ELSEVIER

Evaluation and Program Planning 29 (2006) 269–279

EVALUATION and PROGRAM PLANNING

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Evaluating an evidence-based physical activity intervention website

Laura K. Brennan Ramirez[a,*], Julie M. Bender[a], Ellen K. Barnidge[a], Elizabeth A. Baker[b], Garland Land[c]

[a]*Transtria L.L.C., 3525 Watson Road, Ste. R, St. Louis, MO 63139-2051, USA*
[b]*Department of Community Health and Prevention Research Center, School of Public Health, Saint Louis University, Salus Center, 3545 Lafayette Avenue, Suite 300, St. Louis, MO 63104-1314, USA*
[c]*National Association for Public Health Statistics and Information Systems, 801 Roeder Road, Suite 650, Silver Spring, MD 20910, USA*

Received 1 October 2005; received in revised form 12 October 2005; accepted 3 November 2005

Abstract

Evidence-based practice has emerged as a central tenet of medical care and public health. Despite accumulating evidence for intervention effectiveness, public health professionals have insufficient information to present definitive intervention planning recommendations. Therefore, evidence-based decision-making *processes*, not just interventions, need to be translated and disseminated to public health practitioners, policy-makers, and other community stakeholders. A series of inter-related web-based systems (Missouri Information for Community Assessment, and Intervention MICA) have been developed for local-level community planning, intervention, and evaluation. This study evaluated the physical activity module of the Intervention MICA. Findings from direct observations and surveys of public health practitioners and other intended audiences were very favorable for the utility of the system and its applicability in community settings. Respondents recommended enhancements to the system, including the need to improve navigation, diversify the format and presentation of information, define or clarify terms, and modify specific contents of the system.

Keywords: Intervention; Evidence-based; Evaluation

1. Introduction

In the last two decades, evidence-based practice has emerged as a central tenet of medical care and public health (Agency for Healthcare Research and Quality, 2003; Briss, Zaza et al., 2000; Brownson, Baker et al., 1999, 2002, 2003; Guyatt, 1999; Guyatt, Cook et al., 2004; Guyatt, Haynes et al., 1997; Jaeschke, Guyatt et al., 1998; Montori & Guyatt et al., 2001; Montori, Guyatt et al., 2002; Rychetnik, Hawe et al., 2004). In response, public health researchers have developed impressive surveillance systems and methods to disseminate effective interventions in order to decrease morbidity and mortality rates across populations, such as the Centers for Disease Control and Prevention's *Behavioral Risk Factor Surveillance System* (http://www.cdc.gov/nccdphp/brfss/), *WONDER* (http://wonder.cdc.gov/), and *Community Guide to Preventive Services* (http://www.thecommunityguide.org/). To support evidence-based decision-making in community settings, it is essential to summarize and translate these findings from public health research into tools and resources that are accessible for practitioners, policy-makers, and other community stakeholders.

In Missouri, a series of inter-related web-based tools have been developed to assist in community planning, intervention, and evaluation at the local level. This system, Missouri Information for Community Assessment (MICA), translates evidence from existing data sources (e.g., death certificates, birth certificates, hospital patient abstracts, enrollment data for state programs, Behavioral Risk Factor Surveillance System survey, vital statistics) tracked by the Missouri Department of Health and Senior Services into resources for individuals, organizations, and communities to improve health through the provision of

*Corresponding author. Tel.: +1 314 781 1562; fax: +1 314 781 1906.
E-mail address: laura@transtria.com (L.K. Brennan Ramirez).
URL: http://www.transtria.com.

0149-7189/$ - see front matter © 2006 Elsevier Ltd. All rights reserved.
doi:10.1016/j.evalprogplan.2005.11.008

data as well as planning, implementation, and evaluation information. Three surveillance components are included in the MICA interactive web-based system: (1) Community Profiles summarizes data on health conditions, calculates rates, and prepares information in a graphic format for presentation (http://www.dhss.mo.gov/CommunityDataProfiles/); (2) MICA allows a user to access one of 20 databases and create tables according to the user's specifications, including sociodemographic information, causes of death, births, hospitalizations, emergency room use, and a wide variety of other health indicators (http://www.dhss.mo.gov/MICA/); and (3) Priorities MICA offers the user opportunities to select criteria in order to prioritize health conditions or risk factors (http://www.dhss.gov/PriorityMICA/). These surveillance data can be extracted for a county, several counties, or the state as a whole.

