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Comprehensive Conceptual Framework for Translating Implementation Science towards Sustainability: A Systematic Narrative Review

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Introduction

- A large number of evidence-based interventions remain underused
- Very few interventions are sustainable in a real-world setting
- Struggling to understand the nature and scope of implementation science
- One major reason is the absence of a ‘comprehensive’ conceptual framework – a pathway from innovative ‘science’ into practice

Introduction

- A number of conceptual frameworks in implementation science available
- The existing frameworks can be clarified into three groups:
 - Describing and/or guiding the process of translating research into practice
 - Understanding and/or explaining what influences implementation outcomes
 - Evaluating implementation
- Scaling up and sustainability of implementation are essential components and missing in many frameworks



Objective

To identify a comprehensive conceptual framework that can be applied to a real world health intervention by conducting a systematic narrative review of relevant literature from implementation science theory and framework

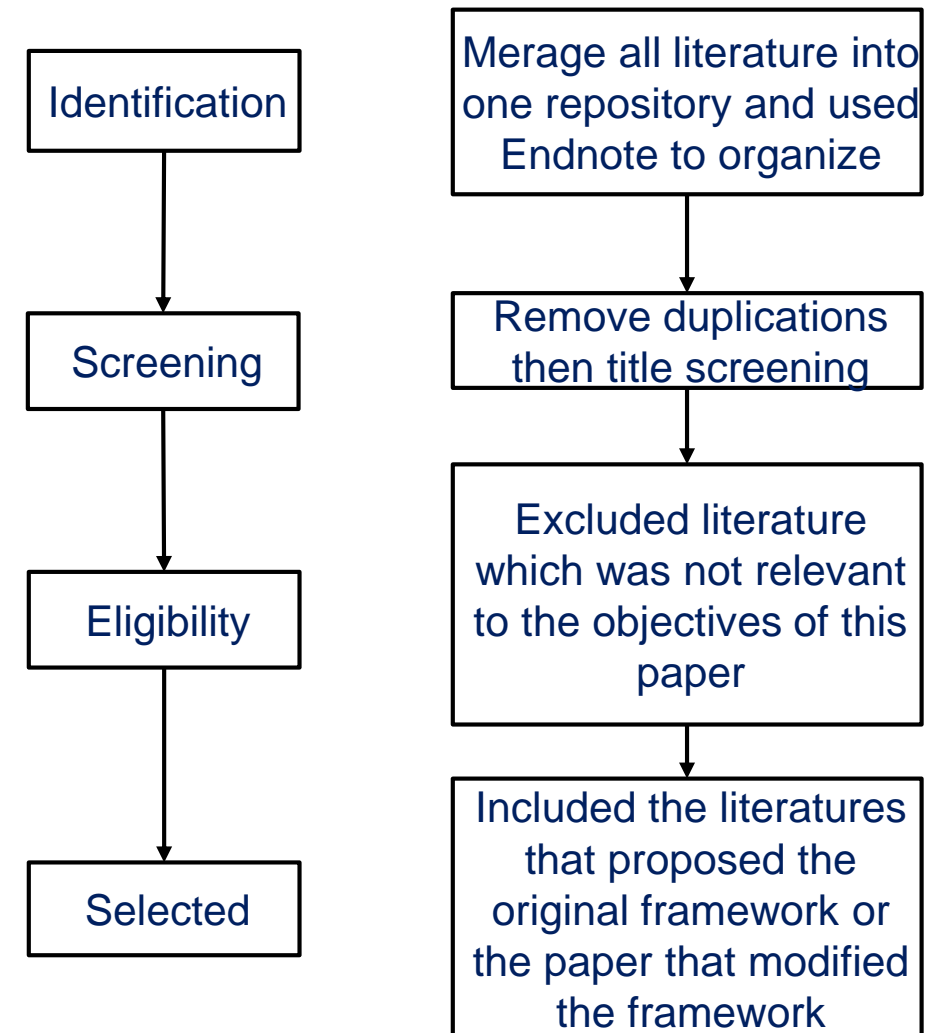


Functional Definition of Implementation Science

Implementation science as a systematic study that has an embedded a range of methodological innovations to: identify an 'effective' intervention that can be implemented in diverse real-world contexts; help in scaling up of an intervention by including course-correction; and facilitate the sustainability of the intervention and its outcomes in a wider community setting in the long term.

