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## Interprofessional collaboration between social workers and community health workers to address health and mental health in the United States: A systematised review

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### Abstract

Collaboration between social workers (SW) and community health workers (CHW) plays an essential role in addressing health inequities in the United States (US). However, little is known about the current state of CHW/SW collaboration. The objectives of this review were to identify (a) the nature, goals and setting of CHWs and SW collaboration; (b) the patient outcomes utilised to measure intervention efficacy. The literature search was conducted in December 2020 using six databases. The inclusion criteria were (1) interventions that included CHWs and SWs; (2) US-based; (3) published between 2000–2020; (4) peer-reviewed journal articles; (5) examining health or mental health outcomes. Search results identified 281 articles, and 15 were included in the final analysis. Settings that utilised SW/CHW collaboration included outpatient clinics ( $n = 10$ ); community organisations ( $n = 4$ ) or hospital ( $n = 1$ ). CHW and SW interventions focused on disease prevention ( $n = 8$ ), chronic care ( $n = 4$ ) and mental health ( $n = 3$ ). Health outcomes were the most evaluated ( $n = 13$ ), and significant improvement of at least one health outcome was reported in those studies. Mental health outcomes ( $n = 3$ ) were also significantly improved, while social determinants of health ( $n = 2$ ) were least common and descriptive only. This is the first review of SW and CHW collaboration. Clarity regarding SW and CHW roles and scopes of practice are needed to understand better SW/CHW collaboration and its impacts on community health outcomes and improve the process of collaboration. SW and CHW collaboration may increase clients' access to preventive care, mental health and address health inequities.

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#### AUTHOR CONTRIBUTIONS

All authors contributed to the study conception, design and data analysis. Material preparation and data collection were performed by the 1st, 2nd and 3rd authors. The first draft of the manuscript was written by the 1st, 2nd and 3rd authors. All authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

## Keywords

community health; community health worker; health equity; social determinants of health; social work

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## 1 | INTRODUCTION

Addressing health inequity in the United States (US) has been at the forefront of public health social work since the foundation of the profession. Recent efforts include the release of Healthy People 2030, the passage of the Patient Protection and Affordable Care Act (ACA), the creation of the Social Work Grand Challenges and the release of the National Academy of Science, Engineering and Medicine report, *Integrating Social Care into the Delivery of Healthcare* (National Academies of Sciences, Engineering and Medicine, 2019). While the ACA significantly increased the number of Americans who have access to health insurance through Medicaid expansion and the creation of the Health Insurance Marketplace, 12 states have yet to expand Medicaid, and there were still 28 million uninsured Americans in 2018 (Berchick et al., 2019; Kaiser Family Foundation, 2021). There are also clear racial inequalities in terms of access to health insurance, where Hispanic (18%) and Black (10%) adults have significantly higher uninsured rates compared to non-Hispanic, White adults (5%; Berchick et al., 2019). For example, 14% of African Americans do not have health insurance in the rural African American South Region, less than 50% have some college education, and the median household income is \$37,900 (American Communities Project, 2019).

A large body of research has indicated that social factors, often referred to as social determinants of health (SDOH), such as education, income and neighbourhood, account for most patient health outcomes (Braveman et al., 2011; Braveman & Gottlieb, 2014). While some SDOH such as transportation, housing and isolated neighbourhoods may seem outside the scope of healthcare systems, in reality, they directly impact a patient's timely access to care and health outcomes. Further, with the realisation that 12% of patients account for 41% of healthcare spending, hospitals and health plans have begun piloting numerous interdisciplinary interventions to address SDOH (Buttorff et al., 2017; Freidman & Banegas, 2018). While many of these interventions include social workers (SW) and/or community health workers (CHW), very few studies have outlined the specific roles each plays in these interventions, their scopes of practice, or the best model for collaboration between SWs and CHWs. Interdisciplinary collaboration is defined as 'an active and ongoing partnership often between people from diverse backgrounds with distinctive professional cultures and possibly representing different organizations or sectors, who work together to solve problems or provide services' (Morgan 2015, p 1218). Ideally, a model that combines the unique strengths of both professions would create a synergy that magnifies positive outcomes for the communities served. However, it remains unclear where and how CHW and SW collaboration currently operates in the US healthcare system.

### 1.1 | Community health worker

A CHW can go by multiple titles, including lay health worker, promotora de salud, community health advisor or community health educator. According to the American Public Health Association (APHA), a CHW is a frontline public health worker with specific training, is trusted by the community, and has a close understanding of the community. Residents of the communities most impacted by health inequities are often recruited and trained as CHWs, serving as cultural ambassadors between the community and the healthcare system. This is particularly important for trust-building in a healthcare system with predominantly white physicians, nurses and healthcare professionals (American Association of Medical Colleges, 2019; Council on Social Work Education, 2020; Zangaro et al., 2018). CHWs understand both the language and culture of the community and that of healthcare providers. This trusting relationship enables the CHW to facilitate access to services and improve service delivery quality and cultural competence (APHA, 2021). Therefore, CHWs serve as a bridge between the community and healthcare providers in order to navigate the healthcare system, coordinate care and promote health equity.

Since the passage of the ACA, CHW integration into healthcare systems has increased dramatically. CHW certification varies by state, and is currently available in 18 states in the US (MHP Salud, 2021). CHWs can be certified based on experience or training, and certification requires a certain number of hours plus continuing education (Texas Department of State Health Services, 2021). CHW certification is based on eight core competencies: communication, interpersonal skills, service coordination, capacity building, advocacy, teaching, organisational skills and health knowledge (Texas Department of State Health Services, 2021). Therefore, CHWs often provide public health education, connections to social service resources and coordinate care in partnership with healthcare and service organisations (Rosenthal et al., 2018).

