Safety culture interventions and implementation strategies used in health care settings: A scoping review protocol

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Abstract

Objective: This scoping review aims to provide a comprehensive overview of interventions and implementation strategies used to improve patient safety culture across various health care settings.

Introduction: Safety culture is crucial for to maintaining safe health care systems for both patients and staff. Sustainable implementation of interventions to strengthen safety culture requires considering both the selected interventions themselves and the implementation strategies. There are reviews available on interventions aimed at improving safety culture in different health care settings, yet an overview of the use of implementation strategies is missing.

Inclusion criteria: This scoping review will include studies reporting interventions and the implementation strategies aimed at improving safety culture in health care settings. We will include studies that report on safety culture from the perspective of health care professionals providing care in any health care setting. Studies with randomized controlled trials (RCTs), controlled trails, quasi- experimental studies, cohort studies and mixed-method designs published since 2000 will be included.

Methods: The scoping review will follow the Joanna Briggs Institute (JBI) methodology for scoping reviews. We will systematically search MEDLINE/PubMed, CINAHL, Embase/Ovid and Web of Science. Additionally, we will conduct backward/forward citation tracking of the included studies to identify further relevant articles. Identified studies will be independently screened by two reviewers against the eligibility criteria. Findings will be mapped and described in narrative and tabular format.

Keywords

Interventions; implementation strategies; health care settings; safety culture

Introduction

The recognition of safety culture as a critical, ethical, economic, and public health issue has grown substantially in response to influential reports such as "To Err is Human" [1] and the recent COVID-19 pandemic [2]. In OECD countries, approximately 15% of health care spending is attributed to unsafe care resulting in unintended harm to patients [2]. Consequently, the importance of fostering a safety culture within health care systems, as highlighted by the World Health Organization's Global Patient Safety Action Plan, has become increasingly prominent. Understanding the concept of safety culture is essential in promoting a culture of safety within health care organizations [3]. Safety culture refers to how individuals and organizations behave based on shared beliefs and perceptions. It consists of three layers: the core layer represents the fundamental principles of safety, the middle layer includes values, beliefs, and attitudes, and the outer layer shows the behavioral expressions of the underlying safety culture [4, 5]. When developing strategies to enhance safety culture in health care settings, it is important to consider the different layers of safety culture.

Effective implementation of interventions to strengthen safety culture requires considering both the selected interventions themselves and the implementation strategies [6]. Implementation science plays a crucial role in supporting the systematic incorporation of evidence-based interventions into health care practice and policy, thereby bridging the gap between knowledge and action and addressing barriers that may hinder the successful implementation of such interventions [7].

A theory-based context analysis and tailored implementation strategies are essential for the success and sustainability of safety culture enhancement initiatives within health care systems. As a result, these strategies insures that interventions are adapted to the respective context and provide guidance for the adoption and sustainability of programs [8, 9]. Ultimately, effective implementation strategies play a key role in determining the success or failure of evidence-based practices aimed at enhancing safety culture in health care settings.

While there are reviews that have reported interventions to improve patient culture in several health care settings [10–12], an overview of implementation strategies to improve safety culture is missing. This underpins the need to better understand which

implementation strategies were effectively used in different programs to improve safety culture in health care settings [6].

Review question

This scoping review aims to provide a comprehensive overview of implementation strategies of interventions used to improve patient safety culture in various health care settings, contexts and target groups, including information on their effectiveness. The review is guided by the following research questions:

- Which interventions are used to improve safety culture in health care settings and target groups and how effective are they?
- Which strategies are described to implement complex interventions to improve safety culture in major health care settings (e.g. hospital, psychiatric hospitals, nursing homes, home care/primary care) and various contexts and target groups?
- What is the impact / effectiveness of these implementation strategies (e.g. implementation outcomes, feasibility, acceptability)?
- What are the barriers and facilitators to the implementation of safety culture improvement interventions?
- Do barriers and facilitators vary among interventions and across diverse settings and target groups?

Eligibility criteria

Participants

We will include studies involving managers, front line staff of all categories, clients/patients/habitants, non-clinician hospital staff.

Concept

This scoping review will include studies reporting interventions and their implementation strategies aiming to improve safety culture as primary or secondary ortcome at the macro (e.g., financial model for nurse experts/ care model, regulation

of hospitalisations), meso (e.g., preparatory coaching to help health care organisations to introduce an intervention), or micro level (e.g., teaching individual health care professionals to reflect on influencing factors on safety culture) in health care settings.

