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## Is Theory Guiding Our Work? A Scoping Review on the Use of Implementation Theories, Frameworks, and Models to Bring Community Health Workers into Health Care Settings

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### Abstract

Community health workers (CHWs) are becoming a well-recognized workforce to help reduce health disparities and improve health equity. Although evidence demonstrates the value of engaging CHWs in health care teams, there is a need to describe best practices for integrating CHWs into US health care settings. The use of existing health promotion and implementation theories could guide the research and implementation of health interventions conducted by CHWs. We conducted a standard 5-step scoping review plus stakeholder engagement to provide insight into this topic. Using PubMed, EMBASE, and Web of Science, we identified CHW intervention studies in health care settings published between 2000 and 2017. Studies were abstracted by 2 researchers for characteristics and reported use of theory. Our final review included 50 articles published between January 2000 and April 2017. Few studies used implementation theories to understand the facilitators and barriers to CHW integration. Those studies that incorporated implementation theories used RE-AIM, intervention mapping, cultural tailoring, PRECEDE-PROCEED, and the diffusion of innovation. Although most studies did not report using implementation theories, some constructs of implementation such as fidelity or perceived benefits were assessed. In addition, studies that reported intervention development often cited specific theories, such as the transtheoretical or health belief model, that helped facilitate the development of their program. Our results are consistent with other literature describing poor uptake and use of implementation theory. Further translation of implementation theories for CHW integration is recommended.

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## Keywords

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Community health workers (CHWs) are an emerging nontraditional health care work-force that is being integrated into health care settings to provide comprehensive care to communities and improve health equity. As trusted members of the communities they serve and given their ability to foster relationships that bridge clinical and community settings, CHWs are unique members of health care teams.<sup>1</sup> There has been a growth of interest in integrating CHWs into health care settings, as reflected by the increase of peer-reviewed journal articles and rapidly expanding evidence base for including CHWs in health care teams.<sup>2</sup>

Systematic reviews from the *Community Preventive Services Task Force* found strong evidence of effectiveness for interventions engaging CHWs in team-based health care models to reduce the incidence of high blood pressure, cholesterol, and type 2 diabetes.<sup>3,4</sup> In addition, there is robust evidence of CHWs' impact, demonstrating that support from CHWs can contribute to reduction in several chronic diseases, improvements of quality of care, self-rated mental health, and reduced hospitalizations.<sup>5-7</sup>

Proper implementation is especially important for CHW integration into organizations and care teams because it can set the stage for continued success throughout the life of an intervention or program.

However, implementation of CHWs is not without challenges.<sup>8,9</sup> Although CHWs are not a new work-force, integrating a non-licensed, patient-centered role that traverses between clinical and community settings is new for most clinical models. In addition, there is often a lack of awareness, understanding, and respect for the CHW model of care within care delivery organizations, which could impact their ability to be fully integrated work to their fullest potential.<sup>3,8,10-12</sup> Despite the increase in research and evidence that supports the inclusion of CHWs as health care team members, there is little information about appropriate theories that can guide the study and implementation of CHWs.

Relevant to the study of CHW integration into health care settings is the emerging field of implementation science and its corresponding theories that delve into the methods of promoting the uptake of research findings into various settings such as clinics.<sup>13-16</sup> Currently, studies utilizing implementation science theories focus on the uptake and translation of research findings into practice (eg, how physicians or nurses incorporate interventions), but there has been little focus on non-physician team members.<sup>17,18</sup> With the mounting evidence of effectiveness of multidisciplinary health care teams and the integration of CHWs to deliver theory-driven interventions, implementation science methods provide an important approach for researchers to further study CHWs.<sup>15</sup> Thus, the use of implementation theories and frameworks could help bolster the process of CHW integration, increase the likelihood of success of CHW interventions, and subsequently improve health outcomes among patients.<sup>19</sup>

With considerable resources being invested in CHW interventions in health care settings, further re-research is needed to understand whether theories are being used to develop, implement, or evaluate these interventions. This scoping review fills this gap by tracking the nature of current CHW integration research activities, including the extent to which theories have been used to develop, implement, and evaluate CHW interventions in health care settings and to identify gaps in CHW implementation literature.

