Challenges and Opportunities to Integrate Evidence-Based Complementary Interventions into Traditional Healthcare settings

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Overview

Overarching Goal: Describe a breadth of **domains** relevant to implementation science studies

Discuss opportunities and challenges with a CIH intervention
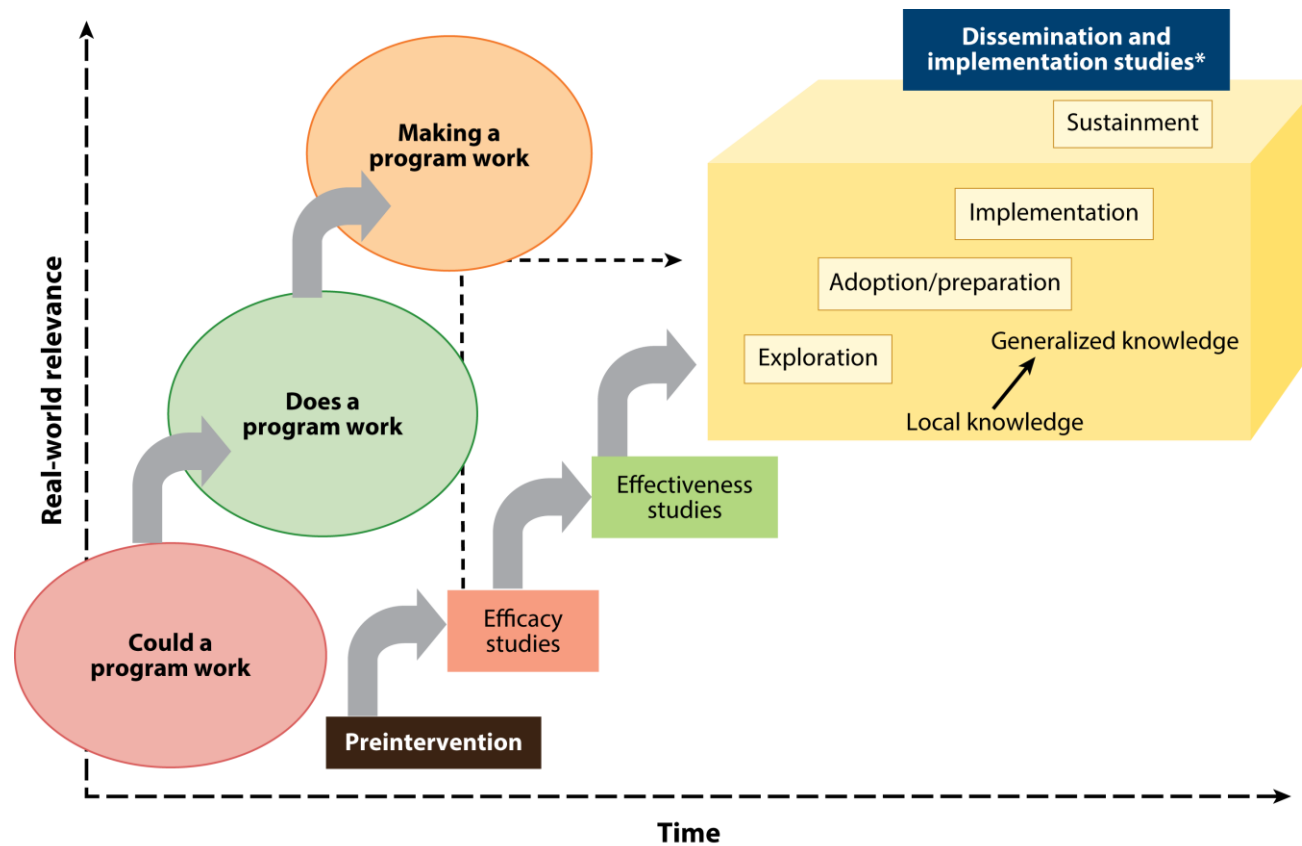
Domains

Study Design

Methods

Stages of implementation

Theories, Models, Frameworks

Implementation strategies

Study Design

*These dissemination and implementation stages include systematic monitoring, evaluation, and adaptation as required.

