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Expanding implementation research to prevent chronic diseases in community settings

Stephanie Mazzucca, PhD[1,*], **Elva M. Arredondo, PhD**[2], **Deanna M. Hoelscher, PhD, RDN**[3], **Debra Haire-Joshu, PhD**[1], **Rachel G. Tabak, PhD, RD**[1], **Shiriki K. Kumanyika, PhD, MPH**[4], **Ross C. Brownson, PhD**[1,5]

[1]Brown School, Washington University in St. Louis, One Brookings Drive, Campus Box 1196, St. Louis, MO 63130

[2]Division of Health Promotion and Behavioral Science, School of Public Health, San Diego State University

[3]Michael & Susan Dell Center for Healthy Living, UTHealth School of Public Health, Austin

[4]Community Health and Prevention, Drexel University Dornsife School of Public Health

[5]Department of Surgery (Division of Public Health Sciences) and Alvin J. Siteman Cancer Center, Washington University School of Medicine; Washington University in St. Louis.

Abstract

Chronic disease prevention continues to be grossly inadequate, overall and in achieving health equity, in spite of the many evidence-based practices and policies (EBPPs) available to address risk behaviors such as unhealthy eating, lack of physical activity, and tobacco use. Although clinical settings are needed for EBPPs that involve medical procedures such as immunization or early detection, dissemination of EBPPs can be effective in a variety of settings such as schools and childcare centers, worksites, social service organizations, and religious organizations. More implementation research is needed to meet challenges of effective application of EBPPs in such community settings, in which primary missions, capacity, cultures, and values do not focus on health services delivery. To address health equity, consideration of social and economic contexts of people reached in these settings is essential. This review presents lessons learned from past studies to guide future implementation research and practice across diverse settings.

Keywords

Dissemination and implementation science; chronic disease; prevention; community settings

[*]corresponding author: smazzucca@wustl.edu.

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INTRODUCTION

Chronic diseases, including cardiovascular disease, cancer, diabetes, and obstructive lung diseases affect nearly two-thirds of Americans and have a staggering impact on individuals, health care systems, and communities across the globe (23; 65). These four diseases cause the majority of deaths globally, with most occurring in low and middle-income countries (65). In the United States, these diseases are responsible for $3.6 trillion in total annual costs (inclusive of lost economic productivity), with projections estimating continued increases in the coming decades (58; 136).

Public health efforts over more than four decades have focused on promoting behaviors such as healthy eating, physical activity, and tobacco cessation, which are known to prevent these chronic diseases (36), and there have been many successes in reducing risk behaviors and chronic disease rates. Notable among these is the decrease in cigarette smoking from 42% in 1965 to 14% in 2018 (28; 132). Successes related to healthy eating and physical activity have been fewer, with most of the US population still far from meeting recommendations (121; 141) and little or no success in addressing the high prevalence of overweight and obesity (2; 52). Prevention is especially important for populations that have relatively higher chronic disease risks associated with poverty or racial/ethnic discrimination, factors that pose barriers to social and economic determinants of good health such as access to healthcare, housing, transportation, and employment (17). Socioeconomic and racial/ethnic disparities in chronic disease risk factors and outcomes are well documented and tend to persist even when overall rates improve. Therefore, prevention must be a major component of efforts to achieve health equity in this arena, for both children and adults (9; 148).

The lack of success in chronic disease prevention and the continuing health disparities is in spite of the availability of many evidence-based policies and programs (EBPPs) (37; 50). This situation reflects the gap between research to show which interventions can work and research on how to disseminate and effectively implement these interventions in populations at large (19; 46; 63). The science of how to close this gap, known as implementation research, has advanced substantially in the past decade but is still far from adequate—not only in quantity, but also in reach (128). To date, settings such as medical practices, hospitals, or medical or public health clinics which have missions and revenue or funding streams for delivery of health services have been the venue for much of the implementation research that has been conducted (106; 146). In the context of chronic disease prevention, this is understandable and appropriate for those preventive EBPPs that involve medical procedures (e.g., HPV vaccinations or early detection of cancers), but neglects the many opportunities for implementation research on policies and programs that can be delivered in other settings. These settings include faith-based organizations, education settings, social service organizations, municipal institutions (e.g., city planning, transportation), workplaces, and other organizations (e.g., recreational sport organizations) that influence individuals' behaviors (Figure 1) (84). We refer to these as community settings because although otherwise very diverse, they have in common the lack of a medical or clinical focus and represent settings of daily life for most individuals.