Methods: Search Strategy (PRISMA Flow Diagram)

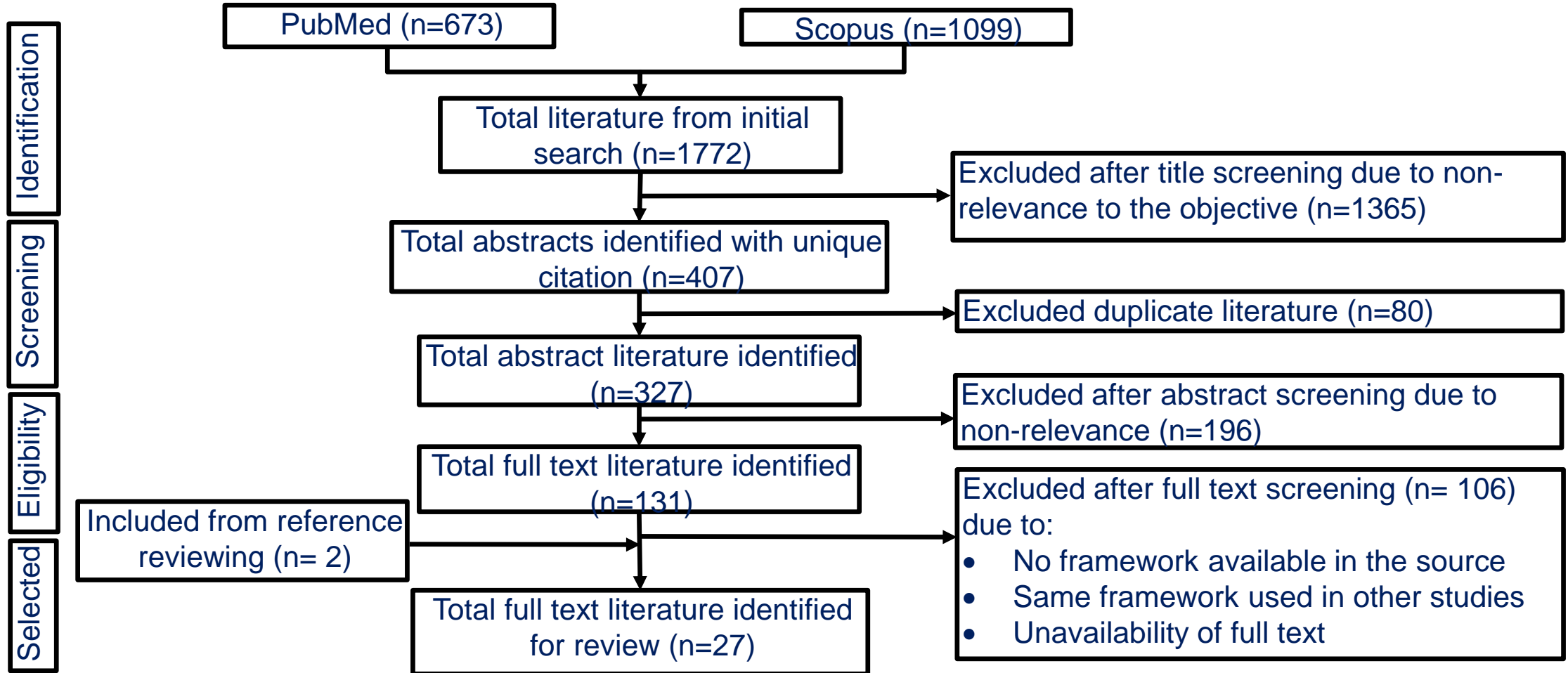
- PubMed and Scopus database were used to search
- As search terms we used “implementation science” OR “implementation research” AND “framework” OR “theory” OR “model”
- The literature search was performed during 1 June 2017 to 11 October 2017
- We customized search strategy considering Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist



Data analysis: Coding, Synthesis and Presentation

- Performed a thematic analysis and considered five aspects as initial themes
- Reviewed the articles, highlighted the text then coded them
- Used a matrix table to display the summary of the reviewed frameworks and to amend and expand on the themes to generate components of a framework
- Used findings of this review to construct a new framework and added additional evidences from other literature for a further clarification of the new framework

Search Results



Search Results

- None of the reviewed frameworks considered the whole spectrum of Implementation Science (from science innovation to sustainability)
- Most (n=23) frameworks emphasized implementation fidelity
- Only half (n=14) of the frameworks considered the sustainability of implementations, although sustainability is a key concern of implementation
- Based on this review, we proposed an advanced framework for implementation science, which considers three domains and five aspects around implementation



Conceptual Framework for Implementation Science

SCIENCE
Efficacy to effectiveness trial
(Domain i)

IN
Science in Scaling-up
(Domain ii)

SERVICES
(in the routine systems)
Sustainability of Science
(Domain iii)

Identify 'effective' intervention
Intervention characteristics:
Intervention source
Evidence strength and quality
Relative advantage

Implementation of intervention: context and process
Inner settings
Outer settings

Sustainability of implementation
Determinants of sustainability
Dimensions of sustainability
(Component 4)