Context

We will include studies that report safety culture, for example measured with safety climate scales, from perspective of health care professionals providing care in any health care setting.

Types of sources

This scoping review will include randomized controlled trials (RCTs), controlled trails, quasi- experimental studies, cohort studies and mixed-method studies published since 2000.

Methods

The proposed scoping review will be conducted in accordance with the JBI methodology for scoping reviews [13].

Search strategy

The search strategy will aim to locate both published and unpublished studies. An initial limited search of MEDLINE/PubMed was undertaken to identify articles on interventions to improve safety culture. The text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles were used to develop a full search strategy for MEDLINE/PubMed (see Appendix A). The initial search strategy was revised with the support of an information specialist. The search strategy will be adapted for the other databases using Polyglot Search Translator (https://sr-accelerator.com/#/polyglot) and through manual adjustments. We will search for evidence in the following electronic databases: Medical Literature Analysis and Retrieval System Online (MEDLINE/PubMed), Cumulative Index to Nursing and Allied Health Literature (CINAHL), EMBASE via Ovid, and Web of Science. Snowballing through backward and forward citation tracking of the included

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studies will be used to search for additional studies reporting further information about the intervention or the implementation strategies.

Study selection

All identified studies will be uploaded into Covidence [14]. After duplicate removal, two researchers will independently screen titles and abstracts for their eligibility. Potentially relevant citations will be retrieved in full and screened in detail for their eligibility by two independent reviewers. Potential disagreement at any stage of the selection process will be resolved by discussion with a third, more senior researcher. To manage the references, we will use Zotero [15].

Data Extraction

Data extraction from the previously included studies will be conducted in Covidence [14] by a primary reviewer and checked by a secondary reviewer. Extracted information will include bibliographic data, study design, objectives/purposes, health care setting, target groups, context factors, intervention, implementation strategies, main findings regarding ingervention (e.g. change of culture, effectiveness, effect sizes, safety culture dimensions) and implementation (e.g. implementation outcomes, facilitators and barriers).

The extraction form will be piloted and adapted with the first 5 studies. All decision steps and modifications to the initial data extraction form will be documented and reported in the scoping review.

Assessment of study quality

We will follow TREND statement (Transparent Reporting of Evaluations with Non-randomized Designs) [16] to assess the included studies.

Data Analysis and Presentation

According to PRISMA for Scoping Reviews (PRISMA-ScR) [17], we will used a flow chart to summarize the data collection process and justify the number of included and excluded studies from this review. We will conduct a descriptive synthesis of the studies found. Data will be presented in tabular form. A narrative summary will accompany the tabulated results.

The themes for thematic analysis will be related to:

- Interventions
- Implementation strategies
- Settings, target groups
- Context factors
- Instruments to measure safety culture
- Barriers and facilitators
- Safety culture dimensions [20], e.g. leadership; perceptions of safety; teamwork and collaboration; safety systems; prioritization of safety; resources and constraints; reporting and just culture; openness; learning and improvement; awareness of human limits; and wellbeing

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Conflicts of interest

There is no conflict of interest for this proposed scoping review.

Dissemination

The results of this literature evaluation will be reported to the EQK and are planned to be published in a suitable scientific journal.

References

1. Institute of Medicine (2000) To Err Is Human: Building a Safer Health System. 9728

2. de Bienassis K, Klazinga NS (2022) Developing international benchmarks of patient safety culture in hospital care: Findings of the OECD patient safety culture pilot data collection and considerations for future work. https://doi.org/10.1787/95ae65a3-en

3. World Health Organization (2021) Global patient safety action plan 2021–2030: towards eliminating avoidable harm in health care. Geneva

4. Guldenmund FW (2000) The nature of safety culture: a review of theory and research. Saf Sci 34:215–257

5. Casey T, Griffin MA, Flatau Harrison H, Neal A (2017) Safety climate and culture: Integrating psychological and systems perspectives. J Occup Health Psychol 22:341–353

6. Curran GM (2020) Implementation science made too simple: a teaching tool. Implement Sci Commun 1:27

7. University of Washing What is Implementation Science?

8. Rabin BA, Brownson RC, Haire-Joshu D, Kreuter MW, Weaver NL (2008) A Glossary for Dissemination and Implementation Research in Health. J Public Health Manag Pract 14:117–123