Implementation research is needed to meet the challenges of effective application of EBPPs in community settings specifically because these organizations or institutions are not designed for health-related programming but can be important complements to health settings by either reinforcing or negating health behaviors. Implementation in these settings is challenging because it involves organizations for which primary missions, capacity, cultures, and values—even when compatible with health and wellness goals—do not prioritize or have internal or external accountability for health outcomes (147). Challenges relate to the diversity of such organizations within and across settings (i.e., adaptation is essentially assured), and the need to obtain evaluation data on health-related metrics that are not obtained as part of the usual operations of the organization.

Arguably, the advantages of implementing EBPPs in community settings far outweigh the challenges. These settings are valuable for health promotion for many reasons, including their importance in influencing the everyday life of individuals, and the often high frequency and long duration of people's contact with these organizations relative to time spent at healthcare and public health organizations (Table 1). These settings are the authentic contexts that ultimately shape people's ability to meet their basic survival and psychosocial needs; patterns of eating and physical activity or inactivity; family lives and other social interactions; and, ultimately, the ability to prevent disease or promote health. From a health equity perspective, these settings have a major role in reaching populations who have disproportionate chronic disease risks precisely due to systemic societal factors that make access to basic survival needs and health improvement opportunities inequitable.

Previous reviews have highlighted that implementation research outside of health settings is relatively underdeveloped compared to implementation research in clinical healthcare and public health settings. (106; 146). While implementation research is not specific to one type of setting or health outcome of interest, it is important to understand the particular opportunities and challenges of implementing EBPPs within and across diverse organizations (Figure 1). Thus, the purposes of this review are to: (1) provide a brief overview of key principles and characteristics of implementation research; (2) summarize evidence from studies of implementation of EBPPs outside of health settings; (3) synthesize common challenges; and (4) highlight lessons learned from previous research to guide future prevention and equity-focused research and practice efforts.

IMPLEMENTATION RESEARCH

There are numerous definitions of implementation research (47; 105). For this review, we define implementation research as the study of the processes and factors that are associated with successful integration of evidence-based interventions within a particular setting (e.g., a worksite or school) (90). Implementation research often assesses whether the core elements of the original intervention are faithfully transported to a real-world setting and how the intervention may need to be adapted to the local context. Central to implementation research, context is defined as the social, organizational, and external factors that influence the success of implementation, for example the characteristics of the individuals making up an organization; an organization's culture, climate, readiness for change, financial constraints; and political influences (105). We use the term "implementation research"

broadly, to encompass a range of terms that are used differently according to funder and region of the world including “dissemination research,” “knowledge translation,” “population health intervention research,” or “scaling up research” (105).

Formal recognition of the need for a greater focus on implementation of EBPPs began about 20 years ago (26). The past few decades of inquiry have taught us several important lessons that are relevant for this review. Implementation research:

- Takes account of multilevel context (e.g., individual, organizational, and external factors) and social determinants, which play central roles in influencing the uptake and sustainment of EBPPs (99);
- Involves the enhancement of readiness through the creation of effective climate and culture in an organization or community (48);
- Pays particular attention to external validity (i.e., the generalizability of an EBPP from one population and/or setting to another) to enhance the relevance and usefulness of research (61; 77);
- Uses multidisciplinary approaches and a range of methods to develop and test implementation strategies, i.e., the techniques, activities, and processes that facilitate the integration of EBPPs into practice (e.g., trainings for teachers, identifying new funding streams), that are tailored to local context (128);
- Focuses on outcomes beyond individual-level (e.g., patient or client behavior changes), for example the acceptability, adoption, costs, and sustainability of an EBPP at the provider, organization, and system level (103);
- Involves stakeholders in all phases of research, e.g., adaptation and evaluation processes, which is likely to enhance implementation (86); and
- Has particular potential to reach disadvantaged groups, as implementation research methods are well suited to support implementation in low-resource settings (150).

The challenges posed by the emphasis on reaching populations that are socially disadvantaged include the social class and power gradients and, in many cases, racial/ethnic differences between researchers and the populations to be reached. Thus, the principle of involving stakeholders is especially important not only to create ownership and facilitate fit of an EBPP, but also to help researchers learn about and understand aspects of organizational context and obtain meaningful input based on the perspectives and experiences of organizational leaders, members, or clients who are insiders with a deep knowledge of the organizational context. Additionally, stakeholder input and buy-in is critical in implementation research, as stakeholders such as community health workers, teachers, and social service providers are often asked to lead implementation efforts.