## Methods

### Approach

For the purpose of this review, theory is defined as “a set of analytical principles or statements designed to structure our observation, understanding and ex-planation of the world.”<sup>15(p2)</sup> Theories include models and frameworks, which are considered to be more descriptive than explanatory, when compared with the theories from which they are derived<sup>15</sup> (see Supple-mentary Digital Content Box, 1 available at <http://links.lww.com/JPHMP/A510>). Hereafter, we refer to theories, models, and frameworks collectively as “theories.” Implementation theories are considered a sub-set of the classic health theories that are focused on change and that have been developed by implementation researchers to provide understanding and/or ex-planation of aspects of implementation<sup>20</sup> (see Supple-mentary Digital Content Box 1, available at <http://links.lww.com/JPHMP/A510>). Implementation theories serve as road maps for researchers by providing a systematic approach to produce generalized knowledge about ways to develop, implement, or evaluate interventions across a variety of settings and populations.<sup>15</sup>

We sought to identify and describe relevant theories (both classic and implementation) that were used to develop, implement, or evaluate CHW interventions in various health care settings. All information was publicly available and did not require institutional review board approval. We used a scoping review procedure that has become increasingly popular in public health research.<sup>21</sup> The intent of a scoping re-view is not to describe the outcomes of the individual studies but rather to scan and describe the overall evidence landscape. It serves as a simple method for clarifying complex concepts and refining subsequent research questions.<sup>22</sup> We used a 5-step approach to our review, which included (1) scoping, (2) searching, (3) screening, (4) data abstraction, and (5) data analysis.<sup>23</sup>

### Scoping and searching

We gathered relevant studies to help understand the extent to which theories are currently used to develop, implement, or evaluate CHW interventions in health care settings; the most common theories chosen; and the levels of the socioecological model (SEM) at which theories have been applied. A comprehensive search was conducted by a medical librarian in PubMed, EMBASE, Web of Science, and PubMed Central using Boolean operators Medical Subject Headings (MeSH) that included but was not limited to the following: “community health worker,” “United States,” “intervention,” “dissemination,” “integrate,” “evaluate,” and “health care.” Because of the wide array of titles used for CHWs, such as *pro-motora* or patient navigator, we used previously identified terms gathered and validated through a group of CHWs and CHW allies. Our search was conducted for articles published from

January 2000 to April 2017. A full list of the search terms is available in the Supplementary Digital Content Box 2 (available at <http://links.lww.com/JPHMP/A513>).

### Screening

Results from peer-reviewed journals were imported into Endnote version 8 and duplicates were excluded. The research team discussed, refined, and finalized criteria to include studies if they (1) described or evaluated a CHW intervention, which was defined as an intervention engaging a health worker meeting the American Public Health Association definition of a CHW (see Supplementary Digital Content Box 1, available at <http://links.lww.com/JPHMP/A510>); (2) included a health care setting such as a health care system, hospital, or clinic that recruited the intervention participants and/or the CHWs; (3) were published after 2000; (4) were written in English; (5) explicitly cited a theory; and (6) occurred in the United States. Exclusion criteria included (1) gray literature; (2) conceptual, methodological, or advocacy papers, unless they included how theory was used in an intervention; (3) review articles, unless they included examples of how theories were used in an intervention; and (4) articles focusing on interventions and programs that were not linked to a health care setting.

Titles and abstracts were initially screened on the basis of the inclusion and exclusion criteria previously outlined. Two members independently conducted an additional full-text screening based on the same inclusion and exclusion criteria. Disagreement was resolved through discussion among 3 team members. Supplementary Digital Content Figure 1 (available at <http://links.lww.com/JPHMP/A511>) illustrates the inclusion and exclusion of studies in our review.

