Creating a Culture of Innovation in Healthcare Settings: A Systematic Review

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PREFACE

The VA Evidence Synthesis Program (ESP) was established in 2007 to provide timely and accurate syntheses of targeted healthcare topics of importance to clinicians, managers, and policymakers as they work to improve the health and healthcare of Veterans. These reports help:

- Develop clinical policies informed by evidence;
- Implement effective services to improve patient outcomes and to support VA clinical practice guidelines and performance measures; and
- Set the direction for future research to address gaps in clinical knowledge.

The program comprises 3 ESP Centers across the US and a Coordinating Center located in Portland, Oregon. Center Directors are VA clinicians and recognized leaders in the field of evidence synthesis with close ties to the AHRQ Evidence-based Practice Center Program and Cochrane Collaboration. The Coordinating Center was created to manage program operations, ensure methodological consistency and quality of products, and interface with stakeholders. To ensure responsiveness to the needs of decision-makers, the program is governed by a Steering Committee composed of health system leadership and researchers. The program solicits nominations for review topics several times a year via the program website.

Comments on this evidence report are welcome and can be sent to Nicole Floyd, Deputy Director, ESP Coordinating Center at Nicole.Floyd@va.gov.

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Peer Reviewers

The Coordinating Center sought input from external peer reviewers to review the draft report and provide feedback on the objectives, scope, methods used, perception of bias, and omitted evidence. Peer reviewers must disclose any relevant financial or non-financial conflicts of interest. Because of their unique clinical or content expertise, individuals with potential conflicts may be retained. The Coordinating Center and the ESP Center work to balance, manage, or mitigate any potential nonfinancial conflicts of interest identified.

EXECUTIVE SUMMARY

INTRODUCTION

Organizational culture plays a critical role in shaping healthcare delivery environments and service quality. Research is needed to identify programs and interventions that foster a culture of innovation, and to determine how culture of innovation can be evaluated and measured.

METHODS

Data Sources and Searches

We conducted broad searches using terms relating to "culture of innovation" or "culture of creativity". We searched Web of Science, Ovid Medline, and PsycINFO from inception to 9/18/2020. We also searched the gray literature on 04/03/20 in a Google search. From these Google searches, we reviewed the first 50 hits for studies that would meet eligibility criteria.

Study Selection

Three team members working independently screened the titles of retrieved citations. Full-text review was conducted in duplicate by 2 team members, with any disagreements resolved through discussion. Because we were looking for literature that had real-world applications of culture of innovation measurement or intervention, publications were required to (1) use some specified measure or metric for culture of innovation and/or (2) describe an intervention or program to improve or establish a culture of innovation to be included.

Data Abstraction

Data extraction was completed in duplicate. All discrepancies were resolved with full group discussion. We abstracted data on the following: setting, sample size, response rate, country, study design, data analysis approach, culture of innovation metric(s), other metric(s), culture of innovation terms, culture of innovation definitions, and findings from abstract.

Data Synthesis and Analysis

Our review is a narrative analysis. We synthesized descriptions of culture of innovation definitions, metrics, and programs from included publications.

RESULTS

Results of Literature Search

We identified 480 potentially relevant citations, of which 164 were included at the abstract screening level. A total of 30 publications were identified at full-text review as meeting initial inclusion criteria: 4 publications with intervention/program and metric(s), and 26 publications with metric(s) only.

Summary of Results for Key Questions

KQ1: How is culture of innovation defined in literature related to healthcare settings?

When reviewing the included studies, there were several ways that terminology and definition captured the concept of "culture of innovation." The variations on the terminology and key words used to describe this concept were 1 source of variety. While publications varied on whether or not they described key domains or explicit definitions related to their "culture of innovation" terms, all the included publications provided relevant citations. Some common themes extracted from relevant citations include: a shared set of beliefs between people that supported improvement or change, resources to support innovation, and acceptance of change.

KQ2: What metrics are used to capture culture of innovation in healthcare settings?

Twenty-seven studies measured some version of the construct "culture of innovation" using 26 different instruments. Ten studies administered a single instrument without adaptation, 7 studies modified or truncated an existing instrument, 2 studies developed "homegrown" instruments, and 8 studies incorporated a mix of adapted, homegrown, and/or instrument without modifications. Six instruments were used in more than 1 study to measure "culture of innovation". TCI and related conceptual work were used in 7 studies, with each study incorporating the 8 items related to "support for innovation" domain within the TCI. Two additional instruments were identified among 3 studies that did not directly measure "culture of innovation". These studies instead described organizational culture using pre-specified categories. While some instruments were developed in a healthcare setting, others were adapted from other disciplines such as management and economics.

KQ3: What are key characteristics and outcomes of programs designed to improve or establish a culture of innovation in healthcare settings?

Four studies described programs that reported outcomes using a quantitative measure of culture of innovation. One publication, which described a leadership program in the UK, treated innovation climate as a primary outcome. The other 3 studies included culture of innovation as either a secondary outcome or 1 of a few various outcomes.

There were similarities between the 4 programs, but no inherent patterns were identified. Three of these studies were larger, including multiple sites, while the fourth study included a smaller sample of nurses from 1 site. Participants in 3 of the studies were frontline healthcare workers, including long-term care providers, nurses, and paramedics. The remaining study included a combination of frontline and senior management. Two programs used QICs with a specific clinical focus: 1 used QI methods to improve acute myocardial infarction and stroke care bundles and the other adapted the Instituted for Health Care Improvement Breakthrough Collaborative method to improve a specific quality topic related to long-term care. Another program incorporated a leadership program aimed at solving a "real world issue" as a group over the course of 8-10 months with a focus on a "relational and experiential approach to learning". The remaining program was a nurse-led program focused on improving nursing care in a psychiatric ward with a year-long program comprised of group clinical supervision and individual learning about how to plan and document nursing care through nursing diagnosis. While 4 studies with culture of innovation outcomes were identified, their small scale or low response rates and variable details provided about the components of each intervention limited the conclusions to be drawn.

DISCUSSION

Research Gaps/Future Research

This review identified numerous ways "culture of innovation" has been defined and measured in healthcare settings. The various ways researchers have tried to measure the construct could be a signal that "culture of innovation" is a unique concept, but more work is needed to refine the definition and critically assess the dimensions and subscales different researchers have attached to this construct.

Another area of interest for future research is to examine how teams can improve and sustain innovative culture over time and what impact innovative culture has on system, clinical, and patient outcomes. The majority of empirical research conducted in this area employed a cross-sectional study design, giving only a static view of an organization's culture of innovation at 1 point in time. Since organizational culture is dynamic and constantly evolving, incorporating longitudinal approaches may capture a more complex picture, including an examination of causal relationships between culture of innovation and system, clinical, and patient outcomes.

CONCLUSIONS

While we were able to identify a moderate amount of literature defining and quantitatively measuring culture of innovation in healthcare settings, this area of research has yet to see rigorous evaluations of intervention work or process of changing culture. A culture of innovation in a healthcare organization may have implications for quality of care, population health outcomes, cost of care, and employee satisfaction. An organization exhibiting a culture of innovation may be more likely to have an orientation towards improvement and the ability to continuously adapt to changing environment. More work is needed to understand how to build a culture of innovation in healthcare settings and harness the benefits of culture of innovation to improve key outcomes.