Organizational dynamics and processes of change are critical considerations for implementation research (111). Any organization undertaking and possibly integrating a new program or policy is likely to undergo some type of operational change (i.e., modification in the way they carry out their activities, or in what activities they undertake). Changes

to organizational structures may also occur, such as who is accountable for program results, policies or schedules, or even physical facilities (e.g., to make room for children to exercise in a classroom). More difficult organizational changes include those that are transformational (e.g., taking on a new role within a community) or relationships with external partnerships (i.e., inter-organizational). Organizational norms may also be affected, e.g., using stairs instead of elevators, or policies about whether or when a person can smoke cigarettes. In discussing organizational change related to obesity prevention, Riley conceptualizes organizational change as a process involving several elements: identifying needs and opportunities; scanning and selecting intervention options; building capacity for implementation; and subcycles of implementation and monitoring and evaluation (111). This process can facilitate efficient EBPP implementation because it carefully considers the organizational context, allowing an EBPP to be selected that fits within the organization and is supported by strategies that leverage the organization's strengths and address barriers to implementation.

This complete process may not be possible in implementation research because of research characteristics or requirements. The EBPP may be pre-selected by the researcher or funder, the way the organization views their need for the program may influence cooperation at various levels, and timelines and resources might limit organizational capacity for implementation. Additionally, data collection for evaluation may be burdensome, especially if it is focused on constructs or outcomes that are not perceived as relevant to the organization. These issues apply to clinical as well as community settings, but the variability across community settings may be greater because of the lack of intrinsic health mandates. Implementation research offers a set of methods to bring awareness of these issues, even when they cannot be fully addressed, to gain a full understanding of what works in these settings.

IMPLEMENTATION RESEARCH IN COMMUNITY SETTINGS

Progress towards better population health can be made by working outside of health settings (35). For example, much of the promise in curbing the obesity epidemic has come from improvements made through economic policies to tax sugar-sweetened beverages; city planning initiatives to improve zoning laws; active transportation opportunities; and school food programs (64; 73; 142). Table 1 provides examples of implementation research in the settings featured in this review. A summary of evidence from these settings follows. Where available, the focus is on knowledge gained from literature reviews, and individual studies are discussed as examples and for settings where reviews were not available.

Faith-based organizations

Faith based organizations (FBOs) are potentially ideal settings to promote health for many reasons related to the characteristics of the congregations they serve, the importance of FBOs in individuals' lives, the potential to align with religious doctrines, and organizational characteristics including physical space and social networks that can support EBPP implementation (15; 69; 76; 109; 110; 116; 130; 137). FBOs have been engaged in many

health-related efforts for adults, including healthy eating and physical activity promotion, diabetes prevention, and cancer screening (24; 71; 76; 107; 131; 140).

Much of the research in FBOs has focused on African-American/black churches within the Christian faith, for example Body and Soul, which is an intervention set in African-American churches to improve fruit and vegetable consumption (3; 4; 102). More recent work in FBOs has focused on Latino and Filipino American churches and Islamic religious settings (6; 10; 80; 107). Organizations in racial/ethnic minority communities may be skeptical about research participation based on awareness of historical abuses such as the Tuskegee Study of black men, or past experiences in which perceived long-term benefit to the community was low or non-existent (12; 24). As with any community engagement, relationships with leaders and members of a faith-based setting should be formed with recognition that “outsiders” generally and researchers in particular need to show understanding of and respect for the context, even when they are of the same ethnic group or faith.

FBOs vary significantly in characteristics relevant to implementing and sustaining health programs. Formative research is needed to understand the social and environmental context and integrate tailored or adapted intervention or implementation strategies where appropriate, resulting in greater acceptability of the EBPP by the community and potential sustainability (24; 107; 140). Leadership support for health programs (e.g., gained through the use of a local advisory board), resource availability (i.e., physical, social, financial), and a good innovation-values fit (67) (i.e., how well the intervention fits FBO values) can influence implementation effectiveness and reach (10; 80). In Box 1, we present an example of how information on barriers and facilitators was used to inform needed implementation strategies and recommendations for working within FBOs.

Many programs in FBOs rely on lay community health workers (CHWs) to implement EBPPs, which is advantageous because they have existing connections within the FBO community, insider knowledge, and are viewed as trustworthy sources of information. The programs delivered by CHWs can complement more advanced healthcare provided in clinical settings but should not be considered a replacement. Because CHWs are not expected to have a health background, the quality of CHW trainings is critical to implementation success. Implementation fidelity may suffer if CHWs are not appropriately trained and supported to deliver complex health interventions (81). In-person trainings for CHWs that have been delivered in efficacy and effectiveness trials are not always feasible from a scalability perspective; thus other approaches such as asynchronous, self-paced online trainings can be used (60). Additionally, while CHWs are often volunteers, other supports such as compensation for their role in implementing a program may enhance implementation success (27).

