AMERICAN JOURNAL OF
Preventive Medicine

RESEARCH ARTICLE

Dissemination and Implementation Science Training Needs: Insights From Practitioners and Researchers

Rachel G. Tabak, PhD, RD,[1] Margaret M. Padek, MPH, MSW,[1] Jon F. Kerner, PhD,[2] Kurt C. Stange, MD, PhD,[3] Enola K. Proctor, PhD,[4] Maureen J. Dobbins, RN, PhD,[5] Graham A. Colditz, MD, DrPH,[6] David A. Chambers, DPhil,[7] Ross C. Brownson, PhD[1,6]

Introduction: Dissemination and implementation research training has great potential to improve the impact and reach of health-related research; however, research training needs from the end user perspective are unknown. This paper identifies and prioritizes dissemination and implementation research training needs.

Methods: A diverse sample of researchers, practitioners, and policymakers was invited to participate in Concept Mapping in 2014–2015. Phase 1 (Brainstorming) gathered participants' responses to the prompt: *To improve the impact of research evidence in practice and policy settings, a skill in which researchers need more training is…* The resulting statement list was edited and included subsequent phases. Phase 2 (Sorting) asked participants to sort each statement into conceptual piles. In Phase 3 (Rating), participants rated the difficulty and importance of incorporating each statement into a training curriculum. A multidisciplinary team synthesized and interpreted the results in 2015–2016.

Results: During Brainstorming, 60 researchers and 60 practitioners/policymakers contributed 274 unique statements. Twenty-nine researchers and 16 practitioners completed sorting and rating. Nine concept clusters were identified: Communicating Research Findings, Improve Practice Partnerships, Make Research More Relevant, Strengthen Communication Skills, Develop Research Methods and Measures, Consider and Enhance Fit, Build Capacity for Research, and Understand Multilevel Context. Though researchers and practitioners had high agreement about importance (r =0.93) and difficulty (r =0.80), ratings differed for several clusters (e.g., Build Capacity for Research).

Conclusions: Including researcher and practitioner perspectives in competency development for dissemination and implementation research identifies skills and capacities needed to conduct and communicate contextualized, meaningful, and relevant research.

INTRODUCTION

Significant funds and effort are dedicated to intervention testing with the aim of preventing disease and improving public health. Often, heath promotion and disease prevention efforts include community members as important public health partners. Unfortunately, the products of such research are not always applied to practice and policy, and therefore do not go on to impact health at the population level.[1–3] Dissemination and implementation (D&I) science represents an important avenue for public health progress by enhancing the application of evidence-based interventions. Owing to the prominence of D&I research as a core function of Prevention Research Centers,[4] these centers

From the [1]Prevention Research Center in St. Louis, Brown School, Washington University in St. Louis, St. Louis, Missouri; [2]Canadian Partnership Against Cancer, Toronto, Ontario, Canada; [3]Department of Family Medicine and Community Health, Case Western Reserve University, Cleveland, Ohio; [4]George Warren Brown School of Social Work, Washington University in St. Louis, St. Louis, Missouri; [5]School of Nursing, National Collaborating Centre for Methods and Tools, McMaster University, Hamilton, Ontario, Canada; [6]Division of Public Health Sciences, Department of Surgery and Alvin J. Siteman Cancer Center, at Washington University School of Medicine and Barnes-Jewish Hospital, Washington University in St. Louis, St. Louis, Missouri; and [7]Division of Cancer Control and Population Sciences, National Cancer Institute, NIH, Bethesda, Maryland

Address correspondence to: Rachel G. Tabak, PhD, RD, Prevention Research Center in St. Louis, Washington University in St. Louis, One Brookings Drive, Campus Box 1196, St. Louis MO 63130. E-mail: rtabak@wustl.edu.

This article is part of a supplement issue titled Prevention Research Centers Program – 30th Anniversary: Translating Applied Public Health Research into Policy and Practice.

