

Key Elements and Effects of Cardiovascular Disease Management Programs based on Community-Based Participatory Research: Protocol for a Scoping Review

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Protocol

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Abstract

Background: Cardiovascular diseases (CVDs) are health problems that demonstrate high death and prevalence rates, and exhibit large health inequalities across different socio-economic status. Although interest in community-based participatory research (CBPR) is increasing because of the efforts to improve health equity, not enough literature review has been conducted on CBPR-based CVD management programs. The objective of this scoping review is to identify the key elements that should be considered when developing CBPR-based CVD management programs, and explore the effects of CBPR-based CVD management programs.

Methods: This study will use the databases of PubMed, Cochrane, and Cumulative Index to Nursing and Allied Health Literature (CINAHL). The criteria for selecting literature will be research that was published in or after 2000, applied CBPR, and either developed or implemented CVD management programs. No limit will be placed on the research design or method. Data extraction will be conducted independently by two researchers, and in the case of data mismatch, a consensus will be reached through discussion. The extracted data will be combined through narrative synthesis.

Discussion: This scoping review will identify specific methods in the development and implementation process of CBPR-based CVD management programs, as well as the characteristics of the programs that were shown to be effective. Therefore, it will be able to provide specific guidelines to researchers, government agencies, and local organizations to design and implement participatory health promotion programs related to CVDs.

Scoping review registration: This protocol has been registered to the OSF registries. 0000000204460911. "Key Elements and Effects of Cardiovascular Disease Management Programs Based on Community-based Participatory Research: Protocol for a Scoping Review." OSF, 4 Sept. 2020. Web.

Background

Cardiovascular diseases (CVDs) are one of the leading causes of death according to the World Health Organization, and are believed to be responsible for 18 million deaths worldwide every year [1]. The high CVD morbidity and mortality rates not only add to the socio-economic burden, but can also exacerbate health inequality [2]. Higher CVD death rates in people of lower socio-economic status [3, 4] is a universal phenomenon that occurs in various countries. The reason for the disparities in CVD mortality according to income level is that the factors affecting CVD occurrence or death differ according to income level. [3, 5, 6]. In other words, health inequality according to socio-economic status affects the determinants of health and the health status. As reducing this inequality is a goal that does not need a room for debate, various efforts are being made across the world to achieve it. CBPR is one of the suggested methods.

The CBPR is a community-based participatory research approach that involves a community's members, leaders, and academic researchers as equal participants [7]. In this manner, CBPR centers on the equality between participants and the fostering of a cooperative partnership for health promotion [8]. It is a

method through which members can identify the on-site challenges themselves and produce ideas for solutions for their community that can be implemented more effectively regarding the validity and durability [9]. Through this process, the relevant parties within a community can form and strengthen networks, while improved leadership can lead to heightened autogenous and continuous capacity for better health in the community [10]. While CBPR emphasizes “participation” of the community’s members, it also emphasizes “action” to almost the same degree. In other words, CBPR is a concept that includes action, as well as the process of achieving it through community capacity building and networks [11]. Therefore, CBPR can be used effectively as one of methods to connect academic research findings to on-site health services.

The community capacity that CBPR hopes to build is known to be a mediating factor that narrows the gap between the health status of different socio-economic status within the mechanisms that lead to health inequality. Health promotion programs based on CBPR are grounded in this mechanism, and aim to build community capacity through mediating variables like social networks, support, and social capital, thereby reducing health disparities and improving overall health status. Specifically, they emphasize the importance of addressing social determinants of health, which are defined as factors related to the social environment in which an individual is born, grows up, and lives, to reduce CVD risk factors and health inequalities arising from CVDs [12]. The American Heart Association has even pointed out that “at present, the most significant opportunities for reducing death and disability from CVD in the United States lie with addressing the social determinants of cardiovascular outcomes,” stressing the importance of raising awareness within communities to improve cardiovascular health [13]. Accordingly, it is possible to expect improved results from CBPR-based CVD management programs compared to the existing programs. As community capacity building cannot be achieved in a short period, considerable time will be required before health status increase. Nonetheless, because a strengthened community capacity does not easily dissolve unless the members’ change, its effects can be expected to be long-term.