Overall, the work conducted in FBOs highlights aspects of implementation research that can guide efforts in other settings: the importance of the local context, engaging stakeholders, involving CHWs, and providing appropriate training to support EBPP implementation. Ongoing implementation research studies will provide insights about the effectiveness of various strategies and outcomes that can inform future research approaches (80; 81).

Educational settings

Educational settings are another in which EBPPs focused on promoting healthy behaviors can be implemented not only to prevent chronic disease but also to improve academic achievement (68). There are a variety of educational settings relevant to children, adolescents, and young adults, including early care and education settings, primary, secondary and higher education school programs. Many factors make education settings appealing for health promotion, including the amount of time children and young adults spend in schools and the multiple levels of influence on behaviors (e.g., social environment, policy) (13; 68; 91; 143; 145). These settings are well-positioned to promote health equity; for example, programs delivered through educational settings can reach children who live in neighborhoods or family contexts that may not be able to provide supervised physical activity opportunities due to space or safety considerations. However, few programs and policies conducted in these settings have been replicated widely or taken to scale, likely because of challenges such as lack of sufficient funds or alignment with priorities of school staff to implement voluntary programs with distal benefits amidst academic objectives (75).

Numerous aspects of the organizational context of school settings have been identified as influential for initial adoption or sustainability of EBPPs, including the school's capacity and available resources to support continued implementation; staff issues related to turnover, motivation, and commitment; how well the EBPP is integrated or can be adapted to fit into the school's usual practices; and the broader state and local policy context for health promotion (57; 88). Having a clear understanding of what is needed to support initial adoption and longer-term sustainment of an EBPP at the organizational level, along with sufficient plans for common scenarios like staff turnover, can improve the potential for sustainability. For example, use of an EBPP may be improved if it is integrated with educational objectives that schools are paid to do and on which they are evaluated. Information about the cost-effectiveness of EBPPs and implementation strategies can help support stakeholders' decisions about which program to implement and how, which is especially important when working with lower resource settings (33).

Much of the existing research in these settings has focused on strategies such as the use of behaviorally-based educational materials, outreach, and educational meetings, as well as small incentives or grants and outreach visits to support implementation of a variety of EBPPs, such as programs delivered within classrooms and policies related to meal service and wellness (143; 145). Similar to other approaches, trainings delivered online can facilitate widespread dissemination and implementation of teacher-delivered programs (117; 144). Besides implementing an EBPP in a school, another approach is to coordinate implementation of programs focused on a similar outcome (e.g., obesity) across multiple settings to impact children's health (59; 120). This approach can be challenging because it requires engagement of stakeholders across multiple organizations all with different contexts and dynamics, but it has the potential to support implementation efforts in synergy with those in other settings (see Box 2 for additional details).

Opportunities for future implementation research in educational settings include the specification and evaluation of processes and strategies used to modify organizational characteristics and/or support EBPP implementation. This can help provide information

about how implementation works, potentially leading to better adaptation for greater program fidelity (91; 143; 145). Ongoing implementation studies in schools are focusing on organization-level changes and outcomes, which can provide useful information about the changes needed to best implement EBPPs and processes for addressing the organizational context (89; 135).

Social service organizations

Social service organizations encompass a variety of organizations, including agencies focused on foster care and adoption, child development, community resource referrals, and nutrition assistance, that are broadly designed to increase social well-being of individuals, families and communities (85; 133). These organizations are important points of contact for socially disadvantaged populations, are often in frequent contact with the individuals they serve, and are an important bridge to connect individuals to other community resources, thereby making social service organizations important settings to implement chronic disease prevention EBPPs and work towards health equity (7; 85).

The majority of implementation research in social service organizations has focused on mental health and addressing social and economic needs (e.g., employment, food security) (85). Implementation research about chronic disease prevention in these organizations has focused on tobacco control and cancer screening referral in community resource referral agencies (21; 70; 129); healthy eating and physical activity in home visiting programs focused on children's development (114; 124); and improving opportunities for healthy eating through charitable food systems (55; 138). These lines of diverse research suggest that there is growing recognition of the role these settings can play in preventing chronic disease directly in addition to the indirect effects on social determinants resulting from the primary set of services delivered by these organizations (85).

