Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Reporting the Use of Theory in Health Research: A Scoping Review of Existing Recommendations and Guidance

Amina El-Dous
Qatar University
Ahsan Sethi
Qatar University
Myriam Jaam
Qatar University
Muhammad Abdul Hadi
Qatar University
Khwlod Alnemer
Qatar University
Alaa Ali Sharafeldin
Qatar University
Zachariah Nazar
znazar@qu.edu.qa

Qatar University

Research Article

Keywords: Models, Theoretical, Research Design, Guidelines as Topic, Scoping Reviews as Topic, Reproducibility of Results.

Posted Date: November 11th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11226867/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License

Additional Declarations: No competing interests reported.

Reporting the Use of Theory in Health Research: A Scoping Review of Existing Recommendations and Guidance

Amina El-Dous[1,2] Ahsan Sethi[3], Myriam Jaam[4], Muhammad Abdul Hadi[4], Khwlod Alnemer[4], Alaa Ali Sharafeldin[4], Zachariah Nazar[4]*

1. QU Health, Qatar University, Doha. Qatar.

2. Department of Laboratory Medicine and Pathology, Hamad Medical Corporation, Doha, Qatar

3. Department of Public Health, College of Health Sciences, QU Health, Qatar University, Doha, Qatar

4. Department of Clinical Pharmacy and Practice, College of Pharmacy, QU Health, Qatar University, Doha, Qatar.

*Corresponding Author. E-mail: znazar@qu.edu.qa

Abstract

Background: The use of theory can strengthen health research by informing methodological decisions and interpretation of findings. However, inconsistent reporting can obscure how theory is selected, operationalised, and applied, limiting critical appraisal, reproducibility, and cumulative theory development. This scoping review aimed to identify and synthesise published recommendations for reporting the use of theory in health research, providing an evidence base for the future development of consensus-based reporting guidance.

Methods: A scoping review was conducted according to Joanna Briggs Institute methodology and reported in accordance with PRISMA-ScR. PubMed, Embase, CINAHL, and ERIC were searched, supplemented by backward citation searching and manual searching of the EQUATOR Network. Peer-reviewed English-language sources providing explicit or implicit recommendations for reporting theory use in health research were eligible; sources applying theory without providing reporting guidance were excluded. Records were screened independently by two reviewers, with disagreements resolved through consensus. Data were extracted by one reviewer and checked by a second. Reporting recommendations were classified as explicit or implicit and synthesised narratively to develop candidate reporting recommendations.

Results: Database searches identified 8,708 records, with two additional sources identified through supplementary searching. Eight sources met the eligibility criteria, yielding 92 relevant recommendations: 76 explicit and 16 implicit. Narrative synthesis generated 15 candidate reporting recommendations across three domains: Title and Abstract (n=3), Introduction and Methods (n=6), and Results and Discussion (n=6). Recommendations addressed theory identification and selection, justification, adaptation and limitations, operationalisation and measurement, integration into study design, interpretation of findings, contextual influences, and implications for theory, practice, and future research.

Conclusions: Existing recommendations for reporting theory use in health research are fragmented across disciplines and methodological contexts. This review consolidates these recommendations into 15 candidate reporting recommendations spanning the research process, providing an evidence-informed basis for the development of consensus-based reporting guidance. Such guidance has the potential to improve the transparency and consistency of theory reporting and enable clearer appraisal of how theory informs health research.

Keywords

Models, Theoretical; Research Design; Guidelines as Topic; Scoping Reviews as Topic; Reproducibility of Results.

Background

Theory can provide a systematic basis for understanding and explaining phenomena by specifying concepts, relationships, and assumptions that can inform how research questions are investigated and findings interpreted [1, 2]. Although the terms theory, model, theoretical framework, and conceptual framework are sometimes used interchangeably, they differ in purpose, scope, and level of abstraction [3, 4]. Broadly, theories seek to explain relationships among phenomena, models represent or organise concepts and their relationships, and theoretical or conceptual frameworks provide structures through which phenomena can be examined within a particular research context [3, 4]. For the purposes of this review, the term 'theory' is used broadly to encompass theories, theoretical frameworks, models, and conceptual frameworks when they inform the research process. Across these conceptual approaches, theory can strengthen the coherence and interpretability of research by making underlying assumptions and relationships explicit [1-2, 4]. It may inform intervention development, identification of relevant determinants or constructs, data collection and analysis, and interpretation of findings [1-2, 5-6]. Its contribution may be particularly important when investigating complex interventions and systems, where outcomes arise through interactions between mechanisms and contextual influences [7-9].