9. Wolfenden L, Foy R, Presseau J, et al (2021) Designing and undertaking randomised implementation trials: guide for researchers. BMJ m3721

10. Esmaeilzadeh S, Lane CM, Gerberi DJ, Wakeam E, Pickering BW, Herasevich V, Hyder JA (2022) Improving In-Hospital Patient Rescue: What Are Studies on Early Warning Scores Missing? A Scoping Review. Crit Care Explor 4:e0644

11. Sacks GD, Shannon EM, Dawes AJ, Rollo JC, Nguyen DK, Russell MM, Ko CY, Maggard-Gibbons MA (2015) Teamwork, communication and safety climate: a systematic review of interventions to improve surgical culture. BMJ Qual Saf 24:458–467

12. Neyens JC, Van Haastregt JC, Dijcks BP, Martens M, Van Den Heuvel WJ, De Witte LP, Schols JM (2011) Effectiveness and Implementation Aspects of Interventions for Preventing Falls in Elderly People in Long-Term Care Facilities: A Systematic Review of RCTs. J Am Med Dir Assoc 12:410–425

13. Peters MD, Godfrey C, McInerney P, Munn Z, Tricco AC, Khalil H (2024) Scoping reviews. JBI Man Evid Synth. https://doi.org/10.46658/JBIMES-24-09

14. Veritas Health Innovation Covidence systematic review software.

15. Corporation for Digital Scholarship (2024) Zotero.

16. Des Jarlais DC, Lyles C, Crepaz N, TREND Group (2004) Improving the reporting quality of nonrandomized evaluations of behavioral and public health interventions: the TREND statement. Am J Public Health 94:361–366

17. Tricco AC, Langlois EtienneV, Straus SE, Alliance for Health Policy and Systems Research, World Health Organization (2017) Rapid reviews to strengthen health policy and systems: a practical guide. World Health Organization, Geneva

18. Bundesamt für Gesundheit BAG Eidgenössische Qualitätskommission (EQK). https://www.bag.admin.ch/bag/de/home/das-bag/organisation/ausserparlamentarische-kommissionen/eidgenoessische-qualitaetskommission-eqk.html. Accessed 8 May 2024

20. Churruca K, Ellis LA, Pomare C, Hogden A, Bierbaum M, Long JC, Olekalns A, Braithwaite J. Dimensions of safety culture: a systematic review of quantitative, qualitative and mixed methods for assessing safety culture in hospitals. BMJ Open. 2021 Jul 27;11(7):e043982. doi: 10.1136/bmjopen-2020-043982. PMID: 34315788; PMCID: PMC8317080

Appendix

Table A1. Search string for MEDLINE/PubMed

Block A (safety culture/climate)	("safety management"[MeSH Terms:noexp] OR ("organizational culture"[MeSH Terms] AND ("safety"[MeSH Terms:noexp] OR "patient safety"[MeSH Terms])) OR "safety culture"[Title/Abstract] OR "safety climate"[Title/Abstract] OR "culture of safety"[Title/Abstract] OR "safety attitude"[Title/Abstract] OR "safety attitudes"[Title/Abstract] OR "safety management"[Title/Abstract] OR "positive safety culture"[Title/Abstract] OR "just culture"[Title/Abstract] OR "safety checklist"[Title/Abstract])
Block B (implementation initiatives)	("Implementation Science"[MeSH Terms] OR "implementation*" [Title/Abstract] OR "initiativ*" [Title/Abstract] OR "Quality improvement" [MeSH Terms] OR "quality improvement*" [Title/Abstract])
Block C (study types)	("Clinical Trials as Topic"[MeSH Terms] OR "Non-Randomized Controlled Trials as Topic"[MeSH Terms] OR "Randomized Controlled Trials as Topic"[MeSH Terms] OR "randomised"[Title/Abstract] OR "randomized"[Title/Abstract] OR "quasi experiment*"[Title/Abstract] OR "quasiexperiment*"[Title/Abstract] OR "time series"[Title/Abstract] OR "effect*"[Title/Abstract] OR "impact"[Title/Abstract])
Combination	(Block A) AND (Block B) AND (Block C)
Filter: Publication year	(2000:2024[pdat])