Directions in Implementation Research Methods for Behavioral and Social Science

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Abstract

There is a growing interest, by researchers, policymakers, and practitioners, in evidence-based policy and practice. As a result, more dollars are being invested in program evaluation in order to establish "what works," and in some cases, funding is specifically tied to those programs found to be effective. However, reproducing positive effects found in research requires more than simply adopting an evidence-based program. Implementation research can provide guidance on which components of an intervention matter most for program impacts and how implementation components can best be implemented. However, while the body of rigorous research on effective practices continues to grow, research on implementation lags behind. To address these issues, the Administration for Children and Families and federal partners convened a roundtable meeting entitled, Improving Implementation Research Methods for Behavioral and Social Science, in the fall of 2010. This special section of the Journal of Behavioral Health Services & Research includes papers from the roundtable and highlights the role implementation science can play in shedding light on the difficult task of taking evidence-based practices to scale.

Introduction

There is a growing interest, by researchers, policymakers, and practitioners, in evidence-based policy and practice. As a result, more dollars are being invested in program evaluation in order to establish "what works," and in some cases, funding is specifically tied to those programs found to be effective. For example, recent funding for a number of new federal programs (e.g., Department of Health and Human Services' home visiting and teen pregnancy prevention initiatives, Corporation for National and Community Service's Social Innovation Fund, Department of Education's i3 initiative, and others) was specifically allocated for models with evidence of effectiveness. However, reproducing positive effects found in research requires more than simply

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Journal of Behavioral Health Services & Research, 2012. 399–342. DOI 10.1007/s11414-012-9293-z

adopting an evidence-based program. Identifying core components of interventions found to be effective, identifying the organizational contexts and support necessary to administer programs, and identifying the elements it takes to implement evidence-based programs with fidelity are critical to their successful replication. Thus, in addition to efficacy and effectiveness research, implementation research can provide guidance on which components of an intervention matter most and how they can best be implemented.

The goals of implementation research include understanding the factors that impede or promote effective implementation, testing new approaches, and determining causal relationships between implementation characteristics and impact. Implementation research can help us to understand the "how" and "why" a program works by unpacking the relationship between implementation and program outcomes. As funding becomes more closely aligned with evidence-based policy and policy makers are looking for more evidence of impact for investments, answering implementation questions has become critical. However, while the body of rigorous research on effective practices continues to grow, research on implementation lags behind.

To reach the goals of implementation science, the field needs strong methods to identify questions, test theory, analyze data, and synthesize information to develop knowledge. Some of the tools and methods used in efficacy and effectiveness research can be applied to implementation science. For example, randomized controlled trials can be used to examine the impact of implementation features on fidelity. Some methods may need to be considered that adequately assess principal nuances in implementation. For example, achieving adequate sample sizes and maximizing power may present challenges when the question of interest is at a school, district, or agency level. Finally, new tools and measures may need to be developed specifically to address the questions of relevance to implementation science. For example, the papers in this special section of the Journal of Behavioral Health Services & Research (JBHS&R) discuss a number of new frameworks and measures for implementation research.

All of these factors set the stage for a roundtable meeting which brought together a diverse group of attendees and presenters to explore cross-cutting areas of implementation research. This roundtable entitled, *Improving Implementation Research Methods for Behavioral and Social Science*, was convened by the Administration for Children and Families in collaboration with a number of federal partners[1] in the fall of 2010. The meeting was intended to bring together experts from multiple disciplines to discuss implementation research methods with particular focus on study design, analytic technique, and measures that can be applied in behavioral and social science research.

The meeting highlighted a number of relevant issues. First, implementation science is inherently multimethod, multidimensional, multilevel, multistage, and complex. Second, the presentations indicated that better measures are needed to capture this complexity. In addition, measurement tools are needed that are useful for both research and practice and create the opportunity to share research and administrative data to maximize learning. Third, participants called for clarity and consistency of terms and measurement across studies. Finally, the presentations indicated that implementation science can have many purposes including: to build theory, to interpret impact, to establish causal relationships between implementation factors and outcomes, and to establish causal relationships between organizational or other factors and implementation success or fidelity. There was a clear call for methods and tools to address all these needs and to account for the dynamic nature of implementation.

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[1]This meeting was planned and sponsored by a group of federal partners assembled by the Office of Office of Planning, Research and Evaluation in the Department of Health and Human Services' Administration for Children and Families. Other partners included: the Office of the Assistant Secretary for Planning and Evaluation in DHHS, the Children's Bureau in the Administration for Children and Families, the Centers for Disease Control and Prevention, the National Institute on Drug Abuse, the National Institute on Mental Health, and the Department of Education's Institute of Education Sciences.

This special section of the JBHS&R includes papers from the roundtable that began a focused discussion about implementation research and its use in the behavioral health and social sciences fields. The intent is to highlight new methods and theory that will advance efforts to support rigorous, relevant implementation science research.

Papers in this Special Section

This special section includes a selection of the papers that were presented at the roundtable with the aim of disseminating this information widely through the field. This collection of articles provides a number of examples of where the field of implementation science is going. Underlying themes in the papers in this special section address a number of very important topics, including: finding common language, translating research into real-world settings, and communicating with diverse stakeholders. The papers outline useful frameworks and measurement tools that can be applied in the study of implementation, and the papers use a number of sophisticated analytic approaches that may expand the way we think about implementation research.

