required? Yes No Not reported Other
(i) If so, how was this gathered? (e.g. survey, questionnaire, focus groups, interviews, etc.)
(e) Was a multidisciplinary approach taken to applying the core processes at this stage? Yes No Not reported Other
(i) Who was involved?
(f) Were the core processes used in order? Yes No Not reported Other
(g) If not all core processes were used, what was the reason given?
B) Were the determinants verified through discussion with key environmental agents? Yes No Not reported Other
3) Were the identified determinants rated by importance and changeability? Yes No Not reported Other
A) How were they rated? (e.g. use of existing evidence from literature, formative research, general behavioural change theory, or existing evidence to support a similar behaviour to rate each determinant by relevance and changeability)
- Task 4: Constructing matrices of change
1) Were matrices of change with populated change objectives constructed? Yes No Not reported Other
A) Were change objectives written with action words? Yes No Not reported Other
2) Which of the following environmental levels were they constructed for:
A) Individual
B) Interpersonal
C) Organisational
D) Community
E) Societal
3) Were different matrices created for different subgroups of the target population? Yes No Not reported Other
- Task 5: Creating a logic model of change
1) Was a logic model of change created? Yes No Not reported Other
A) Which model was used? (E.g. IM model)
- Evaluation:
1) Was the need for an evaluation plan identified at this stage? Yes No Not reported Other
2) What was identified to be measured in the evaluation? (E.g. behavioural and/or environmental outcomes, achievement of performance objectives, etc.)
3) Were change objectives used to create instruments to measure the determinants? (E.g. before and after testing of the change objectives under a determinant) Yes No Not reported Other

Step 3 – Program Design
1) Was Step 3 included in the study? Yes No Not reported Other
2) Was the original work group involved at this stage? Yes No Not reported Other
A) If the work group changed, who was involved at this stage?
3) How was creativity used at this stage?
- Task 1: Generating program themes, components, scope, and sequence
1) What approaches to idea generation were used? (E.g. brainstorming, lateral thinking, free association, literature review, core processes, formative research e.g. focus groups)
2) Was a program theme(s) (brand, slogan, acronym, stylisation, etc.) created? Yes Yes, but not by name No Not reported Other
A) Were any subthemes created? Yes Yes, but not by name No Not reported Other
3) Were the program components outlined? Yes No Not reported Other
4) Was the scope of the program reported? Yes No Not reported Other
5) Was the sequence of program delivery reported? Yes No Not reported Other
6) Was a description of every program interaction given? Yes No Not reported Other
A) Did this include a list of materials and staff required for each interaction? Yes No Not reported Other
7) Was the channel/s (mode of delivery of the program components, e.g. video, group discussion, lecture, etc.) of program delivery reported? Yes Yes, but not by name No Not reported Other
A) What was the channel/s?
B) How was this chosen? (E.g. theory/evidence-based, participant preference, etc.)
8) Was the vehicle/s (how the message of the program is packaged and delivered , e.g. social media, teacher, peer leader, community group) of program delivery reported? Yes Yes, but not by name No Not reported Other
A) What was the vehicle/s?
B) How was this chosen? (E.g. theory/evidence-based, participant preference, etc.)
- Task 2: Choosing theory- and evidence-based change methods (general techniques for influencing changes in determinants of behaviours of the target population or environmental agents) to address program objectives