1. Identifying an "Effective" Intervention

2. Scaling up of Intervention: Consideration of Implementation Fidelity

3. Provision of Course Corrections

4. Provision of Concurrent Evaluation

5. Promoting Sustainability of Interventions

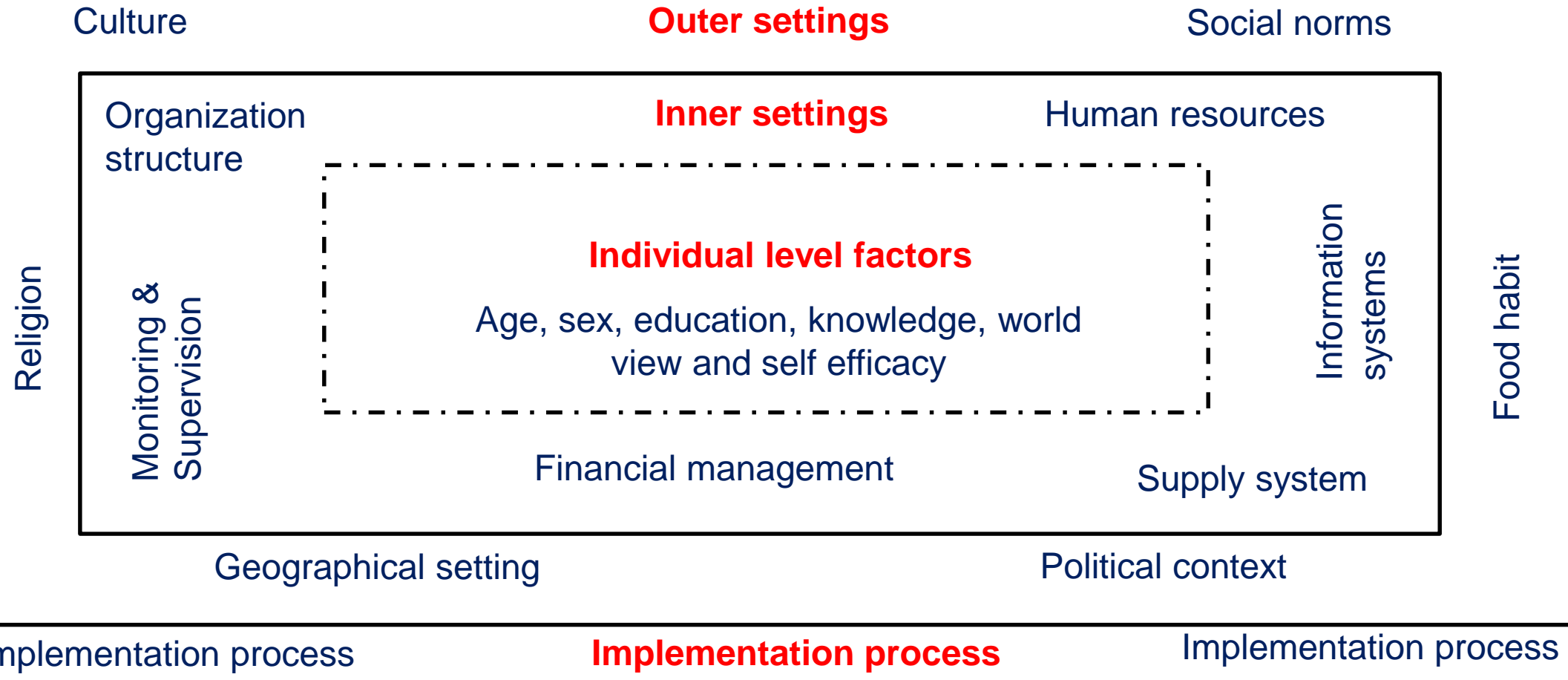
(Component 1)
Methodological considerations:
- Use need based formative research, systematic review, meta-analysis to identify 'effective' interventions;
- Concurrent evaluation for assessing implementation at scaling up and sustainability level: using mixed methods assessment, and considering both process and outcome indicators – ability to address short-term and long-term implementation barriers, and provide guidance towards sustainability

Provision of course corrections during implementation (Component 3)
Economic evaluation, cost-effectiveness

1. Identifying an “Effective” Intervention

- Innovative ‘science’ occurs through efficacy trials and effectiveness trials
- Identification of an ‘effective’ intervention is crucial in implementation science, because an ‘innovative’ intervention is not sufficient
- Assess intervention characteristics to identify an ‘effective’ intervention :
 1. Intervention source (Chambers DA, et.al. 2016)
 2. Evidence strength and quality (GRADE Working Group, BMJ 2004)
 3. Relative advantages (Gustafson DH, et.al. 2003)
 4. Adaptability and complexity (Damschroder LJ, et.al. 2009)