Research suggests that CHWs effectively reduce hospital or ED readmissions, increase primary care follow-up, increase health knowledge, increase cancer screenings and improve population health outcomes across multiple communities and diseases (Bellhouse et al., 2018; Jack et al., 2017). Further, evidence suggests that CHW interventions effectively connect communities with social services, especially racial and ethnic minority communities and communities geographically and socially isolated (Njeru et al., 2019; Spencer et al., 2011; Swider, 2002).

### 1.2 | Social worker

SWs are licensed professionals who have been widely integrated into healthcare settings over the past two centuries. They function as mental health clinicians, community organisers, care coordinators and behavioural health providers. SWs in hospitals, medical settings and community agencies provide direct services to patients with conditions spanning the entire healthcare continuum. As interprofessional team members, they provide mental health services, case management and behavioural interventions to help patients and their families address and resolve their health's social, financial and psychological challenges (National Association of Social Workers, 2016).

There is growing literature that assesses the efficacy of social work interventions in healthcare settings, including recent studies that suggest social work interventions can improve patient outcomes in such areas as depression and quality of life (Cassel et al., 2016; Grote et al., 2015; Hay et al., 2012; Holland et al., 2019). This is particularly important as it relates to integrated behavioural health interventions, where primary care settings offer clinical interventions for behavioural health or substance use issues (Ell et al., 2008; Ell et al., 2010). Shortages in mental health providers and limited access to mental healthcare have been documented in the literature, particularly for communities of colour (Cook et al., 2014; Olfson, 2016). Therefore, SWs play an essential role in improving access to mental healthcare. Additionally, social work interventions such as case management and care coordination have been found to reduce hospital or emergency department readmissions among older adults or 'high utilisers' of inpatient and emergency healthcare services (Bronstein et al., 2015; Roeper et al., 2018; Weerahandi et al., 2015; Xiang et al., 2019). This highlights the important role that social work plays within the healthcare system at large, both in inpatient and outpatient settings.

### **1.3 | Social worker and community health worker collaboration in community health settings**

While studies have separately outlined the efficacy of CHWs and SWs with a variety of patient populations, there is a dearth of literature regarding their collaboration and interdisciplinary effectiveness. One report found that an interdisciplinary team within a haemodialysis clinic composed of SWs, CHWs and other health professionals decreased inpatient admissions and emergency room visits and improved quality of life and depression scores (Hynes et al., 2018). SWs are uniquely trained in assessment, support, clinical interventions and healthcare advocacy, while CHWs are uniquely trained in culturally appropriate health education and community outreach and support. Both professions are trained in community organising, systems navigation, care coordination and advocacy. Therefore, interdisciplinary interventions with SW and CHW team members could be particularly effective at addressing current health inequities in terms of timely access to preventive care and behavioural health services and quality of care and patient outcomes.

This systematised literature review identified studies that answer the following questions: (1) Where does CHW and SW collaboration happen in community health settings? (2) What is the nature of the relationship between CHWs and SWs? (3) What are the goals of CHW and SW collaboration? (4) What are the outcomes used to evaluate the efficacy of CHW and SW collaboration?

## **2 | METHODS**

### **2.1 | Eligibility criteria**

This review aims to identify the most recent literature on CHW and SW collaboration and examine patient health and mental health outcomes of these interventions in the US. To ensure the rigour of the study results, we only included articles published in peer-reviewed journals. Therefore, the inclusion criteria for the study selection were: (1) US-based; (2) published between 2000 and 2020; (3) peer-review journal articles; (4) interventions with

SWs and CHWs; (5) examining health and mental health outcomes. The exclusion criteria were (1) CHWs' partnership with professionals other than SWs; (2) duplicate reporting of the same project and (3) credentials of mental health or behavioural health specialist not defined.

## 2.2 | Databases and search terms

A systematic search of the literature was conducted in December 2020. We searched the following six databases: CINAHL, Health Source, PsychINFO, SocINDEX, Web of Science and PubMed. We used the search terms “community health workers”, “community health advisor”, “lay health advocates”, “promoters”, “outreach educators”, “community health representatives”, “peer health promoters” and “peer health educators” to identify CHWs and search terms “social workers”, “social work” and “social services” to identify social workers. The key terms “partnership”, “collaborative”, “collaboration”, “collaborate” and “integrated” were used to search for literature addressing collaboration between the two professionals.

## 2.3 | Study selection

We followed the Preferred Reporting of Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement to document the study selection process (Moher et al., 2009). See Figure 1 for more details. The initial search yielded 281 articles. After removing 57 duplicate articles, 224 citations were screened based on title and abstract. Two authors (LN and QC) independently examined the articles based on the selection criteria. When there was uncertainty or disagreement between the two reviewers regarding the eligibility of a study, a third reviewer (LP) made the judgement. We resolved all differences by consensus. Forty-eight articles were assessed based on their full text for eligibility. Among these articles, 42 studies were excluded because of no SW involvement ( $n = 15$ ), no mental health or health outcomes reported ( $n = 11$ ), wrong publication types ( $n = 8$ ) or no CHWs involved ( $n = 7$ ). A total number of six papers were included based on a review of the literature. The heterogeneity of the term ‘community health worker’ led to challenges in identifying all relevant articles through the initial search even with a thorough list of database and key terms to define the term ‘community health worker’. Therefore, an additional search was conducted of the reference lists of the six included articles, and nine more articles were included as a result. A total of 15 studies were included in the final review.

## 2.4 | Quality assessment

The quality of included studies was assessed using the Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018). This tool includes specific questions related to the methodological rigour of the study and potential risk for bias based on the category of study. In this review, we categorised our studies into quantitative randomised control trials, quantitative nonrandomised studies and quantitative descriptive studies. Each reviewer (QC and LP) used the MMAT to independently assess the quality of studies. Disagreements were discussed and resolved.