1) Were change methods selected for all change objectives for the target population? (Each objective can have many methods or one method may satisfy many objectives) Yes Yes, but not by name No Not reported Other
A) Were any of the core processes (2), (3), and (4) used to identify and select the change methods? Yes Yes, but not by name No Not reported Other
(a) Which processes were used? Brainstorming/Free association Reviewing existing literature Applying appropriate theories (Use Other to describe the process if not used by name)
(b) Who was involved in using the core processes?
(c) What theory/ies were used?
(d) Was a multidisciplinary approach taken to applying the core processes at this stage? Yes No Not reported Other
(i) Who was involved?
(e) Were the core processes used in order? Yes No Not reported Other
(f) If not all core processes were used, what was the reason given?
B) Was the taxonomy of change methods created by Bartholomew et al. (2016) used to select the change methods? Yes No Not reported Other
C) Were the parameters (the conditions under which the methods are shown to be effective) for each method considered? Yes Yes, but not by name No Not reported Other
(a) Were the parameters linked to theoretical evidence? Yes No Not reported Other
(i) What theories?
2) Were change methods selected for all change objectives for the environmental agents? (Can have many methods for one objective or one method for many objectives) Yes Yes, but not by name No Not reported Other
A) Was the environmental agent identified? Yes Yes, but not by name No Not reported Other
B) Was a change agent linked to each environmental performance objective? Yes No Not reported Other
(a) Who was/were the agent?
C) At which environmental levels was this done?:
(a) Interpersonal
(b) Organisational
(c) Community
(d) Societal
D) Were any of the core processes (2), (3), and (4) used to identify and select the change methods? Yes Yes, but not by name No Not reported Other (Use Other to describe the process if not used by name)
(a) Which processes were used? Brainstorming/Free association Reviewing existing literature Applying appropriate theories (Use Other to describe the process if not used by name)
(b) Who was involved in using the core processes?
(c) What theory/ies were used?
(d) Was a multidisciplinary approach taken to applying the core processes at this stage? Yes No Not reported Other
(i) Who was involved?
(e) Were the core processes used in order? Yes No Not reported Other
(f) If not all core processes were used, what was the reason given?
E) Was the taxonomy of change methods created by Bartholomew et al. (2016) used to select the change methods? Yes No Not reported Other
F) Did method bundling occur? (Methods that can be applied to individuals are bundled together to affect change at an environmental level) Yes Yes, but not by name No Not reported Other
G) Were the parameters (the conditions under which the methods are shown to be effective) for each method considered? Yes Yes, but not by name No Not reported Other
(a) Were the parameters linked to theoretical evidence? Yes No Not reported Other
(i) What theories?
- Task 3: Moving from methods to applications
1) Were practical applications created for the change methods? Yes Yes, but not by name No Not reported Other
A) Were members the target population and potential program implementors included in the selecting or designing of the practical applications? Yes No Not reported Other
B) Were the characteristics of the target population considered when selecting or designing the practical applications? Yes No Not reported Other
C) Was the setting of the intervention considered when selecting or designing the practical applications? Yes No Not reported Other
D) Were practical applications considered in the context of the effective parameters of their relevant change method? Yes Yes, but not by name No Not reported Other
E) Was theory and empirical evidence used to help select or design the practical applications? Yes No Not reported Other
(a) What theories?
F) Was feasibility considered when selecting or designing the practical applications? Yes No Not reported Other
2) Were practical applications created for the change methods at each of the relevant environmental levels? Yes Yes, but not for all levels No Not reported Other
3) Were practical applications considered in the context of the effective parameters of their relevant change method? Yes Yes, but not by name No Not reported Other
4) Was theory and empirical evidence used to help select or design the practical applications? Yes No Not reported Other
A) What theories?
5) Was feasibility considered at this stage when selecting or designing the practical applications? Yes No Not reported Other
6) Were all the program objectives covered by at least one practical application? Yes No Not reported Other
7) Were all the methods and practical applications chosen reassessed against their relevant change objective at the end of this Step? Yes No Not reported Other
- Evaluation:
1) Was a process evaluation planned or conducted at this stage? (E.g. What was the strength of evidence supporting the choice of methods for their specific determinant and change objectives? Were the methods used within their parameters? Were the methods and parameters apparent in the applications that were chosen to reflect them?) Yes No Not reported Other

Step 4 – Program Production
1) Was Step 4 included in the study? Yes No Not reported Other
2) Was the original work group involved at this stage? Yes No Not reported Other
A) If the work group changed, who was involved at this stage?
3) Was the target population and the program setting considered when designing the program materials? Target population Program setting Both No Not reported Other
4) Were original materials or pre-existing materials used in this stage? Original Pre-existing
A) What pre-existing materials were used?
B) Were pre-existing materials used in whole or in part? Whole Part

