COMMUNITY-BASED PARTICIPATORY RESEARCH TO INFORM SOCIAL SERVICE INTERVENTIONS

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Abstract

The aim of this review is to analyze and differentiate the principles, objectives, methods, and results of human-centered design (HCD) and community-based participatory research (CBPR) tackles in addressing public health concerns. Additionally, it aims to suggest ways in which HCD can be integrated into CBPR collaborations and initiatives. Through the examination of published literature, primary sources, and consultations with experts in both techniques, a team of researchers conducted a three-phased process to analyze and compare the primary differences and similarities between HCD and CBPR. They also developed suggestions for incorporating HCD tactics into CBPR initiatives. There are five Human-Centered Design (HCD) tactics that may be easily integrated into Community-Based Participatory Research (CBPR) projects to enhance results: (1) assemble transdisciplinary teams, (2) prioritize empathy, (3) engage and collaborate with "extreme users," (4) Efficiently develop prototypes and (5) produce real goods or services. Incorporating Human-Centered Design (HCD) into Community-Based Participatory Research (CBPR) projects may result in solutions that have a wider impact, are more easily accepted, are more efficient, and bring creativity to public health services, goods, and policies.

Keywords: human-centered design (HCD), community-based participatory research (CBPR), review, differences, similarities, social service.

Introduction

Human-centered design (HCD) and community-based participatory research (CBPR) are two methodologies that prioritize the needs and involvement of individuals in order to tackle practical issues. Historically, Human-Centered Design (HCD) has mostly been used in the corporate sector, whereas Community-Based Participatory Research (CBPR) has predominantly been utilized by academic and community groups, often in collaboration. The public sector has begun to use Human-Centered Design (HCD) as a framework to steer the creation of products,

services, and public policy (Nanos, 2016). Although health research is currently investigating HCD, there are no studies that provide a comprehensive description of the whole HCD cycle or provide practical and reproducible ways for using HCD in health promotion and disease prevention initiatives (Bazzano, Martin, Hicks, Faughnan, & Murphy, 2017). This paper addresses the existing gaps by conducting a thorough comparison and analysis of Human-Centered Design (HCD) and Community-Based Participatory Research (CBPR). Additionally, it offers valuable advice on how to integrate HCD into CBPR partnerships and projects.

The HCD (Human-Centered Design) and CBPR (Community-Based Participatory Research) techniques are not mutually incompatible; in fact, they may provide complimentary solutions for problem-solving. In recent times, there has been a growing trend among public health researchers to combine Human-Centered Design (HCD) and Community-Based Participatory Research (CBPR) methodologies (Kia-Keating, Santacrose, Liu, & Adams, 2017). However, there is currently no existing literature that examines the similarities and differences between HCD and CBPR, or offers guidance to public health practitioners and researchers on how to integrate HCD strategies into CBPR in order to develop more impactful and efficient public health solutions.

This article will first demonstrate the integration of HCD (Human-Centered Design) and CBPR (Community-Based Participatory Research) as worldviews, as described by Trickett (2011). This will provide readers with a clear knowledge of the basic principles of both techniques in their most authentic forms. Firstly, we will analyze and differentiate between HCD (Human-Centered Design) and CBPR (Community-Based Participatory Research) as effective approaches, as described by Trickett (2011). We will examine how the parts of HCD and CBPR are often put into action. Secondly, we will propose five HCD tactics that are suggested for usage in CBPR and other initiatives aimed at promoting public health.

