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## Original Research

# Evaluation of an online training for improving self-reported evidence-based decision-making skills in cancer control among public health professionals



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## ABSTRACT

**Objectives:** The purpose of this evaluation was to assess the effect of the online evidence-based cancer control (EBCC) training on improving the self-reported evidence-based decision-making (EBDM) skills in cancer control among Nebraska public health professionals.

**Study design:** Cross-sectional group comparison.

**Methods:** Previously developed EBDM measures were administered via online surveys to 201 public health professionals at baseline (comparison group) and 123 professionals who took part in the training. Respondents rated the importance of and their skill level in 18 EBCC skills. Differences were examined using analysis of variance models adjusted for gender, age, years at agency, and years in position, and stratified by respondent educational attainment.

**Results:** Among professionals without an advanced degree, training participants reported higher overall skill scores ( $P = .016$ ) than the baseline non-participant group, primarily driven by differences in the partnerships and collaboration and evaluation domains. No differences in importance ratings were observed. Among professionals with advanced degrees, there were no differences in skill scores and small differences in importance scores in the expected direction ( $P < .05$ ). Respondents at baseline rated the following facilitators for EBDM as important: expectations from agency leaders and community partners, high priority placed on EBDM by leadership, trainings, and positive feedback. They also reported using a variety of materials for making decisions about programs and policies, though few used individual scientific studies.

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*Conclusions:* EBCC led to improved self-reported EBDM skills among public health professionals without an advanced degree, though a gap remained between the self-reported skills and the perceived importance of the skills. Further research on training content and modalities for professionals with higher educational attainment and baseline skill scores is needed.

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## Introduction

Cancer and other chronic diseases account for the majority of deaths in the United States and abroad, and most share modifiable behavioral causes that include diet, physical activity, tobacco use, and alcohol consumption.<sup>1,2</sup> Several evidence-based interventions have been identified for chronic disease prevention and control, and calls have been made to translate this knowledge into programs and policies.<sup>2,3</sup> The process of doing so has been described in the evidence-based public health (EBPH) framework for public health practice, which defines evidence-based decision-making (EBDM) as the process of using the best available research evidence together with information regarding population priorities and available resources in choosing and prioritizing public health programs and policies.<sup>4</sup> EBPH shares many similarities with the well-established concept of evidence-based medicine, however several differences between the two fields exist and necessitate separate approaches: type and volume of evidence, complexity of interventions, and heterogeneity of practitioners' training and disciplines.<sup>4</sup>

Despite the agreement about the importance of EBDM in cancer and chronic disease control, programs and policies are often not selected based on best existing evidence.<sup>4</sup> Multiple barriers to utilizing EBDM in public health exist, and it is important to increase the skills of public health professionals in order to improve EBDM.<sup>4,5</sup> Partially due to diversity of disciplines from which public health professionals originate, many are insufficiently trained in the science and practice of public health.<sup>6</sup> Between one-fifth and one-third of the public health practitioners report having undergone formal public health training.<sup>7</sup> Cancer control and other public health professionals report limitations in their organizations' capacity for using evidence-based practices even though they perceive that organizational leadership expects them to use these practices, and they have identified training as an important incentive for practicing EBDM.<sup>7–10</sup> Cancer control practitioners from public health and other settings have previously identified several training needs around implementation of evidence-based cancer control (EBCC) programs.<sup>9</sup>

Several EBPH training programs for cancer control practitioners and other public health professionals exist,<sup>11–14</sup> though only some of these have been evaluated and found effective in improving the knowledge, skills, or practice of the participants.<sup>12,13,15,16</sup> Some of these training programs utilized technology,<sup>11,14</sup> but their effectiveness was not evaluated. Distance learning has been emphasized as a promising

training modality in Institute of Medicine's call for improving the capacity of the public health workforce.<sup>17</sup> Although there is some preference among public health professionals for in-person training as it provides opportunity for interaction,<sup>18</sup> online training and other distance learning technologies have the potential to reach public health professionals for whom in-person training is not feasible<sup>4</sup> or to expand the scale of EBPH training where large groups of public health agencies could be combined into the same training system.<sup>18</sup>

The Prevention Research Center in St. Louis (PRC-StL) developed the online EBCC training aimed at increasing the adoption of evidence-based interventions to control obesity and cancer through promotion of physical activity and healthy eating. To the authors' knowledge, this online training is unique among cancer training programs in addressing a comprehensive set of competencies (deemed 'skills' hereafter). The online program was built around many of the core elements of an established EBPH training program<sup>15</sup> and adapted with examples for obesity and cancer control. The online format of the training has the potential to reach a large number of public health professionals, and allows trainees to complete the training on their own time. Brownson et al. (2009)<sup>19</sup> identified a set of skills for use in practitioner-focused training in EBCC, which were broken down by level of practitioner expertise and rated on priority. These skills serve as the foundation of the EBCC training. The EBCC training was completed by Nebraska public health professionals working in chronic disease prevention and control from February 2012 to June 2013. The purpose of this project was to evaluate the training for whether it increased the self-reported EBDM skills among the participants.

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## Methods

### Sample

The baseline survey, which served as a comparison group, was distributed to the Nebraska Public Health Association Network (PHAN) membership between August and September 2011 by email and followed up with additional emails and phone calls. Of the 247 respondents at baseline, 46 were missing information regarding EBDM skills and were excluded. Analysis was carried out on 201 observations at baseline.

Following the baseline survey, EBCC training participants were recruited in partnership with the Nebraska PHAN, Nebraska Partners N Health, and Nebraska Cancer Coalition

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