### 3 | RESULTS

#### 3.1 | Study characteristics

The characteristics of included study are shown in Table 1. All included studies were quantitative, even though this was not an explicit inclusion criterion. Most studies included sample size details and demographics ( $n = 15$ ) with samples ranging from 36 to over 10,000. Most studies utilised a pre/post, quasi-experimental study design ( $n = 8$ , 53%) followed by randomised control trials ( $n = 4$ , 27%), cross-sectional analyses ( $n = 2$ , 13%) and a retrospective analysis ( $n = 1$ , 7%).

In terms of patient population, studies focused on low-income or uninsured patients ( $n = 6$ ), patients with chronic health conditions ( $n = 4$ ), patients with social needs ( $n = 3$ ) and Latina/o/x or immigrant patients ( $n = 2$ ). Few studies reported the demographic makeup of CHWs ( $n = 2$ ), both of which reported that the CHWs were Spanish-speaking Latinas.

There was considerable variability in the characteristics of included studies in terms of study location, intervention setting and study population. Most studies were in outpatient clinics ( $n = 10$ ), followed by community organisations ( $n = 4$ ), and hospital ( $n = 1$ ). Most studies were on the East Coast ( $n = 6$ ), followed by the Midwest ( $n = 4$ ), West Coast ( $n = 3$ ) and the South ( $n = 2$ ).

#### 3.2 | Quality of reviewed articles

The quality assessment of articles by study design category is presented in Table 2. Across the 15 reviewed articles, four studies were randomised controlled trials, eight were quantitative nonrandomised studies and three studies were descriptive studies. Three articles with randomised control trial design, three with quantitative nonrandomised design and one with quantitative descriptive design fulfilled all the MMAT criteria. Of the four randomised controlled trials reviewed, one study randomised participants in pairs, which could introduce biases, and one study did not provide details on whether the outcomes assessors were blinded. Of the eight quasi-experimental study, five studies did not consider confounders in the design and analysis and one study did not report missing data. Of the three quantitative descriptive studies, two did not reported non-response rate and one did not describe analysis approach.

#### 3.3 | Social work & community health work collaboration

While most studies established formal relationships between SWs and CHWs ( $n = 13$ ), the nature of these relationships varied. Some interventions included direct practice collaboration between SWs and CHWs ( $n = 8$ ), while other studies had SWs in a supervisory role over CHWs instead of a direct practice role ( $n = 5$ ). The remaining studies had an informal relationship between CHWs and SWs ( $n = 2$ ). Informal relationships were defined as SWs that were available as a referral source or a consult, but there was no regular interaction or collaboration between the SW and CHW.

CHW and SW interventions can be organised into three broad categories: prevention ( $n = 8$ ), chronic care ( $n = 4$ ) and mental health ( $n = 3$ ). These categories were partially

determined by patient population, such that clinics implementing a social needs screening for all patients were considered preventive care. In contrast, clinics providing care coordination for medically complex patients were considered chronic care. Prevention techniques included health education, coordinated care and routine social needs screening. Chronic care management interventions included health education, care coordination and care management, while mental health interventions included health education, counselling and care management. Care coordination included the coordination of healthcare needs across multiple settings and resource referrals. In contrast, care management included health education and support with the ultimate goal of self-management of a chronic condition.

Most studies provided intervention training to the CHWs ( $n = 13$ ), including motivational interviewing, coping skills, social needs screening and health education or chronic disease management for specific conditions such as asthma and diabetes. More details, including a description of each intervention, can be found in Table 3.

### 3.4 | SW and CHW collaboration on health, mental health and SDH outcomes

Study outcomes were organised into three broad categories: health outcomes, mental health outcomes and SDOH (Table 3). Health outcomes were the most common ( $n = 13$ ). They included disease-specific outcomes such as vaccination rates or blood glucose levels, disease-specific self-efficacy such as asthma control, standardised self-report measures such as the SF-12, and utilisation rates such as hospital readmissions. Almost all of these studies utilised a pre/post or control group comparison ( $n = 11$ ), and 100% of studies reported at least one significant health outcome improvement due to the intervention.

Mental health outcomes were less common ( $n = 6$ ). They included disease-specific outcomes such as depressive symptoms, standardised self-report measures such as the PHQ-9 and SF-12, and referrals to social services or mental health resources. While most studies utilised a pre/post assessment or comparison group ( $n = 5$ ), only two studies reported a significant improvement of a mental health outcome due to the intervention.

SDOH outcomes were the least common ( $n = 3$ ). They included social support, socioeconomic stress, the number of people screened for SDOH, and the most common social need categories based on the screening. All three of these studies reported descriptive data and did not assess the intervention's ability to address SDOH.

## 4 | DISCUSSION

Despite existing studies supporting the efficacy of CHW interventions and SW interventions in separately addressing SDOH, health and mental health outcomes, little is known about how often CHWs and SWs collaborate, what their collaborative process looks like, and how effective their collaboration is at improving patient outcomes. To our knowledge, this is the first literature review to identify studies that include SW and CHW collaboration and categorise the nature and effectiveness of that relationship. Across all outcome domains, we identified an overall positive effect of CHW and SW collaboration.



Current public health strategies increasingly acknowledge the systemic roots of inequity and call for a more holistic approach to decreasing these disparities in patient outcomes. CHWs and SWs are two healthcare providers with expertise in assessing and addressing SDH (Taylor et al., 2016). Findings from this review support the importance of both SWs and CHWs when delivering preventive and chronic care interventions to increase access to care and address unmet needs. Together, the SWs and CHWs identified and addressed gaps in service delivery within isolated systems that encourage or hinder obstacles to care. However, there is considerable variability in the literature regarding the nature of CHW and SW collaboration.