Annual Reviews

Some Types

- Hybrid Designs
  - Balancing effectiveness of an EBP and implementation strategy

- Factorial Designs
  - Multiphase Optimization Strategy (MOST)
    - Three-phase design
      - Preparation (pilot testing to optimize)
      - Refining (randomized experiment to identify optimal strategies combination)
      - Evaluation/Confirming (randomized implementation trial of optimal vs comparison)
  - Sequential Multiple Assignment Randomized Trial (SMART)
    - Adaptive tailoring (sometimes moving from "low-intensity" to "high-intensity" implementation)
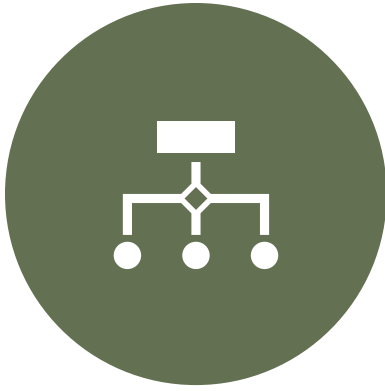   - Multi-stage randomizations where implementation strategies can be modified as needed
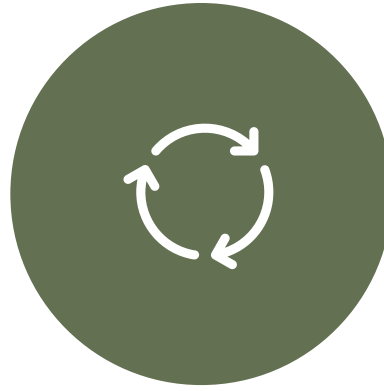
Methods

Mixed Methods

◦ Qualitative
  - ◦ Semi-structured interviews
  - ◦ Informal interviews
  - ◦ Focus groups
  - ◦ Observation and Ethnographic methods

◦ Quantitative
  - ◦ Electronic Medical Record (EMR) data
  - ◦ Surveys
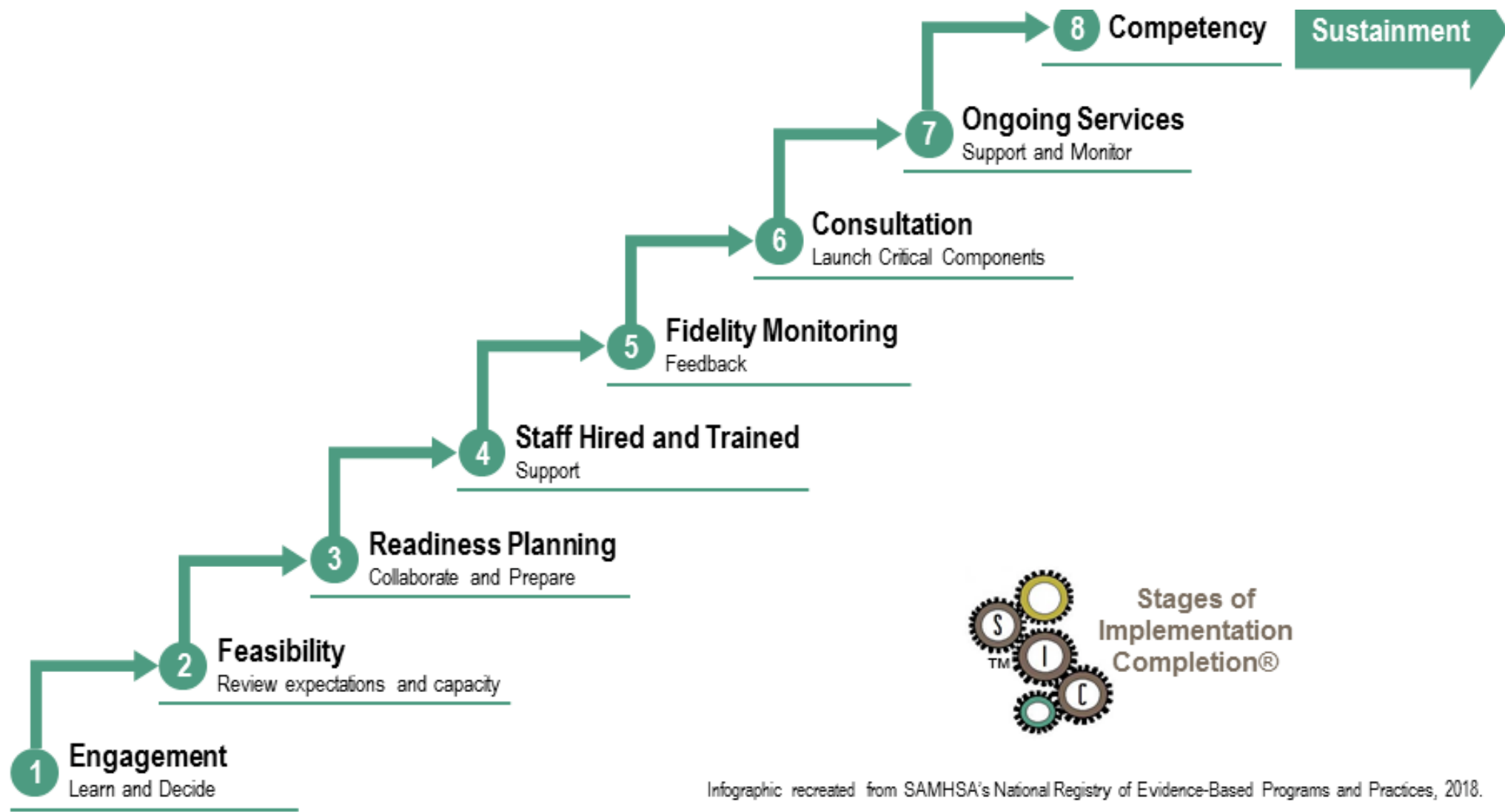 - ◦ Questionnaires

