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Constructing a typology of strategies to enhance organizational readiness for the implementation of evidence-based practices in community mental health

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SARGENT COLLEGE OF HEALTH AND REHABILITATION SCIENCES

Dissertation

**CONSTRUCTING A TYPOLOGY OF STRATEGIES TO ENHANCE
ORGANIZATIONAL READINESS FOR THE IMPLEMENTATION OF
EVIDENCE-BASED PRACTICES IN COMMUNITY MENTAL HEALTH**

by

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DEDICATION

To my grandmother, Margit Feiwel, who dreamed of becoming a doctor, but the 2nd World War changed her life course. And to my grandfather, Nahum Vygodski, who instilled the love of science in me since I was a toddler

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ABSTRACT

Organizational readiness for implementation (ORI) is a critical barrier to successfully implementing evidence-based practices (EBPs) that support the recovery of people with severe mental illnesses (SMI). Despite the importance of ORI, to date, no approach for enhancing readiness across an organization has been developed. The two studies conducted as part of this dissertation aimed to identify, organize, and confirm potential strategies to support ORI enhancement in community mental health (CMH) services. Study findings may inform the development of practices to increase ORI, and thus optimize implementation of evidence-based practices in the CMH services.

The first study aimed to develop a typology of pre-implementation strategies focused on ORI enhancement. A panel of implementation experts participated in a modified Delphi process to classify pre-implementation strategies into stages of organizational readiness. The experts selected strategies from a well-accepted compilation of 73 implementation strategies, developed as part of the Expert Recommendations for Implementing Change (ERIC) project. The Transtheoretical Model

of behavioral change guided the experts in choosing strategies relevant during pre-implementation and classifying them into three readiness stages: Pre-contemplation, Contemplation, and Preparation. The experts identified 48 of the ERIC strategies as relevant to pre-implementation readiness enhancement and agreed on their classification into the three ORI stages. Several strategies were identified as relevant to more than one stage.

The purpose of the second study was to confirm and expand the expert-based typology based on empirical data relevant to the implementation of mental health evidence-based practices. The study employed qualitative methods to learn about the experiences of various CMH stakeholders who participated in a recent implementation project. Participants' feedback about the use of different ORI strategies was compared with the expert-based typology to identify consistencies and discrepancies. Two-thirds of the strategies and their ORI stage designation suggested by the experts were congruent with the second study participants' experiences. Participants also assigned several strategies to different stages than those indicated by the experts and mentioned additional strategies not included in the expert-based typology. The second study highlighted the applicability of the expert-based typology to the CMH field and offered suggestions for potential expansions.

Together, these two studies provide an essential step towards conceptualizing and operationalizing the construct of ORI and the strategies for enhancing it in the CMH context. The high congruence between experts and implementers suggests the applicability of the Transtheoretical model for organizing the strategies associated with

each stage. This dissertation provides a promising foundation for the future development of a systematic approach to ORI enhancement at various levels of readiness for a practice change. Direct targeting of ORI enhancement could increase the uptake of EBPs and ensure that more people with SMI benefit from state-of-the-art interventions supporting their recovery.

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LIST OF ABBREVIATIONS

CMH: Community Mental Health

EBP: Evidence-Based Practices

EI: Expert-informed

ORI: Organizational Readiness for Implementation

SMI: Severe Mental Illnesses

TTM: Transtheoretical Model

INTRODUCTION

Over 13 million adults in the U.S. (5.2% of the general population) have a severe mental illness (SMI), which limits their participation in living, learning, and working in a valued societal role (Substance Abuse and Mental Health Services Administration, 2020). These numbers are expected to increase due to the psychological consequences of the COVID-19 pandemic, thus increasing the need for effective mental health services (Panchal et al., 2021). However, a service gap already exists. A pre-pandemic national survey revealed that about a quarter (24%) of adults living with a mental illness reported an unmet need for mental health treatment in their community (Mental Health America, 2020). In another national survey, only 12.5% of people who reported having a mental illness self-identified as "recovered" or "in recovery"¹ (Substance Abuse and Mental Health Services Administration, 2019).

Compared with hospital treatment, community-based care for people with SMI offers better health outcomes related to quality of life (World Health Organization, 2009) and a lower economic burden on society (Knapp et al., 2014). Numerous community-based practices have been shown to support the recovery of people with SMI by enabling their participation in work, independent living, socialization, and education (Jensen et al., 2019; Meadows et al., 2019; Peterson et al., 2014; Thornicroft et al., 2016). Extending the reach of effective community-based practices for people with SMI has been a federal mission in the U.S. for the last two decades (National Institute of Mental Health, 2020;

¹ "Recovery" refers to living a life of purpose and hope despite the chronic effects of the mental illness (Anthony, 1993; Deegan, 1988; Langer-Ellison et al., 2018)

President's New Freedom Commission on Mental Health, 2003). Yet, despite the documented benefits and multiple federal efforts, access to evidence-based practices (EBPs) in community services remains extremely low. For example, recent estimates suggest that only 0.3% of the eligible U.S. population of people with SMI receive the well-researched vocational intervention of Individual Placement and Support (Bond & Drake, 2017; Drake et al., 2020). Only 3.1% receive supported housing (Interdepartmental Serious Mental Illness Coordinating Committee, 2017). In addition, dissemination of these interventions could take decades due to various implementation barriers (Drake et al., 2020). As a result of the limited access to treatment, people with SMI must cope not only with their mental health condition but also with high unemployment rates, poverty, homelessness, and increased mortality risk (Morgan et al., 2017). It is crucial to develop the means for more efficient implementation processes to help overcome this service gap and increase the well-being of people with SMI.

Organizational readiness as a barrier to effective implementation

Implementation is defined as "a specified set of activities designed to put into practice an activity or program of known dimensions" (Fixen et al., 2005, p. 5). Implementation involves adopting, sustaining, and effectively delivering a new practice to improve the health outcomes of its recipients (Proctor et al., 2011). However, many challenges stand in the way of reaching positive implementation outcomes. Barriers to successful implementation can include the intervention characteristics (e.g., its complexity or cost), the outer context (e.g., policies and resources), the inner context (e.g., organizational structure and climate or tension for change), the characteristics of

individuals involved in the implementation (e.g., related knowledge and self-efficacy), and finally, the implementation process itself (e.g., level of planning and methods for engaging participants) (Damschroder et al., 2009). Barriers and facilitators in and across these domains interact in various ways to influence implementation effectiveness. To better understand the mechanisms of action leading to effective implementation, it is necessary to clearly define each barrier and specify potential strategies to overcome it (Leeman et al., 2017; B. J. Powell et al., 2019).

A critical barrier considered a precursor to effective implementation is the organization's readiness for the change (B. J. Powell et al., 2014; Simpson & Flynn, 2007; Stirman et al., 2016; Weiner et al., 2008; Williams, 2016). *Organizational readiness* involves the willingness and preparedness of members across the organization to initiate and follow through with a change process (Weiner, 2009). More specifically, it is defined as "the degree to which the organization and those involved are individually and collectively primed, motivated, and capable of executing change" (Holt & Vardaman, 2013, p. 9). Studies have found several components of organizational readiness to be positively associated with adoption rate, fidelity rate, and employees' engagement with the implementation process (Augustsson et al., 2017; Durlak & DuPre, 2008; Jones et al., 2005; Rubenstein et al., 2014; Shafran et al., 2009; Sprang et al., 2019; Vukadin et al., 2018). Due to the established association between organizational readiness and the effective uptake of a new practice, organizational readiness should be addressed as an important step in the implementation process.

Most prior research on this topic addresses psychological readiness, which is

comprised of the intention, motivation, and sense of preparedness of different members of the organization (Weiner et al., 2008; Weiner, Clary, et al., 2020). Some theories (Scaccia et al., 2015; Stirman et al., 2016) add a structural aspect that emphasizes the objective components of organizational resources and the capacity to carry out and sustain the change process. Numerous studies have explored the interplay between psychological and structural readiness levels. For example, employees' perceptions that their organization does not have the capacity to change have been associated with more perceived barriers and reluctance to participate in the change effort (Fitzgerald et al., 2017; Kelly et al., 2017; Lundgren et al., 2012). Other studies have shown how a competent and innovative organizational culture and a less stressful organizational climate serve as predictors of employees' readiness to adopt EBPs (Aarons, Glisson, et al., 2012; Fuller et al., 2007). Separating psychological from structural barriers to implementation can clarify some of the construct's complexity (Weiner, 2009). While acknowledging the importance of the structural dimension, this dissertation focuses on the psychological dimension of ORI at the individual and collective levels.

Conceptualizing organizational readiness for implementation

Some disagreement exists regarding the operationalization of the psychological dimension of ORI. In particular, three conceptual issues require further clarification. First, is ORI a state or a process? Second, when does ORI end and implementation begin? And third, what is a proper benchmark for a "collective sense of readiness"? Answering these questions and establishing a clear framework for the ORI construct can help clarify the expected processes and outcomes related to its enhancement.

The first issue that requires clarification is whether readiness is an organizational state or a developmental process. Most theories conceptualize organizational readiness for change as an antecedent to implementation (Holt & Vardaman, 2013; Lehman et al., 2002; Simpson & Flynn, 2007; Weiner, 2009). For example, Holt and Vardaman (2013) focus on the existence or lack of "Initial Readiness." They discuss ways in which pre-existing readiness levels might impact implementation success, but they do not offer specific activities or processes for improving it. Similarly, Weiner, Clary, and colleagues (2020) argue that the term "readiness" refers to a current state of reflection on future plans (i.e., implementation activities). Addressing readiness at a specific point in time bears the risk of excluding organizations from implementation projects due to low readiness levels without allowing them to evolve. As a result, the number of organizations able to adopt the EBP may be reduced.

On the other hand, some frameworks (Scaccia et al., 2015; Simpson & Flynn, 2007; Stevens, 2013) conceptualize ORI as a constantly evolving construct that should be addressed throughout the implementation process. For example, the Heuristic for Organizational Readiness, abbreviated as $R=MC^2$ (Scaccia et al., 2015; Wandersman & Scaccia, 2019), frames ORI as an iterative process leading to positive implementation outcomes. Similarly, Simpson and Flynn (2007) describe readiness as part of a working model that needs to be continuously refined throughout the implementation process. This approach responds to the mutability of readiness and its potential improvement over time. Yet, it lacks a well-defined criterion for a "good enough" readiness level to determine safe transition into implementation activities. Constantly addressing readiness issues that

could have been resolved with a targeted effort prior to implementation may reduce the efficiency of the implementation process. Therefore, ORI needs to be developed within a clear time frame prior to implementation in order for organizations to effectively begin the change process.

The second clarification is needed to determine when the implementation can safely begin or when readiness development reaches the “good enough” benchmark. Implementation frameworks that include pre-implementation stages differ in where they draw the line between preparation and active implementation. Some frameworks, such as the Exploration-Preparation-Implementation-Sustainment (EPIS) (Aarons et al., 2011) and the Stages of Implementation Completion (SIC) (Chamberlain et al., 2011), focus on obtaining management buy-in and performing structural changes to create a supportive infrastructure (e.g., funding, human resources, policies, and procedures) prior to implementation. Others, such as the Quality Implementation Framework (Meyers et al., 2012), position infrastructure as part of an organization's capacity development during the implementation process rather than before it begins. It is critical to identify which activities constitute the starting point of implementation in order to clarify ORI development steps and their expected outcomes. Such a clear structure would advance the standardization of readiness development processes and allow for more accurate planning, evaluation, and replication of pre-implementation efforts. In addition, clearly defining the endpoint of pre-implementation and its associated readiness outcomes would enable more organizations to implement EBPs from a stronger starting position and ensure better implementation results.

The third conceptual question relates to the lack of clarity regarding the definition of a “collective sense of readiness,” the gold standard of ORI. What is considered a "critical mass" of people who share this collective sense? What is the significance of different roles in this shared perspective, and how do they impact the overall organizational readiness? The Theory of Organizational Readiness for Change (Weiner, 2009) treats organizational readiness as a shared psychological and cognitive state in which organizational members feel committed and able to implement organizational change together. This collective sense of readiness includes knowledge, attitudes, beliefs, and intentions related to the expected change shared by all participants in the change process (Harvey & Kitson, 2016; Weiner, Clary, et al., 2020). But who are "the participants" that should share this sense of readiness? Vakola (2013) suggests looking at three levels: individual, group, and organizational readiness. This tripartite suggestion aligns with the "team" or "workgroup" level added to the individual and organizational levels by Rafferty and colleagues (2013). Focusing on the "team" as a mid-size organizational structure makes it more feasible to achieve a shared sense of readiness, that is still powerful enough to create a movement toward improved organizational readiness.

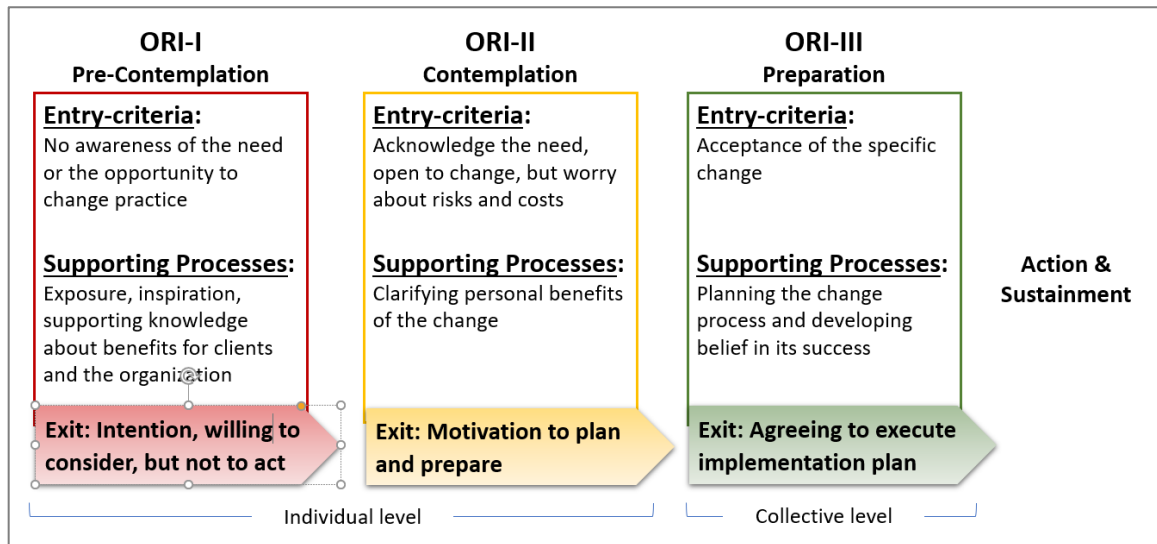
However, it is important to note that some implementation efforts involve members external to the organization, such as clients and policymakers. These stakeholders are not considered part of a defined organizational team yet could be involved in the change process in different capacities. Because stakeholder groups may differ in their readiness levels and concerns about the implementation process (Beidas et

al., 2016; Green & Aarons, 2011), an ORI enhancement methodology should be flexible enough to bring together varied audiences around a shared interest, motivation, and preparedness for the change.