Among the included studies, the description of CHW and SW roles and their scopes of practice were brief, and some were unclear. Based on a systematic review, three practices that are crucial to interprofessional collaboration include (1) bridging professional, social and task-related gaps; (2) negotiating overlaps in roles and tasks and (3) creating spaces to be able to do so (Schot et al., 2020). It was sometimes difficult to identify their level of collaboration, which would make it difficult to replicate some of these collaborative models in other studies or real-world practice. More studies are needed to understand the process of interprofessional collaboration in healthcare settings, including CHWs and SWs.

In addition, most of the included studies did not report the sociodemographic of CHWs. The sociodemographic characteristics of CHWs are particularly relevant when CHWs are meant to be representative of the community they are serving, and it could affect their intervention efficacy in various ways such as trust-building (Crispin et al., 2012). Further, it is well documented that most master's level SWs are white and female, so it is essential to consider these social and cultural limitations when the vast majority of studies included marginalised populations such as low-income communities of colour (CSWE, 2020). Without the sociodemographic information for either the CHWs or SWs, we cannot know whether these sociodemographic factors affected the patient or collaborative relationship.

The racial, ethnic and geographical disparities in health outcomes in the US underscore how important it is to address SDH (Braveman et al., 2011). Increasingly more research has investigated the influence of SDH on mental health and health outcomes. A health equity approach that responds to the unique needs of communities can effectively integrate a response to SDH, such as housing insecurity or transportation barriers, along with traditional patient support services for mental and physical health. This is particularly important for geographically and socially isolated communities that may experience more barriers to preventive or mental healthcare. Yet, very little research focuses on the impact of interventions designed to modify contextual factors influencing inequity. Although CHW interventions were introduced as a solution to health inequity for marginalised communities (Torres et al., 2017), SDH were not targeted outcomes in most collaboration interventions included in the review. Therefore, generalisability is not possible with this review. However, more studies are needed to understand better the efficacy of CHWs and SWs at addressing SDH outcomes.

Decreasing racial, ethnic and geographical disparity in patient outcomes goes beyond personal agency to include fair access to resources and opportunities needed for optimal



physical, mental and social health. By considering the influence of the intersectionality of social conditions on health and mental health outcomes, the importance of CHW and SW collaboration becomes more evident. Findings from this review highlight the urgency to gain a better understanding of the existing field of collaborations and provide more structure to the current interventions and training models to maximise the impact this vital intervention can have on disparities in patient outcomes.

Additionally, we need to consider how the lack of licensure and reimbursement models for CHWs may impact future SW and CHW collaboration. Lack of reimbursement models for SW is also a problem in our current healthcare financing. Further, we need to be familiar with the ongoing dialogue in the CHW field regarding certification and whether it will threaten CHW identity by removing them from the community through professionalisation or exclude some CHWs due to eligibility requirements (Kissinger et al., 2022). As the field of social work has had to grapple with similar dilemmas in the fee-for-service healthcare system, it will be important to continue advocating for collaboration and recognise that several models of collaboration may emerge due to differences in community settings or policy contexts.

#### 4.1 | Strengths and limitations

This is the first review of the nature of collaboration between SWs and CHWs in the US, along with a review of its effects on patient outcomes. More importantly, this review illuminates the gap in information needed to address the efficacy and sustainability of collaborative interventions with SW and CHWs.

There were various limitations to this review. First, the terminology for CHW changes by region of the country, community healthcare system, and/or racial or ethnic group intervention. A CHW can go by multiple titles, including lay health worker, promotora de salud, community health advisor or community health educator. The authors exhausted the list of terminology in the search criterion based on their linkage to national CHW networks and content experts. Yet, some articles may have been missed due to a differentiation in terminology. Second, while interventions across the US may include an interdisciplinary team with both SWs and CHWs, many manuscripts did not clearly outline the intervention's team members. Some studies did not provide adequate details regarding the nature of the collaboration or intervention. They also do not attribute the effects of the intervention to SW/CHW collaboration. Therefore, we are not able to draw linkage between the outcomes and the collaborative relationship of the two professional groups in the intervention. The authors attempted to tease out these relationships through a thorough full-text review and, in some cases reaching out to the study investigators. However, some authors did not respond to an inquiry, and other articles may have been missed. Future studies need to provide more details on the design and implementation of interventions with CHWs and SWs Third, none of the studies compared SW/CHW collaboration to non-SW/CHW teams to understand whether these teams are superior in reducing inequities or disparities in outcomes. While approximately half ( $n = 7$ ) of the included studies involved direct practice collaboration, few details were provided to understand the collaboration process or model. Therefore, more

research is needed to understand better the nature and process of CHW/SW collaboration and whether it is efficacious.

## 5 | CONCLUSION/IMPLICATIONS FOR PRACTICE

Findings from this review support the increasing trend in the field to systematically define the roles of SW and CHW on interdisciplinary teams, particularly in community health settings. SWs and CHWs share a common value base of social justice, self-determination and community empowerment. Collaboration between CHWs and SWs can provide a gateway to the health and mental health system that is otherwise difficult to access and navigate. This type of collaboration can promote increased partnerships between formal and informal service systems to improve service use among individuals who have little trust within formal systems.

Both SW and CHW have the potential to significantly reduce health inequities and provide better access to and delivery of care specifically for marginalised populations. However, because there is overlap and some confusion about the scope and role for CHWs and SWs practicing in healthcare, there is potential for conflict or underutilisation of both providers. There is a need to clearly understand the scope of practice and potential exemplars of collaboration of SW and CHW that leads to the best possible outcomes for patients, families and communities. SW and CHW should be engaged in creating these ideal partnerships. Without an engaged and thoughtful process to define the ultimate collaboration, there is a potential that SW and CHW will either be used interchangeably or be pitted against each other in healthcare settings. These outcomes can reduce the potential for true collaboration based on mutual respect and enhancement of each other's unique skills.