Stages of Implementation

3 phases

PRE-IMPLEMENTATION   IMPLEMENTATION   SUSTAINMENT

8 Competency

Sustainment

7 Ongoing Services
Support and Monitor

6 Consultation
Launch Critical Components

5 Fidelity Monitoring
Feedback

4 Staff Hired and Trained
Support

3 Readiness Planning
Collaborate and Prepare

2 Feasibility
Review expectations and capacity

1 Engagement
Learn and Decide

Stages of Implementation Completion®

Infographic recreated from SAMHSA's National Registry of Evidence-Based Programs and Practices, 2018.
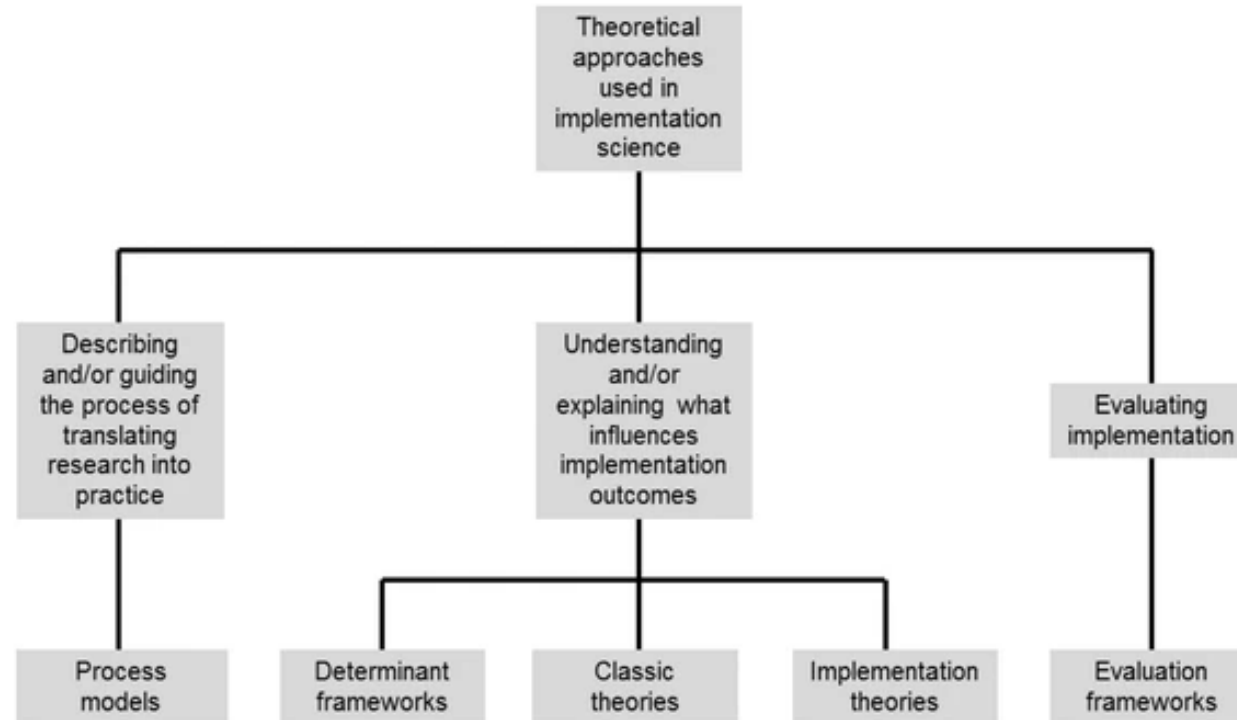
Theories, Models, Frameworks

The ones you've likely heard of…

- Consolidated Framework for Implementation Research (CFIR; Damschroder et al., 2009)

- RE-AIM (Glasgow et al., 2001)

- PARiHS or iPARiHS (Harvey & Kitson, 2015)

Figure 1

Three aims of the use of theoretical approaches in implementation science and the five categories of theories, models and frameworks.