0749-3797/$36.00
http://dx.doi.org/10.1016/j.amepre.2016.10.005

are uniquely positioned to conduct cutting-edge D&I research. The aim of D&I science is to understand how to systematically bring evidence-based policies and programs into real-world practice to promote health and prevent disease.[5,6]

There remains somewhat limited capacity to conduct D&I research.[5] To fill this gap, training programs for researchers interested in D&I science are necessary. Training in D&I research has great potential to improve the impact and reach of the products of health-related research. Training programs exist to build capacity for D&I research such as the Implementation Research Institute,[7] KT Canada Summer Institute on Knowledge Translation,[8] Training Institute for Dissemination and Implementation Research in Health,[9] Prevention and Control of Cancer Post-Doctoral Training in Implementation Science,[10] Mentored Training for Dissemination and Implementation Research in Cancer (MT-DIRC),[11] and University of California San Francisco's Certificate program in Implementation Science.[12] Efforts have begun to develop a set of competencies to inform the curricula for these programs.[8,11] However, end user perspectives on research training needs are necessary to enhance the relevance of training efforts to the needs of practitioners.[13–15]

To help inform training needs, the past 15 years have brought new perspectives on how to infuse more research into practice, with suggestions that incorporating practitioners into research evaluation (so called "practice-based evidence") provides research that may be more relevant to practitioners than research conducted in a purely controlled setting.[14] Ideally, D&I efforts should combine evidence-based practice (i.e., prioritize implementation of interventions shown to be effective and consistent with community preferences)[13,15] with practice-based evidence (i.e., evidence that is developed in the real world rather than under highly controlled research conditions).[14] This is particularly the case in the context of D&I research, as practitioners are often important stakeholders.[16] However, D&I research training programs are often developed with limited practitioner input, which can lead to key gaps in competencies.

The objectives of this paper are threefold: (1) to identify ideas for improving D&I research training from the perspectives of both practitioners and researchers; (2) to use a graphical tool to allow participants to organize the ideas into concept clusters; and (3) to compare the idea clusters identified with existing D&I research competencies.

METHODS

Concept Mapping was used in 2014–2015 to identify the training needs of investigators interested in D&I research. This method engages stakeholders to organize ideas using mixed methods.[17,18] Concept Mapping uses a multistage process to generate and organize ideas; related concepts are clustered visually and statistically.[17] For the current study, both phases were conducted using Concept Systems Global Max.

Concept maps have been used as an evaluative tool and an aid in program planning.[17,18] Known as structured conceptualization, concept maps have the ability to produce visual representations of the collective thoughts of a larger group.[17] In particular, concept maps are useful in understanding training needs, as this method uses multivariate methods to build maps that integrate diverse perspectives from various stakeholders and visually display a composite of the respondents' input. The maps developed can provide a structure to be used in planning and program development, such as curriculum development.[17]

Concept Mapping is appropriate to evaluate the gaps in current training curricula and help set priorities to plan future curricula, which address these concerns.[17,18] Concept maps have been used by the current research team previously as a research agenda–setting tool—the ease of usability makes this tool ideal for engaging with a diverse geographic audience.[19,20] Concept maps have been used by others to outline a training curriculum.[21]

Phase 1

Phase 1 (Brainstorming) gathered statements. Three groups of participants were invited to contribute to Phase 1: practitioners, researchers, and policymakers. To recruit practitioners, a list of e-mails was populated from a variety of Listservs: public health practitioners who had previously collaborated on research projects, the directors of practice-based research networks, and National Association of Chronic Disease Directors practitioners. In total, 294 e-mails were sent to practitioners. The list of policymakers approached was generated from a random sample of 20 U.S. state legislatures and their representatives who serve on a health-related committee. An additional list was generated from a random sample of ten U.S. cities' city council members. In total, 596 policymakers were identified and e-mailed invitations to submit statements. A larger number of policymakers were sampled as previous studies have found low response rates.[22] Finally, researchers were identified through Listservs of previous D&I trainings and D&I network Listservs. A total of 238 researchers were invited to participate. This study was approved by the Human Research Protection Office at Washington University in St. Louis.

Study participants were asked to respond to the focus prompt: *To improve the impact of research evidence in practice and policy settings, a skill in which researchers need more training is…* The list of statements contributed in Phase 1 was edited for clarity and redundancy to minimize the burden of participants in Phases 2 and 3 and to maximize the usefulness of the results.

Phases 2 and 3

The recruitment lists used in Phase 1 were used to identify participants for Phases 2 and 3. The software system limited the number of participants in these phases to 100; thus, participants were asked to reply to an initial e-mail inviting them to Phases 2 and 3. The team then created log-on information for the Concept Systems software for each responding participant.

Phase 2 (Sorting) asked participants to sort each statement into conceptual piles based on their themes or meanings. In Phase 3 (Rating), participants rated each statement based on their perception