By enhanced definitions of the unique contributions of each position on collaborative teams, we can create more comprehensive training programs and collaborative best practices, better evaluate the efficacy of these interventions, improve job satisfaction for both CHW and SW, and collectively show the impact of these interventions on patient outcomes across the US. There is strong evidence that these partnerships work to improve health equity. With more cohesive monitoring and reporting of findings, we can provide the scientific base for more CHW and SW collaborative models.

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## DATA AVAILABILITY STATEMENT

This was a systematic review of current literature. As such, data sharing is not applicable to this article as no new data were created or analysed in this study.

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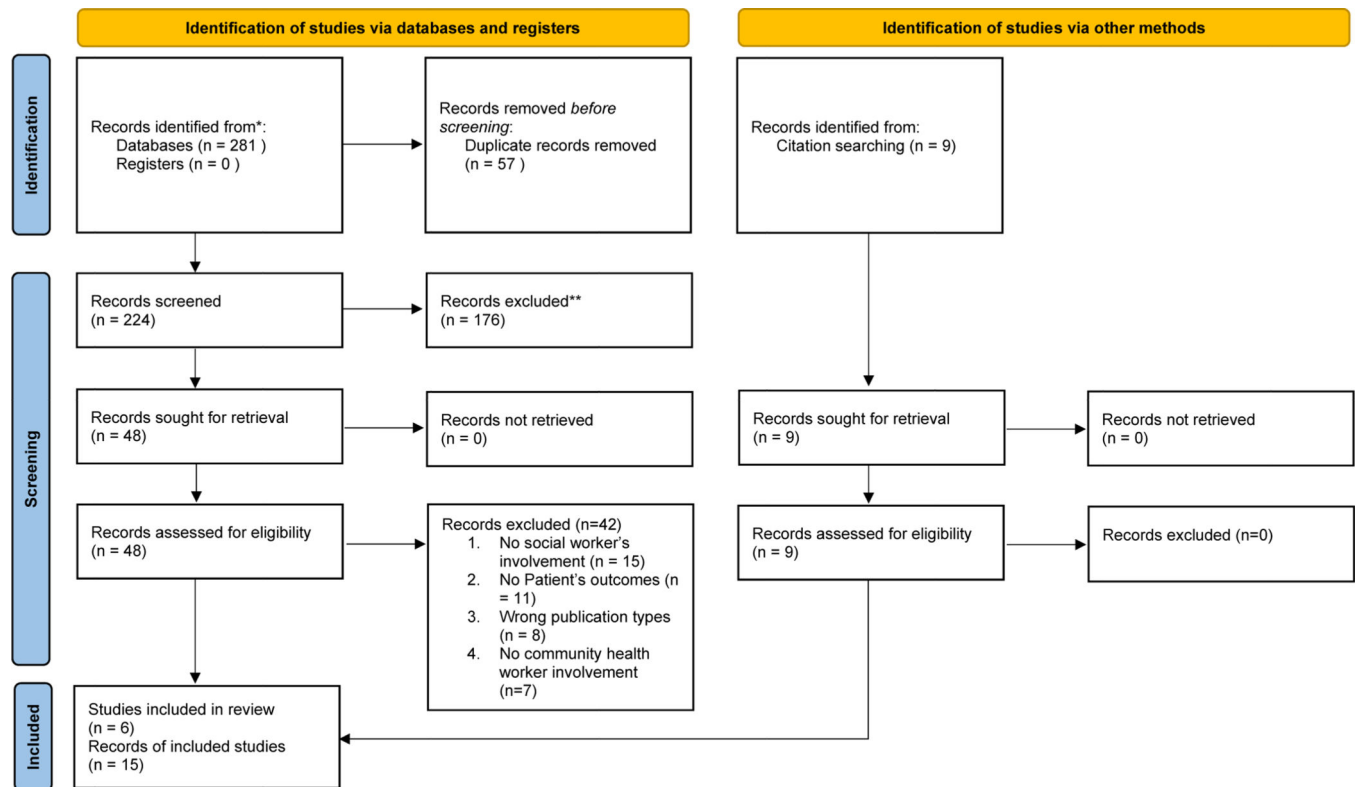
**What is known about this topic**

- Social determinants of health, such as education, income and housing, account for most patient health outcomes.
- Interventions using community health workers improve access to services and improve culturally responsive service delivery.
- Interventions using social workers on interprofessional team members increases a patient's and their families' social, financial and mental health wellness.

**What this paper adds**

- Together social workers and community health workers identified and addressed gaps in service delivery and decreased obstacles to care.
- Community health workers in collaboration with social workers improved service use among individuals who have little trust with formal systems of care.
- Community health worker and social worker collaborations increased clients' access to preventive care and mental health services.