These studies present several key issues for future implementation research. Importantly, the particular EBPP chosen should match or be designed to align with the organization's operational characteristics, e.g., their usual interaction with individuals. Organizations that have a shorter-term interaction with individuals, e.g., food pantries, may be better suited to deliver brief programs to individuals or implement organizational-level programs and policies to improve their operations or structures in support of chronic disease prevention (55). Conversely, organizations that have a more frequent, long-term interaction with individuals, e.g., home visiting programs, could feasibly deliver individual-level health interventions that are embedded into their usual programming (123; 124). Also, this body of research underscores the importance of considering implementation costs and measuring outcomes that align with the primary mission of the organization and are relevant to those in decision-making positions, e.g., local and national funding offices (85; 87). Broadly, social service organizations are uniquely suited to disseminate and implement preventive EBPPs from a social determinants of health perspective. Implementation research in these organizations highlights a variety of successful approaches for integrating the organizational context and dynamics that can be used in other settings.

City planning and transportation

Considering the multiple levels of influence on an individual's health, it is important to support the implementation of EBPPs to optimize the built environment for chronic disease prevention. Numerous reviews have documented the positive effects of policies to improve components of the built environment, including zoning and land use, traffic safety, and active travel opportunities on eating and physical activity behaviors (44; 45). Additionally, there is a well-documented link between the built environment and opportunities to promote health equity (93); for example, safe, affordable transportation routes that offer access to jobs and services that enhance health are needed in low-income communities. City planners and transportation practitioners have been increasingly engaged in chronic disease prevention efforts, representing a transformational change for these organizations (32; 45; 111). However, aligning the work these organizations conduct to design or redesign communities with promoting healthy behaviors is challenging, as it requires coordination of multiple governmental departments with different organizational dynamics and policymakers who make decisions based on data such as cost and locally contextualized information, which are often not available for EBPPs (25; 40; 49; 100; 113).

With the knowledge of what aspects of the built environment can impact health, much of the work to improve the built environment has focused on engaging stakeholders and fostering inter-organizational changes to support decision making for the implementation of preventive EBPPs in city planning and transportation settings (40; 100; 113). Promising solutions include 1) modifying organizational and inter-organizational structures to share personnel between public health and planning teams to ensure that planning perspectives are considered throughout public health planning processes; and 2) improving the collection of locally relevant data (25). Additionally, identifying a broader array of strategies, i.e., moving away from a "one size fits all" approach, can improve the fit between the planning and transportation strategy with the community. For example, in rural communities where mass transit is not cost effective, the focus should be on other opportunities to improve active transportation that leverage the strengths of a rural community such as the presence of cheaper land and the possibility of connecting trails to create a walkable or bikable transportation network.

To complement the organizational-level strategies, national-level planning policies have been adopted that specifically provide guidance about implementing health-related programs, e.g., the UK National Planning Policy framework (25), which can incentivize city planning and transportation organizations to engage in EBPP implementation. A similar initiative is the Health in All Policies (HiAP) approach endorsed by the World Health Organization, which calls on all levels of government to commit to chronic disease prevention and health equity by systematically accounting for the health-related implications of policy decisions and avoiding unintended negative health-related consequences of policy decisions (119; 149). This approach is facilitated by the presence of stable funding mechanisms; strong, long-term political support; open communication channels; and legal obligations, whereas the perception of inter-organizational collaboration as an extra task and siloed organizational structures were barriers to implementation (134). Identifying common ground, such as beneficial outcomes for physical activity and climate change,

may facilitate implementation. To date there have been notable successes in city planning and transportation approaches to chronic disease prevention that rely heavily on inter-organizational changes (25). Continued collaboration to implement policies to improve the built environment is needed.

Workplaces

Workplaces are a highly influential environment for adults, similar to the influence of schools on children's health, and can offer access to no- or low-cost EBPPs for employees at all levels and across the income spectrum. Employers have a number of reasons to support health promotion in their workplaces, e.g., healthcare cost to employers (54). Previous research has identified features of EBPPs and the workplace context that can influence implementation success. These features include the needs and motivations of employers and employees (e.g., the health concerns of employees), the physical structures of the workplace (e.g., employee workforce is mainly off-site), and the workplace's readiness and capacity for change (43; 54; 79). Related to these characteristics, smaller organizations and those in particular industries (e.g., retail) are less likely to implement workplace health promotion programs; thus, these have been the focus of recent workplace health promotion efforts (54).