A stage-based approach to ORI

The Transtheoretical Model (TTM) of behavioral change provides a conceptual framework that may help operationalize pre-implementation ORI. The model offers a stage-based process that precedes the change activities and clearly defines behavioral benchmarks for each stage. It is also flexible enough to entertain varied readiness needs and different stakeholder groups. This model was initially designed to help individuals make behavioral changes (J. O. Prochaska & DiClemente, 1983). It was later adapted for organizational change (Levesque et al., 2001; J. M. Prochaska et al., 2001) and has been used in multiple implementation studies (Grimolizzi-Jansen, 2018; Levesque et al., 2001; J. M. Prochaska, 2000; J. M. Prochaska et al., 2004, 2006; Sherman & Carothers, 2005). The model distinguishes three pre-implementation stages of readiness — Pre-contemplation, Contemplation, and Preparation — preceding the stages of Action (i.e., implementation) and Sustainment (i.e., post-implementation). Each of the three ORI stages addresses clear psychological needs and offers change processes that support advancement from one stage to another (see Figure 1).

Figure 1. ORI stages based on the Transtheoretical Model



Because the TTM was originally designed to support individual change, it can apply to various stakeholders involved in the change process, regardless of their specific role in an organization. Furthermore, in the adaptation of the TTM to organizational change, the developers (J. M. Prochaska et al., 2001) recommend tailoring readiness interventions to different groups of participants who share the same readiness need whether or not they belong to the same unit within the organization. This tailored approach can help target ORI development efforts more effectively and broadly, culminating in a collective sense of readiness at multiple internal and external levels.

As part of this dissertation, several refinements were made to the TTM to specify its application within a practice change rather than other types of organizational changes (e.g., structure or policy change). First, exit points were added to each stage to clarify the association between the TTM and the readiness definition suggested by Holt and Vardaman (2013). These exit points correspond with being "primed" (i.e., interested,

willing to consider), "motivated" (i.e., willing to prepare for the change and engage in the effort), and "prepared" (i.e., ready to act to achieve the change). Second, "having an agreed implementation plan" was added to better operationalize the end of the Preparation stage. This addition aligns with the TTM mark for completing the Preparation stage, defined as when "individuals have decided to make a change in the next 30 days and have already begun to take steps toward that goal" (Prochaska et al., 2006, p. 871). The subsequent Action stage focuses on executing the plan through activities such as skills training and supervision (Vax et al., 2021). Third, to address both the individual and collective dimensions of ORI, the first two stages were conceptualized as targeting the individual's attitudes and beliefs, while the third stage focuses on the shared readiness perception around the practical aspects of the implementation plan. This framework provides a well-defined approach that supports organizational transformation, addresses internal readiness discrepancies that might disrupt implementation, and suggests a more comprehensive understanding of ORI development.

Moving from framework to practical steps

Although the TTM provides a useful structure for ORI development, it lacks specification of the activities that support progress throughout the stages. The processes of change associated with each stage (Levesque et al., 1999, 2001) reflect the movement from the entry-point to the exit-point, rather than offering a practical list of activities. For example, one of the processes called "Self-reevaluation" is defined as "considering how one's identity, happiness, and success, can be enhanced by the change" (Levesque et al., 2001, p. 141). It remains unclear how this consideration should be achieved, who should

facilitate it, and what would be the content related to the planned change during this consideration process. More specification is needed to identify activities or strategies that can help people advance through readiness stages. Using the readiness stages to organize repositories of potential strategies could guide the tailoring of pre-implementation interventions to different participants' needs. Moreover, such specifications could lay the groundwork for a deeper understanding of change mechanisms that can be replicated across organizations.

In the past decade, the field of Implementation Science has been focused on identifying and specifying strategies that support implementation (Kirchner et al., 2017). While there are lists of implementation strategies, none of them specify which are most relevant to ORI development. The most frequently cited list of implementation strategies in the literature was generated through the Expert Recommendations for Implementing Change (ERIC) project (B. J. Powell, Waltz, et al., 2015). In the ERIC project, a large group of implementation experts from various fields built a consensus around a list of implementation strategies collected through a literature review (B. J. Powell et al., 2012). The ERIC project resulted in a compilation of 73 implementation strategies and their definitions. While this compilation provides a helpful summary of known strategies, it lacks internal organization vis-a-vis the implementation process, leaving it unclear when, for what purposes, and with whom these strategies should be utilized. Identifying specific ERIC compilation strategies relevant to each ORI stage would clarify both the ERIC strategies and the TTM stages and lay the foundation for developing a practical approach to ORI enhancement.

As there is currently no clear guidance for enhancing ORI, this dissertation included two studies focused on identifying and organizing strategies to support ORI development within the stage-based model of the TTM. The first study aimed to build consensus among a group of implementation experts concerning an initial typology of strategies for enhancing ORI, consistent with the TTM readiness stages. This study applied a modified Delphi process. A panel of experts was asked to identify the ERIC strategies that support ORI and classify them into the Pre-contemplation, Contemplation, and Preparation stages. The second study aimed to evaluate the relevance of the expert-based typology in the CMH field and strengthen it or inform its expansion. This study used qualitative methods to explore stakeholders' experiences from the CMH field who were recently involved in a multi-site implementation effort of an EBP. Participant experiences concerning the different ORI strategies were compared with the expert-based typology derived from the first study to examine consistencies and discrepancies between the two. The two studies serve as a first step towards creating a pool of strategies that can be tailored to implementers' diverse readiness needs. Such a systematic approach to ORI enhancement can improve implementation outcomes of EBPs supporting people with SMI.

**STUDY 1: ENHANCING ORGANIZATIONAL READINESS FOR
IMPLEMENTATION: CONSTRUCTING A TYPOLOGY OF READINESS-
DEVELOPMENT STRATEGIES USING A MODIFIED DELPHI PROCESS**

ABSTRACT

Background: Knowledge about the development of organizational readiness for implementation (ORI) is limited. ORI, referred to as the willingness and capacity of all relevant stakeholders to change practice, is critical for increasing the adoption rate of evidence-based practices and improving implementation outcomes. However, no methodology currently guides ORI's enhancement or addresses differences in readiness needs across an organization. This study used the Transtheoretical Model (TTM) as a framework for classifying a well-established compilation of implementation strategies into three readiness stages: Pre-contemplation, Contemplation, and Preparation.

Methods: A modified Delphi method was used to establish consensus among a panel of purposefully selected research and field implementation experts. The Delphi process involved three rounds of online questionnaires. The third round also included a live video discussion to clarify definitions in an effort to increase consensus among experts.

Results: Of the 73 strategies reviewed, the experts identified 75% ($n = 55$) as relevant to pre-implementation and reached a high-level agreement on the assignment of 7% ($n = 5$) of the strategies to the Pre-contemplation stage (ORI-1), 25% ($n = 18$) to the Contemplation stage (ORI-2), and 52% ($n = 38$) to the Preparation stage (ORI-3). Several

strategies were identified as relevant to more than one stage.

Conclusions: Participating experts were able to reach high-level agreement on the relevance of specific sets of implementation strategies to each of the three ORI stages.

The lowest number of strategies was assigned to ORI-1 and the highest number to ORI-3.

Given the overlap of strategies across ORI stages, there is a need to better understand the specific utilization of such strategies at different stages. Future studies are needed to empirically confirm the relevance and applicability of this expert-informed typology, based on implementers' experiences in the field.

INTRODUCTION

Organizational readiness for implementation (ORI) is a complex construct encompassing both the willingness and perceived capacity of stakeholders across an organization to engage in adopting a new practice (Benzer et al., 2017; Holt & Vardaman, 2013; Rafferty et al., 2013; Vax et al., 2021; Weiner, 2009). ORI significantly impacts the adoption rates of evidence-based practices (Hagedorn & Heideman, 2010; Lundgren et al., 2013; Malthe Bach-Mortensen et al., 2018; B. J. Powell et al., 2014; Simpson & Flynn, 2007; Weiner et al., 2008; Williams, 2016), which lead to improved health and rehabilitation services (Proctor et al., 2011). Organizational-level factors influencing ORI include organizational climate and resources (Castañeda et al., 2012), while individual-level factors constitute attitudes, commitment, and self-efficacy to execute the change (Holt & Vardaman, 2013; Weiner, 2009). Multiple assessment tools have been developed to measure different aspects of ORI at the individual and collective levels across an organization (Aarons et al., 2010; Allen et al., 2017; Sanders et al., 2017; Timmings et al., 2016; Weiner, Mettert, et al., 2020). However, it is unclear how readiness may be enhanced when found insufficient to ensure successful implementation.

Given this gap, there is a need to determine which implementation strategies could be most helpful prior to implementation and to plan for their systematic utilization. The Expert Recommendations for Implementing Change (ERIC) project collated a list of 73 strategies defined by leading experts in implementation science (B. J. Powell, Waltz, et al., 2015). Follow-up studies have organized this list of strategies into sub-categories related to their primary function (e.g., support clinicians) (Waltz et al., 2015) or the

contextual barriers they address (e.g., available resources) (Waltz et al., 2019). However, these follow-up studies have not specified the optimal timing for each strategy, nor do they identify which strategies are relevant to readiness development.

The functional classification of implementation strategies was first combined with a temporal measure by Bunger et al. (Bunger et al., 2017), who found that many strategies were used throughout implementation as ongoing activities. Yet, their utilization differed between pre-implementation and active implementation phases. Specifying the pre-implementation utilization of discrete strategies and their expected readiness outcomes could inform a methodology for ORI development and add to these strategies' usability (Proctor et al., 2013).

The Transtheoretical Model (TTM) (J. O. Prochaska & DiClemente, 1983) is a framework developed to support individuals in changing persistent behaviors, such as drug and alcohol abuse (Migneault et al., 2005; Nidecker et al., 2008; J. M. Prochaska et al., 2004), smoking (Aveyard et al., 2009; Velicer et al., 1999), and gambling (Kushnir et al., 2016). The TTM was adapted to organizational change (J. M. Prochaska et al., 2001), including changes in policies and practices in various organizations (Berry et al., 2007; Grimolizzi-Jansen, 2018; Levesque et al., 1999; Lyons et al., 2009; J. M. Prochaska, 2007; Smathers et al., 2018; Suryadevara, 2015; Theberge-Smith, 2018). This model focuses on changing individuals' interest, attitudes, and beliefs regarding an expected change, and therefore aligns with current definitions of organizational readiness for change (Holt & Vardaman, 2013; Weiner, 2009). The TTM is comprised of five stages of behavioral change: 1) Pre-contemplation, 2) Contemplation, 3) Preparation, 4) Action,

and 5) Sustainment. Individuals within an organization may proceed through these stages at a different pace as they embrace and sustain behavioral changes related to their work practice. Recent studies have demonstrated the usability of the TTM as a framework for organizing implementation strategies (Grimolizzi-Jansen, 2018; Vax et al., 2021). Using this framework to organize the comprehensive and widely-used list of ERIC strategies offers a systematized approach to ORI development and adds specificity to the ERIC strategies.

The purpose of the current study was to construct a stage-based typology of ORI development strategies taken from the ERIC Project. Our goal was to reach a consensus among a group of implementation experts concerning strategies relevant to pre-implementation and their stage-classification into the TTM readiness stages – Pre-contemplation, Contemplation, and Preparation. A modified Delphi process (Sackman, 1974) was used to build the experts’ consensus and reach an initial ORI typology.

METHODS

Delphi Participants

A panel of implementation experts was recruited to participate in a three-round modified Delphi Process. The experts represented two groups: 1) Research experts, selected from a review of the Implementation Science Journal between the years 2009-2019, and 2) Field experts, selected from a pool of implementation leaders from the community mental health (CMH) field known to the authors. The inclusion criterion for research experts was that they had published two or more peer-reviewed articles in the

last ten years specifying a model or framework related to organizational readiness, stages of implementation, or strategies for implementation. Field experts included administrators and implementation consultants with at least ten years of experience in leading implementation efforts for one or more evidence-based practices in the CMH field. The participants were recruited only from the U.S. to allow better coordination during the consensus-building process.

Nineteen research experts and 11 field experts were identified. Eight of them were excluded, as they collaborated on research or field projects with other, more senior experts identified. Thus, an email describing the study, expected tasks, and timeline was sent to 22 experts – 17 researchers and five field experts. Eleven of the researchers and all five field experts agreed to participate in the study. The research experts represented different health-related fields (e.g., public health, health policy, behavioral health, children’s mental health, etc.). They included two panelists who developed a theory or framework related to organizational readiness, four who developed models related to implementation stages, and five that focused their research on implementation strategies. The field experts were involved in multi-sites implementation projects in the CMH field in various systems (e.g., Veterans Affairs, state-vocational rehabilitation, non-profit organizations, etc.). A complete list of the panelists and their affiliations can be found in the Contributors section.