Definitions and examples of Community-Based Participatory Research

CBPR, based on Paulo Freire's concepts of empowerment education and critical awareness, is a research methodology that combines education and social action to enhance health and diminish health disparities (Wallerstein & Duran, 2006). CBPR revolves on purposeful connections between academic and community collaborators and incorporates the ideas of shared learning, reciprocal advantage, and enduring dedication. Community-Based Participatory Research (CBPR) is a cyclical and iterative process that involves establishing partnerships and gaining community trust, conducting a community assessment, defining the problem, developing a research methodology, collecting and analyzing data, interpreting the data, identifying action and policy implications, disseminating the results, taking action, and making plans for sustainability (Lewis, Shain, Quinn, Turner, & Moore, 2002). CBPR projects have the potential to enhance the pertinence and suitability of intervention designs, enhance the quality of collected data, streamline participant recruitment, tackle issues that are important to community members, and foster trust and collaboration between researchers and community members (Salimi et al., 2012).

CBPR has been widely used across several health domains and substantially employed in the creation of public health interventions. A CBPR study was undertaken in Durham, North Carolina, with the collaboration of researchers, practitioners, and community people. The objective of the project was to decrease the spread of sexually transmitted diseases and HIV. This effort was documented by Lewis et al. in 2002. The campaign included instructing local barbers and beauticians to act as peer educators and provide condoms and instructional materials in their establishments. Researchers conducted a needs assessment by using participant observation and qualitative interviews in partnership with community members. The purpose was to evaluate how the program may be improved to better fulfill the requirements of the community. Other CBPR projects have focused on various health behaviors and outcomes, such as smoking cessation or healthy eating. These projects have been carried out in diverse geographic locations, such as New York City and rural Alaska. They have employed different methods to enhance participation between community members and researchers, such as utilizing community advisor boards or collaborating with local community organizations. The involvement of community members has varied, ranging from full control to consultation. Additionally, these projects have employed different measures and indicators to evaluate success, including individual or community-level changes. (Peterson & Gubrium, 2011; Salimi et al., 2012).

CBPR was used to enhance hand hygiene practices among agricultural laborers in California, as shown by Salvatore et al. (2009). The Center for Children's Environmental Health Research at the University of California, Berkeley collaborated with university and community partners to develop a worksite intervention aimed at safeguarding farmworkers and their families from the harmful consequences of exposure to agricultural pesticides (Salvatore et al., 2009). A collaborative effort involving researchers, academics, health center representatives, health department officials, farmworkers, and the agricultural industry was undertaken to develop and assess an intervention that focuses on individual-level factors (such as worker education) and environmental factors (such as the provision of warm water, soap, and protective equipment) (Salvatore et al., 2009).

The project involved the active participation of two advisory boards: a community advisory board (CAB) and a Farmworker Council. These boards were formed to contribute to the design and analysis of the intervention study. Their involvement included tasks such as designing the intervention, creating data collection tools and protocols, hiring staff, recruiting and retaining participants, collecting and analyzing data, and sharing the research findings. The intervention resulted in the improvement of various behaviors, such as hand washing during the midday break and before leaving work. The authors propose that the involvement of growers and farmworkers in the development of the intervention, along with the community-based participatory research (CBPR) approach, likely enhanced the intervention's effectiveness and applicability (Salvatore et al., 2009). This example exemplifies the fundamental ideas and methodologies of Community-

Based Participatory Research (CBPR) and showcases the impact that CBPR may have on project results.

Example of the integration of Human-Centered Design with Community-Based Participatory Research

Kia-Keating et al. (2017) have effectively combined Human-Centered Design (HCD) and Community-Based Participatory Research (CBPR) to specifically target and tackle health inequalities connected to violence among Latinx adolescents. Their latest paper exemplifies the practical use of Human-Centered Design (HCD) methodologies during the inspiration and ideation phases within the first stages of a broader Community-Based Participatory Research (CBPR) project. The research team in this project formed a CAB (Community Advisory Board) consisting of a variety of stakeholders, including adults and youth. They conducted three community forums that encouraged active participation and used Human-Centered Design (HCD) activities such as drawing, photojournaling, and conversation starters to gain a deeper understanding of the needs and obstacles faced by community members. They then collaborated with community members using additional HCD activities like storyboarding to develop potential solutions that aim to reduce violence and enhance community cohesion. This approach was informed by the work of IDEO.org (2015) and Kia-Keating et al. (2017). The findings obtained from this preliminary study will provide valuable insights for the subsequent stage of the research project, which is centered on the last phase of Human-Centered Design (HCD) known as implementation. In this phase, Kia-Keating et al. want to develop, refine, and establish a sustainable intervention model that effectively addresses the specific requirements of their collaborating community.