A variety of strategies have been used to support implementation of workplace health promotion programs in previous literature. Informational meetings, supporting implementation with a program champion, and the presence of a wellness committee can improve implementation (18). Active dissemination of a program can also improve implementation, as in the Centers for Disease Control and Prevention's Work@Health Program, which has been disseminated across the United States through a variety of training and technical assistance formats (e.g., online, in-person, train-the-trainer) to small and medium-sized employers (30; 72). Other approaches have focused on increasing the internal capacity for workplaces to implement programs independently (126).

Participation in workplace health promotion programs is often low, but several strategies have been used to engage workplaces in these programs. For example the 10,000 Steps Workplace Challenge in Australia used microgrants to provide pedometers within the context of a well-known, state-funded physical activity promotion program. In addition to the financial incentive, the application process was easy, and the program was well-known. With these strategies, the program achieved high adoption within nonmetropolitan and smaller workplaces, in which the organizational context may limit the ability to take on complex EBPPs (38). Also, engaging stakeholders within the organization in the research design, conceptualization, and implementation may facilitate participation and sustainability, because their knowledge of the local context can guide implementation that appropriately addresses the organizational context (122). Implementation of workplace health promotion programs has demonstrated success to improve chronic disease-related risk factors in workplaces, and efforts to match implementation strategies with the organizational context can guide research in other areas.

Other settings

Organizations focused on youth or community development programs (e.g., YMCAs, Boy Scouts of America, out-of-school programs) or sports and recreation programs are also important partners for implementing chronic disease EBPPs. These are diverse organizations that are potentially but not always present in all communities, and programs may be limited in organizations that rely on public funding. The literature regarding these organizations is similarly heterogeneous, reflecting the variety in focus, structure, and capacity of these settings to implement EBPPs. Thus, we present several individual examples of implementation research in these organizations.

The Diabetes Prevention Program, a lifestyle modification program to prevent type 2 diabetes, has been disseminated widely across the United States in a variety of community settings such as the YMCA (5; 139). The program has been adapted to improve uptake in various contexts, for example by condensing the program or embedding culturally appropriate foods and activities (125). Despite its wide dissemination, the reach of the program and its impact on health outcomes remains lower for individuals with low income and racial or ethnic minorities (51). Additional work is needed to understand how to best optimize the program's implementation within a wider range of communities, for example, rural communities that do not have the same organizations present in their communities to implement these programs.

Additionally, out-of-school time programs administered through schools and organizations such as the Boy Scouts of America, 4-H, or YMCA have been the focus of EBPP implementation. Several studies have reported favorable outcomes from the dissemination of various training modalities to improve implementation of healthy eating and physical activity programs (11; 39; 74); however, evidence of the sustained impact of these efforts on children's physical activity is modest (11).

An emerging body of implementation research has focused on chronic disease prevention EBPPs in sports and recreation organizations, which have wide reach for children and adults. This research leverages existing social networks and peer coaches to implement EBPPs that align well with the organization, for example, implementing a weight loss program through soccer or hockey clubs to promote weight loss in men (62). There is limited evidence about effective strategies to improve the implementation of EBPPs in sports and recreation organizations (82); however, these organizations represent an important group for the focus of future research.

LESSONS FOR THE FIELD

Improving the use of EBPPs to prevent chronic disease through community settings has the potential to make meaningful gains towards chronic disease prevention and promoting health equity. This review highlights the many possibilities for implementing EBPPs in a variety of settings. Despite the heterogeneity in the characteristics of each of the settings, reviewing implementation research for chronic disease prevention across these settings allows us to synthesize similar lessons learned about conducting research in community organizations, to advance implementation of EBPPs and chronic disease prevention.

Working with community settings to implement chronic disease prevention EBPPs

Engaging stakeholders can improve implementation efforts.—Regardless of the setting, successfully engaging the many stakeholders who influence or are affected by the implementation of an EBPP (e.g., leaders, program recipients) throughout all phases of implementation research is needed to foster organizational change and improve implementation efforts (98; 112). Researchers should build an understanding of who the appropriate stakeholders are, which may differ by setting (24; 25; 41; 106). Engaging stakeholders in implementation can help researchers understand the local context from an insider's perspective, understand the decision-making structures within an organization, and tailor messaging with stakeholders to highlight common ground between researchers and stakeholders (108).