Modified Delphi Process

The Delphi method is widely used in health research to develop consensus on group opinion (Sackman, 1974). Delphi methods are usually used to address complex,

large, multidisciplinary problems where knowledge is incomplete or when uncertainty and lack of evidence exist (C. Powell, 2003; Trevelyan & Robinson, 2015). The modified Delphi method aims to reach agreement among a group of experts on a set of selected items (Custer et al., 1999; Sackman, 1974), rather than elicit agreement about an open question, which is the focus of the original Delphi Process (Avella, 2016). We chose to use the modified Delphi process since the ERIC compilation of strategies provides a pre-defined set of items. In addition, this version of the Delphi method typically improves the response rate and provides a solid grounding for previously developed work (Custer et al., 1999). The modified Delphi method has been used in several projects to define constructs and processes related to implementation (Attieh et al., 2014; Domlyn & Wandersman, 2019; Oostendorp et al., 2015; B. J. Powell, Waltz, et al., 2015; Timmings et al., 2016). It is considered a highly efficient method to promote conceptualization in the implementation science field (Minas & Jorm, 2010).

In this study, the modified Delphi process included three rounds to develop consensus on the categorization of ERIC implementation strategies into ORI stages. The experts were not given the opportunity to add or modify strategies to avoid another consensus process related to these changes. The first two rounds were conducted individually, using an online questionnaire; the third round involved a video conference of all the panelists, followed by another individual questionnaire. The panelists had two weeks to complete each round with a week break between the submission deadline and the launch of the next round. The rapid turnaround was designed to maintain participants' engagement and reduce attrition (Donohoe et al., 2012). The overall process took less

than three months, with the first round released on June 1st, 2020, and the third round completed on August 20th, 2020. Consistent with the literature (Diamond et al., 2014), we set a 60% agreement threshold, representing the majority of votes, to determine high-level agreement among the participants in each round. Medium- and low-level agreements were set to 30-59% and under 30%, respectively. The consensus-building process was designed like a funnel, offering more granularity from one step to another (see Figure 2). High-level agreement served as the criterion for each strategy's inclusion in the typology. The Medium-level agreement was only used in Round 2 to identify strategies that the experts thought were relevant to the typology but needed further discussion before determining their classification.

The University Institutional Review Board exempted the study. Nevertheless, participant confidentiality was maintained throughout the survey rounds to avoid any pressure between co-panelists and guarantee the same weight for all participants' responses (Avella, 2016). The participants were only exposed to each other in the final round during the video conference discussion.

Round 1: A link to an online questionnaire was emailed to all the participants via Qualtrics, a secure survey platform. The panelists were asked to identify strategies they perceived as relevant to pre-implementation from the complete list of the ERIC strategies (N=73); definitions for these strategies were included (B. J. Powell, Waltz, et al., 2015). Participants were asked to check off one category for which they perceived the strategy to be most relevant: 1) Pre-implementation, 2) During implementation, or 3) Pre- and during implementation. Participants were provided with the definition for each stage. Pre-

implementation was defined as “when members of the organization are considering changing their practice or preparing to engage in the implementation activities (e.g., evaluating the need to change, weighing the cost and benefits, and planning).” During implementation was defined as “when members of the organization are actively engaged in changing their practice or acquiring a new practice (e.g., training, supervision, problem-solving, and dissemination activities).” At the end of this round, strategies endorsed by most participants ($\geq 60\%$) as relevant for pre-implementation only or for both pre- and during implementation were compiled together and carried forward to the second round.

Round 2: The online questionnaire was revised to include only strategies carried over from the previous round. Participants were asked to indicate which stages were relevant for each strategy, or no stage at all (None category). The stages were defined based on the TTM definitions (Levesque et al., 2001) as follows: ORI-1. Pre-contemplation - members of the organization have no awareness of the new practice or feel no pressing need to change their current practice. Strategies in this stage mostly relate to generating inspiration for the change, addressing anxiety about maintaining the status quo, communicating information about the change and how it can improve the organizational success and climate, or displaying strong leadership commitment to the change; ORI-2. Contemplation - the benefits of changing the practice are recognized but are still outweighed by the potential risks or costs. Strategies in this stage mostly relate to clarifying or modifying personal values and goals concerning the change initiative; ORI-3. Preparation - interest and motivation for changing the practice have been

established, and people are ready to create a plan or take small steps toward launching implementation activities. Strategies in this stage mostly relate to planning the implementation process, encouraging involvement, and empowering members of the organization to take key positions in the implementation process.

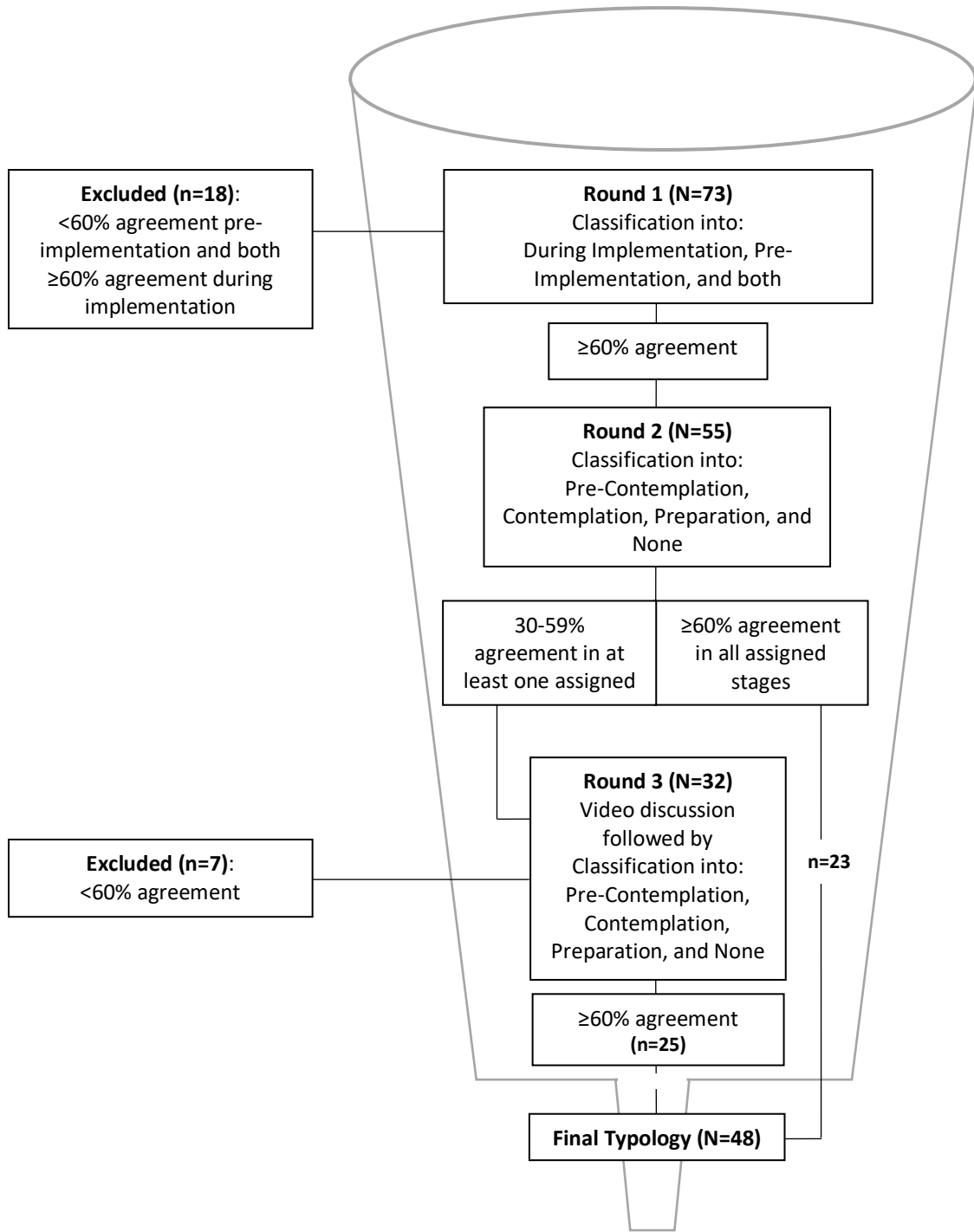
Strategies that reached a high-level agreement ($\geq 60\%$) for all ORI stages to which they were assigned were included in the final typology. Strategies that reached a medium-level agreement (30-59%) in at least one category were carried forward to the third round to develop a better consensus about their assignment.

Round 3: The final round consisted of two steps aimed at building consensus around the assignment of strategies with a medium-level agreement and finalizing the ORI typology. First, a 90-minute live video conference was conducted using the Zoom platform to clarify and refine the decision process related to strategy classification. The participants were presented with examples of strategies representing four different types of disagreement: 1) high-level agreement on one stage and medium-level agreement on other stages; 2) medium-level agreement on all ORI stages; 3) a mix of low- and medium-level agreement; and 4) medium-level agreement on the None category. Using these examples, the experts engaged in a structured discussion. They reviewed the ORI stages, agreed on specific issues related to the decision process, and received guidance before the final classification task.

Second, a final questionnaire was sent via an email containing all the medium-agreement level strategies carried over from Round 2. Experts were asked to assign the strategies again to each ORI stage independent of their responses in the previous round.

Strategies from Round 2 with a high-level agreement in all assigned stages were then combined with strategies that reached a high-level agreement in Round 3 to create the final typology.

Figure 2. Flowchart of the Delphi process



RESULTS

Sixteen panelists started the process, and 13 remained active until the end (see Table 1)

Table 1. Number of panel participants in each round

Round	No. of Participants	Research Experts	Field Experts
1	16	11	5
2	15	10	5
3	13	9	4

Round 1

The panelists sorted the 73 implementation strategies listed in the ERIC project into three categories of Pre-implementation, During implementation, or both. Of the 73 strategies, the experts identified 55 (75%) as relevant to pre- and during-implementation. Of the remaining 18 strategies, six (33%) were deemed relevant only during implementation, and twelve (67%) did not reach the agreement threshold for pre- and during-implementation. These 18 strategies were excluded from a further discussion (see Appendix A., excluded strategies marked with superscript a). The 55 strategies considered relevant to pre-implementation were carried over to the next round. Appendix A. summarizes the strategies included in each round, their final classification, and in which round their allocation was determined.

Round 2

Of the 55 strategies relevant to pre-implementation included in this round, five (9%) reached a high-level agreement as relevant to Pre-contemplation (ORI-1), 19 (35%) to Contemplation (ORI-2), and 47 (85%) to Preparation (ORI-3). All the strategies

assigned to Pre-contemplation or Contemplation with a high-level agreement were assigned to at least one other stage. Twenty-three (42%) strategies reached a high-level agreement for all stages to which they were allocated. Three of them were assigned to Pre-contemplation, 10 to Contemplation, and 21 to Preparation. For example, “Develop a formal implementation blueprint” had a high-level agreement for Preparation, and “Conduct needs assessment” had a high-level agreement for both Pre-contemplation and Contemplation. All 23 strategies that reached a high-level agreement were considered for inclusion in the ORI typology (see Appendix A, marked with superscript b).

Twenty-eight strategies (51%) reached a high-level agreement for one stage and a medium-level agreement for another. For example, “Use data experts” had a high-level agreement as relevant to Preparation, but a medium-level agreement for Contemplation. Four more strategies (7%) reached only a medium-level agreement for one or more categories. None of the 55 strategies included in this round had only low-level agreement. Thus, all 32 strategies with inconsistent or medium-level agreement were carried over to Round 3 to determine their final allocation.

Round 3

Participants in the live discussion generated three main guidelines regarding the conceptualization of intervention strategies used in different ORI stages. 1) The strategies should be viewed in the context of implementing relatively new practices, which present more readiness challenges, and not in the context of scaling up already disseminated interventions, for which there is usually more acceptance. 2) Some pre-implementation strategies are related to the external context (e.g., policy) or the intervention design (e.g.,

the “packaging” of the intervention); therefore, they are not relevant to organizational readiness development and should be assigned to the “None” category. 3) Some strategies can be used in different ways (like funding/contracting) at different stages, depending on the system in which the organization operates. Such strategies can be assigned to more than one stage, given the aim of developing a typology of strategies for people to choose from, based on their local needs or system structures.

At the end of the third round, 25 of the 32 strategies (78%) reached a high-level agreement in one or more stages (two in Pre-contemplation, eight in Contemplation, 17 in Preparation) and were included in the final typology (see Appendix A., marked with superscript c). Of the 25 strategies that reached a high-level agreement in this round, 14 (44%) retained their high-level allocation from the previous round, and 11 (34%) had shifted their allocation. Of those 11 strategies, four (36%) moved their high-level agreement from one stage to another (e.g., “Assess for readiness and identify barriers and facilitators” moved from Preparation to Contemplation). Six strategies (55%) shifted from high-level agreement in two stages to only one stage (e.g., “Conduct educational outreach visits” was previously assigned to both ORI-1 and 2, but after Round 3 was only assigned to Contemplation). One strategy (9%) had a high-level agreement added in another stage after having just one in the previous round (“Use an implementation advisor” was previously assigned to Preparation and in this round was added to Contemplation as well). The four strategies with only a medium-level agreement in the previous round kept their status. Three more strategies were removed from pre-implementation or decreased their level of agreement. Those seven strategies (21.5%)

were eliminated from the typology (see Appendix A., marked with superscript d).

Final typology

Of the 73 implementation strategies identified by the ERIC project, the final expert-informed typology included 48 (66%) strategies deemed relevant to enhancing ORI prior to implementation. This typology was comprised of the 23 strategies from Round 2 and the 25 strategies from Round 3 that reached a high-level agreement. The distribution of the 48 strategies was as follows: five strategies in Pre-contemplation (10%), 18 in Contemplation (37%), and 38 in Preparation (79%). Some strategies were assigned to more than one stage. Four out of five strategies (80%) in Pre-contemplation were also relevant to Contemplation (e.g., “Conduct local consensus discussions”). Nine out of 18 strategies (50%) in Contemplation were also relevant to Preparation (e.g., “Build a coalition”). Only one strategy reached a high-level agreement in all three stages: “Conduct educational meetings.” Table 2 presents the strategies’ final distribution across all stages.