### Data abstraction

Data abstraction took place using N Vivo 11 for Windows wherein 2 members of the research team independently abstracted the following information from each study: (1) aims and purpose; (2) study population; (3) study design; (4) disease category; (5) implementation theory, model, or framework; (6) classic theory, model, or framework; (7) study outcomes; and (8) key findings related to the use of the theory.

### Data analysis

Across included studies, we identified and counted different types of study populations, intervention personnel, health care settings, disease categories, theories used, and reasons for the use of theory because these are all factors that could be expected to influence the implementation of CHW interventions in health care settings.<sup>8</sup> The specific theories we found in included studies were each categorized as one of 2 types: (1) implementation theory, defined as “theory developed by implementation researchers or commonly used in the implementation science field”<sup>15(p3)</sup>; or (2) classic theory, defined as theory that originates from a field other than implementation science (eg, health promotion, psychology, public health, organizational management).<sup>15,16</sup> Data abstraction and coding results were summarized and reviewed by all members of the team. Theories were categorized across levels of the SEM, including individual, interpersonal, organization, community, and system or population levels. Consensus about the level of the SEM for each theory was reached through conversation between coders.<sup>24</sup> Although not explicitly coded, we also noted the use

of implementation constructs from various theories. For example, when a study analyzed “reach” of the intervention, this was noted as a construct aligning with the RE-AIM framework for implementation research.

An important element of scoping reviews is meaningfully engaging stakeholders in reviewing the findings. We engaged a group of stakeholders at the beginning of the process to help develop the re-search questions and then presented our results to a group of CHW intervention program planners and evaluators from the Centers for Disease Control and Prevention. This group included individuals who had evaluated and provided technical assistance to state health departments and their partners, such as health care systems, providers, and plans, to engage CHWs in the clinical setting. We presented the scoping review findings to these individuals and gathered feedback to contextualize our results and identify next steps for translating our findings into tools for practice.

## Results

### Search results

In total, 1170 articles were included from our initial search, 184 duplicates were removed, and 770 articles were excluded on the basis of an initial title and abstract review. Two hundred sixteen full copies of articles were additionally screened; 151 articles were further excluded during full-text review. A full-text review focused on health care setting, use of theory, model or framework, and the use of CHWs, leaving 65 studies for data abstraction. During the abstraction process, an additional 15 articles were excluded because of insufficient connection to a health care setting or theory, leaving 50 total studies remaining for this review (see Supplementary Digital Content Figure 1, available at <http://links.lww.com/JPHMP/A511>; and Supplementary Digital Content Table 2, available at <http://links.lww.com/JPHMP/A512>).

### Overview of studies

Among the 50 included intervention studies, there was diversity in the populations and diseases/conditions targeted (see Supplementary Digital Content Table 2, available at <http://links.lww.com/JPHMP/A512>). One-fifth of the studies (n = 10) focused on low-income or poor populations.<sup>25–34</sup> The majority of interventions studied (n = 14) targeted diabetes.<sup>31,32,34–48</sup> Cancer was the second most targeted disease, with 11 interventions targeting breast cancer,<sup>26,33,49–57</sup> 5 targeting cervical cancer,<sup>29,33,54,58,59</sup> and 3 targeting colorectal cancer.<sup>25,56,57</sup>

### Types of health care settings

Nineteen studies occurred in a clinic, of which 13 were community-based.\* There were 4 federally qualified health centers,<sup>40,45,59,64</sup> 1 patient-centered medical home,<sup>48</sup> and 5 primary care centers,<sup>36,43,53,56,57</sup> one of which was a cancer treatment center.<sup>57</sup> In addition, 1 study was set in a joint cancer treatment facility and research center.<sup>65</sup> Three of the studies