Realising these potential contributions depends not only on the appropriate use of theory but also on transparent reporting of how it has been applied. Adequate reporting enables readers to understand why a particular theory was selected, which theoretical constructs were considered, how these constructs informed methodological decisions, and how study findings relate to the theoretical assumptions underpinning the research [10-12]. Conversely, incomplete reporting makes it difficult to distinguish meaningful theoretical integration from superficial reference to theory and limits opportunities for critical appraisal, replication, evidence synthesis, and cumulative theory development [10-12].

Reviews across several areas of health research have identified inconsistent application and reporting of theory. A systematic review of health-behaviour research found that fewer than half of the studies reviewed used theory, with substantially fewer making extensive use of theory [13]. Similarly, Davies et al. identified limited theory use and poor justification of theoretical choices in guideline dissemination and implementation research [14]. Reviews of medication-adherence and digital-health interventions have also identified incomplete reporting of how theoretical constructs informed intervention development and limited evidence that theory was explicitly tested [13,16]. Michie and Prestwich (2010) developed the Theory Coding Scheme as a methodological tool to assess the extent to which behavioural interventions were theory-based, including whether theoretical constructs informed intervention design, were measured and tested, and whether findings were used to refine theory [10]. Collectively, this literature demonstrates that simply citing a theory provides insufficient information to determine how it informed the research process or how empirical findings were used to evaluate it.

Several reporting guidelines and checklists address aspects of theory reporting within particular research contexts. The Standards for Reporting Implementation Studies (StaRI) and Guidance for Reporting Intervention Development Studies in Health Research (GUIDED), for example, include recommendations concerning the theoretical or conceptual rationale underpinning implementation and intervention development, respectively [17-18]. More specifically, the Checklist for Theoretical Report in Epidemiological Studies (CRT-EE) was developed to improve the completeness and transparency of reporting theories and theoretical models in epidemiological research and comprises 15 items spanning the sections of a research article [19]. CRT-EE represents an important contribution, but its development and content are explicitly situated within epidemiological research. Several items are framed around epidemiological conventions, including the specification, measurement, analysis, and reporting of variables and their theoretically proposed relationships [19]. Its applicability to the different ways in which theory may be used across qualitative, quantitative, mixed-methods, implementation, and other health research traditions has therefore not been established.

More broadly, recommendations for reporting theory use remain dispersed across reporting guidelines, methodological papers, reviews, and discipline-specific literature, with differences in scope and intended application [3, 11-12, 20]. There is currently no consolidated set of reporting recommendations designed for application across the breadth of health research. Consequently, researchers lack common reporting expectations applicable across disciplines and study designs, while readers and reviewers may lack a consistent basis for critically appraising how theory has informed the research. This fragmentation also limits comparison, evidence synthesis, and cumulative theory development. Consolidating existing recommendations and establishing their relevance across health research is therefore an important step towards developing consensus-based, cross-disciplinary reporting guidance.

This scoping review aimed to identify and synthesise existing recommendations for reporting the use of theory in health research. Specifically, it sought to identify recommendations concerning the reporting of theory selection, application, operationalisation, evaluation, and interpretation across disciplines and study designs. The resulting synthesis was intended to provide an evidence-informed foundation for the subsequent development of consensus-based reporting guidance for theory use in health research.

Methods

Study design and protocol

This scoping review was conducted in accordance with the JBI methodology for scoping reviews [21] and reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) [22].

The review protocol was prospectively registered on the Open Science Framework (OSF) [23] (DOI: 10.17605/OSF.IO/Z4DNT).

Eligibility criteria

Eligibility criteria were developed using the JBI Population–Concept–Context (PCC) framework [21].

Population. Sources from disciplines and professional fields contributing to health research were eligible, including medicine, nursing, pharmacy, public health, psychology, allied health, and health professions education. Literature arising from academic, clinical, policy, or community-based research contexts was eligible where its primary focus related to human health or healthcare systems.

Concept. The concept of interest was the reporting of theory use in health research. For the purposes of this review, theory was operationally defined as an umbrella term encompassing theories, theoretical frameworks, models, and conceptual frameworks when these were used to inform the research process. Although these concepts are distinct, they were considered together because the terminology is used inconsistently and sometimes interchangeably across the health research literature [3-4]. Theory use could relate to any stage of the research process, including study design, intervention development, data collection, analysis, interpretation, or evaluation. Eligible sources were required to provide explicit or implicit recommendations, guidance, checklists, or structured criteria concerning how theory use should be reported or communicated. Sources that applied theory to a specific research question but did not provide recommendations or guidance relevant to reporting theory use were excluded.

Context. Sources were eligible across all geographical locations and health research settings, including clinical, community, organisational, policy, and educational contexts.

All study designs and article types capable of contributing relevant reporting recommendations were eligible. These included, but were not limited to, reporting guidelines and checklists, methodological studies and papers, expert commentary or consensus-based guidance, systematic and other evidence reviews, and empirical research evaluating the use or reporting of theory. Eligibility was therefore determined by the relevance of the source to the review concept rather than by study design.

