Annotated Bibliography: Methods for Translating Evidence-Based Behavioral Interventions (EBI) to Reach Diverse Populations

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Populations composed of racial/ethnic minorities, people with low socioeconomic status, and disabled persons have worse health than their counterparts. One approach for addressing these health disparities is to implement evidence-based interventions (EBI), particularly behavioral interventions to prevent and manage chronic diseases in community settings to reach disparity populations. Most available methods for translating EBIs into real-world settings, however, seldom account for the special issues in reaching disparity populations, thus there are few conceptual models of processes that apply to the health disparities field. Most models assume that translating one EBI with minor adaptations suffices, and communities are seldom involved in the process. In fact, substantial adaptations may be necessary to accommodate differences between the original EBI context and that of the disparity communities, e.g., in populations, community settings, and available resources.

This annotated bibliography includes key publications that provide guidelines and models for translation and adaptation in disparity communities. We list publications in two categories:

I. Conceptual frameworks of methods of applicable to health disparity communities.
II. Examples of the adaptation and translation process, including detailed methods.

Conceptual Frameworks: Translation and Implementation Methods Appropriate for Diverse Populations

Nápoles AM and Stewart AL. Transcreation: an implementation science framework for community-engaged behavioral interventions to reduce health disparities. *BMC Health Services Research*. 2018 Sept 12;18(1):710. PMC6134771

> The *Transcreation Framework for Community-engaged Behavioral Interventions to Reduce Health Disparities* describes the process of planning, delivering, and evaluating interventions in community settings. Community partners are engaged from the start. Specific guidelines are described for seven steps: 1) identify community infrastructure and engage partners; 2) specify theory; 3) identify multiple inputs for the new program; 4) design an intervention prototype; 5) design methods for conducting the study in community settings (including randomized, controlled trials); 6) build community capacity for delivery; and 7) deliver the *transcreated* intervention and evaluate implementation processes. We describe rigorous scientific methods for evaluating program effectiveness in community settings. The model encourages delivery of interventions by community-based interventionists, and incorporates training and ongoing technical assistance to assure treatment fidelity. This framework expands the types of scientific evidence used and balances fidelity to evidence with fit to the community setting.

Nápoles AM, Santoyo-Olsson J, and Stewart AL. Methods for translating evidence-based behavioral interventions for health-disparity communities. *Preventing Chronic Disease*, 2013 Nov 21;10:E193. PMC3839588

> This paper is the first-generation conceptual framework of methods for translating evidence-based interventions, preceding the paper described above. Drawing from existing translational models, seven methodological phases are described pertaining to processes of translating and implementing EBIs in communities. These are: establish infrastructure for translation partnership, identify multiple inputs (information gathering), review and distill information (synthesis), adapt and integrate program components (translation), build general and specific capacity (support system), implement intervention (delivery), and develop appropriate designs and measures (evaluation). Specific methodological steps and resources are described for each phase. This paper differs from the 2018 paper because it provides illustrative examples of translational methods from research on racial/ethnic minorities, disabled persons, and those with low socioeconomic status. The unique contribution designing adaptations so that programs fit new community contexts, meet the needs of health-disparity populations, capitalize on scientific evidence and build on community assets and resources. The authors discuss tradeoffs between maintaining fidelity while maximizing fit to the new context.

Castro FG, Barrera M Jr, Holleran Steiker LK. Issues and challenges in the design of culturally adapted evidence-based interventions. *Annual Review of Clinical Psychology*. 2010;6:213-39. PMC4262835

The authors provide relevant definitions, describe challenges and issues, and give examples of cultural adaptation frameworks and methods. They explore emerging multistep frameworks as a guide to developing culturally adapted EBIs. Table 2 provides a useful summary and comparison of three adaptation process models with the specific steps of each model. They also review evidence on the effectiveness of EBIs that have been culturally adapted and suggest important areas for future research, including identification of cultural mediators and moderators of program effectiveness.