Many previous reviews of CBPR in the health and medical sector are focused on specific ethnic groups such as Hispanics, African-Americans, Asian-Americans, and immigrants [14, 15], or residents in specific regions such as Sub-Saharan Africans and Asia-Pacific Islanders [7, 16]. There are not enough reviews that focus on providing a comprehensive compilation of the effects of CBPR-based health programs.

Methods/ Design

1. STUDY OBJECTIVES

The purpose of this scoping review is to review the literature on CBPR-based CVD management programs, and thereby identify the key elements that should be considered when developing CBPR-based CVD management programs, and explore the effects of CBPR-based CVD management programs.

2. PROTOCOL DESIGN

This scoping review was designed based on the scoping review methodology developed by Arksey and O'Malley [17] and revised by Levac and colleagues [18] It composed of 6 components; (1) Step 1: Identify The Research Question (2) Stage 2: Identifying relevant studies—search strategy (3) Stage 3: Study selection, (4) Stage 4: Charting the data, (5) Stage 5: Collating, summarizing, and reporting the results, and (6) Stage 6: Consultation exercise. Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews [19] will be complied with to report all recommended results.

Stage 1: Identifying the research question

In order to establish research questions in this review, we studied a preliminary investigation of the relevant studies and took a discussion. First, we organized the research questions into the 'process' of developing and applying the CBPR-based CVD management program and the 'outcomes' after applying the program. By dividing the 'outcomes' into quantitative and qualitative aspects, the research questions were defined such as:

1. What are the key elements that should be considered in the development process of a CBPR-based CVD management program?
2. Are CBPR-based CVD management programs more effective than conventional programs?
3. Are CBPR-based CVD management programs effective in building community capacity?

Stage 2: Identifying relevant studies—search strategy

This study will use the databases of PubMed, Cochrane, and Cumulative Index to Nursing and Allied Health Literature (CINAHL). We will establish the strategy by selecting the following search terms after examining in the abstracts and full texts of previous studies related to the topic. The keywords will be used to conduct the searches for “population” were “cardiovascular disease,” “vascul* disease,” and “CVD” which will be combined using the Boolean operator “or.” The keywords used to make searches for “Intervention” were “community- based participatory research,” “participatory action research,” “CBPR,” “PAR,” “community engagement,” “community involvement,” and “civic engagement,” which a were combined using the Boolean operator “or.” The Boolean operator “and” will be used to further combine search results for “intervention” and “Population.” For a more comprehensive search, all keywords will be searched in Medical Subject Headings, and further search will be conducted in the titles and abstract fields.

The search results will be shared with the researchers of this study and saved in the bibliographic management program EndNote (V.9.3.3.), which will also help in removing duplicate publications.

Stage 3: Study selection

In order to elicit answers for the research questions of this scoping review, we have determined the selection criteria for this review as shown in Table 1, and will conduct the study selection using those criteria.

Table 1
Inclusion criteria

Publication date	Literature published in or after 2000
Study design	All study types (e.g., RCT, non-RCT, observational study, qualitative study, mixed method)
Participants	Adults who are 18 years old or over
Intervention	A study on the development of CVD management program based on CBPR A study on the effect of CVD management program based on CBPR on residents

The studies retrieved using the search terms presented in the search strategy will be reviewed according to the study selection criteria. Two researchers will review the titles and abstracts of the studies independently and the studies that do not meet the criteria will be excluded under the agreement of the both researchers. If it is difficult to select the literature based on the abstract, the full text of the study will be reviewed to determine its selection. In the case where the two researchers disagree on the selection, the study will be selected after a consensus is reached through sufficient discussion between them. If a consensus cannot be reached, the study will be selected after discussion with a third researcher.

Stage 4: Charting the data

The two researchers will extract data independently and compare their results. The data will be extracted using the standardized form in Table 2. Before starting data extraction, the researchers will compose the data extraction form and attempt the data extraction, and, if necessary, will adjust the form. The researchers will meet regularly twice a week for two to three hours to examine and compare the extracted data.