Table 2. Final expert-informed ORI typology

ORI-1 Pre-Contemplation	ORI-2 Contemplation	ORI-3 Preparation	
<p>Unique to this stage</p> <p>1. Develop educational materials</p> <p>Overlap with ORI-2</p> <p>2. Conduct local consensus discussions</p> <p>3. Conduct local needs assessment</p> <p>4. Inform local opinion leaders</p> <p>Overlap across all stages</p> <p>5. Conduct educational meetings</p>	<p>Unique to this stage</p> <p>1. Assess for readiness and identify barriers and facilitators</p> <p>2. Conduct educational outreach visits</p> <p>3. Fund and contract for clinical innovation</p> <p>4. Identify and prepare champions</p> <p>5. Identify early adopters</p> <p>6. Visit other sites</p> <p>Overlap with ORI-1</p> <p>7. Conduct local consensus discussions</p> <p>8. Conduct local needs assessment</p> <p>9. Inform local opinion leaders</p> <p>Overlap with ORI-3</p> <p>10. Access new funding</p> <p>11. Alter incentive / allowance structures</p> <p>12. Build a coalition</p> <p>13. Promote adaptability</p> <p>14. Recruit, designate and train for leadership</p> <p>15. Shadow other experts</p> <p>16. Use advisory boards and workgroups</p> <p>17. Use an implementation adviser</p> <p>Overlap across all stages</p> <p>18. Conduct educational meetings</p>	<p>Unique to this stage</p> <p>1. Centralize technical assistance</p> <p>2. Change accreditation or membership requirements</p> <p>3. Change physical structure and equipment</p> <p>4. Change record system</p> <p>5. Create new clinical teams</p> <p>6. Create or change credentialing and/or licensure standards</p> <p>7. Develop a formal implementation blueprint</p> <p>8. Develop an implementation glossary</p> <p>9. Develop and implement tools for quality monitoring</p> <p>10. Develop and organize quality monitoring systems</p> <p>11. Develop disincentives</p> <p>12. Develop resource sharing agreements</p> <p>13. Distribute educational materials</p> <p>14. Involve patients / consumers and family members</p> <p>15. Make billing easier</p> <p>16. Make training dynamic</p> <p>17. Model and simulate change</p> <p>18. Obtain formal commitments</p>	<p>19. Place innovation on fee for service lists / formularies</p> <p>20. Prepare patients / consumers to be active participants</p> <p>21. Promote network weaving</p> <p>22. Revise professional roles</p> <p>23. Stage implementation scale up</p> <p>24. Tailor strategies</p> <p>25. Use data experts</p> <p>26. Use data warehousing techniques</p> <p>27. Use train the trainer strategies</p> <p>28. Work with educational institutions</p> <p>Overlap with ORI-2</p> <p>29. Access new funding</p> <p>30. Alter incentive / allowance structures</p> <p>31. Alter patient / consumer fees</p> <p>32. Build a coalition</p> <p>33. Promote adaptability</p> <p>34. Recruit, designate and train for leadership</p> <p>35. Shadow other experts</p> <p>36. Use advisory boards and workgroups</p> <p>37. Use an implementation adviser</p> <p>Overlap across all stages</p> <p>38. Conduct educational meetings</p>

DISCUSSION

This study aimed to facilitate the adoption of new practices by developing a typology of pre-implementation strategies that address ORI enhancement. We used the TTM as the theoretical framework to break down the construct of organizational readiness into a stage-based process. Using a modified Delphi method, we built consensus among implementation experts regarding the classification of the ERIC strategies into three readiness stages: Pre-contemplation (ORI-1), Contemplation (ORI-2), and Preparation (ORI-3). The experts identified 48 strategies as relevant to pre-implementation readiness development and specified which strategies were most appropriate for each ORI stage.

The study confirms that implementation strategies can be linked to specific readiness stages, as defined by the TTM. It also aligns with the recommendation to develop guidelines for tailoring implementation strategies from the ERIC compilation (B. J. Powell, Waltz, et al., 2015). Our typology may be used in conjunction with the ERIC compilation to inform the selection and utilization of specific strategies to address readiness needs in a directed and practical way. Other attempts to categorize and specify the utilization of the ERIC strategies have lacked a temporal dimension (Perry et al., 2019; Waltz et al., 2015, 2019). We have addressed this gap by providing a process-based approach that distinguishes between pre-implementation and during implementation phases and provides steps to be taken prior to implementation. Future studies may replicate our work to determine which ERIC strategies are relevant during active

implementation and sustainment to complete the association between all five stages of the TTM and the ERIC list.

Furthermore, the TTM provides a framework to address the critical psychological aspects of attitudes and beliefs toward the change. While those implementing a new approach may include “early adopters” or those eager to implement an innovation (Rogers, 2003), a larger proportion of people fall into the Pre-contemplation and Contemplation stages when introduced to a new change process (Laforge et al., 1999; J. M. Prochaska et al., 2001). Although several researchers have emphasized the importance of individuals’ positive attitudes and beliefs as antecedents to organizational readiness (Aarons, Cafri, et al., 2012; Keith et al., 2017; Rafferty et al., 2013; Vakola, 2014), specific strategies for enhancing these attitudes and beliefs have been previously unaddressed (Dave et al., 2019; Rafferty et al., 2013; Weiner, Mettert, et al., 2020). The conceptual structure of Pre-contemplation, Contemplation, and Preparation provides a refined view of the different psychological barriers and readiness needs that can more accurately direct enhancement efforts. Linking readiness needs with discrete strategies can help implementation consultants and leaders respond to deficits identified in readiness assessments. For example, the TCU-ORC (Lehman et al., 2002), the most established readiness measurement tool (Weiner, Mettert, et al., 2020), includes measures related to individuals’ awareness of pressures for change. If this assessment reveals a lack of knowledge and understanding of the need to change, Pre-contemplation strategies can be used to address it. Focusing on the psychological barriers of individuals in the early stages of Pre-contemplation and Contemplation can increase the number of engaged

participants in the Preparation and Action stages, leading to a greater positive impact on the change process.

While our typology contains specific sets of implementation strategies for each ORI stage, the number of strategies assigned to ORI-3 was much larger than the number of strategies assigned to ORI-1 and ORI-2. Two explanations might help clarify this difference between stages. First, it may be easier to operationalize and measure Preparation-related strategies than Contemplation and Pre-contemplation strategies due to their more practical nature. For example, “Distribute educational materials” describes a concrete task, whereas “Identify early adopters” is more generic and calls for specification as to how it should be performed.

Another explanation lies in how the strategies are described. It has been recognized that the implementation strategies listed in the ERIC compilation vary in their level of specificity (Bunger et al., 2017; Perry et al., 2019; B. J. Powell, Waltz, et al., 2015; Waltz et al., 2019). This variability makes it difficult to compare the number of strategies in one stage with another. For example, it is possible to have fewer but more broadly defined strategies in one stage and a greater number of more specific strategies in another stage. A similar concern was raised by several panelists in our study regarding their ability to uniquely classify some of the strategies involving multiple activities that span across stages. Further investigation showed that these broad strategies were mostly assigned to ORI-1 and ORI-2, while the strategies assigned to ORI-3 were more concrete. To resolve the unbalanced distribution of strategies and create a similar degree of specificity across strategies, we suggest that future work focuses on breaking down some

of the broad strategies in ORI-1 and 2. For example, “Conduct needs assessment,” appearing in ORI-1 and ORI-2, can be divided into “Assess client needs,” which is more relevant to establishing the need to change practice during ORI-1, and “Assess staff needs for support,” which may be more appropriate in ORI-2. To date, studies related to implementation strategies have mostly focused on clustering “small” strategies (B. J. Powell, Waltz, et al., 2015; Waltz et al., 2015). More information is needed on how “broad” strategies can be dismantled to make them more specific. Exploring this typology's utility in the real world will provide valuable information about how strategies can be divided or collapsed.

The strategies’ overlap across stages may also be attributed to their broad nature. However, another possible explanation for the overlap is the experts’ decision to assign strategies to more than one stage, if needed. Several experts argued that some strategies could be used differently, depending on the context in which the change process occurs. For example, “Inform local opinion leaders” was assigned to both ORI-1 and 2 with the notion that it can be utilized in both stages, depending on local opinion leaders’ role, impact, and relationship with the organization. The panel decided that since the typology could be utilized in a wide range of organizational contexts, it would be better to assign strategies to multiple stages and allow implementers to “pick and choose” based on their fit with the local setting. Future studies could clarify the circumstances under which the same strategies are used in different stages.

Our confidence in the results is limited to the experts who agreed to participate in the study. The experts we identified as relevant to our topic that could not participate in

the study might have provided other perspectives or further strengthened our results. Avella (2016) states that typical Delphi panels range between 10 to 100 members and usually consist of two or three expert groups, depending on the relevant stakeholders available to provide input on the research question. While our panel represented diverse perspectives from both academia and the field, additional implementers representing frontline roles could have provided valuable user experience (Campbell et al., 2004). Additionally, our panel included only U.S.-based experts and did not account for geographical or cultural representation. This approach may have downplayed the impact of cultural differences on the structure of the typology. While the choice of limiting our panel to U.S. experts helped us overcome the technical challenges of time differences and language barriers, the lack of international input may limit the generalizability of the typology. Future studies should strive to create panels reflecting more diverse geographic and cultural contexts for implementation and use focus groups, rather than large-scale discussion meetings, to accommodate different time zones, cultural differences, and professional backgrounds.

Another limitation of the study is that our list of implementation strategies included only those identified in the ERIC project and excluded additional strategies that might be missing from the literature. The ERIC compilation of strategies is the most comprehensive list to date. It includes a definition for each strategy that was established in a consensus-building process involving a large panel of implementation experts. We deliberately avoided asking the experts in our study to offer additional strategies beyond those listed in the ERIC compilation in order to refrain from reaching another set of

agreement on new strategies and their definitions that might not be consistent or comparable to the ERIC list. One potential next step would be to conduct a field study to elicit additional implementation strategies and how they were used relative to the TTM stages. Further work can be done to identify other refinements and sub-constructs already suggested for the ERIC compilation (Perry et al., 2019; Waltz et al., 2015, 2019) and include them in the typology to provide a more holistic view of current knowledge.

The results from this study provide an initial framework to address ORI enhancement and positively impact the adoption rate of evidence-based practices. Further refinement and development of pre-implementation strategies, specifically those addressing Pre-contemplation and Contemplation, could help increase ORI levels in organizations that might otherwise avoid joining an implementation project.

CONCLUSION

This study constituted an initial effort to specify the possible utilization of implementation strategies in relation to stages of readiness development. The typology constructed in the study offers greater specificity regarding the potential utilization of the ERIC strategies to support the implementation outcome of organizational readiness for implementation. However, while the participating experts agreed on distinct sets of strategies suitable for each ORI stage, further specificity is needed, especially for strategies that affect attitudes and beliefs in the Pre-contemplation and Contemplation stages. It is also important to test this typology in the field, both as an exploration of its

utility and as a way of understanding more about the different uses of similar strategies across ORI stages.

CONTRIBUTORS

We would like to acknowledge each member of the expert panel, listed here by alphabetical order of their last name: Gregory Aarons, University of California, San Diego; Cayte Anderson, University of Wisconsin-Madison; Deborah Becker, The IPS Employment Center at the Rockville Institute, Westat; Torrey A. Creed, University of Pennsylvania; Lisa Dixon, Columbia University; Rani Elwy, Brown University; Joseph Marrone, Boston University and UMASS Boston; Janice Prochaska, Prochaska Change Consultants; Lisa Razzano, University of Chicago, and Thresholds Inc., Illinois; Lisa Saldana, Oregon Social Learning Center (OSLC); Virginia Selleck, Private consultant; Christopher Shea, University of North Carolina-Chapel Hill; Thomas Waltz, Eastern Michigan University; Abe Wandersman, The Wandersman Center and the University of South Carolina-Columbia; Bryan Weiner, University of Washington; Nathaniel Williams, Boise State University.

**STUDY 2: ORGANIZATIONAL READINESS FOR IMPLEMENTATION OF
EVIDENCE-BASED PRACTICES IN COMMUNITY MENTAL HEALTH:
INITIAL CONFIRMATION AND REFINEMENT OF
AN EXPERT-INFORMED TYPOLOGY**

ABSTRACT

Purpose: Organizational readiness is a known barrier to implementing evidence-based practices (EBPs) in community mental health (CMH). A robust methodology for enhancing organizational readiness for implementation (ORI) would improve implementation outcomes of EBPs and ensure better services for people with severe mental illnesses (SMI). Prior work established a framework of implementation strategies targeting ORI enhancement by asking a group of implementation experts from various fields to categorize strategies from the Expert Recommendations for Implementing Change (ERIC) Project into three readiness stages, consistent with the pre-action stages suggested by the Transtheoretical Model of Behavioral Change: Pre-contemplation, Contemplation, and Preparation. The current study provides initial confirmation and refinement of this expert-driven typology based on CMH field experiences.

Methods: We conducted in-depth interviews with stakeholders involved in a recent EBP implementation project. Participants included staff (n=9) from four CMH agencies and the implementation team who facilitated the project (n=3). Their experiences were compared with the experts' typology from the previous study to identify consistencies and discrepancies.

Results: The participants' experiences were congruent with two-thirds of the strategies and their stage-classifications as determined by the experts. The refinements included 12 strategies used in additional stages beyond the experts' classification, four strategies from the ERIC list that were not included in the typology, and five new strategies.