\* References 27–29, 32, 39, 44, 46, 51, 54, 60–63.

were set in a hospital,<sup>26,30,49</sup> 1 of which was a children's hospital.<sup>30</sup> Five studies were set in safety-net hospitals or clinics.<sup>34,50,66–68</sup>

### CHW personnel

Studies often reported CHWs as being bilingual and/or bicultural; however, a CHW's specific community membership was often difficult to confirm as the recruitment strategy and the CHW's background was not always well described in the article. For example, one article<sup>35</sup> described community membership as follows: "CHWs were chosen who were familiar with, or came from, similar communities in which they would be working."<sup>(p121)</sup> However, this and other studies generally did not describe the process of recruiting CHWs and/or their methods for verifying that CHWs came from or were otherwise familiar with the community served.

Nine studies specifically described CHWs as working in a health care team including other health care professionals such as nurses, physicians, pharmacists, or a combination of these team members.<sup>†</sup> One additional study included CHWs in the health care team by providing them with access to electronic health records.<sup>65</sup>

### Theories used and rationale for use

Across the 50 studies included in the final analysis, 30 different theories were reported (both implementation and classic theories). Community-based participatory research (CBPR) (n = 9) and cultural tailoring (n = 9) were the most frequently used theories across all studies (see Supplementary Digital Content Table 2, available at <http://links.lww.com/JPHMP/A512>).

In addition, we found that most of the studies cited only one theory. Explicit reasons for using the selected theory were provided in most of the studies (n = 32); often, authors suggested a general importance of using theory in understanding relationships that impact health behaviors, adaptation to real-world settings, or describe and monitor intervention implementation. However, most authors ultimately used a broad statement to describe their reason for selecting a theory, often providing no specific linkage to theoretical constructs or additional operationalization of the theory. For example, in one study, the researchers reported their reason for choosing a theory to be motivated by "the nature of study, population, and type of behavioral change desired."<sup>26(p3)</sup>

### Use of implementation theories

Of the total 30 different theories, only 6 were categorized as implementation theories (as defined in Supplementary Digital Content Box 1, available at <http://links.lww.com/JPHMP/A510>). These included cultural tailoring (n = 8), PRECEDE-PROCEED (n = 4), intervention mapping (n = 3), RE-AIM (n = 2), diffusion of innovation (n = 1), and collaborative care model (n = 1).

The cultural tailoring theories we found addressed cultural adaptation, cultural humility, cultural competency, and the use of a specific cultural framework (eg, CLEAN Look

<sup>†</sup>References 31, 36, 37, 39, 41, 48, 65, 68, 69.

framework).<sup>48</sup> Example reasons given for using cultural tailoring included improving program impact<sup>28</sup> and adapting materials for populations.<sup>61</sup>

The PRECEDE-PROCEED model was used across included studies to develop well-designed interventions and implement them by using patient and family resources.<sup>31,36,37,70</sup> For example, PRECEDE-PROCEED was used to help plan a multilevel intervention designed to improve urban African Americans hypertension self-management by leveraging strengths at the patient, family, and community levels.<sup>70</sup> Intervention mapping was generally used alongside other theories to help plan interventions and develop a systematic approach to the design and evaluation of an intervention.<sup>29,58,71</sup>

The RE-AIM framework was used in one study to measure intervention fidelity, recruitment and retention, dosage and delivery of content, satisfaction, structured observations, and perceived areas for improvement.<sup>51</sup> A second study used RE-AIM to help guide the implementation of a patient-centered medical home by operationalizing all elements of RE-AIM (ie, reach, effectiveness, adoption, implementation, and maintenance) in a quasi-experimental design; the authors reported that application of RE-AIM helped identify successful elements of the program.<sup>69</sup>

As described in the “Methods” section, although we did not explicitly code for implementation constructs, during coding, we observed the use of these constructs independent from any overarching implementation theory. Implementation theory constructs mentioned in the studies included were feasibility, acceptability, fidelity, efficacy, effectiveness, and cost-effectiveness, among others.