Intervention planning, implementation, and evaluation tools are also provided as part of Intervention MICA, an interactive, evidence-based system that helps the user select the most appropriate intervention strategies and provides information, tools, and links to other sites that support intervention selection and delivery (http://www.dhss.mo.gov/InterventionMICA). Intervention MICA guides the user through an evidence-based public health process of creating partnerships, performing a needs assessment, assessing readiness, building capacity, selecting and implementing an intervention, designing an evaluation, and maintaining momentum. Users are able to move through this stepwise process or go directly to specific intervention strategies related to their topic of interest (e.g., links from the Priorities MICA surveillance system have been established so that the user can automatically retrieve intervention information on their priority health condition or risk factor). The intervention strategies are organized according to risk factor (e.g., physical activity, tobacco use, or nutrition) or health condition (e.g., asthma, diabetes, or heart disease). Although the Intervention MICA system is intended to address a wide variety of health conditions and risk factors, physical activity was the first topic area to be developed and evaluated. Therefore, the physical activity module forms the basis of the description, recommendations, and lessons learned in this study.

The design, content, and format of the Intervention MICA system were informed through interviews with national, state, and local experts in the field (i.e., health practitioners, health care administrators, and researchers) and reviews of the scientific literature, government reports, and Internet sources (Brownson et al., 2003; Brownson, Gurney et al., 1999; Glasgow, Vogt et al., 1999; Macdonald, 2000; Truman, Smith-Akin et al., 2000). Within the different health topics, information is provided for a variety of intervention settings (i.e., communities, healthcare facilities, worksites, schools, faith-based organizations, and homes), populations, and specific strategies to create change.

For physical activity, six intervention strategies are included: individual information exchange, supportive relationships, provider education systems, group education sessions, campaigns and promotions, and environments and policies. These strategies were derived from the *Guide to Community Preventive Services* systematic reviews and recommendations (Centers for Disease Control and Prevention, 2001; Dunn & Blair, 2002; Kahn, Ramsey et al., 2002; Task Force on Community Preventive Services, 2002) as well as other review articles (Cavill, 1998; Cunningham & Michael, 2004; Dishman, Oldenburg et al., 1998; Eakin, Glasgow et al., 2000; King, Jeffery et al., 1995; Marcus, Owen et al., 1998; McGraw, Sellers et al., 2000; Napolitano & Marcus, 2002; Peterson, Atwood et al., 2002). Trained research staff reviewed each intervention with respect to research (e.g., study design, strength of association, use of theory) and practice (e.g., presence of a protocol, availability of intervention or evaluation tools, cost limitations) criteria specified in a detailed abstraction protocol. For each intervention strategy, investigators reviewed the quantitative and qualitative information abstracted, summarized the evidence across interventions, and created recommendations for evidence-based decision-making.

A logic framework was created to link the settings, strategies, behavioral science theories, and intermediate and long-term health outcomes (see Fig. 1). Within the website pages, each intervention strategy contains a general description, research and practice evidence, links to example interventions, action steps to create and implement the intervention, links to intervention tools and resources, and links to evaluation information, tools, and resources. When possible, the user is directed to existing resources (e.g., intervention descriptions, implementation materials, evaluation tools). The system is intended to link the user to needed information and resources rather than to duplicate those already available and accessible to local community stakeholders.

The purpose of this study was to evaluate the physical activity component as well as the overall evidence-based intervention planning process of the Intervention MICA system. Evaluation of this system included the following objectives: (1) to obtain in-depth quantitative and qualitative feedback from users about their experience interacting with the Intervention MICA, specifically to understand how the respondents processed the information presented; and (2) to capture the user reactions to the overall usability of the system, including ease or difficulty in navigation, credibility of information, appropriateness of the type and amount of content, and aesthetic appeal of the design and layout. Findings have been used to make changes in the system that will enhance the ability of the physical activity module to reach its intended audience in a user-friendly and personally relevant manner and to ensure appropriate development of future modules.

2. Methods

In-depth quantitative and qualitative feedback were obtained from public health practitioners, students and