Peer-reviewed publications in English were eligible. Electronic database searches were restricted to publications from 1 January 2015 to 18 October 2025 to focus the review on contemporary reporting recommendations and maintain a manageable search scope. This date restriction represented a deviation from the registered protocol, which had not specified a publication-date limit. To reduce the risk of excluding earlier influential guidance, supplementary citation searching and searching of the EQUATOR Network were not date-restricted.

Information sources and search strategy

A systematic literature search was conducted across PubMed, Embase, CINAHL, and ERIC, with the final searches conducted on 18 October 2025.

The search strategy was developed with input from an experienced librarian and iteratively refined by the research team. Controlled vocabulary, including Medical Subject Headings (MeSH) where applicable, was combined with free-text terms representing three principal concepts: *health research, theory use, and reporting guidance*. The search strategy was initially developed and pilot-tested in PubMed before being adapted to the syntax and controlled vocabulary of the remaining databases.

Search terms included combinations and variations of terms relating to *health research, theory, theoretical application, conceptual framework, model, reporting guideline, reporting checklist, reporting standard, reporting framework*, and related terminology. Searches were designed to identify relevant reporting recommendations irrespective of study design or publication type.

The complete search strategies for all databases, including search terms, Boolean operators, limits applied, search dates, and numbers of records retrieved, are provided in Additional File 1.

To identify additional eligible sources, backward citation searching of the reference lists of included articles was undertaken using Google Scholar. The EQUATOR Network database of health research reporting guidelines was also manually searched. These supplementary searches were not restricted by publication date.

Selection of sources of evidence

All records identified through the electronic database searches were imported into EndNote 21, where duplicates were identified and removed. The remaining records were subsequently uploaded to Rayyan for screening [24].

Study selection was undertaken in two stages: (1) title and abstract screening and (2) full-text assessment. Before formal screening commenced, the eligibility criteria were pilot-tested by the review team on a sample of three articles to establish a shared understanding of their interpretation and application.

Six reviewers participated in screening and were organised into three reviewer pairs (ZN/YM, AE/KA, and MJ/AS). Records were distributed between the three pairs, with each record independently assessed by both reviewers within the assigned pair. Reviewers were blinded to each other's screening decisions within Rayyan. Disagreements at either the title and abstract or full-text screening stage were resolved through discussion and consensus, with a third reviewer consulted where consensus could not be reached. Reasons for exclusion at the full-text stage were recorded. The complete study selection process is presented in a PRISMA-ScR flow diagram (Figure 1).

Data charting

A standardised data-charting form was developed a priori in Microsoft Excel and pilot-tested on three included sources.

Data were charted by one reviewer (AE) and subsequently checked for accuracy and completeness by a second reviewer (ZN). The reviewers resolved discrepancies through discussion and consensus.

Data charted from each included source included:

- bibliographic characteristics, including author and year of publication;
- country of origin;
- health research field or discipline;
- study aim or purpose;
- study methodology;
- characteristics and intended audience of the reporting recommendations;
- format of the reporting guidance, where applicable; and
- explicit or implicit recommendations concerning how the use of theory should be reported.

Reporting recommendations were classified as explicit where authors directly stated how theory use should be reported. Recommendations were classified as implicit where reporting guidance was not directly stated

as a recommendation but could be reasonably inferred from the authors' critique, appraisal, findings, or discussion of deficiencies in theory use or reporting.

Implicit recommendations were initially interpreted by AE and subsequently reviewed by ZN to ensure that the interpretation was supported by the source material. Disagreements were resolved through discussion, with a third reviewer consulted where required.

Critical appraisal of individual sources of evidence

Formal methodological quality or risk-of-bias assessment of included sources was not undertaken. Consistent with the purpose of this scoping review, the objective was to identify and map the breadth and content of available reporting recommendations rather than to determine intervention effectiveness or generate evidence statements based on methodological quality.

Data analysis and synthesis

Characteristics of the included sources were summarised descriptively using frequencies and narrative summaries, including publication year, geographical origin, health research discipline, methodological approach, and type of reporting guidance.

Extracted reporting recommendations were synthesised narratively, informed by established guidance for narrative synthesis [25], to identify common and distinct reporting concepts across the included sources and develop a consolidated set of candidate reporting recommendations for reporting theory use in health research. Both explicit recommendations and interpreted implicit recommendations were included in the synthesis.

The synthesis involved an iterative process of comparison, grouping, and refinement. Extracted recommendations were first examined to identify the underlying reporting concept addressed, including the selection, application, operationalisation, evaluation, or interpretation of theory. Recommendations addressing conceptually similar reporting requirements were grouped together and compared across sources. Overlapping or substantively equivalent recommendations were consolidated, while recommendations addressing distinct reporting requirements were retained separately. Where an extract addressed more than one reporting concept, it could contribute to more than one candidate reporting recommendation.