Conclusions: This study provides initial confirmation of the ORI typology and suggests several expansions that should be further tested. The results offer a preliminary structure as to how ORI can be enhanced in the CMH field.

INTRODUCTION

Numerous psychosocial interventions have been shown to be effective in supporting people with serious mental illness (SMI) in work, education, and independent living. However, the adoption of those interventions remains extremely low (Interdepartmental Serious Mental Illness Coordinating Committee, 2017). A common reason for the low adoption rates of evidence-based practices (EBPs) is limited organizational readiness for the desired change in practice (B. J. Powell et al., 2014; Simpson & Flynn, 2007; Stirman et al., 2016; Weiner, Clary, et al., 2020). *Organizational readiness* is defined as “the degree to which the organization and those involved are individually and collectively primed, motivated, and capable of executing change” (Holt & Vardaman, 2013, p. 9). Higher readiness levels can lead to higher adoption rates of EBPs and more effective implementation processes (Weiner, 2009; Weiner, Mettert, et al., 2020). Therefore, addressing the three aspects of readiness – interest (i.e., being primed), motivation, and preparedness (i.e., feeling capable) to change practice across the organization – has the potential to encourage CMH agencies to adopt EBPs.

Over the last decade, research related to the effective implementation of EBPs has focused on specifying strategies to overcome barriers to successful implementation (Kirchner et al., 2017). The most comprehensive compilation of such strategies was generated through the Expert Recommendations for Implementing Change (ERIC) project (B. J. Powell et al., 2012; B. J. Powell, Waltz, et al., 2015). It includes 73 implementation strategies collected from the literature, then verified by a group of

implementation experts from various health fields. Several attempts have been made to assess the relevance of these strategies to specific fields, including school-based mental health interventions (Cook et al., 2019), psychotherapy for PTSD (Sayer et al., 2020), and cardiac prevention (Perry et al., 2019). To date, such an assessment has not been conducted for psychosocial interventions for the SMI population.

In addition, although the ERIC compilation provides a comprehensive list of implementation strategies, it lacks internal organization or a framework to guide the selection of strategies at specific stages of implementation, such as pre-implementation, active implementation, sustainment, or scaling-up. The few published studies that explored the utilization of ERIC strategies before and during implementation described the timing of strategies' utilization during the implementation process but did not provide information regarding their target outcomes (Bunger et al., 2017; Rundall et al., 2018). While these studies offer initial guidance as to which ERIC strategies could be relevant pre-implementation, more information is needed regarding how they can be utilized to target readiness benchmarks in CMH services.

A recent study recruited a group of implementation experts from various fields and used a modified Delphi process to build consensus around the classification of strategies from the ERIC compilation into a systematic framework that can support ORI development (Vax et al., 2020). The experts selected strategies related to ORI enhancement from the ERIC compilation and categorized them into three stages of readiness based on the well-established model of behavioral change, the Transtheoretical Model (Levesque et al., 2001; J. M. Prochaska et al., 2001; J. O. Prochaska &

DiClemente, 1983). The three organizational readiness stages were Pre-contemplation, Contemplation, and Preparation. The behavioral markers related to each stage are presented in Table 3.

Table 3. ORI stages definitions

Stage	Condition	Readiness needs	Expected outcome
ORI-1 Pre-Contemplation	No awareness of the need to change practice or intention to act.	Knowledge about the intervention and the change process, exposure, inspiration, explanation of general benefits for the clients and the organization	Willingness to consider, but not to act (interest)
ORI-2 Contemplation	Acknowledge the need for change, open to the change, but expresses concerns about risks, costs, and ambivalence.	Identifying personal benefits of the change, verifying supports, and evaluating the feasibility of the change process	Willingness to become actively involved (motivation)
ORI-3 Preparation	Acceptance and readiness to make small steps towards the change	Developing belief in the success of the process, securing resources	Planning active steps (preparedness)

The goal of the study was to create a repository of strategies related to each ORI stage, which can be used as relevant to the local context. This study culminated in a typology comprised of 48 pre-implementation strategies classified by the ORI stages. While the expert-informed (EI) typology identifies strategies that may support implementers' progress through the stages of readiness development, it was constructed by experts from a variety of fields and was not specific to CMH services. Empirical data about the use of ORI strategies when implementing EBPs in the mental health field would further refine this typology.

This study aimed to provide a first step towards validating this conceptual ORI framework by pursuing confirmation and refinement of the EI typology. A qualitative exploration collected field experiences from stakeholders who were involved in a recent multi-site implementation project of an EBP that supports cognitive functioning at work for individuals with SMI. The aim was to evaluate consistencies and discrepancies between the experts' classification of the ERIC strategies to each of the ORI stages, as constructed in the previous study, and the utilization of readiness-related strategies reported by the participants in the current study.

METHODS

Study design. We conducted a qualitative study using in-depth interviews with various stakeholders from the CMH field who recently participated in a multi-site implementation project. The interviews explored the participants' experiences of becoming engaged with the implementation effort. We then compared the interview data with the EI typology, using content analysis to detect consistencies and discrepancies between the two. This congruence analysis allowed us to ascertain field confirmation and identify potential refinements for each ORI stage relevant to the CMH field.

The implementation project. The context for this study was a project piloting an implementation framework applied to a cognitive remediation program called "Thinking Skills for Work." This program aims to improve employment outcomes in people with SMI by complementing vocational rehabilitation services, such as supported employment, with cognitive remediation techniques. The intervention involves computer-

based cognitive exercises, coaching strategies to improve cognitive performance, and teaching self-management strategies to enhance cognitive functioning in on-the-job and other real-life situations (McGurk & Mueser, in press). The program has been shown to be effective at improving cognitive and employment outcomes across multiple controlled trials (McGurk et al., 2005, 2007, 2015; McGurk & Mueser, 2016). The implementation framework piloted in this study was applied to agencies across the State of Oregon that provide supported employment services. The framework included free online training, weekly remote supervision, technical assistance to agency leadership, and a marketing campaign to increase interest and demand for the new intervention among clients and referring providers. The State Director of Supported Employment, who served as a liaison, facilitated the agencies' recruitment, provided input on training materials, and helped mitigate challenges with local sites throughout the project. Prior to launching the project, representatives from interested agencies participated in a video conference with the training team to learn more about the project and clarify expectations. Each agency selected two staff members – a Supported Employment Supervisor and a staff member from their employment or clinical teams – to be trained as cognitive specialists.

Data collection. We conducted 12 in-depth retrospective interviews, nine of them with staff from the four agencies, serving in various roles, that participated in the pilot implementation project. Three additional interviews were conducted with implementation team members, including the lead-developer of the intervention, a research and training assistant, and the State Director of Supported Employment (see Table 4).

Table 4. Study 2 participants

Stakeholder group	N	Female	Male	Range of the Years of experience in CMH	Education level	Involved in decision making	Trainee
Implementation Team	3	2	1	15-30	MA, PhD	N/A	N/A
Directors of Clinical/Employment Services	2	0	2	20-40	MA	+	-
Supported Employment Supervisors	4	3	1	6-21	MA	+	+
Supported Employment Providers	3	2	1	10-16	MA, BA	-	+
Total	12	7	5				

Interviews focused on the participants' experiences during recruitment and preparation for the implementation effort. The timeframe lasted from when they first learned about the project to the beginning of the training. We used three different interview guides, one for agency directors and supervisors who were involved in deciding to join the project, one for staff members who were brought in after the decision to implement the intervention was made, and one for the implementation team members. All participants were asked about their role in the project, their overall experience, and how they were introduced to the project.

In addition, the *directors and supervisors* were asked about personal and organizational challenges they encountered, what helped them overcome these, and what influenced their decision to enroll their agency in the project. This group of participants was also asked how and to whom they introduced the project within their organization. The *providers* were asked about their views prior to implementation regarding personal and organizational barriers to taking on the new intervention, what was done to address

those concerns, and by whom. The *implementation team members* were asked about their challenges in getting buy-in from different stakeholders and overcoming those challenges. All participants were prompted to describe how the activities addressed the receivers' attitudes, beliefs, and behaviors towards engaging in the implementation project. Finally, the participants were asked to suggest additional strategies that could have helped them or others become even more primed, motivated, and prepared for the implementation process.

Procedures. The University Institutional Review Board declared the study as non-human subject research. The study participants from the agencies were recruited with the help of the state liaison, and the implementation team was recruited for the study by the first author. While informed consent was not required, all participants received information via email about the study goals, expectations, data security measures, and the voluntary nature of their participation. All interviews were conducted through the Zoom video-conferencing platform. The interviews were recorded and transcribed verbatim. The transcripts were de-identified for analysis purposes, using a code number to replace personal and agency identifiers. Participants received a gift card as a token of appreciation for their time and input.

Analysis. All 12 interviews were analyzed in three steps. ***Step 1 – Coding interviews for ORI stages:*** The first author applied a content analysis approach (Hsieh & Shannon, 2005) using the qualitative analysis software NVivo 12 to identify the pre-implementation ORI stages reported in each interview. The coding was informed by behavioral and psychological markers related to each ORI stage consistent with the

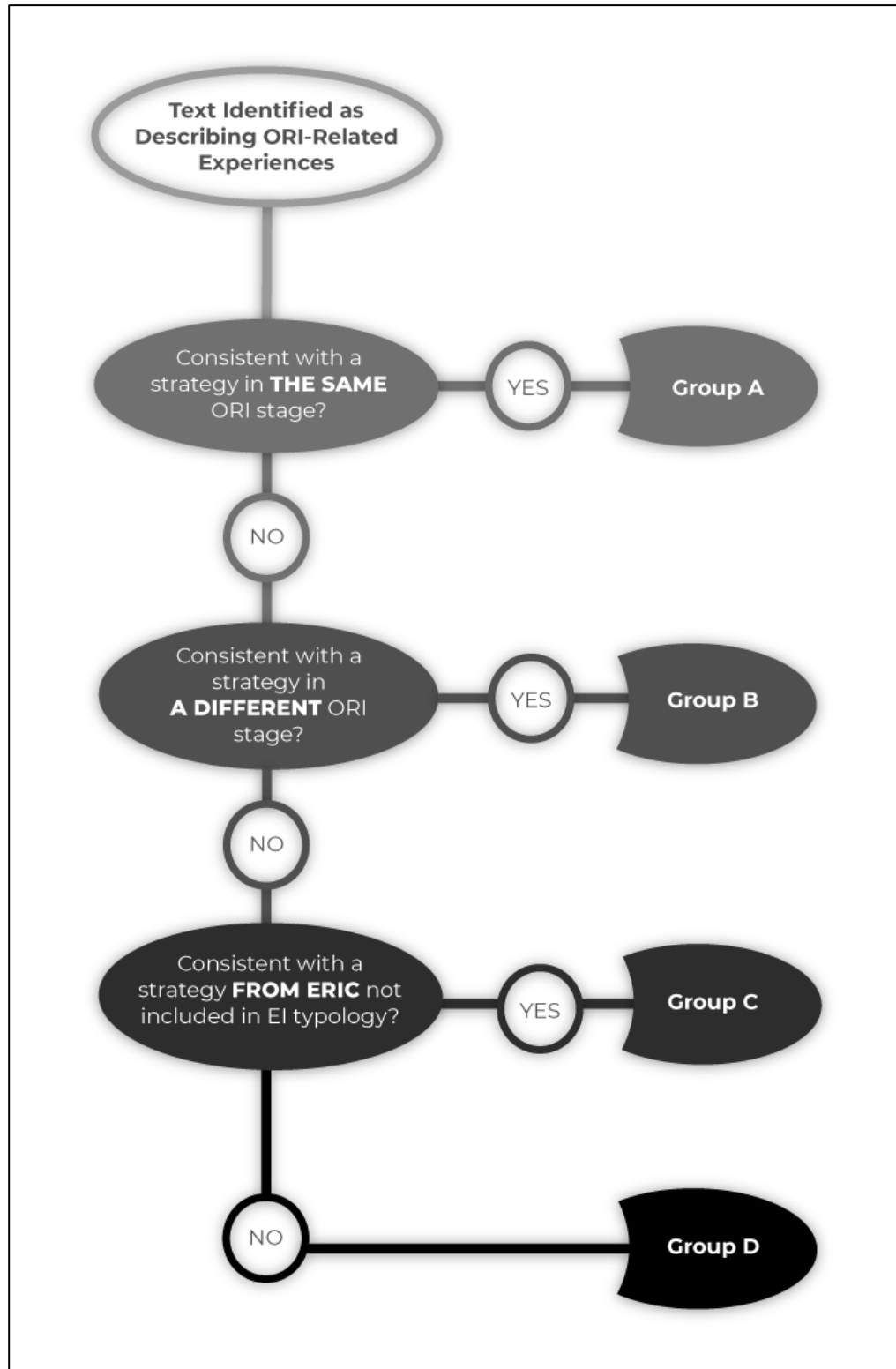
Transtheoretical Model (see Table 3).

Step 2 – Coding for ORI strategies: Two researchers experienced in implementing EBPs in the CMH field analyzed the text corresponding to each ORI stage. The codebook used for this step consisted of the EI typology developed in our previous study (Vax et al., 2020) and all other ERIC implementation strategies that the experts considered not relevant to ORI development. The coders developed new codes for strategies mentioned in the interviews that were not included in the ERIC list. For each part of the text identified in Step 1, the coders followed a stepwise coding process (see Figure 3) based on the following sequential questions: A) is the text consistent with a strategy assigned to the relevant ORI stage in the EI typology? B) is the text consistent with a strategy assigned to a different ORI stage in the EI typology? C) is the text consistent with a strategy from the ERIC list that was not included in the EI typology? D) is the text describing another strategy not included in the ERIC list? Each researcher coded the data independently. The researchers met several times during the analysis process to discuss the coding consistency and formulate new coding categories before moving on to additional interviews. Any discrepancies in coding were resolved based on consensus.