**FIGURE 1.**

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases, registers and other sources. \*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers). \*\*If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools. *From:* Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: [10.1136/bmj.n71](https://doi.org/10.1136/bmj.n71). For more information, visit: <http://www.prisma-statement.org/>

TABLE 1

Study characteristics ( $n = 15$ )

| Authors                 | Study location                                           | Study design             | Settings               | CHW relationship with SW | Relationship types with social worker | Study population                                                                | CHW demographics reported |
|-------------------------|----------------------------------------------------------|--------------------------|------------------------|--------------------------|---------------------------------------|---------------------------------------------------------------------------------|---------------------------|
| Arsenault et al. (2016) | Maine                                                    | Retrospective study      | Outpatient clinic      | Formal                   | Direct practice collaboration         | People who visited Oakland Family Medicine                                      | No                        |
| Blewett & Owen (2015)   | Hennepin County, Minnesota                               | Quasi-experimental study | Outpatient clinic      | Informal                 | Referral source                       | Medicaid recipients with incomes below 133% FPL                                 | No                        |
| Ell et al. (2014)       | Los Angeles, California                                  | RCT                      | Outpatient clinic      | Formal                   | Direct practice collaboration         | Latinos with comorbid coronary heart disease and depression                     | No                        |
| Ell et al. (2017)       | Los Angeles, California                                  | RCT                      | Outpatient clinic      | Formal                   | Supervisory                           | Latinos with comorbid coronary heart disease or diabetes and depression         | Yes                       |
| Ferrer et al. (2013)    | San Antonio, Texas                                       | Quasi-experimental study | Outpatient clinic      | Formal                   | Direct practice collaboration         | Uninsured patients                                                              | No                        |
| Fiori et al. (2019)     | Bronx County, New York City                              | Cross sectional study    | Community organisation | Formal                   | Direct practice collaboration         | Families who screen positive for social needs at a paediatric well visit (FQHC) | No                        |
| Fiori et al. (2020)     | Bronx County, New York City                              | Cross sectional study    | Outpatient clinic      | Formal                   | Referral source                       | Families who screen positive for social needs at a paediatric well visit (FQHC) | No                        |
| Gunderson et al. (2018) | Mayo Clinic, Minnesota                                   | Quasi-experimental study | Community organisation | Formal                   | Supervisory & Referral Source         | Patients with complex medical and social needs                                  | No                        |
| Kangovi et al. (2014)   | Philadelphia, Pennsylvania                               | RCT                      | Hospital               | Formal                   | Supervisory                           | Low-SES patients, predominantly African American                                | No                        |
| Kangovi et al. (2018)   | Philadelphia, Pennsylvania                               | RCT                      | Outpatient clinic      | Formal                   | Supervisory                           | Low-SES patients, predominantly African American                                | No                        |
| Komaromy et al. (2020)  | New Mexico                                               | Quasi-experimental study | Outpatient clinic      | Formal                   | Direct practice collaboration         | High-need high-cost Medicaid patient                                            | No                        |
| Martin et al. (2009)    | Chicago, Illinois                                        | RCT                      | Outpatient clinic      | Formal                   | Direct practice collaboration         | Low-income African American adults with asthma                                  | No                        |
| Parker et al. (2020)    | Kansas City, Kansas                                      | Quasi-experimental study | Community organisation | Informal                 | Consult                               | Immigrant Latino families with an adolescent between 11 and 14 years old        | No                        |
| Razon et al. (2019)     | East Coast                                               | Cross sectional study    | Outpatient clinic      | Formal                   | Direct practice collaboration         | Young adults with complex healthcare needs                                      | No                        |
| Tran et al. (2014)      | Central North Carolina (Chatham, Durham & Wake counties) | Quasi-experimental study | Community organisation | Formal                   | Supervisory                           | Immigrant Latinas                                                               | Yes                       |

Abbreviation: RCT, randomised control trial.

TABLE 2

Quality assessment summary based on the mixed methods appraisal tool (MMAT;  $N=15$ )

| Study design category                  | Number of articles | Methodological quality criteria                                          | Yes | No | Could not determine |
|----------------------------------------|--------------------|--------------------------------------------------------------------------|-----|----|---------------------|
| Quantitative Randomised control trials | 4                  | Is randomisation appropriately performed?                                | 3   | 1  | —                   |
|                                        |                    | Are the groups comparable at baseline?                                   | 4   | —  | —                   |
|                                        |                    | Are there complete outcome data?                                         | 4   | —  | —                   |
|                                        |                    | Are outcome assessors blinded to the intervention?                       | 3   | —  | 1                   |
|                                        |                    | Did the participants adhere to the assigned intervention?                | 4   | —  | —                   |
| Quantitative non—Randomised studies    | 8                  | Are the participants representative of the target population?            | 8   | —  | —                   |
|                                        |                    | Are measurements appropriate for the outcome and intervention?           | 8   | —  | —                   |
|                                        |                    | Are there complete outcome data?                                         | 7   | —  | 1                   |
|                                        |                    | Are the confounders accounted for in design and analysis?                | 3   | 5  | —                   |
|                                        |                    | During the study period, is the intervention administered as intended?   | 8   | —  | —                   |
| Quantitative descriptive studies       | 3                  | Is the sampling strategy relevant to address the research question?      | 3   | —  | —                   |
|                                        |                    | Is the sample representative of the target population?                   | 3   | —  | —                   |
|                                        |                    | Are the measurements appropriate?                                        | 3   | —  | —                   |
|                                        |                    | Is the risk of nonresponse bias low?                                     | 1   | —  | 2                   |
|                                        |                    | Is the statistical analysis appropriate to answer the research question? | 2   | —  | 1                   |