Partnerships should be built on trust and benefit the organization.—Careful attention should be paid to forming partnerships with community settings that are built on trust, as practitioners in community settings and community members may be skeptical of working with researchers (12; 31). Collaborating with local, state, and national partners or organizations can facilitate local partnerships, demonstrating to community organizations that you are a trustworthy partner. The onus is on researchers to communicate the alignment of chronic disease prevention with the priorities of the organization (31; 147) and the significant expertise stakeholders bring to the partnership. The benefits to the organization may not come exclusively from health-related outcomes; for example, improvements in academic performance resulting from physical activity may be more relevant to a school than increases in physical activity (12; 31).

The organizational context should directly inform implementation efforts for sustainable organizational change.—The organizational structures and dynamics, e.g., decision making processes, will dictate what types of organizational changes are needed to support EBPP implementation. For example, implementing a physical activity program in a school requires changes to the operations (programming) of the school, policy changes (e.g., use of campus facilities for activity before school), structural changes to modify spaces for increased activity, approval from school administrators; and buy-in from teachers asked to serve as program implementers (83; 92). In other settings, city planners need to work with design or health promotion experts in the context of strong inter-organizational partnerships to maximize opportunities for activity (25). The focus of implementation science on context and organizational processes is a strength that can be used to support researchers in thoughtfully assessing the local context in and priorities of an organization and matching that context to implementation strategies tailored to the context (99).

Challenges remain for working with community settings.—Practical matters such as competing priorities within organizations (e.g., maintaining their core operations) and standard tenure and promotion criteria for researchers can make these partnerships difficult even when both sides are interested in working together. Evaluating researchers on societal as well as academic impact, i.e., factors beyond bibliographic output, can incentivize academics to engage in research with the organizations discussed in this paper (96). While not a major focus of this review, issues related to cost-effectiveness and economics remain.

Limited data on cost-effectiveness of programs and policies exist, which should be a priority in future work. Also, identifying appropriate research funding and sustainable funding models to implement programs delivered by community members, for example CHWs, is crucial to the long-term success of implementation in many of these settings (97). Public-private partnerships between national funding organizations such as the National Institutes of Health and local organizations could support the implementation of programs and offer researchers an opportunity to study implementation issues such as cost and complex organizational change.

Implications for future implementation research

There is a need to better apply implementation research concepts, including strategies and outcomes (43; 88; 118; 125; 145; 146) in diverse community settings. It is important for these concepts to be clearly articulated and evaluated systematically so that other researchers can translate findings and methods across these settings (66). For example, knowing what types of organizational changes are needed for CHWs to implement a healthy eating program (e.g., trainings provided) in churches can inform the implementation of a smoking cessation program in volunteer-run community-based organizations. Use of reporting standards and guidelines in future studies can facilitate these efforts (101; 104). Last, issues related to implementation can be incorporated into efficacy and effectiveness research, as the evidence for a program or policy is building. Hybrid approaches that examine effectiveness and implementation research questions simultaneously can accelerate the generation of important implementation evidence (34).

CONCLUSIONS

There are many rich opportunities to use implementation research to improve chronic disease prevention in community settings and work towards health equity. While there is variability in the settings where implementation research is conducted, many of the successes and challenges to organizational change are shared across settings. A continued focus on rigorous, rapid and relevant research that promotes organizational change can improve implementation research and facilitate the uptake and reach of EBPPs.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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SUMMARY POINTS

Highlight the central points of your review (as many as 8), in complete sentences; insert above the Acknowledgments and/or Literature Cited section

- Chronic diseases, including cardiovascular disease, diabetes, obesity, obstructive lung diseases, and cancer, remain a top public health concern and can be prevented by promoting behaviors such as healthy eating, physical activity, and tobacco cessation.
- Evidence-based programs and policies (EBPPs) to prevent chronic disease exist, but their use in real-world settings remains limited.
- Community settings such as faith-based organizations, educational settings, social service organizations, municipal institutions (e.g., city planning, transportation), workplaces, and other organizations (e.g., recreational sport organizations) are particularly promising for implementing preventive EBPPs because they are highly influential settings in the daily lives of most individuals.
- From a health equity perspective, focusing prevention efforts in community settings has the potential to reach populations with disproportionately higher chronic disease risk who are not able to access health improvement opportunities because of systemic societal factors.
- Implementation research can facilitate the uptake and reach of chronic disease prevention EBPPs, especially due to the focus on organizational context and dynamics that influence implementation within community settings.
- Considering implementation across these diverse community settings underscores the similarities of working within organizations that do not have an explicit mission related to health, such as the need to align the EBPP with the mission of the organization for it to be integrated into practice.
- Challenges of implementing EBPPs in community settings include differences in the priorities of researchers and stakeholders, limited organizational resources to support implementation and sustainment, and a lack of funding streams available to community settings for this work.
- Existing implementation research in community settings highlights the range of opportunities to conduct chronic disease prevention outside of healthcare and public health settings, the importance of engaging stakeholders, the process of carefully building partnerships, and using the organizational context to inform implementation approaches.

