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The "Empowering Latinas to Obtain Breast Cancer Screenings" study: Rationale and design

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ABSTRACT

Background: Latinas suffer disproportionately from breast cancer (BC) in part due to lower guideline-concordant screening. Multiple intervention approaches have been developed to promote screening through direct patient education and empowerment approaches (i.e., training community members to share BC information). This study compares the relative effects of these approaches on: 1) women's BC screening; and, 2) women's dissemination of BC information within their social networks.

Design/methods: Our quasi-experimental trial is being implemented in community venues in two predominantly Latino neighborhoods in South and West Chicago. Eligible participants: 1) are female; 2) are 52–74 years old; 3) have not obtained a mammogram in the past 2 years; and, 4) have not previously participated in health-related volunteerism. Based on their geographic location, participants are assigned to one of two group-based interventions. Both interventions consist of three two-hour sessions, which includes BC early detection education. The education intervention sessions also covers BC prevention (diet, physical activity), whereas the empowerment intervention covers sharing information with family/friends, and health volunteerism. Navigation is provided for all women who wish to obtain mammograms. Primary outcomes include: 1) receipt of BC screening; and, 2) participants' dissemination of BC information. Secondary outcomes include positive changes in 1) participants' self-reported psychosocial facilitators; and, 2) social network members' BC behaviors.

Discussion: The design of our program allows for a preliminary comparison of the effectiveness of these two approaches. This work will inform larger comparativeness trials and offers a new approach to intervention evaluation via social network analysis.

1. Introduction

Latinas suffer disproportionately from breast cancer (BC) relative to non-Latina Whites (NLWs), including later stage at diagnosis and worse quality of life [1–4]. While controversies about BC screening exist [5,6], screening remains a major modifiable determinant of these disparities [7–9]. Multiple approaches have sought to improve screening among Latinas to reduce BC burden [10–17]. Some have focused on access/logistic barriers (e.g., costs, insurance status, transportation, childcare), including *patient navigation* to free/low-cost services [10,13,14,18]. While implemented at the individual-level, these approaches have focused on the consequences of societal/distal determinants (e.g., economic hardship, fragmented/uncoordinated care). Others, generally implemented by community health workers [19], have focused on psychosocial/cultural barriers (e.g., lack of information, embarrassment) [10,12,17]. These approaches have focused on more proximal (e.g., fear) and intermediate determinants (e.g., shared cultural misconceptions with social networks). Two psychosocial/cultural approaches are *education*, wherein the target population of Latinas receive information (e.g., [20,21]); and, *empowerment*, wherein community leaders and BC survivors have been trained to disseminate information to the target population of Latinas (e.g., [22–24]).

Are there differences in the effectiveness of interventions? Access/logistic-based approaches appear to be more effective more consistently [10]. This work parallels systematic reviews that have characterized screening promotion across populations [25,26]. Less consistently effective are psychosocial/cultural approaches, which often reflect intrapersonal, interpersonal, as well as cultural forces (e.g., norms, values), although there are more studies that combine access/logistic and psychosocial/cultural-based approaches is optimal [27–30].

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There is a question about *which* psychosocial/cultural-based approach should be used. Variation in effectiveness for psychosocial/cultural-based approaches has been found in the context of BC screening [10], but also in other reviews focused on Latino health at large [11,17,31] and across populations [16]. Reviews have largely compared efficacy in terms of the presence of a theoretical framework, interventionist characteristics, intervention duration, and intervention location (e.g.,[15,16,32,33]). Assessing differential efficacy has been less studied, partly due to differences in participant populations (e.g., target populations versus community leaders/advocates) and goals (e.g., participants' behavior change versus dissemination of health information) [23,34,35]. However, a growing number of empowerment approaches, which generally include elements of education approaches *and* training on dissemination, have begun to measure the behaviors of the targeted community leaders/advocates in addition to the behaviors of the target populations reached by the leaders/advocates [34,36–38]. Others have similarly advocated that measuring participant-driven health dissemination is needed for education approaches, as participants are likely sharing information they have learned and may be catalyzing behavior change for individuals in their own social networks [39–41]. There is altogether a growing ability and need to compare these approaches' effects on participants' behaviors *and* their dissemination of information/behavior change throughout networks.

The current paper describes the rationale and design for the "Empowering Latinas to Obtain Breast Cancer Screenings" study. Our primary aim is to compare the effects of two multifaceted interventions, education/navigation and empowerment/navigation among Chicago-based Latinas who are non-adherent to US Preventive Services Task Force (USPSTF) guidelines [42].