### Use of theories across levels of the SEM

Table 1 summarizes and cites all theories used in included studies and categorizes each theory according to the level of the SEM at which it was applied. Of the 30 different theories used in the included studies, we found that the majority were applied at the individual or community level (n = 26). The most commonly used individual-level theory was a classic theory: social cognitive theory (SCT) (n = 6). Studies that employed SCT used it to design or develop an intervention. For example, Prezio et al noted, “Social cognitive theory guided the development of this protocol which places an emphasis on knowledge acquisition and the development of strategies for dealing with specific situations related to diabetes management.”<sup>62(p21)</sup> An-other study used SCT in combination with another theory to develop a conceptual framework.<sup>25</sup> A third study used social network and social support theory; this was the only example of a theory in this review that was applied at the interpersonal level.<sup>73</sup>

The most common organizational-level theory (n = 16) was another classic theory: the chronic care model (n = 6). Community-level theories (n = 18) included the implementation theories of CBPR (n = 9) and cultural tailoring (n = 8), and community-academic partnerships (n = 1). Eight studies used CBPR to develop or design an intervention, support the community, consider community approaches to problems, or engage stakeholders. System or population-level theories were used in 10 of the studies, with the implementation



theory of PRECEDE-PROCEED being the most commonly used system/population-level theory (n = 4).

## Discussion

The goal of this study was to understand whether and how theories, especially implementation theories, have been used in intervention studies integrating CHWs into health care settings. There are several notable findings and key takeaways from this review. First, there was a limited use of implementation theories among the studies. Furthermore, there were no clear examples of operationalization or evaluation of constructs from implementation science. Among the 50 studies included, only 6 used implementation theory. However, we also found 24 classic theories used, many of which may be useful in planning or evaluating implementation of CHW interventions. While study authors generally offered a reason for choosing a particular theory, across the included studies, the use of theory was generally inconsistent and lacked clarity.

In addition to considering the type of theory used (classic and implementation), we also organized the wide variety of theories included in our results by the SEM.<sup>74</sup> Unsurprisingly, we found implementation theories across several levels of the SEM, as dissemination and implementation theories inherently examine multilevel issues.<sup>24</sup> However, we also found that implementation theories were applied at higher levels of the SEM (ie, community and systems/population levels).

Our results are consistent with other implementation science literature that has described poor uptake and use of implementation theories.<sup>75,76</sup> Increased use of theories in the development, implementation, or evaluation of CHW interventions could have benefits for patients and health care systems.<sup>15,19</sup> Specifically, theories could suggest what determinants influence implementation processes and outcomes, as well as offer guidance on how to influence these determinants. For example, we found in this review that implementation theories were not applied to study and evaluate CHW integration at the organizational level, although organizational-level implementation theories have particular relevance for studying CHW integration. Organizational level theories could be used to help identify specific barriers in an organization that affect communication between individual health care team members and CHWs, as well as changes to organizational workflows and protocols that might successfully address barriers.

Specifically, the Consolidated Framework for Implementation Research (CFIR), which was not referenced as part of any studies in our review, is a comprehensive implementation theory for assessing potential barriers and facilitators to successful implementation and is commonly used for evaluation of programs.<sup>77</sup> CFIR places emphasis on intervention characteristics, internal and external influencers, individual characteristics, and processes. Within each of these domains, there are a variety of constructs that could help program planners design ways to integrate CHWs into the health care setting. Not only could using CFIR and other implementation theories help plan, implement, and evaluate a program, but they could also elaborate on the culture shifts, for example, and be used to promote



awareness and understanding of the concept of community membership. Such changes could help maximize the adoption of CHW-based interventions.