TABLE 3

Intervention descriptions & outcomes (*n* = 15)

| Authors                    | Intervention techniques                    | Intervention description                                                                                                                                                                                                                                                                                                    | Outcomes                                                                                                                | Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prevention ( <i>n</i> = 8) |                                            |                                                                                                                                                                                                                                                                                                                             |                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Arsenault et al. (2016)    | Health education and promotion             | A combination of client reminders, small media, one-on-one education and reducing structural barriers to increase colorectal cancer screening rates                                                                                                                                                                         | • Colon cancer screening rates                                                                                          | A significant increase in the number of patients screened and a mean increase in the proportion screened on 11.44% was seen throughout the intervention period                                                                                                                                                                                                                                                                                                                      |
| Blewett & Owen (2015)      | Care coordination                          | A coordinated care model in an accountable care organisation made up of four county-affiliated organisations to provide health, mental health, social services and claims processing services                                                                                                                               | • The rate of outpatient<br>• Visits, ED visit and inpatient admissions                                                 | The rate of outpatient<br>Visits increased by 3.3%, the rate of emergency department and inpatient admissions decreased by 9.1% and 3.0%                                                                                                                                                                                                                                                                                                                                            |
| Ferrer et al. (2013)       | Care coordination                          | The community of solution comprises a county health system, a family medicine residency program, a metropolitan public health department and local nonprofit organisations and businesses. Community-based activities responding to the needs of individuals and their neighbourhoods are driven by a cohort of promotores. | • Hospitalisations<br>• ED and urgent care visits<br>• Hospital associated charges<br>• Patients' functional status     | -24% Decrease in hospitalisations<br>-12% Increase in ED visits<br>-9% Decrease in total charges for an annualised overall savings of \$250,215 compared with 2010                                                                                                                                                                                                                                                                                                                  |
| Fiori et al. (2019)        | Social needs screening & care coordination | Community Linkage to Care (CLC) program integrates routine social needs screening and CHW referral assistance in a primary care setting.                                                                                                                                                                                    | • SDH screens performed at eligible well-child visits<br>• SDH needs (total number and categories)                      | - 4162 SDH screens were conducted at 6410 eligible well-child visits for an overall screening rate of 65%.<br>- screens performed/eligible well-child visits over the 11-month period was 66%<br>- 19.7% of the SDH screens performed had one or more positive responses.<br>- 37.8% of positive SDH screens had more than 1 positive item.<br>Of the positive screens, the most frequently cited social needs: childcare 48.8%, housing quality and/or availability and food 22.8% |
| Fiori et al. (2020)        | Social needs screening & care coordination | The CLC program (same as above)                                                                                                                                                                                                                                                                                             | • Social service uptake/referral status<br>• Number of outreach encounters<br>• SDH needs (total number and categories) | -CHW referrals resulted in 856 outreach attempts with a median of 3 attempts<br>-39% of households that identified 2 or more social needs with the 3 most common social need categories reported to be housing stability and quality (40%), benefits assistance (19%) and food insecurity (15%)<br>-Of the households referred to the CHW, 43% had successful referrals.                                                                                                            |
| Kangovi et al. (2014)      | Care coordination                          | To implement a CHW-led, post-hospitalisation transition program:<br>The IMPACT model focused on goal-setting, goal support and connection to primary care.                                                                                                                                                                  | • Timely post hospital primary care<br>• 30-day hospital readmission<br>• SF-12<br>• Patient activation                 | -Intervention patients were more likely to obtain timely post-hospital primary care (60.0% vs 47.9%; <i>P</i> = 0.02).<br>-Intervention patients were more likely to improve in mental health (6.7 vs 4.5; <i>P</i> = 0.02).<br>-Intervention patients were more likely to improve in patient activation (3.4 vs 1.6; <i>p</i> = 0.05).                                                                                                                                             |
| Kangovi et al. (2018)      | Care coordination                          | To compare a CHW intervention to standard goal setting, CHWs provided 6 months of hands-on, tailored support spanning the domains of coaching,                                                                                                                                                                              | • SF-12<br>• Mean change in patient-selected chronic disease indicator (HbA1c, BMI, SBP or CPD)                         | -At 9 months, both groups had similar improvement in physical health and chronic disease control<br>-The intervention arm had a greater improvement in patient activation                                                                                                                                                                                                                                                                                                           |