In the first article, Century et al.[1] take a close look at measurement in implementation science. Their paper, *Measuring Enactment of Innovations and the Factors that Affect Implementation and Sustainability*: *Moving Toward Common Language and Shared Conceptual Understanding*, focuses on the importance of shared conceptual or operational tools. They lay out a conceptual framework for documenting the components of an innovation, a second framework for describing contextual factors that affect the implementation of those components and tools for measuring each. Their work aims to create tools that could be used across multiple programs to support shared measurement and knowledge accumulation across projects and fields, a direction that would greatly benefit implementation science.

In the second article, *A Concept Mapping Approach to Guide and Understand Dissemination and Implementation*, Green et al.[2] describe the use of concept mapping to study implementation of behavioral health innovations. They provide an example of how concept mapping provides a structured approach to collecting data, engaging stakeholders in the research process, and developing a conceptual model. The final conceptual model (or map) can be used to operationalize constructs or as the basis for developing measures and displaying results. This mixed methods approach is used to make sense of complex and often divergent stakeholder perceptions regarding implementation. Data are analyzed using a combination of multidimensional scaling and hierarchical cluster analysis. The approach goes beyond traditional qualitative and quantitative methods and identifies clusters of statements that are conceptually similar and statistically related.

Nelson et al.[3] in their paper *A Procedure for Assessing Intervention Fidelity in Experiments Testing Educational and Behavioral Interventions*, describe a method for quantitatively assessing the level of fidelity in efficacy and effectiveness trials. A quantitative index provides the platform to advance the study of factors related to fidelity and to examine how fidelity mediates outcomes. Benefiting both the science and practice communities, the creation of a quantitative index of fidelity allows the field to explore thresholds of fidelity necessary for impacts. Currently, there is little empirical evidence tying core components to outcomes, so indices like the one described may provide evidence to inform program design and improvement. As evidence-based programs go to scale, the practice communities need clear guidance on elements and dosage needed to produce the outcomes desired.

Panzano et al.[4] in their paper, *The Assimilation of Evidence-Based Health Care Innovations*: *A Management-Based Perspective*, look beyond the adoption of evidence-based practices and discuss their framework for assimilation of these practices. The paper describes the framework and discusses its use in a longitudinal field study where they examine the extent to which strategic fit, climate for implementation, and fidelity explain variability in the assimilation of an evidence-based practice. This work pushes us to think not only about the factors associated with adopting a

practice but also to think about whether and how that practice is incorporated into standard practice and sustained over time.

Finally, Pas and Bradshaw [5] in their paper, *Examining the Association between Implementation and Outcomes*: *State-wide Scale-up of School-Wide Positive Behavior Intervention and Supports*, focus on understanding the translation of program efficacy research to practice. The study found that fidelity to the model and a number of school contextual factors are related to student level outcomes. The results of the study provide support for the importance of implementation quality in achieving outcomes when interventions are brought to scale and provide lessons about the process by which this can be done. This study had both rich data (multiple indicators of implementation quality and of student outcomes) and used sophisticated analytic methods to examine the relationships between contextual factors, implementation, and outcomes, thus providing a powerful example of the role implementation science can play in shedding light on the difficult task of taking evidence-based practices to scale.

Implications for Behavioral Health

The articles presented in this special section of the JBHS&R offer solid information about approaches, details, and limitations used in implementation science. These approaches can help deepen our understanding of how to implement and sustain evidence-based approaches. Advances in methods are necessary both for science and practice.

Implementation science is a rapidly growing field of empirical research. As questions about implementation become more sophisticated, methods need to be explored, adapted, and created to support the science. As evidence-based programs go to scale, the practice community is hungry for information on the best practices around implementation. Evidence-based programs are fiscal and time investments, and getting a return on investment in improving behavioral and health outcomes is critical.

References

1. Century J, Cassata A, Rudnick M, et al. Measuring Enactment of Innovations and the Factors that Affect Implementation and Sustainability: Moving Toward Common Language and Shared Conceptual Understanding. *Journal of Behavioral Health Services & Research* 2012; (in press).
2. Green AE, Fettes DL, Aarons GA. A Concept Mapping Approach to Guide and Understand Dissemination and Implementation. *Journal of Behavioral Health Services & Research* 2012; (in press).
3. Nelson MC, Cordray DS, Hulleman CS, et al. A Procedure for Assessing Intervention Fidelity in Experiments Testing Educational and Behavioral Interventions. *Journal of Behavioral Health Services & Research* 2012; (in press).
4. Panzano PC, Sweeney HA, Seffrin B, et al. The Assimilation of Evidence-Based Health Care Innovations: A Management-Based Perspective. *Journal of Behavioral Health Services & Research* 2012; (in press).
5. Pas ET, Bradshaw CP. Examining the Association between Implementation and Outcomes: State-Wide Scale-up of School-Wide Positive Behavior Intervention and Supports. *Journal of Behavioral Health Services & Research* 2012; (in press).