Second, while our review found that CHW interventions targeting chronic diseases in a variety of populations experiencing health disparities were implemented across a wide range of health care settings, our findings also support an ongoing concern in the field that health care systems and providers may not have a complete understanding of a CHW's role and how to integrate them into the system, organization, or team.<sup>8,78</sup> In only 9 of the studies we reviewed were CHWs described as part of the health care team. We anticipated more intervention studies of multidisciplinary teams including CHWs, as this is an evidence-based implementation strategy that reflects a more advanced level of CHW integration into an organization or program.<sup>3,4</sup> Strategies to improve organizational capacity and willingness to work with CHWs could be informed by implementation theories. For example, implementation theories could help program planners increase awareness in health systems about CHWs' qualities and ensure fidelity to the CHW identity by verifying community membership during recruitment. This would, in turn, support CHW self-determination, a key tenet to the field.

Third, while we observed that researchers incorporated constructs from implementation theories (eg, adaptation, feasibility), construct application was in-consistent and not theory-driven. This supports a common concern about "conceptual confusion" in which researchers apply constructs from different theories and, in the process, make it difficult to ascertain what role theory played in intervention development and evaluation.<sup>24</sup> Our findings point to a need to better understand why certain theoretical constructs are used in the literature, particularly when evaluating interventions in health care settings. A lack of exposure to theory and the difficulty inherent in operationalizing theories may be key contributors to this gap we found. This finding highlights a need for implementation theorists to develop practical tools that help those planning, implementing, and evaluating CHW interventions to incorporate implementation theories in their work. For example, researchers could update existing technical assistance tools to incorporate theoretical frameworks.<sup>9</sup> Understanding and building on researchers' use of implementation constructs such as reach and feasibility may be a starting point for implementation theorists seeking to increase the use of implementation theories in practice.

Broadly, this scoping review demonstrates a lack of comparative studies to assess CHW implementation and related outcomes, indicating the need for further theory-based implementation of CHW interventions. Shifting toward more rigorous intervention, design, and questions could be facilitated through the application of implementation theories, which could help demonstrate utility of CHWs in clinical settings. As new CHW interventions are developed, they could incorporate the diffusion of innovation, RE-AIM, Promoting Action on Research Implementation in Health Services, and CFIR into design. These ideas could be facilitated by pilot testing theory-based implementation and use of checklists, which could lead to a more robust set of tools and a research agenda that aligns with field-based needs.<sup>79</sup> Future translational research also considers developing rationale for how theory could be operationalized.

There are several limitations to this study. First, we chose to focus on peer-reviewed literature. While we included gray literature databases in our initial library search, our final sample included only peer-reviewed literature since we anticipated that nonpublished studies, such as technical and evaluation reports, would be less likely to report on the use of theory than peer-reviewed literature. Second, we limited our review to include studies in which a health care entity was implementing a CHW intervention. CHWs have roles in health care as well as community settings; however, we chose to focus on their emerging roles in health care settings because this is where CHWs are expected to have a substantial impact on health care quality and costs (ie, the triple aim of improving patient experience, health of the population, and reducing cost) and also where many implementation challenges are being observed.<sup>11</sup> In addition, we did not evaluate the effectiveness of the theory used in each study. Moreover, because we did not assess the quality of the application and operationalization of theory we are unable to assess whether the use of theory had a substantive impact on CHW integration and implementation outcomes. Future research opportunities could also include looking at implementation of CHWs in community settings and comparing community and clinical implementation.<sup>80</sup>

While some implementation theories identified in this study (eg, RE-AIM) have been tested for effectiveness, not all implementation theories have been fully tested or analyzed for their strengths and weaknesses; however, there is an opportunity to continue testing the impact of implementation theory on both design and outcomes of CHW interventions.