Step 3 – Confirmation of the EI typology. In this step, the first author compared the implementation strategies that emerged from the interviews and the strategies in the EI typology's corresponding stage. First, the findings from Step 2 of the analysis were summarized and organized into four groups: A) strategies consistent with the same ORI stage as in the EI typology; B) strategies consistent with a different ORI stage than in the

EI typology; C) strategies consistent with an ERIC implementation strategy not included in the EI typology; D) new strategies, not included in the ERIC list, and E) strategies from the EI typology that were not reported in this study. While categories A and E represent consistency with the experts' classification, the remaining three categories reflect different types of refinements to the typology that emerged from the field. Summaries of the different categories were developed for each ORI stage. Steps 2 and 3 were reviewed for validation by the second author, who is an implementation expert.

Figure 3. A Stepwise confirmation process for the coding of ORI strategies



RESULTS

The participants' experiences spanned all three ORI stages. Only providers experienced the Pre-contemplation stage, while most directors and supervisors started the process in the Contemplation stage. One director had previous experience with the program. Therefore, he started the process in the Preparation stage. Seven participants reached the Preparation stage, while two remained in contemplation until the beginning of implementation (see Table 5).

Table 5. Participants' progress along the ORI stages during pre-implementation

		Pre-Contemplation (ORI-1)	Contemplation (ORI-2)	Preparation (ORI-3)
Agency 1	Supervisor		+	+
	Provider	+	+	+
Agency 2	Director		+	+
	Supervisor Provider	+	+	
Agency 3	Supervisor		+	+
	Provider	+	+	+
Agency 4	Director			+
	Supervisor		+	+

Congruence by ORI stage

ORI-1, Pre-contemplation. Study participants reported all five implementation strategies (100%) classified as ORI-1 in the EI typology as being used in this stage (Group A). The participants also reported using three strategies that the experts assigned to later stages of the typology (Group B) and two strategies from the ERIC list that were not included in the typology (Group C). Finally, they identified three new strategies (Group D) not included in the EI or ERIC classifications. Overall, 13 strategies were

reported by the participants as relevant to the Pre-contemplation stage. Appendix B presents a summary of all study findings. Table 6 presents the strategies identified in this stage by their categories of congruence.

Table 6. ORI-1 strategies (Pre-contemplation)

Stage definition: Members of the organization have no awareness of the pressing need to change their practice. Helping them advance from this position should result in their willingness to consider the change but not yet to act	
A. Confirmed by the field	1. Conduct educational meetings ^{2,3} 2. Conduct local consensus discussions ² 3. Conduct local needs assessment ² 4. Develop educational materials 5. Inform local opinion leaders ²
B. New from another stage	6. Identify and prepare champions 7. Identify early adopters 8. Recruit, designate and train for leadership
C. New from ERIC	9. Develop academic partnerships 10. Mandate change
D. New from the field	11. Involve high-level management ^{2,3} 12. Market the innovation ^{2,3} 13. Recruit a local coordinator ^{2,3}
E. Not confirmed in the field test	

Note: Superscripts represent other ORI stages where the strategy appears in the EI typology.

ORI-2, Contemplation. Sixteen of the 18 strategies (89%) included in this stage of the EI typology were reported by study participants (Group A). In addition, seven strategies were reported in this stage that were classified in the EI typology as ORI-3 only (Group B). Four strategies from the ERIC list not included in the EI typology were reported by the participants in this stage (Group C). Finally, three new strategies described by the participants were identified as relevant to this stage (Group D) which were also relevant to ORI-1. Overall, 30 implementation strategies were identified as relevant to the Contemplation stage. Table 7 presents the strategies identified in this stage

by their categories of congruence.

Table 7. ORI-2 strategies (Contemplation)

Stage definition: The benefits of changing the practice are recognized but are still outweighed by the potential risks or costs. Advancement in this stage should result in the members' willingness to become actively involved in the implementation project.	
A. Confirmed by the field	1. Access new funding ³ 2. Alter incentive/allowance structures ³ 3. Assess for readiness and identify barriers and facilitators 4. Build a coalition ³ 5. Conduct educational meetings ^{1,3} 6. Conduct educational outreach visits 7. Conduct local consensus discussions ¹ 8. Conduct local needs assessment ¹ 9. Fund and contract for clinical innovation 10. Identify and prepare champions 11. Identify early adopters 12. Inform local opinion leaders ¹ 13. Promote adaptability ³ 14. Recruit, designate, and train for leadership ³ 15. Use an implementation adviser ³ 16. Visit other sites
B. New from another stage	17. Centralize technical assistance 18. Develop a formal implementation blueprint 19. Make billing easier 20. Make training dynamic 21. Model and simulate change 22. Place innovation on fee for service lists / formularies 23. Tailor strategies
C. New from ERIC	24. Capture and share local knowledge 25. Develop academic partnerships 26. Mandate change 27. Provide ongoing consultation
D. New from the field	28. Involve high-level management ^{1,3} 29. Market the innovation ^{1,3} 30. Recruit a local coordinator ^{1,3}
E. Not confirmed in the field test	31. Shadow other experts ³ 32. Use advisory boards and workgroups

Note: Superscripts represent other ORI stages where the strategy appears in the EI typology.

ORI-3, Preparation. Twenty of the 38 strategies (53%) assigned by the experts to this stage were also reported by the study participants (Group A). Three strategies

assigned by the experts to ORI-2 were reported in this stage (Group B). Another three strategies that were not part of the EI typology, but were included in the ERIC list, were reported as relevant to this stage (Group C). Four new strategies were identified as relevant to this stage (Group D), with two of them unique to ORI-3 and two also relevant to ORI-1 and ORI-2. Overall, 31 strategies were reported as relevant to the Preparation stage. Table 8 presents the strategies identified in this stage by their categories of congruence.

Table 8. ORI-3 strategies (Preparation)

Stage definition: Interest and motivation for changing the practice have been established, and people are ready to take small steps toward launching implementation activities. This stage should culminate in an implementation plan, including identified participants, roles, processes, and resources.	
A. Confirmed by the field	<ol style="list-style-type: none"> 1. Alter incentive/allowance structures² 2. Build a coalition² 3. Centralize technical assistance 4. Change physical structure and equipment 5. Conduct educational meetings^{1,2} 6. Create new clinical teams 7. Develop a formal implementation blueprint 8. Develop an implementation glossary 9. Develop resource sharing agreements 10. Distribute educational materials 11. Make billing easier 12. Model and simulate change 13. Obtain formal commitments 14. Place innovation on fee for service lists/formularies 15. Promote adaptability² 16. Promote network weaving 17. Recruit, designate, and train for leadership² 18. Revise professional roles 19. Tailor strategies 20. Use data experts
B. New from another stage	<ol style="list-style-type: none"> 21. Assess for readiness and identify barriers and facilitators 22. Identify early adopters 23. Visit other sites
C. New from ERIC	<ol style="list-style-type: none"> 24. Develop academic partnerships 25. Mandate change

	26. Provide ongoing consultation
D. New from the field	27. Develop and test technical infrastructure 28. Involve high-level management ^{1,2} 29. Market the innovation ^{1,2} 30. Plan for time and space allocation 31. Recruit a local coordinator ^{1,2}
E. Not confirmed in the field test	32. Access new funding ² 33. Alter patient/consumer fees 34. Change accreditation or membership requirements 35. Change record system 36. Create or change credentialing and/or licensure standards 37. Develop and implement tools for quality monitoring 38. Develop and organize quality monitoring systems 39. Develop disincentives 40. Involve patients/consumers and family members 41. Make training dynamic 42. Prepare patients/consumers to be active participants 43. Shadow other experts ² 44. Stage implementation scale-up 45. Use advisory boards and workgroups ² 46. Use an implementation adviser ² 47. Use data warehousing techniques 48. Use train the trainer strategies 49. Work with educational institutions

Note: Superscripts represent other ORI stages where the strategy appears in the EI typology.

Overall congruence

The participants confirmed about two-thirds of the EI typology. Out of 48 strategies included in the EI typology, a total of 31 strategies (65%) were reported by the participants in the corresponding stages (Group A). The other 17 strategies (35%) were not reported by the participants in this study (Group E). Twelve strategies (25%) from the EI typology were reported in a stage additional to the stage(s) recommended by the experts (Group B). Four of the 25 strategies (16%) from the ERIC list that the experts did not include in the typology were reported by participants (Group C). Finally, the study participants described five new strategies that were not part of the ERIC list or the EI typology (Group D). Overall, 57 strategies were reported by study participants.

DISCUSSION

This study is an important step towards establishing a systematic approach to ORI development. Confirming the association between implementation strategies and the readiness stages they address strengthens the Transtheoretical Model's combination with the ERIC compilation while making each of them more practical and useful. The study also revealed strategies that need to be further specified in terms of their actors, activities, and purpose, and it offered new strategies relevant to ORI development that were missing from the ERIC compilation. These findings expand the EI typology by adding unique strategies that implementation experts did not previously identify. Harnessing the stakeholders' experiences to refine and expand on the experts' views grounds the ORI typology in "real life" and reinforces its applicability to the CMH field.

Many of the strategies reported in this study were also deemed relevant to pre-implementation phases in other fields, such as "Identify barriers and facilitators for implementation" or "Identify and prepare champions" (Bunger et al., 2017; Rundall et al., 2018). However, this study took another step towards specifying the targeted utilization of those strategies within the pre-implementation phase by confirming their association with the behavioral and psychological markers of the ORI stages. As suggested by Presseau and colleagues (2019), clarifying stakeholders' behaviors is crucial for designing and measuring implementation outcomes.

The EI typology and this study also address a knowledge gap identified specifically in mental health research about the temporality, theoretical justification, and outcomes missing from the reporting of implementation strategies (Hooley et al., 2020).

By tying together strategies and pre-implementation stages based on a behavioral framework, we added an operational layer to both the ERIC compilation and the Transtheoretical Model's constructs. The findings supplement the results from a previous study conducted by members of the current study team (Vax et al., 2021), in which strategies and associated actions reported by stakeholders in the CMH field were identified and organized into the TTM readiness stages. Extending this process to the ERIC strategies provides a broader range of behavioral applications to support ORI development. Further exploration is needed to outline the unique role of different stakeholder groups in applying these strategies within the context of each stage, and to list specific actions that can be used to implement each strategy.

The results from this study confirm a large portion of the EI typology and offer several additions to each ORI stage. The congruence level found in ORI-1 and ORI-2 was much higher than the congruence in ORI-3. It is possible that since ORI-3 had 38 strategies identified in the EI typology, compared to only five and 18 in ORI-1 and 2, the study's limited sample was not large or diverse enough to experience all of them. Larger empirical studies spanning a variety of implementation efforts could provide more information about the strategies not reported in this project. Although they were not applied in this specific implementation project, some strategies may still be relevant to the CMH field. In contrast, other strategies might not be relevant due to the field's structural and administrative characteristics.

In addition, several strategies assigned by the experts to ORI-3 relate to the same topic area and, therefore, could be collapsed into one (e.g., "Develop and organize quality

monitoring systems” and “Develop and implement tools for quality monitoring”). If such consolidation had been applied to the EI typology, we might have seen higher consistency with the field reports. Further exploration of the strategies identified in the EI typology, but not reported in this study, could help identify which of them are still relevant for the field and should be included in the final typology and which could be consolidated.

The 12 strategies that arose in stages beyond their EI classification reflect the complexity of organizational readiness (Weiner, 2009) that can be resolved through a greater specification of their unique utilization in each stage. For example, the findings show that the experts considered several strategies to serve a practical purpose in ORI-3, but these strategies were also assigned to ORI-2 to support decision-making (e.g., “Make billing easier”). According to the participants, the early utilization of these strategies helped them evaluate the project's feasibility and impacted their attitudes and beliefs regarding the change. Other strategies were applied across all stages, but differed in the main actors in each stage. For example, “Recruit, designate, and train for leadership” was used by the implementation team in ORI-1 to recruit the state-level leadership, who used it to recruit executive-level leadership in ORI-2, leading to the recruitment of team-level leadership in ORI-3. The variations in target audience and purpose show how those strategies support the evolution of readiness and how they gradually engage all levels of the project's hierarchy to establish a collective sense of readiness (Benzer et al., 2017; Holt & Vardaman, 2013; Proctor et al., 2009; Weiner, 2009).

Lastly, some strategies reported by the participants were re-visited multiple times

in response to recurring issues (e.g., “Tailor strategies”); the experts assigned these strategies to the implementation rather than the pre-implementation phase. These strategies tend to be very broadly defined and could be applicable throughout the implementation process. The ERIC strategies that were not included in the EI typology, but were reported by the study participants, seem to represent such general activities (e.g., “Conduct ongoing consultation”). These types of overarching strategies used throughout the implementation process were also reported by Bunger et al. (2017), suggesting that some ERIC strategies are broader and not unique to a specific phase. While the strategies that span multiple stages contribute to the typology's flexibility, they could also benefit from more specification regarding the purpose, actors, and actions relevant to their utilization in each stage (Hooley et al., 2020; Proctor et al., 2013). Further confirmation is needed to ensure the relevance of these overarching strategies to ORI development.

The new strategies identified by participants broadened the typology and increased its flexibility. The additional strategies were either missing completely from the ERIC compilation, and therefore from the EI typology, or they underscored a latent aspect concealed in existing strategies that we thought should be highlighted in the context of ORI development. For example, two additions, “Develop and test technical infrastructure” and “Plan for time and space allocation,” align with revisions suggested by Perry and colleagues (2019), based on a utilization evaluation of the ERIC compilation for cardiac prevention. The strategy identified as “Develop and test technical infrastructure” is possibly unique to the implementation process piloted in this study due

to the remote nature of training and supervision conducted, as well as the fact that the EBP requires computer-based cognitive exercises. However, as evidenced by the COVID pandemic, technology is expected to become more and more central to implementation efforts. It should receive more attention in the planning phase, including technical staff's involvement early in the process.