The resulting groupings were reviewed against the original extracts to ensure that the developing recommendations remained grounded in the source material. The scope and wording of each grouping were then refined and expressed as concise, action-oriented candidate reporting recommendations. Where recommendations originated from discipline- or design-specific contexts, wording was generalised only where the underlying reporting concept was not inherently dependent on the original disciplinary or methodological context. The candidate reporting recommendations were subsequently organised according to their anticipated location within a research manuscript: Title and Abstract; Introduction and Methods; and Results and Discussion.

The developing synthesis was reviewed and refined through discussion among the author team, with differences in interpretation or categorisation resolved through consensus. An audit trail documented the progression from the extracted source material to the final candidate reporting recommendations.

Results

Study selection

The database searches identified 8,708 records, with two additional records identified through supplementary searching: one through backward citation searching and one through manual searching of the EQUATOR Network. Following removal of 102 duplicates, 8,606 records underwent title and abstract screening, of which 8,547 were excluded. Of the 59 reports sought for retrieval from the database searches, two could not be retrieved, leaving 57 for full-text assessment. Both reports identified through supplementary searching were also assessed for eligibility. Of the 59 reports assessed in total, 51 were excluded, resulting in eight sources meeting the eligibility criteria and being included in the final synthesis (Figure 1).

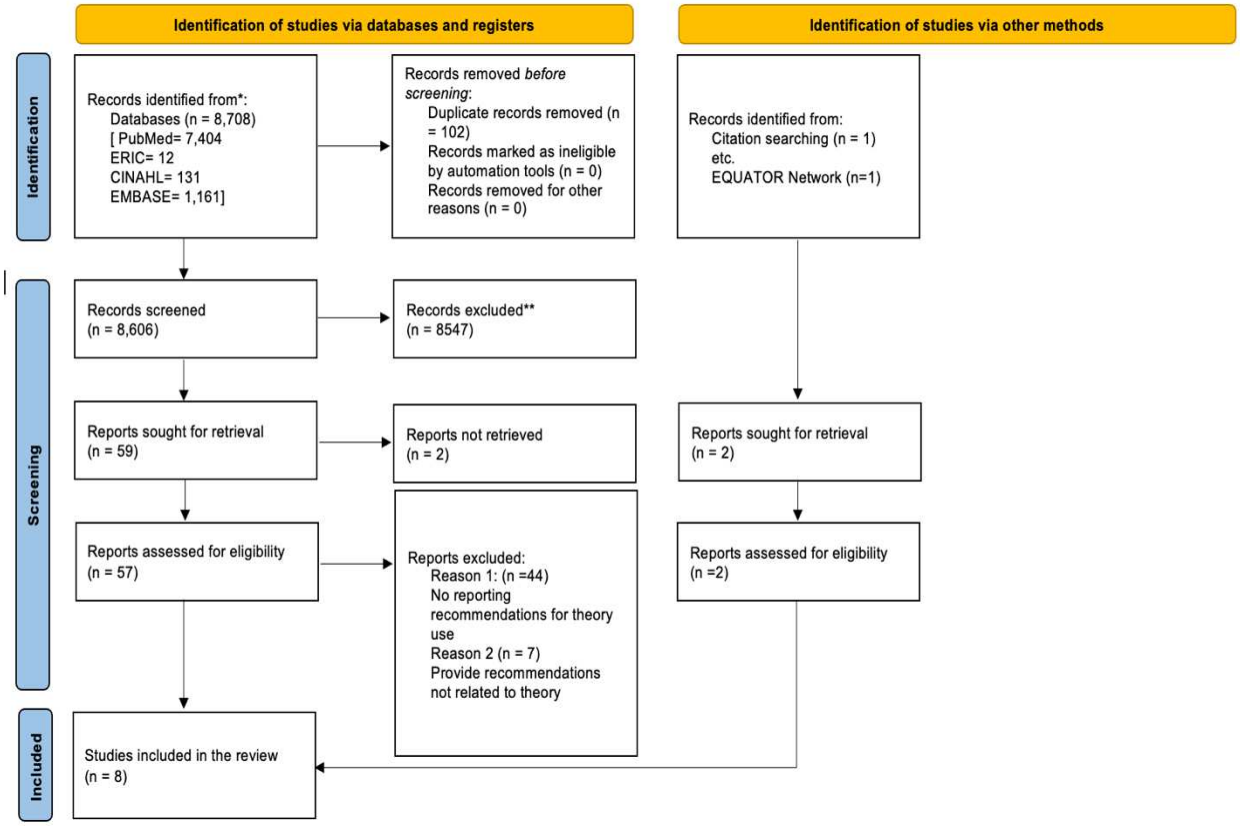


Fig. 1 PRISMA-ScR flow diagram of study selection

Characteristics of included sources

Table 1 presents the characteristics of the eight included sources. The eight sources were published between 2010 and 2022 and represented a range of disciplinary and methodological contexts. These included clinical and applied fields, public health and epidemiology, behavioural and psychological science, implementation science, and multidisciplinary health research methodology. Geographically, the sources originated

predominantly from the United Kingdom and Brazil, with additional contributions from Ireland, the United States, and Canada.