FIGURE 1. Opportunities for implementation research to prevent chronic diseases outside of health settings

Context includes the characteristics and needs of individuals who are members of or are served by these settings; the organizational structure and operational characteristics; and the external policy and funding environment.

Health equity is both a process, i.e., removing economic and social obstacles to health such as poverty or discrimination, and a goal, i.e., when everyone has a fair and just opportunity to be as healthy as possible (16).

TABLE 1.

OPPORTUNITIES AND CHALLENGES FOR CHRONIC DISEASE PREVENTION BY SETTING

SETTING	Key Implementation Research Examples	Strengths and Opportunities	Challenges
Faith-based organizations	• Body and Soul (3; 4) • Fe en Accion (Faith in Action) (6; 10) • Project HEAL (60)	• Potential to reach racial and ethnic minorities and rural communities (42; 56) • Trusted organizations for many marginalized populations (6) • Alignment of health promotion with principles in religious texts (76) • System of volunteers who can implement programs and provide social support (69) • Availability of physical space, infrastructure resources (e.g., rooms, kitchens), and communication outlets (15; 116; 130; 137)	• Knowledge of the social and environmental context is needed to improve fit of implementation strategies and EBPPs (24; 107; 140) • Forming relationships may be difficult, e.g., in communities who have been historically mistreated by researchers (12) • Religious differences between researchers and the faith community may impede partnership formation (23) • Variation in FBOs' capacity to support implementation and sustainment of health programs (24; 76)
Educational settings	• Action Schools! British Columbia (83; 92) • Bihar School Teachers Study (78) • Texas CORD (59; 120)	• Children and young adults spend a majority of their day in these settings (91; 143; 145) • Many opportunities to influence health behaviors, e.g., foods provided, social interactions between teachers and children and among children, modifying school policies (68) • Teachers and school staff are viewed as a trustworthy source by children and are skilled workers (13)	• Primary focus on educational attainment, not health (57) • School-level capacity, resources, and funds to implement EBPPs may be limited (75) • Staff issues related to turnover, motivation, and commitment (57; 88) • Fit of the EBPP with the school and broader policy context (57; 88)
Social service organizations	• HEALTH (123; 124) • Smoking Care (20; 94) • Smoke-Free Homes (SFH): Some Things Are Better Outside (21; 129)	• Often in frequent contact with the individuals they serve and have ties with other organizations and resources to address social determinants of health (85) • Potential to reach racial and ethnic minorities (7) • Providers are knowledgeable of the needs of the populations they serve (i.e., culturally competent)	• Willingness of organizations to implement EBPPs may be limited because their primary focus is on delivery of a particular service • Funding structures may restrict available implementation approaches (e.g., mode)
City planning and transportation	• Ciclovías Recreativas (115) • Health in All Policies implementation (134) • England's National Planning Policy framework implementation (27)	• Potential reach is vast, as programs and policies are implemented widely within a community • Highlighted as important setting for health promotion by international agencies, e.g., WHO and UN (45) • Synergy between health promotion and other outcomes, e.g., social cohesion, community development, planetary health	• Designing or redesigning communities with a health promotion perspective is costly and requires coordination of multiple governmental departments and policymakers (40) • Planners and policymakers use cost data and locally contextualized data, which is not always available (25; 49; 100; 113).
Workplaces	• HealthLinks (53) • Work@Health (30; 72) • 10,000 Steps Workplace Challenge (38)	• Many adults spend much of their time in their workplaces • Numerous benefits of implementing EBPPs to employers, e.g., reduced healthcare costs, improved recruitment, retention, productivity, and morale of their workforce (54)	• Participation in workplace health promotion programs is often low • Wide variation in willingness, capacity, and resources needed to implement EBPPs, which may exacerbate health disparities
Other settings	• Diabetes Prevention Program (5; 125; 139) • Football Fans in Training (62) • Out-of-school Nutrition and Physical Activity program (74)	• Social networks can enhance EBPP uptake, e.g., peer influence • Organizations regarded as trustworthy and important in the lives of individuals and communities	• Many are volunteer-run organizations that may have limited capacity to implement EBPPs • Organizational cultures are varied, requiring formative research and careful adaptations of EBPPs