C) How were pre-existing materials evaluated and validated for use in the program? (Usually, they are assessed against the program matrices, methods and practical applications)
(a) Were any changes made after the review? Yes No Not reported Other
D) Was the suitability of pre-exiting materials assessed? (E.g. using the Suitability Assessment of Materials framework) Yes No Not reported Other
E) Were materials (original and/or pre-existing) assessed in terms of showing non-stereotypical power and social relations? (E.g. only women providing care to children, assumptions on socioeconomic status, or gender role stereotypes) Yes No Not reported Other
5) Were creative consultants engaged in this stage? Yes No Not reported Other
6) Were the target population, potential program adopters (individuals responsible for total buy-in and assimilation of the program) and potential program implementers (individuals responsible for the setup of the program in the setting) involved at this stage? Target population Potential program adopters Potential program implementers No Not reported Other
- Task 1: Refining program structure and organisation
1) Was feasibility of the program assessed at this stage? Yes No Not reported Other
A) How was it assessed?
2) Was any budget and time constraints reported at this stage for development and/or implementation of the program? Yes No Not reported Other
A) Did the budget have any effect on the production of the program? Yes No Not reported Other
(a) How?
3) Was dosage of the program considered at this stage? Yes No Not reported Other
A) How was dosage determined?
(a) Did the dosage have any effect on the production of the program? Yes No Not reported Other
- Task 2: Preparing plans for program materials
1) Were program plans/design documents (documents that convey the intent of the work group to those who will write/select/design the content) prepared for all program materials? Yes No Not reported Other
A) Were the plans reassessed in the context of cultural relevance? Yes No Not reported Other
B) Was any formative research conducted to assess the characteristics of the intended participants' needs, cultural preferences, knowledge, attitudes, beliefs, and health literacy that relate to message, medium, and situation of the program? Yes No Not reported Other
C) Was any preproduction research conducted to assess the best method of intervention delivery? Yes No Not reported Other
(a) Was any preproduction testing used? Yes No Not reported Other
(i) If not, what reason was given?
D) Were any design documents written for community processes? (E.g. policy development, coalition building, etc.) Yes No Not reported Other
2) Was the availability of materials (e.g. quantity needed, ready in the timeframe, within budget, copyright issues/fee for use) assessed? Yes No Not reported Other
3) Was reading level considered? Yes No Not reported Other
A) Was the reading level of the target population established? Yes No Not reported Other
(a) If so, how? (E.g. Rapid Estimate of Adult Literacy in Medicine, Test of Functional Health Literacy in Adults)
B) Was the reading level of the material assessed? Yes No Not reported Other
(a) If so, how? (E.g. SMOG formula, Fry Readability Graph, Flesch Reading Ease score, Flesch-Kincaid grade level, Microsoft Word readability and level statistics, PMOST/KIRSCH document readability formula)
C) Was health literacy of the target population considered? Yes No Not reported Other
(a) If so, how?
- Task 3: Drafting messages, materials, and protocols
1) Were messages (promotional materials) drafted to operationalise each change method? Yes No Not reported Other
A) Did messages consider the demographic and/or clinical characteristics of the target population (these factors are usually identified in Step 1)? Yes No Not reported Other
2) Were considerations made to enhance cognitive processing (working memory)? (E.g. plan and limit number of concepts introduced per program module, match graphics to messages, use prior knowledge to fill in gaps, etc.) Yes Yes, but not by name No Not reported Other
3) Was a cultural perspective taken when writing the messages? (E.g. preferred communication styles, structure of arguments, use of words, standard of judging credibility , etc.) Yes No Not reported Other
A) Was this pretested? Yes No Not reported Other
(a) If not, what was the reason given?
4) Was a cultural perspective considered in the delivery of messages? Yes No Not reported Other
A) Was this pretested? Yes No Not reported Other
(a) If not, what was the reason given?
5) Was any translation of materials required? Yes No Not reported Other
6) Was an inclusive method of using medical terminology considered? Yes No Not reported Other
7) What program materials were produced? (E.g. visuals, narrative “print”, video, computer multimedia, etc.)
A) Were the program materials pretested? Yes No Not reported Other
(a) If not, what was the reason given?
- Task 4: Pretesting, pilot-testing, refining, and producing materials
1) Was pilot-testing (testing the program as it will be implemented) conducted? Yes No Not reported Other
A) How was pilot-testing conducted?
B) Was any feedback actioned on? Yes No Not reported Other
2) Were there parameters of the change methods for each practical application reassessed at this stage? Yes No Not reported Other
- Evaluation
1) Was any program evaluation included at this stage? (E.g. formative pretesting or pilot-testing or summative evaluation of acceptability and delivery of the program) Yes No Not reported Other
Step 5 – Program Implementation (Adoption, Implementation, and Maintenance) Plan
1) Was Step 5 included in the study? (I.e. was IM used to implement the program?) Yes No Not reported Other
2) Was an implementation intervention created for the program? Yes No Not reported Other
3) Was the original work group involved at this stage? Yes No Not reported Other
A) If the work group changed, who was involved at this stage?
B) Was a linkage system (way to assure collaborative communications between the program developer and the user group to promote program use) used at this stage? (E.g. adding new adopters and implementers, change agents or program champions) Yes No Not reported Other
4) Were any implementation science or resources used at this stage? (E.g. RE-AIM, Interactive Systems Framework, Consolidated Framework for Implementation Research) Yes No Not reported Other
- Task 1: Identifying program implementers
1) Was the organisation or setting for the program decided before development or at this stage? Before development At this stage Not reported Other
A) How were implementation partners recruited?
B) What type of organisation(s)/setting was used? (E.g. church, school, clinical practice, etc.)