| Authors                                         | Intervention techniques        | Intervention description                                                                                                                                                                                                                                                                                                                                                                                                                                             | Outcomes                                                                                                                                                                                                                                                                         | Results                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parker et al. (2020)                            | Health education and promotion | social support, advocacy and navigation to help patients achieve their action plans<br><br>To provide a brief, parent-based sexual risk reduction program using a culturally relevant approach for Latinx families in the Midwest; Familias Hablando Unidas includes two group sessions, distribution of a manual for parents that focused on strategies for delaying the initiation of adolescent sexual intercourse; and two booster telephone calls. <sup>a</sup> | <ul style="list-style-type: none"> <li>• Quality of care</li> <li>• All cause hospitalisations</li> <li>• Parent-child communication about sex; comfort, preparation ease and intent regarding communication with adolescents about sex</li> </ul>                               | <p>=Intervention patients were more likely to report higher quality of care</p> <p>There were notable improvements in parent outcomes after implementation of the intervention including parent-child communication about sex as well as comfort, preparation ease and intent regarding communication with adolescents about sex (all <math>p &lt; 0.05</math>)</p>                                                    |
| Chronic care (n = 4)<br>Gunderson et al. (2018) | Care management                | A cosupervisory, generalist CHW model provides an innovative template for cocreation of patient-centered infrastructure and resourcing within an evolving and replicable holistic care continuum. Includes consultation, relational care, troubleshooting and updates on operations, tools and community resources.                                                                                                                                                  | <ul style="list-style-type: none"> <li>• Number of emergency department visits</li> <li>• Inpatient hospitalisations</li> <li>• Outpatient visits</li> <li>• Total cost of care</li> </ul>                                                                                       | <p>-a significant decrease in outpatient visits (<math>p &lt; 0.01</math>) and emergency department utilisation (<math>p = 0.01</math>) among adults</p> <p>-similar effectiveness on the cost of care</p>                                                                                                                                                                                                             |
| Komanomy et al. (2020)                          | Care management                | To implement a complex care intervention in which outpatient intensivist teams provided care to high-need high-cost Medicaid patients. The ECHO model connects specialists with primary care providers for case-based mentoring to treat complex diseases.                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>• Medicaid costs</li> <li>• Healthcare utilisation (inpatient admissions, emergency department [ED] visits and outpatient visits)</li> <li>• Dispensed prescriptions</li> </ul>                                                           | <p>At 12 months post-enrollment, the odds of a patient having an inpatient admission and an ED visit were each reduced by approximately 50%.</p> <p>-Outpatient visits and prescriptions increased by 23% and 8% 12-months post-enrollment.</p>                                                                                                                                                                        |
| Martin et al. (2009)                            | Care management                | To improve asthma self-efficacy via self-management behaviours for African American adults. Four different group sessions were offered over a 12-week period. The group sessions were led by the social worker, with the CHWs in attendance. Patients received 4–6 follow-up home visits.                                                                                                                                                                            | <ul style="list-style-type: none"> <li>• Asthma self-efficacy</li> <li>• Asthma action plan</li> <li>• Asthma quality of life</li> <li>• Asthma coping</li> </ul>                                                                                                                | <p>-The intervention group had significantly higher asthma self-efficacy at 3 months (<math>p &lt; 0.001</math>).</p> <p>-Asthma action plans were more common in the intervention group at 3 months (<math>p = 0.06</math>).</p> <p>-At 6 months, the intervention group had improved asthma quality of life (<math>p = 0.002</math>) and improved coping (<math>p = 0.01</math>) compared with control subjects.</p> |
| Razon et al. (2019)                             | Care coordination              | An interprofessional healthcare transition (HCT) consult team that coordinates HCT services for patients with the highest complexity. All outpatient consults have the goal of transfer planning. The team also accepts inpatient consults for medical questions, care coordination, community resources and HCT preparation, which may involve outpatient follow-up after discharge from the hospital.                                                              | <ul style="list-style-type: none"> <li>• Number of referrals</li> <li>• Percent transferred to adult care</li> <li>• Changing insurance</li> <li>• Referrals to mental health support</li> <li>• Developmental services</li> <li>• Legal assistance with guardianship</li> </ul> | <p>-24 patients (39% of outpatient referrals) were referred to adult mental health supports (e.g. filling psychotropic medications, connecting to adult therapists)</p> <p>-8 (13%) patients with changing insurance coverage</p> <p>-The community health worker was assigned to work with 84 (43%) patients.</p> <p>-Among the patients with IDD, 9 (20%) were connected to developmental services 23 (37%)</p>      |
| Mental health (n = 3), Ell et al. (2014)        | Mental health counselling      | Problem-solving therapy (PST) plus antidepressant medications, education and patient navigation assistance to provide culturally adapted collaborative depression care among predominantly Hispanic patients                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>• SF-12</li> <li>• Pain</li> <li>• Sheehan disability scale</li> <li>• PHQ-9</li> <li>• SCL-20</li> </ul>                                                                                                                                 | <p>-49% showed a 50% reduction of PHQ-9 score at 6 months and 48% at 12 months</p> <p>-47% showed a 50% reduction of SCL-20 at 6 months and 43% reduction at 12 months</p> <p>-There was no significant difference in reduction between PST and PST + medication</p>                                                                                                                                                   |
| Ell et al. (2017)                               | Care management                | Promotoras met with patients over 6 visits to engage in 6 tasks: engagement (initial rapport-building); problem formulation (targeted problem list); education (self-care management strategies; health information); action planning (developing action steps and implementation; community                                                                                                                                                                         | <ul style="list-style-type: none"> <li>• Quality of Life</li> <li>• Physical condition</li> <li>• Medical care utilisation</li> </ul>                                                                                                                                            | <p>-The percentage of patients seen by medical professionals for depression was increased. Receipt of antidepressant medication was also increased.</p> <p>-≥ 50% PHQ-9 score reduction since baseline; 53–55% AHH and 49–51% UC, and &gt;3 out of 10 were in remission (PHQ-9 scored under 5; 32% and 31% of AHH, 40% and 30% of UC at 6 and 12</p>                                                                   |

| Authors            | Intervention techniques        | Intervention description                                                                                                                                                         | Outcomes                                                                                                                                                                                                                        | Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tran et al. (2014) | Health education and promotion | resource navigation; referrals to providers) and evaluation (feedback). The purpose is to reduce patient depression symptoms, barriers to care and activate self-care management | <ul style="list-style-type: none"> <li>• Self-management skill and confidence</li> <li>• Patient knowledge</li> <li>• Depression,</li> <li>• Self-efficacy</li> <li>• Social support</li> <li>• Socioeconomic stress</li> </ul> | <p>months respectively).</p> <ul style="list-style-type: none"> <li>-The average number of clinic visits was 8.2, 8.7 and 6.3 in 6-month intervals at baseline, 6 months and 12 months respectively.</li> <li>-Patients in both study arms had statistically significant improvement in depression symptoms and the overall mental component summary score, self-care management and social support</li> <li>-A significant decrease in depressive symptoms (16.4 vs. 8.5, <math>p = 0.01</math>), stress (26.7 vs. 22.7, <math>p = 0.00</math>), acculturative stress (1.6 vs. 1.4, <math>p = 0.03</math>)</li> <li>-A significant increase in social support (47.9 vs. 54.0, <math>p = 0.01</math>)</li> <li>-A significant increase in a variety of coping skills including self-distraction, active coping, use of emotional support, positive reframing and planning</li> </ul> |

<sup>a</sup>Please see Guilamo-Ramos, V., & Lee, L. J. FAMILIAS HABLANDO UNIDAS: Creando Conversaciones Saludables. [https://powertodecide.org/sites/default/files/resources/supporting-materials/ftt\\_commhealthwkr\\_span.pdf](https://powertodecide.org/sites/default/files/resources/supporting-materials/ftt_commhealthwkr_span.pdf).