Table 1 Five categories of theories, models and frameworks used in implementation science

Category	Description	Examples
Process models	Specify steps (stages, phases) in the process of translating research into practice, including the implementation and use of research. The aim of process models is to describe and/or guide the process of translating research into practice. An action model is a type of process model that provides practical guidance in the planning and execution of implementation endeavours and/or implementation strategies to facilitate implementation. Note that the terms "model" and "framework" are both used, but the former appears to be the most common	Model by Huberman [40], model by Landry et al. [41], model by Davies et al. [43], model by Majdzadeh et al. [44], the CIHR Model of Knowledge Translation [42], the K2A Framework [15], the Stetler Model [47], the ACE Star Model of Knowledge Transformation [48], the Knowledge-to-Action Model [13], the Iowa Model [49,50], the Ottawa Model [51,52], model by Grol and Wensing [53], model by Pronovost et al. [54], the Quality Implementation Framework [27]
Determinant frameworks	Specify types (also known as classes or domains) of determinants and individual determinants, which act as barriers and enablers (independent variables) that influence implementation outcomes (dependent variables). Some frameworks also specify relationships between some types of determinants. The overarching aim is to understand and/or explain influences on implementation outcomes, e.g. predicting outcomes or interpreting outcomes retrospectively	PARIHS [5,64], Active Implementation Frameworks [63,68], Understanding-User-Context Framework [62], Conceptual Model [17], framework by Grol et al. [22], framework by Cochrane et al. [59], framework by Nutley et al. [21], Ecological Framework by Durlak and DuPre [57], CFIR [60], framework by Gurses et al. [58], framework by Ferlie and Shortell [61], Theoretical Domains Framework [66]
Classic theories	Theories that originate from fields external to implementation science, e.g. psychology, sociology and organizational theory, which can be applied to provide understanding and/or explanation of aspects of implementation	Theory of Diffusion [107], social cognitive theories, theories concerning cognitive processes and decision making, social networks theories, social capital theories, communities of practice, professional theories, organizational theories
Implementation theories	Theories that have been developed by implementation researchers (from scratch or by adapting existing theories and concepts) to provide understanding and/or explanation of aspects of implementation	Implementation Climate [116], Absorptive Capacity [117], Organizational Readiness [118], COM-B [119], Normalization Process Theory [120]
Evaluation frameworks	Specify aspects of implementation that could be evaluated to determine implementation success	RE-AIM [124]; PRECEDE-PROCEED [125]; framework by Proctor et al. [126]

Implementation Strategies

Implementation strategies: recommendations for specifying and reporting

Enola K Proctor[1*], Byron J Powell[1] and J Curtis McMillen[2]

Abstract

Implementation strategies have unparalleled importance in implementation science, as they constitute the 'how to' component of changing healthcare practice. Yet, implementation researchers and other stakeholders are not able to fully utilize the findings of studies focusing on implementation strategies because they are often inconsistently labelled and poorly described, are rarely justified theoretically, lack operational definitions or manuals to guide their use, and are part of 'packaged' approaches whose specific elements are poorly understood. We address the challenges of specifying and reporting implementation strategies encountered by researchers who design, conduct, and report research on implementation strategies. Specifically, we propose guidelines for naming, defining, and operationalizing implementation strategies in terms of seven dimensions: actor, the action, action targets, temporality, dose, implementation outcomes addressed, and theoretical justification. Ultimately, implementation strategies cannot be used in practice or tested in research without a full description of their components and how they should be used. As with all intervention research, their descriptions must be precise enough to enable measurement and 'reproducibility.' We propose these recommendations to improve the reporting of implementation strategies in research studies and to stimulate further identification of elements pertinent to implementation strategies that should be included in reporting guidelines for implementation strategies.

A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project

Byron J Powell[1*], Thomas J Waltz[2], Matthew J Chinman[3,4], Laura J Damschroder[5], Jeffrey L Smith[6], Monica M Matthieu[6,7], Enola K Proctor[8] and JoAnn E Kirchner[6,9]

Abstract

Background: Identifying, developing, and testing implementation strategies are important goals of implementation science. However, these efforts have been complicated by the use of inconsistent language and inadequate descriptions of implementation strategies in the literature. The Expert Recommendations for Implementing Change (ERIC) study aimed to refine a published compilation of implementation strategy terms and definitions by systematically gathering input from a wide range of stakeholders with expertise in implementation science and clinical practice.

