



EMPOWERING COMMUNITIES IN DIABETES SELF-MANAGEMENT: COMPARATIVE ANALYSIS OF PEER SUPPORT AND HEALTH WORKER MODELS

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Abstract Background: The global rise of Type 2 Diabetes requires innovative support strategies beyond clinical settings. Peer support and Community Health Worker (CHW) models represent promising approaches, though their distinct roles and integration within healthcare frameworks need clarification.

Objectives: This review synthesizes evidence on the effectiveness of peer and CHW models in improving diabetes self-care and glycemic control, comparing their training, roles, and implementation within an Interprofessional Collaboration (IPC) framework.

Results: Evidence confirms both models effectively improve outcomes through complementary mechanisms. Peer support, grounded in lived experience, excels in providing emotional support and sustaining long-term glycemic and blood pressure control. CHWs, leveraging formal training, are pivotal in patient education, care coordination, and system navigation. Integration within IPC teams maximizes their effectiveness by bridging clinic and community care and enhancing patient-centered approaches through patient-reported outcomes. Sustainable implementation requires recruiting peers from program graduates, comprehensive CHW training, supportive supervision, and sustainable funding models.

Conclusion: Peer support and CHW models offer complementary strategies for empowering communities in diabetes self-management. Healthcare systems should formalize these roles within IPC teams, while policymakers secure sustainable funding. Future research should focus on direct comparisons and long-term outcomes across diverse populations.

Keywords: type 2 diabetes, peer support, community health workers, interprofessional collaboration, diabetes self-management.

BACKGROUND

Type 2 Diabetes (T2D) poses a critical global health challenge, with prevalence soaring to over 500 million people and disproportionately affecting low-income and minority populations (1,2). This chronic condition demands complex, lifelong self-management, including medication adherence, dietary changes, and physical activity (2,3). However, the limited time patients spend in clinical settings is insufficient to support the sustained behavioral changes necessary for optimal glycemic control (1,3).

The vital need for ongoing Diabetes Self-Management Support (DSMS) beyond traditional healthcare remains critical (1,3). Community-based models have emerged as scalable solutions, with peer support and Community Health Workers (CHWs) being particularly promising (2,4). Peer supporters, drawing on their lived experience with diabetes, provide emotional and appraisal support (2,5). In contrast, Community Health Workers (CHWs) are lay health workers from the community, often embedded in the health system, who offer education, care coordination, and navigation services (4,6). Both are crucial for bridging the clinic-community divide, especially in resource-limited settings (2,7).

The five studies collectively reveal that while peer support and community health worker (CHW) interventions show promise in improving diabetes self-management and glycemic outcomes, significant methodological and conceptual gaps remain. Reviews by Pienaar and Reid, (2020) and Werfalli et al., (2020) found that both peer and CHW programs in low- and middle-income countries showed positive but inconsistent results due to variations in training quality, supervision, and integration with healthcare systems (2,8). Experimental studies in high-income countries, including those by Presley et al., (2020) and Tang et al., (2014, 2015), demonstrated that peer-led and CHW-supported interventions improved psychological well-being and maintained certain clinical benefits, although effects on HbA1c control differed across populations and intervention settings (3,9,10). A randomized trial in USA, found that a peer-led maintenance program was more effective than CHW telephone outreach in sustaining HbA1c and blood pressure improvements over 18 month (3). Meanwhile, CHWs have been successfully integrated into collaborative teams with other professionals, such as pharmacists, to tailor care to patient needs (6).

This review synthesizes evidence on the effectiveness of peer and CHW models in improving self-care and glucose control (2). It uniquely compares their training, roles, and implementation strategies, and explores how their integration into IPC teams can enhance patient-centered care and sustainable diabetes management (3,6).

RESULT AND DISCUSSION

Community Health Worker (CHW) Model

Community Health Workers (CHWs) are lay health workers recruited from the communities they serve, sharing language, culture, and life experiences with their patients (2,11). They are typically employed by the health system, which distinguishes them from volunteer models (3). A key characteristic is that they may not have personal experience with diabetes themselves (2,3). Their primary roles are multifaceted, focusing on bridging the gap between clinical services and the patient's environment (11). Key functions include providing culturally appropriate patient education on diabetes management, offering care coordination, and navigating health services (2,11). In some settings, they may also be involved in more direct patient care tasks, such as conducting health screenings (11). To perform these roles, CHWs usually undergo a formal, standardized training program. One cited example includes 160 hours of community outreach training plus 80 hours of diabetes-specific education (3,12). As integrated members of the healthcare team, they typically receive a salary

and ongoing professional supervision (3).