2. Scaling up of Intervention: Consideration of Implementation Fidelity





3. Provision of Course Corrections during Implementation

- Assessing the implementation process during implementation helps to improve lessons learned about the implementation (Demby H, et.al. 2014)
- It creates the opportunity of timely course-correction during implementation
- Timely course correction is very critical to address the real world issues
- Consideration of a timely course correction helped in achieving program outcomes in a low-income setting (Sarma H, et.al. 2015)

4. Provision of Concurrent Evaluation

- Traditional evaluation uses a retrospective approach, measuring the impact, decision makers need to understand the processes of implementation
- ‘Concurrent evaluation’ aims to continuously assess the progress of a particular program, determining how a program works and with whom it works; and, accordingly, to make necessary corrections (Moss JZ, 1970)
 - It is a mixed-methods assessment
 - Considers both process and outcome indicators and ability to address implementation barriers
 - It is prospective in nature

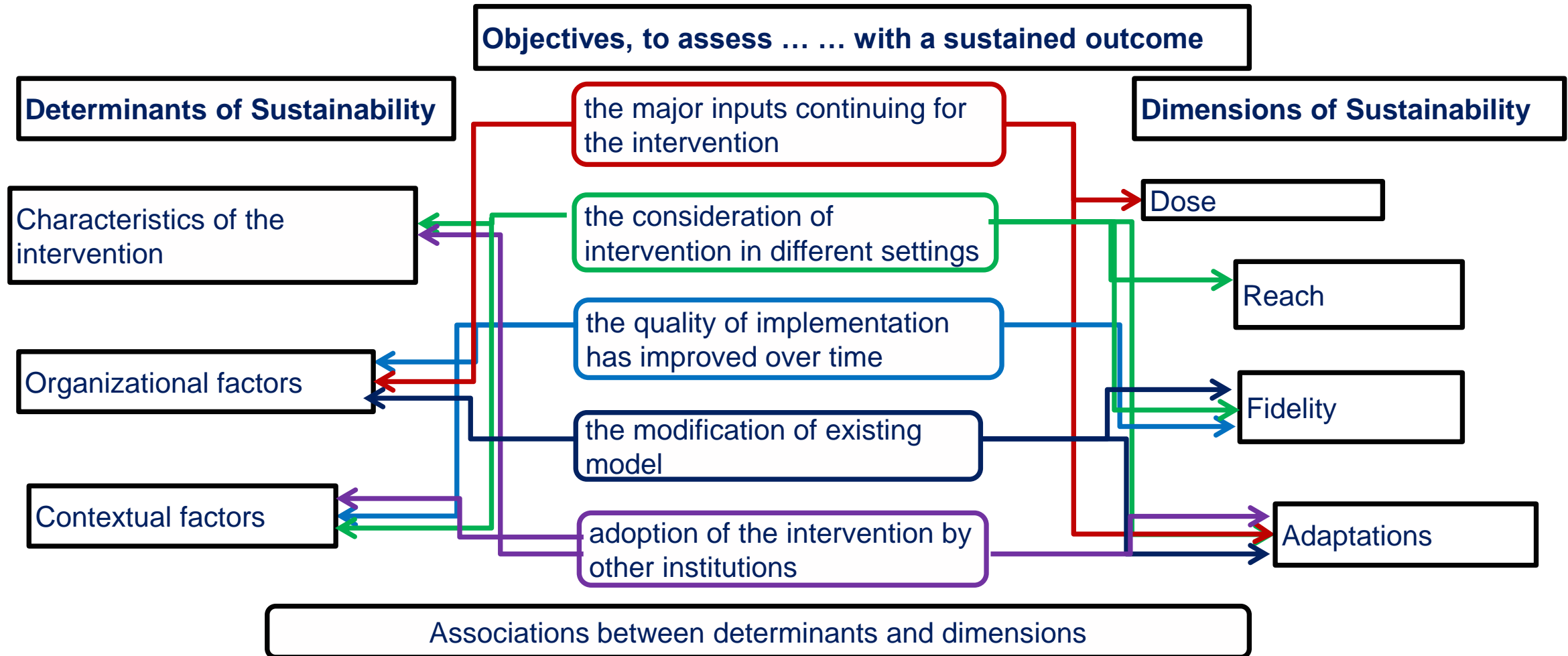


5. Promoting Sustainability of Interventions

- Sustainability is the continued use of program components for the continued achievement of desirable program outcomes*
- The four key questions about sustainability are:
 1. What would be the appropriate time point to measure sustainability?
 2. Would sustainability be measured retrospectively or prospectively?
 3. What are the dimensions of sustainability?
 4. What are the determinants of sustainability?

5. Promoting Sustainability of Interventions

How to assess sustainability?



Conclusions

- This conceptual framework provides a foundational conceptualization of key components of implementation science
- It can be used in various settings to understand the implementation pathway from an efficacy trial to sustainability of an implementation
- We are using this framework for examining the role of community health workers in addressing childhood malnutrition

Acknowledgement

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Thank You