Methods: Purposive sampling was used to recruit a panel of experts in implementation and clinical practice who engaged in three rounds of a modified Delphi process to generate consensus on implementation strategies and definitions. The first and second rounds involved Web-based surveys soliciting comments on implementation strategy terms and definitions. After each round, iterative refinements were made based upon participant feedback. The third round involved a live polling and consensus process via a Web-based platform and conference call.

Results: Participants identified substantial concerns with 31% of the terms and/or definitions and suggested five additional strategies. Seventy-five percent of definitions from the originally published compilation of strategies were retained after voting. Ultimately, the expert panel reached consensus on a final compilation of 73 implementation strategies.

Conclusions: This research advances the field by improving the conceptual clarity, relevance, and comprehensiveness of implementation strategies that can be used in isolation or combination in implementation research and practice. Future phases of ERIC will focus on developing conceptually distinct categories of strategies as well as ratings for each strategy's importance and feasibility. Next, the expert panel will recommend multifaceted strategies for hypothetical yet real-world scenarios that vary by sites' endorsement of evidence-based programs and practices and the strength of contextual supports that surround the effort.

Opportunities & Challenges: Case of Yoga

Design
- Hybrid type 1, 2, or 3?
- Appropriate setting? (e.g., medical clinic, community clinic)

Methods to use
- Mixed? Focus groups vs individual interviews?

Theory, Framework, Model
- Process model? Evaluation framework?

Implementation Stages
- Where would you start your trial?

Implementation Strategies
- Which set of strategies do you think are suitable for yoga implementation in your given setting?

The more you know…

- **VA's QUERI's Implementation Research Group** - https://www.queri.research.va.gov/ceir/irg.cfm
  - Adaptation and Fidelity Implementation Group (Borsika Rabin, MPHD, PhD, PharmD); Russ Glasgow, PhD
  - Advancing Implementation Science Lab (Julie Lowery, PhD, & Laura Damschroder, MS, MPH)
  - Implementation Facilitation Learning Collaborative (Mona Ritchie, PhD)
  - Qualitative Comparative Analysis Workgroup (Edward Meich, EdD)

- **Non-VA**
  - NIH National Cancer Institute Implementation Science Webinar Series (LINK)
  - NIH National Cancer Institute: Advanced Topic Webinars in Implementation Science (LINK)
  - Center for Prevention Implementation Methodology for Drug Abuse and HIV (Northwestern Medicine) (LINK)

- **SIRC D&I Training Opportunities Resource List**: List of training opportunities compiled by SIRC (LINK)

- **Imp Sci journals to consider**: http://isrn.net/blog/qijournals

Could Complementary and Integrative Health Approaches Benefit Veterans Over Time?

Physical and mental health disorders in veterans returning from war zones often cannot be treated with allopathic medicine alone

Yoga

Tai chi

Healing touch   Acupuncture   Meditation

Complementary and integrative health (CIH) approaches, which are non-pharmacological treatment alternatives, can be helpful

Is participating in CIH associated with improved veterans' patient-reported outcomes over time?

2 Veterans Affairs medical centers

HOSPITAL +

119 veterans participating in any type of CIH

401 surveys of patient-reported outcomes

- Overall physical/mental health
- Pain intensity
- Perceived stress
- Engagement in care

Obtained at five time-points

Baseline
2 months
4 months
6 months
12 months

Yoga → Decrease in perceived stress

Meditation → Increased physical functioning at 2, 6, and 12 months

Improved overall physical/mental health

Improved ability to participate in social role activities at 2 months

Tai chi → Reduced anxiety at 2 and 6 months

Engagement in care ✕ All CIH ✕ Pain intensity

Specific CIH approaches are associated with improved patient-reported outcomes and are worth considering as non-pharmacological treatment options for enhancing the health and well-being of veterans.

Participating in Complementary and Integrative Health Approaches Is Associated With Veterans' Patient-reported Outcomes Over Time
Elwy et al. (2020) | *Medical Care* | DOI:10.1097/MLR.0000000000001357

MEDICAL CARE
Official Journal of the Medical Care Section, American Public Health Association

https://journals.lww.com/lww-medicalcare/toc/2020/09001

Q & A

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