The other new strategies described by participants offer a variation to existing strategies. These include “Involve high-level management,” “Market the innovation,” and “Assign a local coordinator.” While it could be argued that these three strategies are already covered under existing ones, we found it critical to specify them in relation to ORI development. For example, a local coordinator's role in soliciting participation, supporting enrollment, providing feedback on educational materials, and solving problems goes beyond the role suggested in the original ERIC strategy: “Identify and prepare champions.” While the new strategies need to be confirmed in other CMH implementation projects, the fact that multiple stakeholders mentioned them at multiple sites supports their relevance to the field. It is important to note that most of the new strategies were described in relation to multiple stages, suggesting they need to be further specified to differentiate their application in each stage.

The primary limitation of this study is the small sample of organizations and participants. Besides the initial small number of participating agencies in the project, not all project participants agreed to share their experiences and contribute to the study. This limitation might have impacted the variety of strategies we gathered and biased responses. In addition, the representation of ORI stages varied as some participants did

not experience pre-contemplation, while others did not reach the preparation stage. The information collected from multiple participants and agencies should have mitigated these gaps to some extent. Future studies might consider using a multiple-case study design to determine an overall agency readiness level and allow for a more accurate comparison between agencies (Baxter & Jack, 2008).

Another limitation is the specificity of the project. We limited ourselves to one implementation project with one EBP to eliminate some of the “noise” that characterizes many implementation studies (Hohmann & Shear, 2002; Vinson et al., 2017). The cost of this choice is the limited generalizability of our results even within the CMH field. Consequently, we suggest using our findings with caution and evaluating their relevance to additional implementation projects in the field. Although we conducted the interviews within a year of the beginning of the implementation effort, the retrospective interviews could have jeopardized the accuracy of the participants’ reports. Future studies should collect data in real-time during pre-implementation.

The results from this study respond to the knowledge gap concerning ORI enhancement. The high level of congruence between the EI typology and reports from the field confirms the structure of the stage-based model of ORI development. The high level of consistency found in ORI-1 and ORI-2 and the additional strategies offered for these two stages add critical knowledge concerning how positive attitudes and beliefs may be established in the early stages of an implementation project. The overlap of some strategies across stages calls for further specification to differentiate their unique utilization in each stage. More validation is needed to establish the behavioral

benchmarks achieved by the strategies in each stage in order to be able to use the typology as a guiding tool to help members of an organization advance through the ORI stages. Finally, using evidence collected from the target population to support implementation knowledge is a relatively new approach (Moreno et al., 2016; Pintello, 2020; Stewart et al., 2020). More research involving stakeholders from the field is needed to establish the final ORI typology.

CONCLUSION

This study provided valuable confirmation and suggested refinements from multiple CMH sites and stakeholders to support the construction of a systematic approach to ORI development. In addition to the high congruence between the experts' judgments and the experiences described by study participants, the study findings also expanded the utilization of several strategies and offered new strategies that were not known initially. This confirmation and enrichment of the EI typology align with the original purpose of creating a “bank of strategies” to be utilized according to local context and needs. More operationalization (i.e., actors, doses, specific actions, etc.) is needed to better guide the application of the strategies beyond the readiness stages they address. The strategies that were not reported in this study and the strategies that were added to the typology should be confirmed in other CMH implementation efforts to ensure their relevance beyond this specific project. We strongly believe that the ORI typology holds promise for a practical and dynamic methodology that can position agencies for effective adoption of EBPs that support people with SMI.

OVERALL DISCUSSION

This dissertation addressed a gap in knowledge about enhancing organizational readiness for implementation (ORI), to improve the adoption of evidence-based practices in community mental health (CMH) services. ORI is considered a critical precursor to the successful implementation of new practices (Weiner, Clary, et al., 2020). Much work has been invested in developing measures for assessing levels of ORI (Weiner, Mettert, et al., 2020), but no methodology has been designed to support readiness enhancement. The two studies comprising this research project sought to identify implementation strategies relevant to ORI enhancement, organize them within a stage-based framework derived from the Transtheoretical Model (TTM; J. M. Prochaska et al., 2001), and explore their utilization in the CMH field. Together, these two studies advance implementation science and the CMH field to better understand processes related to ORI enhancement.

The first study aimed to reach consensus among a group of implementation experts regarding the classification of pre-implementation strategies into three readiness stages. A well-known compilation of 73 implementation strategies, formulated by the ERIC project (B. J. Powell, Waltz, et al., 2015), was used as the starting point for building the experts' consensus, using a modified Delphi process. The experts agreed that 48 strategies from this list were relevant to ORI and classified them into three ORI stages aligned with the TTM: Pre-contemplation, Contemplation, and Preparation.

Although the experts were able to identify implementation strategies relevant for each stage, many of the strategies overlapped across multiple stages, raising two possible concerns: the potential lack of theoretical differentiation among the three TTM-based

stages and the lack of specificity in the strategies listed. First, the TTM stages might not be conceptually distinct, especially Pre-contemplation and Contemplation, as they both focus on psychological aspects at the individual level. Almost all the strategies assigned to the Pre-contemplation stage were also assigned to the Contemplation stage, suggesting that the experts had difficulty distinguishing between these two stages. In addition, half of the strategies assigned to Contemplation were also assigned to the Preparation stage, implying that some of the psychological factors remain relevant during the more practical stage of Preparation. Therefore, there is a need for future studies to investigate the distinction among the three stages suggested by the TTM. Future work may result in greater separation between the psychological and the practical levels or conversely, may identify the need to combine stages.

Another possible explanation for the overlap across stages is that the strategies themselves are not defined concretely enough in the ERIC compilation; therefore, one broad strategy might apply to multiple stages. Additional specification of activities related to broadly defined strategies has already been suggested in previous studies (Presseau et al., 2019; Vax et al., 2021). For example, “Assessing readiness needs” can be used during Pre-contemplation to evaluate implementer’s interest in the proposed change through interviews and team discussions. It can also be used during Preparation with a different set of activities, such as reviewing available resources and funding mechanisms for the purpose of evaluating the organization’s capacity to execute the change. Operationalizing broad strategies by specifying activities could guide their use in the context of each stage, thereby reducing overlap of strategies. Such specification could

produce more accurate and effective utilization of the strategies and the typology as a whole.

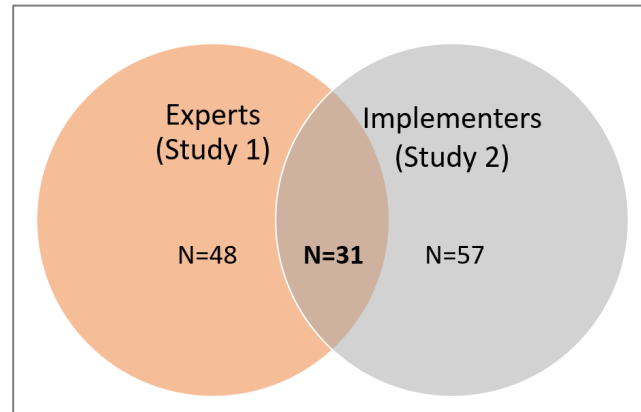
A final issue related to the structure of the expert-based typology is the uneven distribution of strategies across all three stages. The experts assigned only five strategies to Pre-contemplation, 18 to Contemplation, and 38 to Preparation. While it is possible that the Preparation stage is the most intense part of the implementation process, these results might also reveal a gap in knowledge related to strategies that address individuals' engagement across the organization. Most implementation frameworks that offer pre-implementation stages focus on planning and preparation as the first steps of implementation (Creed et al., 2014; Saldana et al., 2020; Simpson & Flynn, 2007), leading to a broader knowledge base related to these constructs. The framework suggested in this dissertation highlights the importance of attending to the psychological factors at the individual level before attending to the practical factors at the organizational level. Individuals may include the frontline providers and middle management, who might resist the change due to lack of engagement and understanding of the change process. As discussed below, findings from the second study provide initial strategies to expand the first two stages and enhance individual readiness across the organization. Further exploration of strategies that support individual's engagement in the change process is needed, as well as further confirmation of strategies relevant to the Preparation stage.

Since the experts represented various fields and theoretical perspectives, the second study aimed to evaluate the relevance of the findings from the first study to the

CMH field. Study 2 explored the pre-implementation experiences of different stakeholders who recently implemented an EBP supporting the vocational recovery of people with SMI. Two-thirds of the expert-informed strategies and their stage assignments were congruent with the experiences described by the implementers. Overall, this study yielded 57 strategies identified as readiness-related. Fifty-two of those strategies were from the ERIC compilation, and five emerged from the implementers' reports. This study confirmed many of the experts' judgments and suggested additional strategies, especially related to the Pre-contemplation and Contemplation stages, that require further investigation.

The results from the two studies show congruence between the experts' judgments and the implementers' experiences regarding the stage-allocation of 31 of the 73 strategies suggested by the ERIC compilation (see Figure 4). This congruence provides greater confidence in the stage assignment of these strategies and in the usefulness of the ORI framework as an organizing model. Strategies that differed in their stage-assignment between the two studies might need to be further evaluated or refined to determine their final classification.

Figure 4. Confirmed ORI strategies



In addition to informing a stage-based typology of strategies for ORI enhancement, the results of these studies provide a much-needed refinement to the ERIC compilation. Classifying the strategies into behaviorally-defined stages improves the capability to select and tailor them to different implementers' needs (B. J. Powell et al., 2019; B. J. Powell, Beidas, et al., 2015). The classification also responds to four major requirements for specifying implementation strategies, as suggested by Proctor and colleagues (2013): 1) *action target* – reflected in the exit-point of each stage; 2) *temporality* – reflected in the pre-implementation timeframe and the stage-process; 3) *implementation outcome affected* – the individual and collective sense of readiness, and 4) *a justified theoretical framework* – the TTM and its relation to Holt and Vardaman's (2013) definition of organizational readiness. Such specificity increases the practical utilization of these strategies and the ability to replicate and measure their effectiveness (Kirchner et al., 2019; B. J. Powell, Waltz, et al., 2015). While other efforts to classify the ERIC strategies have taken different approaches, such as organizing them by function

(Waltz et al., 2015), the contextual barriers they address (Waltz et al., 2019), or their utilization along the implementation timeline (Bunger et al., 2017), this research project is the first to combine a temporal aspect with theoretically-driven behavioral targets.

Furthermore, this dissertation exposed an oversight in the ERIC compilation related to strategies that correspond with the Pre-contemplation and Contemplation stages. The dissertation begins to address the knowledge gap related to strategies relevant for Pre-contemplation and Contemplation by identifying new strategies that focus on the psychological aspects of participating in a change process and by framing their utilization within each stage. For example, “Inform local opinion leaders” may be used differently to increase leadership awareness of the need for a practice change during the Pre-contemplation stage than to address feasibility concerns during the Contemplation stage.

The multiple perspectives obtained in this research project include implementation experts from academia and the field as well as implementers of different stakeholder groups. This multi-level, diverse approach strengthens the validity and applicability of the study results to the "real world" and provides a more holistic view. Most studies that focus on conceptual development in implementation science obtain only one perspective. For example, expert-informed methods are often used for theoretical development or evidence evaluation purposes. Such an approach was used to refine the ERIC compilation (B. J. Powell, Waltz, et al., 2015) and in the rating of evidence supporting vocational rehabilitation practices (Leahy et al., 2018). Stakeholders' perspectives, on the other hand, are usually used to identify needs (Stewart et al., 2020), facilitators and barriers to implementation (Beidas et al., 2016; Lushin et al., 2019), or

adaptations to evidence-based interventions (Kim et al., 2019). While both approaches provide valuable information, they are usually not integrated but rather operate in parallel, resulting in fragmented knowledge. In this dissertation, the two approaches were used to complement one another. Both studies shared the same theoretical basis of the ORI stages and the ERIC strategies. Experts and implementers' input was integrated into a single result to create a more comprehensive framework with a broader empirical base.

While the experts and the implementers represented various roles and backgrounds, their small number and restricted geographical distribution, especially in Study 2, limit the generalizability of the study results. Further confirmation is needed from other CMH sites involved in implementing EBPs to empirically ground the typology's relevance to this field. In addition, focusing on the ERIC compilation limited the strategies identified as relevant to ORI development. Other strategies suggested by experts, implementers, and more recent literature should be explored to expand the typology further.

Another theoretical limitation involved structuring the ORI development around psychological aspects while deliberately avoiding the structural aspects impacting organizational readiness, such as resources and organizational structure. Although processes for addressing structural issues might differ from the processes suggested in the ORI framework, it is important to address them in conjunction with the psychological aspects, as they play a vital role in planning and executing the implementation effort. Lastly, the contribution of this study is limited to the CMH field. It is yet to be determined whether the results apply to other mental health systems (e.g., hospitals,

clinical settings, Veterans Affairs, educational systems) and other populations.

Broadening the exploration may increase the applicability of the ORI framework and provide further insight regarding the different readiness needs in each system and content area.

Future studies should investigate the replication and expansion of the typology to clarify the strategies' utilization across stages. Conducting studies in other CMH agencies implementing EBPs of different types could support or expand new strategies beyond the ERIC compilation and help refine existing ones to strengthen the knowledge base of ORI enhancement. Multisite research may lead to further specification of strategies that currently span multiple readiness stages.

Since the first study included leading experts in implementation science from various fields, the agreement reached by the experts may serve as a good starting point to explore the typology's relevance in other mental health settings and other health fields (e.g., child development, cancer treatment, diabetes prevention, etc.). Finally, as Lewis and colleagues (2018) suggested, more steps should be taken to evaluate the feasibility and effectiveness of the classified strategies in supporting implementation readiness beyond establishing conceptual frameworks.

OVERALL CONCLUSION

Organizational readiness is a key factor influencing the successful implementation of EBPs that support people with SMI in pursuing fulfilling lives. Despite a growing awareness that a collective sense of readiness is an organizational feature that ensures

better implementation outcomes, no strategies for increasing pre-implementation ORI levels have been identified. This dissertation has established an initial typology of strategies to support ORI enhancement using the Transtheoretical Model as a conceptual framework. The high level of congruence between experts and implementers in the two studies provides evidence for the framework and the strategies associated with each stage. Taken together, the two studies contribute to the understanding of ORI enhancement in the context of CMH services. While further evaluation and specification of the typology is needed, these empirical and theoretical contributions form a path towards increasing the uptake of EBPs so that people with SMI are provided greater access to state-of-the-art interventions that support their recovery.