The sources also varied in purpose and methodological approach, encompassing reporting guidelines and checklists, methodological studies, systematic reviews, and expert or consensus-based guidance. Recommendations concerning theory reporting were therefore presented in different forms and with varying levels of specificity. Some sources provided explicit recommendations for reporting theory use, whereas others identified deficiencies, expectations, or methodological considerations from which reporting recommendations were derived implicitly.

Table 1. Characteristics of included sources

Source	Country	Field/Context	Study Design/Type	Focus relevant to theory reporting
Michie and Prestwich (2010) [10]	UK	Health psychology / behavioural science	Methodological study	Developed the Theory Coding Scheme to assess the extent and quality of theory use in behavioural interventions.
Patton et al. (2017) [15]	UK/Ireland	Pharmacy / medication adherence / behavioural medicine	Systematic review	Evaluated the extent to which psychological theory informed medication-adherence interventions in older adults with polypharmacy.
Guise et al. (2017) [26]	USA/Canada	Health research methodology / complex interventions	Reporting guideline – explanation and elaboration	Provided guidance for applying PRISMA-CI to reporting systematic reviews of complex interventions.
Pinnock et al. (2017) [18]	UK	Implementation science / health services research	Reporting guideline – explanation and elaboration	Developed and elaborated StaRI guidance for transparent reporting of implementation studies.
Duncan et al. (2020) [17]	UK	Multidisciplinary health research / intervention development	Consensus-based reporting guideline	Developed GUIDED to improve reporting of intervention development in health research.
Nakabayashi et al. (2020) [27]	Brazil	Nutrition / public health / health behaviour	Systematic review	Evaluated use of the Transtheoretical Model in nutritional interventions for adolescents.
de Souza Filho et al. (2021) [19]	Brazil	Epidemiology / public health	Reporting checklist – explanation and elaboration	Developed CRT-EE to improve reporting of theories and theoretical models in epidemiological studies.
Carpenter et al. (2022) [28]	USA	Geriatric medicine / implementation science	Narrative review / expert guidance	Examined implementation-science reporting challenges in aging research using StaRI and proposed practical guidance.

Extracted reporting recommendations

Across the eight included sources, 92 relevant recommendations were identified, comprising 76 explicit and 16 implicit reporting recommendations.

The distribution of extracted recommendations varied across the included sources, reflecting differences in their purpose and methodological approach. Some sources provided structured reporting criteria or recommendations, while others contributed recommendations through methodological evaluation of how theory had been selected, operationalised, applied, or evaluated.

Narrative synthesis of reporting recommendations

Narrative synthesis resulted in 15 candidate reporting recommendations, organised into three domains corresponding broadly to sections of a research manuscript: Title and Abstract (n=3), Introduction and Methods (n=6), and Results and Discussion (n=6) (Table 2).

In the Title and Abstract, recommendations focused on making theory use readily identifiable. Recommendations relating to the Introduction and Methods addressed description and justification of the selected theory, contextual considerations influencing theory selection, adaptations and limitations, operationalisation and measurement of constructs, and the influence of theory on study design. Within the Results and Discussion, recommendations addressed transparent presentation of theory-informed findings, assessment of findings against theoretical assumptions, implications for theory and practice, contextual influences on theory performance, and remaining uncertainties.

Table 2. Candidate reporting recommendations for reporting the use of theory in health research

Candidate reporting recommendation number	Manuscript Section	Reporting Recommendation
1	Title & Abstract	Indicate in the title that the study is theory-informed.
2	Title & Abstract	Indicate the name of the theory in the keywords.
3	Title & Abstract	State in the abstract that a theory was used and its intended purpose.
4	Introduction & Methods	Describe the theory or theories used, including their key constructs, and justify the use of single or multiple theories where applicable.
5	Introduction & Methods	Provide a clear, evidence-based justification for the selected theory, describing the contextual factors (e.g. social, cultural, or organisational) that shaped the choice, and justify the exclusion of relevant alternative theories where applicable.
6	Introduction & Methods	Describe any adaptations made to the theory, including modified or excluded constructs, and report any changes to the theory application during the research process with justification.
7	Introduction & Methods	Acknowledge known limitations of the theory, particularly in relation to the study context, and describe any mitigation strategies adopted where applicable.
8	Introduction & Methods	Describe how theoretical constructs were operationalised and measured, including evidence of validity and reliability where applicable.
9	Introduction & Methods	Explain how the theory informed the study design, including data collection and/or data analysis.
10	Results & Discussion	Where appropriate, include a figure illustrating the theory and provide supplementary materials (e.g., detailed analytical outputs or coding frameworks) to support complete and transparent reporting of how the theory was applied throughout the study.