To further promote the increasing interest in integrating Human-Centered Design (HCD) and Community-Based Participatory Research (CBPR) in public health research and practice, we conducted a comprehensive evaluation of available literature and source materials on these two techniques. In the following part, we delineate our evaluation procedure and analysis based on consensus. Next, we analyze and differentiate the methods used and pinpoint five Human-Centered Design (HCD) instrumental tactics that might enhance Community-Based Participatory Research (CBPR) projects and collaborations.

Significance for the implementation of health promotion strategies

Human-centered design (HCD) may be used in a range of pragmatic strategies to address public health issues at the individual, organizational, or community scales. For instance, HCD tools may be integrated into patient-centered outcomes research, expedited health impact evaluations, studies on trauma-informed treatment and interventions, and CBPR approaches like Photovoice. The ideas of Human-Centered Design (HCD) may be used to connect the process of identifying requirements and testing prototypes, break down implementation into more detailed and iterative stages, or include a wider range of perspectives in identifying problems or evaluating solutions. By using Human-Centered Design (HCD) techniques, specifically focusing on empathy, it is

possible to increase the initial phases of team formation, improve staff training, streamline data gathering and reporting procedures, and influence the conclusion or termination stages of a community-based project.

Significance for Public Health Research

As academics increasingly adopt Human-Centered Design (HCD) as a crucial technique in developing public health solutions, it will be necessary for other institutional structures to adapt and change. Initially, it is imperative that conventional financing channels embrace and actively encourage Human-Centered Design (HCD) in the field of public health. Several public health funders have previously allocated funds specifically for initiatives related to Human-Centered Design (HCD). As an example, the Office of Adolescent Health provided funding for the Innovation Next accelerator program, which was organized by Power to Decide. During this program, teams used Human-Centered Design (HCD) to develop a technology solution aimed at preventing adolescent pregnancy. The Robert Wood Johnson Foundation offers a comparable funding opportunity for using design thinking to construct communities that prioritize the needs and well-being of children (Robert Wood Johnson Foundation, 2017). Nevertheless, none of these financing options established a direct connection between Human-Centered Design (HCD) and Community-Based Participatory Research (CBPR).

Furthermore, it is recommended that further public health training schools include Human-Centered Design (HCD) training into their curriculum, especially since there is an increasing emphasis on innovation in the field of public health and medical education. Matheson et al. (2015) assert that incorporating HCD training into conventional medical training would provide significant advancements in illness prevention, which have been elusive to the healthcare sector for many years (p. 477). Several public health training institutions, such as the University of Michigan's School of Public Health and Yale's School of Public Health, have already incorporated Human-Centered Design (HCD) into their curriculum and programs. Tulane University even has a dedicated center called the Phyllis M. Taylor Center for Social Innovation and Design Thinking. In addition, schools of public health have the opportunity to collaborate with other professional institutions, such as business schools, schools of social work, and urban planning programs, or design businesses, in order to provide public health students with access to current courses and materials on Human-Centered Design (HCD).

Conclusion

This article examines the similarities and differences between HCD (Human-Centered Design) and CBPR (Community-Based Participatory Research). It also offers ideas to public health practitioners and academics on how to effectively integrate HCD as a strategic approach in CBPR partnerships and projects. Furthermore, we proposed measures to modify public health training and financing structures in order to include integrated HCD/CBPR techniques for addressing public health issues. In light of the intricate and diverse character of the health and

social problems that exist in the world today, it is crucial to develop solutions that integrate complementary frameworks and approaches.

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