(a) Why was this organisation(s)/setting chosen?
2) Were the following factors considered :
A) Who will decide to adopt and use the program?
B) Which stakeholders will decision makers need to consult?
C) Who will make resources available to implement the program?
D) Who will implement the program?
E) Will the program require different people to implement different components?
F) Who will ensure that the program continues as long as it is needed?
- Task 2: Stating outcomes and performance objectives for program use
1) Were program outcomes (statements on how an implementation intervention can achieve program adoption, implementation and maintenance) stated for adoption (a decision to use a new program)? (Usually worded: “[someone/ group] adopts the [innovative program] as indicated by [the evidence or document to indicate adoption]”) Yes Yes, but not by name No Not reported Other
A) What was the outcome(s)?
2) Were program outcomes stated for implementation (use of the program to a “fair trial point” or until evaluation)? (Usually worded: “the [organization or individual] will implement [innovative program] including use of [program components]” . May also include reference to methods for implementing “the essential program components with acceptable completeness, fidelity, and dose”) Yes Yes, but not by name No Not reported Other
A) What was the outcome(s)?
3) Were program outcomes stated for maintenance (the program is continued and becomes part of the normal practices and policies of the adopting organisation)? Yes Yes, but not by name No Not reported Other
A) What was the outcome(s)?
4) Were performance objectives (how the program outcomes can be actioned) stated for adoption? Yes Yes, but not by name No Not reported Other
5) Were performance objectives stated for implementation? Yes Yes, but not by name No Not reported Other
A) Were any additional frameworks used to guide implementation? (E.g. Consolidated Framework For Implementation Research or Interactive Systems Framework for Dissemination and Implementation) Yes No Not reported Other
B) Were any organisational theories or empirical literature used to guide implementation? Yes No Not reported Other
C) Where any of the following dimensions for implementation considered:
(a) Fidelity (accuracy of implementation)?
(b) Completeness (proportion of the intended program delivered)?
(c) Dose (amount of the program components participants receive)?
D) Were “essential components” for high levels of fidelity and completeness identified? Yes Yes, but not by name No Not reported Other
E) Were implementation performance objectives stated for:
(a) The adopter
(b) The program champion
(c) The program provider
F) Was any adaptation/reinvention (implementation options) built into the implementation process of the program? Yes Yes, but not by name No Not reported Other
(a) In what ways did program developers enable adaptation/reinvention?
6) Were performance objectives stated for maintenance? Yes Yes, but not by name No Not reported Other
A) Were any threats to or facilitators of maintenance identified? Yes Yes, but not by name No Not reported Other
(a) What were they?
B) Was a plan made to help maintain the program? Yes No Not reported Other
- Task 3: Constructing matrices of change objectives for implementation
1) Were matrices of change objectives for implementation reported? Yes No Not reported Other
A) Were determinants identified for adoption? Yes Yes, but not by name No Not reported Other
(a) What were they?
B) Were determinants identified for implementation? Yes Yes, but not by name No Not reported Other
(a) What were they?
C) Were determinants identified for maintenance? Yes Yes, but not by name No Not reported Other
(a) What were they?
D) Were the core processes used to select the determinants? Yes Yes, but not by name No Not reported Other
(a) Which processes were used? Posing Questions Brainstorming/Free association Reviewing existing literature Applying appropriate theories Identifying and addressing the need for new research Completing and assessing a list of possible answers (Use Other to describe the process if not used by name)
(b) Who was involved in using the core processes?
(c) What theory/ies were used?
(d) Was new data required? Yes No Not reported Other
(i) If so, how was this gathered? (e.g. survey, questionnaire, focus groups, interviews, etc.)
(e) Was a multidisciplinary approach taken to applying the core processes at this stage? Yes No Not reported Other
(i) Who was involved?
(f) Were the core processes used in order? Yes No Not reported Other
(g) If not all core processes were used, what was the reason given?
E) Were determinants organised and prioritised by importance (strength of association with program adoption and implementation) and changeability (how likely that an implementation intervention influences a change in the determinant)? Yes No Not reported Other
F) Were change objectives written? Yes No Not reported Other
- Task 4: Designing implementation interventions
1) Was brainstorming (or a similar method) used to create an initial list of implementation intervention methods? Yes (Brainstorming) Yes (Other method) No Not reported Other
A) Was theory and empirical literature used to refine the list of implementation intervention methods? Yes No Not reported Other
(a) What theories?
2) Was brainstorming (or similar method) used to create an initial list of practical applications for the implementation intervention methods? Yes (Brainstorming) Yes (Other method) No Not reported Other
A) Was theory and empirical literature used to refine the list of practical applications? Yes No Not reported Other
(a) What theories?
3) Was any taxonomy (such as the ones created by Bartholomew et al. 2016) used to identify any implementation intervention methods? Yes No Not reported Other
A) Which taxonomy/ies were used?
4) Were methods applied “At” the decision maker (direct changes to their behaviour) at the environmental level or “From” the decision maker (changes that the decision-maker can implement to affect a group) to the constituents of that level ? At From Not reported Other
5) Were any materials created to facilitate the implementation intervention? (E.g. materials to promote awareness, implementation manual, training