11	Results & Discussion	Present findings in relation to the theoretical constructs.
12	Results & Discussion	Report whether the findings support, partially support, or contradict the theoretical assumptions, and describe how they contribute to refining, extending, or challenging the theory.
13	Results & Discussion	Describe the practical implications of theory-informed findings for health services, health outcomes, and research, and support the translation of these theoretical findings into practice with evidence.
14	Results & Discussion	Report contextual or other factors that influenced the theory's performance or effectiveness.
15	Results & Discussion	Identify remaining uncertainties and areas for future research related to the theory and its application.

Mapping the candidate reporting recommendations to their source literature demonstrated varying levels of convergence across the included sources. Table 3 maps each candidate reporting recommendation to its supporting source(s) and indicates whether the underlying recommendation was explicit (E) or implicit (I). Several candidate reporting recommendations were supported by multiple sources, whereas others arose from reporting considerations identified within individual sources.

Table 3. Mapping of candidate reporting recommendations to supporting sources and recommendation type (I: Implicit Reporting Recommendation. E: Explicit Reporting Recommendation)

Candidate reporting recommendations Number	**Study**							
	Michie and Prestwich, (2010)	Patton et al. (2017)	Guise et al. (2017)	Pinnock et al. (2017)	Duncan et al. (2020)	Nakabayashi et al. (2020)	de Souza Filho et al. (2021)	Carpenter et al. (2022)
1			I	I			E	
2				I				
3				I				
4	E	E						E
5			I		I		E	
6						I		
7	E							E
8	E	E						E
9	E				E			E
10				E			E	
11							E	
12		E						
13				I				
14						E		
15					I			

Discussion

This scoping review identified a small and heterogeneous body of literature addressing the reporting of theory use in health research. Narrative synthesis resulted in 15 candidate reporting recommendations spanning the research process, from identifying and justifying theory use to describing its application and

relating findings back to theoretical constructs and assumptions. Recommendations were dispersed across different disciplinary and methodological contexts, and the extent of support for individual recommendations varied considerably between sources. The findings therefore indicate not an absence of existing guidance, but a lack of consolidated guidance applicable across health research. This is consistent with previous calls for greater consistency in the application and reporting of theory [12].

The synthesis indicates that transparent theory reporting extends beyond simply identifying or citing a theory. The candidate reporting recommendations encompass justification of theory selection, description and operationalisation of constructs, adaptations and limitations, integration of theory into study design and analysis, and interpretation of findings in relation to theoretical propositions. Context also emerged as an important consideration, both in explaining theory selection and in interpreting how a theory operates when applied to particular populations and settings. This aligns with broader recognition that contextual influences are important when interpreting complex interventions and implementation processes [3, 8-9, 29]. Making such influences and any adaptations to theory explicit may help readers distinguish limitations of the theory itself from those arising through its application in a particular context.

The recommendations also emphasise the importance of relating empirical findings back to the theory that informed the research. Reporting whether findings support, challenge, refine, or extend theoretical propositions can help theory-informed studies contribute to cumulative theoretical development rather than using theory solely as an organising framework. This is consistent with arguments that cumulative knowledge development requires empirical findings to be linked explicitly to theoretical constructs and assumptions [30]. Transparent reporting of this relationship may therefore facilitate both critical appraisal of theory use within individual studies and subsequent refinement of theory across studies.

Existing reporting guidance provides important foundations but differs in scope and purpose. StaRI and GUIDED incorporate theory-related considerations within guidance for implementation studies and intervention development, respectively [17-18], while CRT-EE provides dedicated guidance for reporting theory within epidemiological research [19], and Sidani et al. [11] address reporting of intervention theory. The present review brings together recommendations across these and other methodological contexts; however, the resulting 15 recommendations should be regarded as candidate reporting recommendations rather than a final reporting checklist or standard. Their inclusion in the review reflects the available literature and does not establish their relevance, clarity, or applicability across all forms of health research. Further consensus-based evaluation is therefore required before they can form the basis of cross-disciplinary reporting guidance.

Strengths and limitations

A strength of this review was its systematic approach to identifying and synthesising reporting recommendations across diverse health research contexts. The review followed JBI methodology and PRISMA-ScR, incorporated dual independent screening, and used a structured process for identifying and verifying both explicit and implicit recommendations. Mapping each candidate reporting recommendation to its source literature also provided transparency regarding its evidential basis.