Gonzales NA. Expanding the cultural adaptation framework for population-level impact. *Prevention Science*, 2017;18(6):689-93. PMC5572077

Attention to cultural diversity and cultural adaptation of evidence-based interventions (EBIs) has been a longstanding priority in prevention science. However, EBIs for diverse populations present several challenges for broad dissemination and population impact. This commentary summarizes five papers in this special issue that focus on some of these challenges and offer new ways of thinking and recommendations for the next generation of translation research. It underscores three broad recommendations: 1) the need for a more expanded conceptualization and empirical understanding of the core tension between fidelity and adaptation, 2) greater focus on the systems of care that deliver EBIs to culturally diverse populations; and 3) greater flexibility in strategies to adapt and evaluate interventions within settings that serve diverse populations. By offering exemplars and suggestions to address these challenges, these papers help to realign research on cultural adaptation with its ultimate goal of reducing health disparities. However, other fundamental challenges remain unaddressed, including the need to reduce inequalities that exist in the health, education, social service, and justice systems that will ultimately support broad diffusion of EBIs for diverse populations.

Barrera M Jr, Castro FG, Strycker LA, Toobert DJ. Cultural adaptations of behavioral health interventions: a progress report. Jour*nal of Consulting and Clinical Psychology*, 2013 Apr;81(2):196-205. PMC3965302

The goals of this article are to: 1) describe consensus on the stages involved in developing cultural adaptations, 2) identify common elements in cultural adaptations, 3) examine evidence on the effectiveness of culturally enhanced interventions for various health conditions, and 4) pose questions for future research. The authors review influential literature from the past decade. Results suggest that cultural adaptation can be organized into five stages: information gathering, preliminary design, preliminary testing, refinement, and final trial. With few exceptions, reviews of several health conditions (e.g., diabetes) concluded that culturally enhanced interventions are more effective in improving health outcomes than usual care or other control conditions. The authors conclude that progress has been made in establishing methods for conducting cultural adaptations and providing evidence of their effectiveness.

Examples of Processes of Translation and Adaptation of Evidence-Based Interventions

Burgio LD, Collins IB, Schmid B, Wharton T, McCallum D, Decoster J. Translating the REACH caregiver intervention for use by area agency on aging personnel: the REACH OUT program. *The Gerontologist*, 2009;49(1):103-16. PMC3695600.

This article describes in detail the processes used to translate the evidence-based Resources for Enhancing Alzheimer's Caregiver Health (REACH) II intervention (tested in a clinical trial) for use in a community-based social service setting. Collaborators from Alabama Department of Senior Services and the University of Alabama adapted the REACH II intervention to be shorter, delivered by case managers in the community setting. The authors describe the processes of adaptation, implementation of the adapted program (which was called REACH OUT) and a process evaluation of the implementation from the perspective of the case managers and the participants.

Delgadillo AT, Grossman M, Santoyo-Olsson J, Gallegos-Jackson E, Kanaya AM, and Stewart AL. Description of an academic community partnership lifestyle program for lower-income, minority adults at risk for diabetes. *The Diabetes Educator*, 2010, Jul-Aug;36(4):640-60. PMC3771540.

This article describes development of *Live Well, Be Well*, a lifestyle intervention for delivery in a community setting to meet the needs of lower income, minority, and low-literacy adults at risk for diabetes. The project was a partnership of researchers at a major university and public health professionals at a local health department. The program was adapted from several interventions with demonstrated efficacy. Individually tailored and nonprescriptive, it utilized existing health department infrastructure, focusing on telephone counseling. The program was delivered in Spanish and English by health department staff, in local, community-based facilities such as senior centers. An innovative strategy was to use existing culturally appropriate, low-literacy materials when available rather than designing new ones. These were drawn from numerous sources such as the Mayo Clinic (healthy cooking), National Institutes of Diabetes and Digestive and Kidney Diseases (food portions), National Heart Lung and Blood Institute (portion sizes), the Centers for Disease Control and Prevention (healthy drinks), the American Diabetes Association (meal planning), and the Alameda County Public Health Department (fat and sugar demonstration tool kit). The program thus provides a unique translational model for implementing diabetes risk reduction programs for underserved populations.