APPENDIX A:

**STUDY 1: STRATEGIES' ALLOCATION AND LEVELS OF AGREEMENT PER
ORI CATEGORY (N=73)**

Strategy	Round 2	Round 3	Description	ORI-1	ORI-2	ORI-3	Not ORI related
Access new funding ^b	✓		Access new or existing money to facilitate the implementation	Low	High	High	
Alter incentive / allowance structures ^b	✓		Work to incentivize the adoption and implementation of the clinical innovation	Low	High	High	
Alter patient / consumer fees ^b	✓		Create fee structures where patients/consumers pay less for preferred treatments (the clinical innovation) and more for less-preferred treatments	Low	Low	High	Low
Assess for readiness and identify barriers and facilitators ^c	✓	✓	Assess various aspects of an organization to determine its degree of readiness to implement, barriers that may impede implementation, and strengths that can be used in the implementation effort	Medium	High	Medium	
Audit and provide feedback ^a			Collect and summarize clinical performance data over a specified time period and give it to clinicians and administrators to monitor, evaluate, and modify provider behavior				Medium
Build a coalition ^b	✓		Recruit and cultivate relationships with partners in the implementation effort	Low	High	High	
Capture and share local knowledge ^a			Capture local knowledge from implementation sites on how implementers and clinicians made something work in their setting and then share it with other sites				Medium
Centralize technical assistance ^b	✓		Develop and use a centralized system to deliver technical assistance		Low	High	Low

Strategy	Round 2	Round 3	Description	ORI-1	ORI-2	ORI-3	Not ORI related
			focused on implementation issues				
Change accreditation or membership requirements ^b	✓		Strive to alter accreditation standards so that they require or encourage use of the clinical innovation. Work to alter membership organization requirements so that those who want to affiliate with the organization are encouraged or required to use the clinical innovation	Low	Low	High	Low
Change liability laws ^d	✓	✓	Participate in liability reform efforts that make clinicians more willing to deliver the clinical innovation	Medium	Medium	Medium	
Change physical structure and equipment ^b	✓		Evaluate current configurations and adapt, as needed, the physical structure and/or equipment (e.g., changing the layout of a room, adding equipment) to best accommodate the targeted innovation	Low	Low	High	Low
Change record system ^b	✓		Change records systems to allow better assessment of implementation or clinical outcomes	Low	Low	High	Low
Change service sites ^a			Change the location of clinical service sites to increase access				Medium
Conduct cyclical small tests of change ^a			Implement changes in a cyclical fashion using small tests of change before taking changes system-wide. Tests of change benefit from systematic measurement, and results of the tests of change are studied for insights on how to do better. This process continues serially over time, and refinement is added with each cycle				High
Conduct educational meetings ^b	✓		Hold meetings targeted toward different stakeholder groups (e.g., providers, administrators,	High	High	High	

Strategy	Round 2	Round 3	Description	ORI-1	ORI-2	ORI-3	Not ORI related
			other organizational stakeholders, and community, patient/consumer, and family stakeholders) to teach them about the clinical innovation				
Conduct educational outreach visits ^c	✓	✓	Have a trained person meet with providers in their practice settings to educate providers about the clinical innovation with the intent of changing the provider's practice	Medium	High	Medium	
Conduct local consensus discussions ^b	✓		Include local providers and other stakeholders in discussions that address whether the chosen problem is important and whether the clinical innovation to address it is appropriate	High	High	Low	
Conduct local needs assessment ^b	✓		Collect and analyze data related to the need for the innovation	High	High	Low	
Conduct ongoing training ^a			Plan for and conduct training in the clinical innovation in an ongoing way				Medium
Create a learning collaborative ^a			Facilitate the formation of groups of providers or provider organizations and foster a collaborative learning environment to improve implementation of the clinical innovation				Medium
Create new clinical teams ^b	✓		Change who serves on the clinical team, adding different disciplines and different skills to make it more likely that the clinical innovation is delivered (or is more successfully delivered)	Low	Low	High	Low
Create or change credentialing and/or licensure standards ^b	✓		Create an organization that certifies clinicians in the innovation or encourage an existing organization to do so. Change governmental professional certification or licensure requirements to include delivering the	Low	Low	High	Low

Strategy	Round 2	Round 3	Description	ORI-1	ORI-2	ORI-3	Not ORI related
			innovation. Work to alter continuing education requirements to shape professional practice toward the innovation				
Develop a formal implementation blueprint ^b	✓		Develop a formal implementation blueprint that includes all goals and strategies. The blueprint should include the following: High) aim/purpose of the implementation; Medium) scope of the change (e.g., what organizational units are affected); Low) timeframe and milestones; and 4) appropriate performance/progress measures. Use and update this plan to guide the implementation effort over time	Low	Low	High	
Develop academic partnerships ^d	✓	✓	Partner with a university or academic unit for the purposes of shared training and bringing research skills to an implementation project	Medium	Medium	Medium	
Develop an implementation glossary ^c	✓	✓	Develop and distribute a list of terms describing the innovation, implementation, and stakeholders in the organizational change	Medium	Low	High	Low
Develop and implement tools for quality monitoring ^b	✓		Develop, test, and introduce into quality-monitoring systems the right input—the appropriate language, protocols, algorithms, standards, and measures (of processes, patient/consumer outcomes, and implementation outcomes) that are often specific to the innovation being implemented	Low	Low	High	

Strategy	Round 2	Round 3	Description	ORI-1	ORI-2	ORI-3	Not ORI related
Develop and organize quality monitoring systems ^c	✓	✓	Develop and organize systems and procedures that monitor clinical processes and/or outcomes for the purpose of quality assurance and improvement	Low	Medium	High	
Develop disincentives ^c	✓	✓	Provide financial disincentives for failure to implement or use the clinical innovations	Low	Medium	High	
Develop educational materials ^c	✓	✓	Develop and format manuals, toolkits, and other supporting materials in ways that make it easier for stakeholders to learn about the innovation and for clinicians to learn how to deliver the clinical innovation	High	Medium	Medium	
Develop resource sharing agreements ^b	✓		Develop partnerships with organizations that have resources needed to implement the innovation		Low	High	
Distribute educational materials ^c	✓	✓	Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically	Medium	Medium	High	
Facilitate relay of clinical data to providers ^a			Provide as close to real-time data as possible about key measures of process/outcomes using integrated modes/channels of communication in a way that promotes use of the targeted innovation				High
Facilitation ^a			A process of interactive problem solving and support that occurs in a context of a recognized need for improvement and a supportive interpersonal relationship				Medium
Fund and contract for clinical innovation ^c	✓	✓	Governments and other payers of services issue requests for proposals to deliver the innovation, use contracting processes to motivate providers to deliver the clinical innovation, and develop	Medium	High	Medium	Low

Strategy	Round 2	Round 3	Description	ORI-1	ORI-2	ORI-3	Not ORI related
			new funding formulas that make it more likely that providers will deliver the innovation				
Identify and prepare champions ^c	✓	✓	Identify and prepare individuals who dedicate themselves to supporting, marketing, and driving through an implementation, overcoming indifference or resistance that the intervention may provoke in an organization	Medium	High	Medium	
Identify early adopters ^c	✓	✓	Identify early adopters at the local site to learn from their experiences with the practice innovation	Medium	High	Medium	
Increase demand ^d	✓	✓	Attempt to influence the market for the clinical innovation to increase competition intensity and to increase the maturity of the market for the clinical innovation	Medium	Medium	Medium	
Inform local opinion leaders ^c	✓	✓	Inform providers identified by colleagues as opinion leaders or "educationally influential" about the clinical innovation in the hopes that they will influence colleagues to adopt it	High	High	Low	
Intervene with patients/consumers to enhance uptake & adherence ^a			Develop strategies with patients to encourage and problem solve around adherence				Medium
Involve executive boards ^d	✓	✓	Involve existing governing structures (e.g., boards of directors, medical staff boards of governance) in the implementation effort, including the review of data on implementation processes	Medium	Medium	Medium	
Involve patients/consumers	✓	✓	Engage or include patients/consumers and	Medium	Medium	High	

Strategy	Round 2	Round 3	Description	ORI-1	ORI-2	ORI-3	Not ORI related
Engage consumers and family members ^c			Engage consumers and family members in the implementation effort				
Make billing easier ^c	✓	✓	Make it easier to bill for the clinical innovation	Low	Medium	High	
Make training dynamic ^b	✓		Vary the information delivery methods to cater to different learning styles and work contexts, and shape the training in the innovation to be interactive	Low	Low	High	
Mandate change ^d	✓	✓	Have leadership declare the priority of the innovation and their determination to have it implemented	Medium	Medium	Medium	
Model and simulate change ^c	✓	✓	Model or simulate the change that will be implemented prior to implementation	Low	Medium	High	
Obtain and use patient/consumers and family feedback ^a			Develop strategies to increase patient/consumer and family feedback on the implementation effort				Medium
Obtain formal commitments ^c	✓	✓	Obtain written commitments from key partners that state what they will do to implement the innovation		Medium	High	
Organize clinician implementation team meetings ^a			Develop and support teams of clinicians who are implementing the innovation and give them protected time to reflect on the implementation effort, share lessons learned, and support one another's learning				Medium
Place innovation on fee for service lists / formularies ^c	✓	✓	Work to place the clinical innovation on lists of actions for which providers can be reimbursed (e.g., a drug is placed on a formulary, a procedure is now reimbursable)	Medium	Medium	High	
Prepare patients / consumers to be active participants ^c	✓	✓	Prepare patients/consumers to be active in their care, to ask questions, and specifically to inquire about care	Medium	Medium	High	

Strategy	Round 2	Round 3	Description	ORI-1	ORI-2	ORI-3	Not ORI related
			guidelines, the evidence behind clinical decisions, or about available evidence-supported treatments				
Promote adaptability ^b	✓		Identify the ways a clinical innovation can be tailored to meet local needs and clarify which elements of the innovation must be maintained to preserve fidelity	Low	High	High	
Promote network weaving ^c	✓	✓	Identify and build on existing high-quality working relationships and networks within and outside the organization, organizational units, teams, etc. to promote information sharing, collaborative problem-solving, and a shared vision/goal related to implementing the innovation	Low	Medium	High	
Provide clinical supervision ^a			Provide clinicians with ongoing supervision focusing on the innovation. Provide training for clinical supervisors who will supervise clinicians who provide the innovation				High
Provide local technical assistance ^a			Develop and use a system to deliver technical assistance focused on implementation issues using local personnel				Medium
Provide ongoing consultation ^a			Provide ongoing consultation with one or more experts in the strategies used to support implementing the innovation				High
Purposely reexamine the implementation ^a			Monitor progress and adjust clinical practices and implementation strategies to continuously improve the quality of care				High
Recruit, designate and train for leadership ^b	✓		Recruit, designate, and train leaders for the change effort	Low	High	High	

Strategy	Round 2	Round 3	Description	ORI-1	ORI-2	ORI-3	Not ORI related
Remind clinicians ^a			Develop reminder systems designed to help clinicians to recall information and/or prompt them to use the clinical innovation				High
Revise professional roles ^b	✓		Shift and revise roles among professionals who provide care, and redesign job characteristics	Low	Low	High	Low
Shadow other experts ^b	✓		Provide ways for key individuals to directly observe experienced people engage with or use the targeted practice change/innovation	Low	High	High	
Stage implementation on scale up ^b	✓		Phase implementation efforts by starting with small pilots or demonstration projects and gradually move to a system wide rollout	Low	Low	High	Low
Start a dissemination organization ^d	✓	✓	Identify or start a separate organization that is responsible for disseminating the clinical innovation. It could be a for-profit or non-profit organization	Low	Low	Medium	Medium
Tailor strategies ^c	✓	✓	Tailor the implementation strategies to address barriers and leverage facilitators that were identified through earlier data collection	Low	Medium	High	
Use advisory boards and workgroups ^b	✓		Create and engage a formal group of multiple kinds of stakeholders to provide input and advice on implementation efforts and to elicit recommendations for improvements	Low	High	High	
Use an implementation adviser ^c	✓	✓	Seek guidance from experts in implementation	Medium	High	High	
Use capitated payments ^a			Pay providers or care systems a set amount per patient/consumer for delivering clinical care				Medium
Use data experts ^c	✓	✓	Involve, hire, and/or consult experts to inform management on the use of	Low	Medium	High	Low

Strategy	Round 2	Round 3	Description	ORI-1	ORI-2	ORI-3	Not ORI related
			data generated by implementation efforts				
Use data warehousing techniques ^c	✓	✓	Integrate clinical records across facilities and organizations to facilitate implementation across systems	Low	Medium	High	Low
Use mass media ^d	✓	✓	Use media to reach large numbers of people to spread the word about the clinical innovation	Medium	Medium	Medium	
Use other payment schemes ^a			Introduce payment approaches (in a catch-all category)				Medium
Use train the trainer strategies ^c	✓	✓	Train designated clinicians or organizations to train others in the clinical innovation	Low	Medium	High	Low
Visit other sites ^c	✓	✓	Visit sites where a similar implementation effort has been considered successful	Low	High	Medium	
Work with educational institutions ^c	✓	✓	Encourage educational institutions to train clinicians in the innovation	Medium	Medium	High	Low
TOTAL	55	32					

High-level agreement (≥60%), Medium-level agreement (30-59%), Low-level agreement (<30%)

^a Strategies excluded after Round 1 (*n*=18)

^b Strategies included in the typology after Round 2 (*n*=23)

^c Strategies included in the typology after Round 3 (*n*=25)

^d Strategies excluded after Round 3 (*n*=7)

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