Several limitations should be acknowledged. Only eight sources met the eligibility criteria, and these represented a limited range of disciplinary and methodological contexts. Database searches were restricted to English-language publications from 2015 onwards, although supplementary searching was not date-restricted. Interpretation of implicit recommendations and consolidation of heterogeneous

recommendations necessarily involved researcher judgement, despite review and consensus procedures. Finally, the resulting recommendations are literature-derived candidates and have not yet undergone consensus evaluation for their relevance, clarity, completeness, or applicability across health research designs.

Future research

The candidate reporting recommendations should next undergo structured expert consensus to determine their relevance, clarity, completeness, and applicability across health disciplines and study designs. Consistent with guidance for developing health research reporting guidelines [31], this should be followed by refinement and pilot testing before any resulting guidance is recommended for wider use. Subsequent research should evaluate its usability and its effect on the completeness and transparency of theory reporting.

Conclusion

Existing recommendations for reporting theory use in health research are fragmented across disciplinary and methodological contexts. This review consolidated these recommendations into 15 literature-derived candidate reporting recommendations spanning the research process. These candidates are not intended as a final reporting checklist; rather, they provide an evidence-informed foundation for subsequent consensus, refinement, and testing of cross-disciplinary guidance for reporting theory use in health research.

Abbreviations

CRT-EE: Checklist for Theoretical Report in Epidemiological Studies

EQUATOR: Enhancing the QUAlity and Transparency Of health Research

GUIDED: Guidance for Reporting Intervention Development Studies in Health Research

JBI: Joanna Briggs Institute

OSF: Open Science Framework

PCC: Population–Concept–Context

PRISMA-ScR: Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews

StaRI: Standards for Reporting Implementation Studies

Additional file: Additional file 1 (.docx): Complete database search strategies. Search strategies for PubMed, Embase, CINAHL and ERIC, including search terms, Boolean operators, limits, search dates and numbers of records retrieved.

Statements & Declarations

Ethics approval and consent to participate: Not applicable. This study did not involve human participants, human data, human tissue, or animals.

Consent for publication: Not applicable.

Availability of data and materials: The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request.

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

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Authors' contributions: ZN conceived the study. ZN, AS, MEJ and MAH contributed to the study design. ZN, AS, MAH, MEJ, AED, AAS and KA contributed to data acquisition, analysis and interpretation. ZN, AS, MAH, AED, AAS and KA contributed to drafting or substantively revising the manuscript. All authors read and approved the final manuscript.

Acknowledgements: Open Access funding provided by Qatar University.

Authors' information: Not applicable.

Clinical trial number: not applicable.

References

1. Davidoff F, Dixon-Woods M, Leviton L, Michie S. Demystifying theory and its use in improvement. BMJ Qual Saf. 2015;24(3):228–38. doi:10.1136/bmjqs-2014-003627.
2. Reeves S, Albert M, Kuper A, Hodges BD. Why use theories in qualitative research? BMJ. 2008;337:a949. doi:10.1136/bmj.a949.
3. Nilsen P. Making sense of implementation theories, models and frameworks. Implement Sci. 2015;10:53. doi:10.1186/s13012-015-0242-0.
4. Varpio L, Paradis E, Uijtdehaage S, Young M. The distinctions between theory, theoretical framework, and conceptual framework. Acad Med. 2020;95(7):989–94. doi:10.1097/ACM.0000000000003075.
5. Eccles M, Grimshaw J, Walker A, Johnston M, Pitts N. Changing the behavior of healthcare professionals: the use of theory in promoting the uptake of research findings. J Clin Epidemiol. 2005;58(2):107–12. doi:10.1016/j.jclinepi.2004.09.002.
6. Glanz K, Bishop DB. The role of behavioral science theory in development and implementation of public health interventions. Annu Rev Public Health. 2010;31:399–418. doi:10.1146/annurev.publhealth.012809.103604.
7. Hawe P, Shiell A, Riley T. Theorising interventions as events in systems. Am J Community Psychol. 2009;43(3–4):267–76. doi:10.1007/s10464-009-9229-9.
8. Moore GF, Audrey S, Barker M, Bond L, Bonell C, Hardeman W, et al. Process evaluation of complex interventions: Medical Research Council guidance. BMJ. 2015;350:h1258. doi:10.1136/bmj.h1258.
9. Skivington K, Matthews L, Simpson SA, Craig P, Baird J, Blazeby JM, et al. A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance. BMJ. 2021;374:n2061. doi:10.1136/bmj.n2061.
10. Michie S, Prestwich A. Are interventions theory-based? Development of a Theory Coding Scheme. Health Psychol. 2010;29(1):1–8. doi:10.1037/a0016939.
11. Sidani S, Fox M, El-Masri MM. Guidance for the reporting of an intervention's theory. Res Theory Nurs Pract. 2020;34(1):35–48. doi:10.1891/1541-6577.34.1.35.
12. Willmott T, Rundle-Thiele S. Are we speaking the same language? Call for action to improve theory application and reporting in behaviour change research. BMC Public Health. 2021;21:479. doi:10.1186/s12889-021-10541-1.
13. Painter JE, Borba CPC, Hynes M, Mays D, Glanz K. The use of theory in health behavior research from 2000 to 2005: a systematic review. Ann Behav Med. 2008;35(3):358–62. doi:10.1007/s12160-008-9042-y.
14. Davies P, Walker AE, Grimshaw JM. A systematic review of the use of theory in the design of guideline dissemination and implementation strategies and interpretation of the results of rigorous evaluations. Implement Sci. 2010;5:14. doi:10.1186/1748-5908-5-14.
15. Patton DE, Hughes CM, Cadogan CA, Ryan CA. Theory-based interventions to improve medication adherence in older adults prescribed polypharmacy: a systematic review. Drugs Aging. 2017;34(2):97–113. doi:10.1007/s40266-016-0426-6.
16. Willmott T, Pang B, Rundle-Thiele S, Badejo A. Reported theory use in electronic health weight management interventions targeting young adults: a systematic review. Health Psychol Rev. 2019;13(3):295–317. doi:10.1080/17437199.2019.1625280.