Lorig KR, Ritter PL, Jacquez A. Outcomes of border health Spanish/English chronic disease self-management programs. *The Diabetes Educator*, 2005;31(3):401-9. PMID:15919640

This article describes the dissemination and evaluation of the community-based Chronic Disease Self-management Program and the Spanish-language version (Tomando Control de Su Salud) as delivered to primarily Spanish-speaking Latinos in several settings along the Texas/New Mexico/Mexico border. It details the cultural adaptations made in the Spanish language version based on formative research, and the delivery of the program by the El Paso Diabetes Association to 445 persons with chronic illness. The program was effective, resulting in significant improvements in behaviors, health status and self-efficacy.

Nápoles AM, Santoyo-Olsson J, Ortiz C, Gregorich S, Lee HE, Duron Y, Graves K, Luce JA, McGuire P, Díaz-Méndez M, Stewart AL. Randomized controlled trial of Nuevo Amanecer: a peer-delivered stress management intervention for Spanish-speaking Latinas with breast cancer. *Clinical Trials*, 2014; Apr;11(2):230-8. PMC3972263

This paper describes the community-based participatory research methods used to develop and implement a culturally tailored, peer-delivered cognitive-behavioral stress management intervention for low-income Spanish-speaking Latinas with breast cancer. It describes the randomized controlled trial study design to test the program, and unique considerations in implementing the RCT in community settings. The authors delineate several methodological phases used to develop and implement the Nuevo Amanecer program and trial, emphasizing community engagement processes. Of note, the translational processes for this study follow the guidelines published by Nápoles et al. in 2013 (see second reference in this bibliography). In particular, they summarize several "lessons learned." For example, including community-based organizations and cancer survivors as research partners and hiring recruiters and interventionists from the community were critical to successful implementation in community settings. Also, facilitating and maintaining excellent communication among community partners was imperative to troubleshoot implementation issues. Engaging community members in the design and implementation of community-based programs and trials enhances cultural appropriateness and congruence with the community context.

Nápoles-Springer AM, Ortiz C, O'Brien H, Diaz-Mendez M. Developing a culturally competent peer support intervention for Spanish-speaking Latinas with breast cancer. *Journal of Immigrant and Minority Health*, 2009;11(4):268-80. PMC3832434.

This paper provides an example of how formative research can be used to adapt evidence-based interventions for minority populations. The authors obtained input from Latina breast cancer survivors, breast cancer patients referred to psychosocial services, and advocates for Latinos with cancer to identify barriers to, benefits of, and useful components of an effective peer support counselor intervention for Spanish-speaking Latinas recently diagnosed with breast cancer. Results indicated that interventions should begin soon after diagnosis, build self-care skills, be culturally competent and emotionally supportive, provide language appropriate cancer information, encourage self-expression, and address lack of access to and knowledge of services.

Stewart AL, Gillis D, Grossman M, Castrillo M, Pruitt L, McLellan B, and Sperber N. Diffusing a research-based physical activity promotion program for seniors into diverse communities: CHAMPS III. *Preventing Chronic Disease*, 2006 Apr;3(2) A51. PMC1563966.

The authors describe the processes involved in diffusing an evidence-based intervention (CHAMPS II), designed to increase lifestyle physical activity levels, to reach lower-income and minority (primarily Hispanic or Latino and African American) seniors. The evaluation was based on the logic model approach recommended by the Centers for Disease Control and Prevention. Through an academic-community partnership, university staff worked with each organization to adapt the program to be as appealing and effective as possible, enable their staff and volunteers to provide the program, increase participants' physical activity, and leave sustainable programs in place. The adapted and implemented programs differed substantially from the original program and among organizations. Evaluation revealed numerous challenges and some unexpected community-level benefits. The overarching challenge was to retain original program features within each organization's resources yet be sustainable.