materials , etc.) Yes No Not reported Other
A) What was created?

Step 6 – Evaluation Plan
- Was Step 6 included in the study? Yes No Not reported Other
- Was an evaluation plan integrated from Step 1 of the intervention development process? (This may be answered by looking back at evaluation questions in previous sections) Yes No Not reported Other
- What was the purpose of the evaluation? (E.g. efficacy, effectiveness, quality improvement, knowledge generation, cost-benefit/effectiveness, etc.)
- Was the original work group involved at this stage? Yes No Not reported Other
o If the work group changed, who was involved at this stage? (E.g. policymakers and decision makers, program sponsors, evaluation sponsors, target population, program managers, program staff, contextual stakeholders, beneficiaries , etc.)
o Was stakeholder involvement measured? Yes No Not reported Other
 How? (E.g. early identification and involvement, planning for ongoing involvement, planning how to use evaluation data, presentation of results in multiple forms)
- Were reports on the evaluation tailored to different stakeholder groups and their interests? Yes No Not reported Other
- Were any conflicts of interest between evaluators and stakeholders reported? (E.g. bias) Yes No Not reported Other
- Task 1: Writing evaluation questions
1) Was an effect evaluation (outcome/impact evaluation) conducted? (E.g. comparing with or without the program, such as quality of life, behaviours, program objectives, etc.) Yes No Not reported Other
A) What outcomes were measured?
(a) How were these chosen? (E.g. limitation of evaluation resources, stakeholder's interest, evaluation purpose, etc.)
B) Was efficacy (measurement under ideal conditions) or effectiveness (measurement under real-world conditions) measured ? Efficacy Effectiveness
C) What questions were asked?
(a) How were these questions designed? (E.g. using a logic model)
2) Was a new logic model of change created with types of evaluation added? Yes No Not reported Other
3) Was a timeframe for expected effects established? (E.g. waiting for outcomes to develop, examining post-intervention behaviours, or after the duration of the intervention) Yes No Not reported Other
A) How?
B) If health changes were not expected or measured in the evaluation plan, was this justified? (E.g. that health changes will occur over a longer time because of the behaviour change introduced by the program) Yes No Not reported Other
4) Was a process evaluation conducted? Yes No Not reported Other
A) What program implementation questions were asked? (E.g. To what extent is the program being delivered to the persons for whom it was intended? How well does the delivery maintain fidelity to the program's original design? How do aspects of implementation explain results of an effect evaluation? Were theory- and evidence-based change methods appropriately operationalized in the program applications?)
B) Did the process evaluation assess:
(a) Program factors (suitability of program design)?
(b) Organisational factors (operationalisation in the chosen setting)?
(c) Implementation factors (suitability of implementation process)?
C) Was any evaluation data collected from the intervention group? Yes No Not reported Other
D) Which of the following were assessed :
(a) Context? (E.g. aspects of the larger social environment that may affect implementation)
(b) Reach? (E.g. the proportion of the intended audience to whom the program is actually delivered)
(c) Dose delivered? (E.g. the amount of intended units of each program component that is delivered)
(d) Dose received? (E.g. the extent to which participants engage with the program)
(e) Implementation? (E.g. the extent to which the program was implemented and received)
(f) Recruitment? (E.g. a description of the approach used to attract program participants)
(g) Fidelity? (E.g. the extent to which the intervention was delivered as intended)
(i) Were any barriers to fidelity identified?
(i) What were the barriers?
E) Were the methods and practical applications assessed in the context of intervention group feedback? Yes No Not reported Other
5) Was another kind of evaluation conducted? Yes No Not reported Other
A) What kind of evaluation was conducted?
- Task 2: Selecting and developing measures
1) Were any measures (device for quantifying or categorising an indicator) developed for the evaluation? Yes No Not reported Other
A) What measures were used?
B) Was any theory or empirical evidence used to select or develop the measures? Yes No Not reported Other
(a) What theories?
C) What indicators (data points that can be measured, e.g. days doing physical activity) were identified for each measure?
D) Was the validity of the measure assessed? Yes No Not reported Other
(a) How?
E) Was the reliability of the measure assessed? Yes No Not reported Other
(a) How?
2) Were any pre-existing measurement tools used in the evaluation? Yes No Not reported Other
A) What tools were used?
- Task 3: Specifying designs for process and effect evaluations
1) For process evaluations, was a quantitative or qualitative (or both) approach taken to the evaluation? Quantitative Qualitative Both Other
A) What study design was used to examine the process?
2) For process evaluations, were any analytical methods used? (E.g. web analytics) Yes No Not reported Other
3) For process evaluations, was a mediation (how was a program outcome achieved) or moderation (in what context of the program did the outcome occur) (or both) analysis conducted? Mediation Moderation Both Neither Not reported Other
4) For effect evaluations, were indicators of desired program effects compared with what happened before and after the program? Yes No Not reported Other
A) What was reported?
5) For effect evaluations, were any of the changes observed attributed to the intervention being evaluated? Yes No Not reported Other
A) What was reported?
6) For effect evaluations, what study design was used to examine the effect? (E.g. RCT, observational study, time-series study, non-random designs, etc.)
A) Was a mediation or moderation (or both) analysis conducted? Mediation Moderation Both Neither Not reported Other
- Task 4: Completing the evaluation plan