2. Study design and methods

2.1. Overview

As described above, the "Empowering Latinas to Obtain Breast Cancer Screenings study" is an exploratory quasi-experimental study funded by the National Institutes of Health. The target sample is 150 Chicago-based Latinas who are non-adherent to USPSTF guidelines (75 education; 75 empowerment). The objectives are to compare the relative efficacy of two multifaceted interventions. The primary predictor is study arms - education/navigation and empowerment/navigation programs. Both programs were delivered by community health workers (CHWs). Primary outcomes are BC screening uptake; and, dissemination of BC information throughout their networks. Secondary outcomes are women's psychosocial/cultural facilitators for BC screening uptake (cultural beliefs, self-efficacy, social norms, social support, knowledge); and, network members' BC screening behaviors (screening, peer referrals to study). Fig. 1 depicts a simplified overview of study processes described below, including sampling, area-level assignment, study arm-specific interactions, and surveys.

2.2. Conceptual framework and hypotheses

Fig. 2 depicts our conceptual framework.

Several theories informed our conceptual model. First, we draw from existing multi-level models [27,29,43–45], which describe screening as influenced by distal (e.g., social conditions, policies), intermediate (e.g., neighborhoods, social networks), and proximal determinants (e.g., access/logistic, psychosocial/cultural, demographics). Existing intervention approaches focus on proximal determinants to promote Latinas' BC screening. Navigation is tailored to address patients' specific barriers, including access and logistic factors [13,14]. Education approaches target psychosocial/cultural barriers [17]. Empowerment approaches focus on intermediate determinants of screening – specifically social networks [22,23,46,47]. Thus, in navigation and education approaches, participants are the targeted

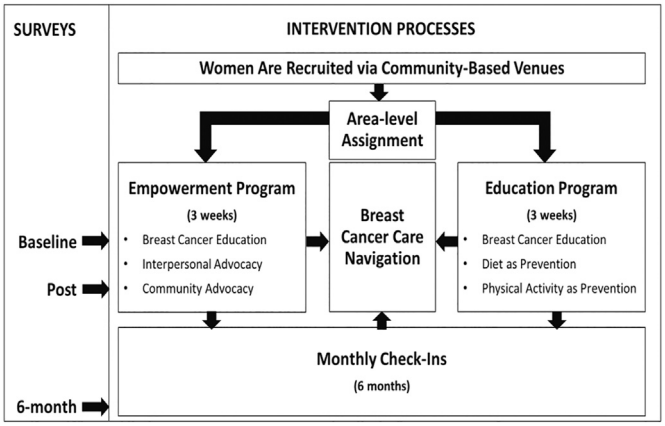

Fig. 1. Overview of empowering latinas to obtain breast cancer screenings study processes.

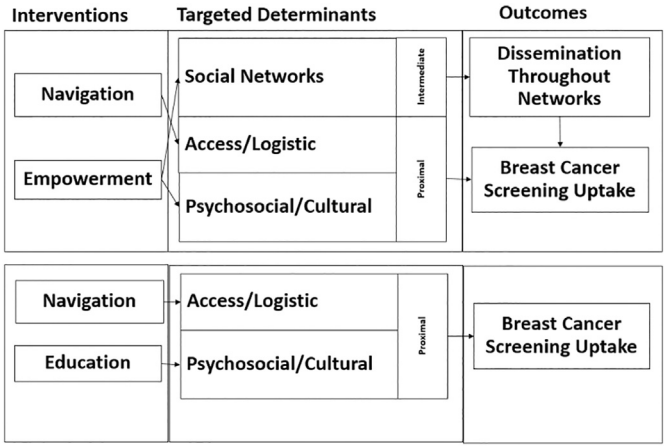

Fig. 2. Conceptual framework.

population and behavior change in BC screening is targeted by addressing proximal determinants. Conversely, in empowerment approaches, participants are the interventionists to the targeted population, wherein proximal determinants of screening are addressed to encourage the dissemination of information throughout networks and, ultimately, to change the intermediate determinants of network members' decisions to obtain screening. Given this, we predict that women receiving the empowerment intervention will be more likely to disseminate BC information more often and more widely throughout their networks relative to women receiving the education intervention.

Second, we draw from social psychology and volunteerism theories, which suggest that empowerment approaches may also have incidental health-protective effects for the participants themselves [37,48,49]. These models suggest that there may be more sustained changes in cultural beliefs, self-efficacy, social norms, social support, and knowledge for empowerment participants because of their greater perceived obligation to share information (thus the need to know it and model it first). This sustained change in psychosocial/cultural facilitators to screening may then result in greater adherence to guideline-concordant BC screening among empowerment participants relative to education participants. Additionally, hypocrisy reduction and cognitive dissonance theories suggest that participants trained to share recommendations with members of their networks may be more obligated to adhere to recommendations before they disseminate information throughout their communities [50,51]. Given these consequences of engaging one's social networks, an intermediate determinant, we predict that women receiving the empowerment intervention will be more likely to obtain BC screening relative to women receiving the education