Table 2
Data to be extracted

Domain	Details of data to be extracted
Participant	Demographic characteristics of participants (sex, age, race or ethnicity, geographic location), Health status of participants
Study Design	Quantitative study: randomized controlled trial or nonrandomized controlled trial, observational study, Qualitative study: case report, Mixed method
Study objectives	Objectives of a study as written in the full text
Characteristic of CBPR	Type of community partner, Form and nature of community involvement
Quality scoring of CBPR	Average score for five questions to evaluate quality of CBPR
Characteristics of CVD Management program	Program contents (physical exam, physical activity, eating, complex program, and etc.), Total period of the program
Study result	Change in participants' health status or community capacity after program implementation, Key elements of CVD program developed on CBPR
Others	Country where a study has been conducted, Funding source

Stage 5: Collating, summarizing, and reporting the results

Results will be compiled after selected studies are categorized as qualitative or quantitative according to the measurement method of the study. The results of the review on research question 1—Development and Application of CVD Management Program based on CBPR—and research question 3—Building community capabilities of participants after the program—will be reported in qualitative aspect. This will be deductively encoded into conceptual model that is taken from the CBPR quality assessment tool developed by Viswanathan and colleagues [20] and revised by Chen and colleagues [21]. The assessment tool consists of five questions in two domains. The first domain was composed of two items: “community partner identified?” and “community partner involved in the planning and/or execution of research?”. The second domain was composed of three items: “community partner involved in selection of research topic or development (or review) of the program?”, “community partner involved in analysis and/or interpretation of research?” and “community partner involved in dissemination of research results?”

Research question 2—the effects of the CBPR-based CVD management program—will be analyzed quantitatively. Because the outcome indicators being used in the selected studies are expected to be various, this protocol did not present indicators for the summarizing of results. For example, In the case of RCT and non-RCT, indicators such as changes of health status and participation rate will be summarized as quantitative results by comparing pre- and post-measurements.

The quality of CBPR for the selected studies will be assessed. The quality of CBPR will be assessed using tools developed by Viswanathan and colleagues [20] and revised by Chen and colleagues [21], following additional revisions by the researchers of this study. Each question will be measured by a three-point scale (1 = poor, 2 = fair, 3 = good), where a higher score indicates a higher quality of the CBPR. On the other hand, since the inclusion criteria of this review does not include research design types, it is expected that studies using various types of research design will be selected. Therefore, risk of bias will not be assessed for the selected studies.

Stage 6: Consultation exercise

To achieve the objective of this review to identify the key elements of the CBPR-based CVD management program and to assess the effectiveness of the program, we will take consultation from relevant experts on how appropriate the results of the review are. Specifically, we will organize a focus group of researchers or activists who have participated in CBPR, and we will conduct a focus group interview to confirm if the results from this review adequately reflect the needs or experiences of them.

Discussion

The objective of this scoping review is to examine the literature on CBPR-based CVD management programs, and thereby identify the key elements that should be considered when developing a CBPR-based CVD management program and assess the programs' effects. This study will be the first scoping review on CBPR-based CVD management programs. As communities are units that not only share geographic boundaries but also identity, it is important to consider the unique environment and context [10]. By examining the development process of CBPR-based CVD programs, this review will be able to identify how a community's unique character is reflected in the development process. Also, as the health issue that this study is interested in is CVD, this review will identify the content, duration, and resident participation mechanism methods of CBPR-based CVD management programs that have been effective. This study will identify specific methods related to the development and implementation of CBPR-based CVD management programs (e.g., investigating health issues and selecting topics, forming community partnerships, recruiting participants, collecting and analyzing data, utilizing research findings) as well as the characteristics of programs that were shown to be effective. The findings of this study will be able to offer specific guidelines for researchers, government agencies, and community organizations seeking to design and implement health promotion programs using community participation in areas with high CVD prevalence rates.

Abbreviations

CBPR community-based participatory research

CVD cardiovascular disease

RCT randomized controlled trial

Declarations

Ethics approval and consent to participate

Given that this protocol is for a scoping review, ethics approval and consent to participate is not required.

Consent for publication

Not applicable.

Availability of data and materials

The datasets to be generated and analyzed in this study will not be publicly available and will be available by contacting the corresponding author on reasonable request.

Competing interests

The authors declare no conflict of interests.

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Authors' contributions

BP provided the main idea of this study and engaged in the overall research, including research design. JY established a literature search strategy and led the preparation of the manuscript and EK reviewed and revised the manuscript critically.

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Supplementary Files

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