1) What was the evaluation sample size?
2) What data was to be collected?
3) Who was going to collect the data?
4) What resources were identified as required to conduct the evaluation?
5) How was the data going to be analysed?
6) How were the results going to be reported to stakeholders?
A) Were any reporting guidelines used? (E.g. CONSORT [CONsolidated Standards of Reporting Trials, for randomized trials], CARE [Consensus-based Clinical Case Reporting Guideline] for case reports; SRQR [Standards for reporting qualitative research] and COREQ [COnsolidated criteria for REporting Qualitative research], and SQUIRE [Standards for QUality Improvement in Reporting Excellence] for quality improvement studies)

Synthesis and Quality Assessment

In this section, you register the procedure for the review's synthesis: the procedure you designed to use the data that was extracted from each source to answer your research question(s). This often includes transforming the raw extracted data, verifying validity, applying predefined inference criteria, interpreting results, and presenting results. Additionally, you register procedures you designed to assess bias in individual sources and the synthesis itself.

Planned data transformations

The data extracted from the search will be visually presented in tables, graphs and diagrams. A descriptive summary will also be given for both the results of the extracted data on chronic conditions and on chronic pain. This will be followed by a discussion of the results, including patterns in the data in relation to the objectives of this review, comparing the operationalisation of IM by the authors of the reviewed studies with the protocol described in the IM text, limitations of the review, and recommendations for further research. A more detailed analysis of studies that developed interventions for chronic pain will be conducted, including, but not limited to the determinants and risk factors identified, the settings of the interventions, the behavioural and environmental outcomes identified, and the theories used to support the decisions made throughout the intervention development process.

Missing data

If required, authors of papers will be contacted to request missing or additional data.

Data validation

Not applicable

Quality assessment

Not applicable

Synthesis plan

Not applicable

Criteria for conclusions / inference criteria

Not applicable

Synthesist blinding

No applicable

Synthesis reliability

Not applicable

Synthesis reconciliation procedure

Not applicable

Publication bias analyses

Not applicable

Sensitivity analyses / robustness checks

Not applicable

Synthesis procedure justification

Not applicable

Synthesis data management and sharing

Not applicable

Miscellaneous synthesis details

Not applicable