Teri L, McKenzie G, Logsdon RG, McCurry SM, Bollin S. Mead J. Menne H. Translation of two evidence-based programs for training families to improve care of persons with dementia. *The Gerontologist*, 2012;52(4):452-9. PMC3391381

The Ohio Department of Aging (in collaboration with the Alzheimer's Association Chapters in Ohio) and the Oregon Department of Health Services (in partnership with Area Agencies on Aging and the Oregon Chapter of the Alzheimer's Association) translated two programs - Reducing Disability in Alzheimer's Disease and STAR-Community Consultants (STAR-C) - for implementation by their staff. Both programs are designed to improve care, enhance life quality, and reduce behavioral problems of persons with dementia and have demonstrated efficacy via randomized controlled trials. This article addresses the developmental and ongoing challenges encountered in translating these programs to inform other community-based organizations considering the translation of evidence-based programs and to assist researchers in making their work more germane to their community colleagues.

McCurry SM, Logsdon RG, Mead J, Pike KC, La Fazia DM, Stevens L, Teri L. Adopting evidence-based caregiver training programs in the real world: Outcomes and lessons learned from the STAR-C Oregon Translation Study. *Journal of Applied Gerontology*, 2017 May;36(5):519-536. PMID:25873454

The authors describe the translation and evaluation of STAR-Community Consultants program (STAR-C), an evidence-based dementia caregiver training program, within the Oregon Department of Human Services. Staff from two regional Area Agencies on Aging (AAAs) were trained to implement all aspects of STAR-C, including screening, recruitment of caregiver/care-receiver dyads, and treatment delivery. Mailed assessments of caregiver depression, burden, and care-receiver mood, behavior, and quality of life were collected at pre-treatment, post-treatment, and 6-month follow-up. One hundred fifty-one dyads entered the program; 96 completed the 8-week intervention. Significant positive post-treatment effects were obtained for caregiver depression, burden, and reactivity to behavior problems, and care-receiver depression and quality of life. At 6-month follow-up, improvements in caregiver reactivity and care-receiver depression were maintained. Caregivers reported high levels of satisfaction with the program. STAR-C was successfully and effectively implemented by participating AAAs. Recommendations for replication, including training, recruitment, and assessment procedures are provided.

Rashid JR, Leath BA, Truman BI, Atkinson DD, Gary LC, Manian N. Translating comparative effectiveness research into practice: Effects of interventions on lifestyle, medication adherence, and self-care for type 2 diabetes, hypertension, and obesity among Black, Hispanic, and Asian residents of Chicago and Houston, 2010 to 2013. *J Public Health Manag Pract.* 2017 Sep/Oct;23(5):468-476. doi: 10.1097/PHH.0000000000000525. PMID:28257397

This paper reports on the implementation of several comparative effectiveness research-proven interventions translated for minority communities. It was a partnership between government agencies (US Department of Health and Human Services, Office of Minority Health), health providers (health centers, including a federally qualified community health center in Chicago, Illinois), and community organizations (public housing facilities for seniors in Houston, Texas). The programs were designed to improve outcomes for minority participants with any combination of type 2 diabetes, hypertension, or obesity. Through virtual training institutes, intervention staff learned cultural competency methods of adapting effective interventions. There were two types of interventions. Health educators delivered the Health Empowerment Lifestyle Program (HELP) in Chicago and community pharmacists delivered the MyRx Medication Adherence Program in Houston. For this annotated bibliography, the authors' presentation of information on adaptation, adoption, and implementation of HELP and MyRx are useful. The communities faced similar implementation challenges across settings, targets of change, and cities. Available resources were insufficient to sustain benefits with measurable impact on racial/ethnic disparities beyond the study period. The author suggest improvements to adaptation methods for future studies.