17. Duncan E, O'Cathain A, Rousseau N, Croot L, Sworn K, Turner KM, et al. Guidance for reporting intervention development studies in health research (GUIDED): an evidence-based consensus study. BMJ Open. 2020;10(4):e033516. doi:10.1136/bmjopen-2019-033516.
18. Pinnock H, Barwick M, Carpenter CR, Eldridge S, Grandes G, Griffiths CJ, et al. Standards for Reporting Implementation Studies (StaRI) Statement. BMJ. 2017;356:i6795. doi:10.1136/bmj.i6795.
19. de Souza Filho BAB, Tritany EF, Struchiner CJ. Checklist for Theoretical Report in Epidemiological Studies (CRT-EE): explanation and elaboration. Physis. 2021;31(1):e310124. doi:10.1590/S0103-73312021310124.
20. Liang L, Bernhardsson S, Vernooij RWM, Armstrong MJ, Bussières A, Brouwers MC, et al. Use of theory to plan or evaluate guideline implementation among physicians: a scoping review. Implement Sci. 2017;12:26. doi:10.1186/s13012-017-0557-0.
21. Peters MDJ, Marnie C, Tricco AC, Pollock D, Munn Z, Alexander L, et al. Updated methodological guidance for the conduct of scoping reviews. JBI Evid Synth. 2020;18(10):2119–26. doi:10.11124/JBIES-20-00167.
22. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): checklist and explanation. Ann Intern Med. 2018;169(7):467–73. doi:10.7326/M18-0850.
23. Nazar Z. Reporting recommendations for the use of theory in health research: a scoping review protocol [pre-registration]. OSF Registries. 2024. doi:10.17605/OSF.IO/Z4DNT.
24. Ouzzani M, Hammady H, Fedorowicz Z, Elmagarmid A. Rayyan—a web and mobile app for systematic reviews. Syst Rev. 2016;5:210. doi:10.1186/s13643-016-0384-4.
25. Popay J, Roberts H, Sowden A, Petticrew M, Arai L, Rodgers M, et al. Guidance on the conduct of narrative synthesis in systematic reviews: a product from the ESRC Methods Programme. Lancaster: Lancaster University; 2006.
26. Guise JM, Butler M, Chang C, Viswanathan M, Pigott T, Tugwell P, et al. AHRQ series on complex intervention systematic reviews—paper 7: PRISMA-CI elaboration and explanation. J Clin Epidemiol. 2017;90:51–8. doi:10.1016/j.jclinepi.2017.06.017.
27. Nakabayashi J, Melo GR, Toral N. Transtheoretical model-based nutritional interventions in adolescents: a systematic review. BMC Public Health. 2020;20:1543. doi:10.1186/s12889-020-09643-z.
28. Carpenter CR, Southerland LT, Lucey BP, Prusaczyk B. Around the EQUATOR with clinician-scientists transdisciplinary aging research (Clin-STAR) principles: implementation science challenges and opportunities. J Am Geriatr Soc. 2022;70(12):3620–30. doi:10.1111/jgs.17993.
29. Bauer MS, Kirchner J. Implementation science: what is it and why should I care? Psychiatry Res. 2020;283:112376. doi:10.1016/j.psychres.2019.04.025.
30. Michie S, Johnston M. Theories and techniques of behaviour change: developing a cumulative science of behaviour change. Health Psychol Rev. 2012;6(1):1–6. doi:10.1080/17437199.2012.654964.
31. Moher D, Schulz KF, Simera I, Altman DG. Guidance for developers of health research reporting guidelines. PLoS Med. 2010;7(2):e1000217. doi:10.1371/journal.pmed.1000217.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- AdditionalFile1.docx