## Conclusions

This scoping review provides an assessment and overview of the theories used in published studies of interventions, which, to some extent, integrated CHWs into health care settings. The limited use of theory and poor operationalization of implementation theory we found points to a gap and opportunity for further research. Future research, as well as resource and tool development, could focus on translating implementation science constructs into potential actions that could be taken by those working to plan, implement, and evaluate CHW integration in health care settings. The existing support for CHWs coupled with the growing field of implementation science offers a unique opportunity to infuse implementation science principles and constructs into the design and analysis of CHW interventions.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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- Theory-driven development, implementation, and evaluation of CHW interventions could have benefits for patients and health care systems.
- Theories and models such as intervention mapping, RE-AIM, cultural tailoring, PRECEDE-PROCEED, and diffusion of innovation can be used to build, implement, and evaluate CHW programs.
- Practical tools are needed to translate these and other implementation theories for practitioners to use in CHW and other interventions in health care settings.

TABLE 1

Number, Type, and Use of Theories<sup>a</sup> (n=50)

Theory/Model/Framework <sup>b,c</sup>	Use in Studies, n (% of 50)	How Used, n (% of 50)			
		Design/Develop Intervention, 39 (78)	Identify Barriers, 5 (10)	Select/Tailor Intervention, 11 (22)	Evaluate Intervention Impact, 11 (22)
Individual level (n = 26; 52% of 50)					
Social cognitive theory	6 (12)	6 (15.4)			
Motivational interviewing	4 (8)			4 (36.4)	
Transtheoretical model	4 (8)	4 (10.3)			
Patient navigation model	3 (6)		3 (60)	3 (8.3)	3 (27.3)
Biopsychosocial model	2 (4)	2 (5.1)			
Adult learning theory	1 (2)	1 (2.6)			
Cognitive behavioral therapy	1 (2)	1 (2.6)			
Chronic disease self-management	1 (2)	1 (2.6)			
Health belief model	1 (2)				1 (9.1)
Screening adherence follow-up intervention model	1 (2)	1 (2.6)			
Self-efficacy theory	1 (2)	1 (2.6)			
Tailored health messaging	1 (2)			1 (9.1)	
Interpersonal level (n = 2; 4% of 50)					
Social network	1 (2)	1 (2.6)			
Social support	1 (2)	1 (2.6)			
Organizational level (n = 16; 32% of 50)					
Chronic care model	6 (12)	6 (15.4)			
<i>Intervention mapping</i>	3 (6)	3 (7.7)			
Interprofessional collaboration	2 (4)	2 (5.1)			
<i>RE-AIM</i>	2 (4)				2 (18.2)
<i>Collaborative care model</i>	1 (2)	1 (2.6)			
Donabedian structure	1 (2)	1 (2.6)	1 (20)		1 (9.1)
Patient-centered medical home model	1 (2)	1 (2.6)			
Community level (n = 18; 36% of 50)					
Community-based participatory research	9 (18)	8 (10.2%)		1 (9.1)	
<i>Cultural tailoring</i>	8 (16)	7 (17.9)		1 (9.1)	
Community-academic partnership	1 (2)		1 (20)		
System/population level (n = 10; 20% of 50)					
<i>PRECEDE-PROCEED</i>	4 (8)	3 (7.7)		1 (9.1)	1 (9.1)
Social ecological model	2 (4)	1 (2.6)			1 (9.1)
<i>Diffusion of innovation</i>	1 (2)				1 (9.1)
Ecological model of prevention	1 (2)	1 (2.6)			
Health behavior framework	1 (2)	1 (2.6)			
Health disparities framework	1 (2)	1 (2.6)			1 (9.1)

<sup>a</sup>The table is adapted with permission from Liang, 2017.<sup>72</sup>

<sup>b</sup>Implementation theory: Theory developed by implementation researchers or commonly used in the implementation science field<sup>15</sup> (denoted here in italic). Classic theory: Theory that originates from a field other than implementation science (eg, health promotion, psychology, public health, organizational management).<sup>15</sup>

<sup>c</sup>Theories are organized by level (individual, interpersonal, organizational, community).

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