Peer Support (Peer Leader) Model

The peer supporters are individuals who live with Type 2 Diabetes themselves or have close familial experience with the disease (2,13). This lived experience is their foundational qualification and the basis of their credibility and authority (2,14). Their roles are centered on providing psychosocial and practical support derived from shared experience (13). This includes the provision of emotional, appraisal, and informational assistance, facilitating group problem-solving, and fostering a network of mutual support among participants (15,16). Training for peer leaders is less about formal health education and more focused on facilitation skills, active listening, and empowerment-based strategies (3,15). A specific example includes a 46-hour training program covering communication, facilitation, and behavior modification skills (3). Given their different role and funding structures, peer supporters are often volunteers or receive modest stipends rather than a full-time salary (3,17).

Table 1. Comparative: CHW vs. Peer Support Models

Feature	Community Health Worker (CHW)	Peer Leader (PL)
Defining Characteristic	Member of the community; shares culture & language; may not have diabetes (2,3).	Has lived experience with diabetes (self or family) (2,13).
Typical Employment Status	Salaried health system employee (3).	Volunteer or modest stipend (3).
Primary Role	Education, service coordination, system navigation (2,11).	Mutual support, shared problem-solving, emotional sustenance (2,3).
Basis of Authority	Formal training and connection to health system (3).	Experiential knowledge and shared identity (2).

Based on the analysis of current evidence (18–21), both peer support and community health worker (CHW) models demonstrate significant benefits for diabetes management, with each showing distinct strengths in key outcome areas. The comparative effectiveness on glycemic control, psychosocial factors, and clinical outcomes is summarized below.

Table 2. Comparative Effectiveness of Peer Support and CHW Models

Outcome Category	Key Findings for Peer Support	Key Findings for CHW Models
Glycemic Control	Modest, significant HbA1c reduction (SMD -0.41) (18). Effective in sustaining long-term HbA1c reductions (19).	Contributes to HbA1c reduction, often as part of a broader intervention package (21).

Outcome Category	Key Findings for Peer Support	Key Findings for CHW Models
Psychosocial and Self-Care	Improves self-efficacy (20), provides emotional support and shared problem-solving (18).	Provides education, service coordination, and system navigation (21).
Clinical and Cardiometabolic	Associated with sustained blood pressure improvements over the long term (19).	
Optimal Conditions	Smaller groups, group sessions, high-frequency contact, and shorter (≤ 6 month) interventions show significant effects (18).	

A Meta-analyses by Azmiardi et al., (2021) confirm that DSME integrated with peer support has a statistically significant, though modest, effect on reducing HbA1c, a key marker for long-term blood glucose control (18). This effect appears to be particularly effective in sustaining glycemic control over the long term. A more recent meta-analysis by Luo et al., (2025) also found a modest improvement in HbA1c levels in middle-aged and elderly patients receiving peer support (19). For CHW-led interventions, the evidence suggests they also contribute to improved glycemic control, often as part of a multi-component strategy (21).

The two models impact self-management through different but complementary mechanisms. Peer Support excels in providing emotional, appraisal, and informational assistance, which fosters self-efficacy (18). A study on online health communities in China (20) and Taiwan (22) found that the frequency and intensity of peer interaction positively affects self-efficacy, which is a cornerstone of successful self-management. This model is rooted in mutual support and shared identity. CHW Models typically focus more on patient education, practical skills, and navigating the healthcare system (21). While this also supports self-care behaviors, the basis of authority is the CHW's formal training and connection to the health system.

Beyond blood sugar, these community models can improve other health metrics. There is evidence that peer-led support can be particularly effective in maintaining improvements in blood pressure over the long term (9,21). This highlights the potential for peer support to contribute to comprehensive cardiovascular risk reduction in patients with diabetes. The effectiveness of these interventions, particularly peer support, can be enhanced by specific implementation strategies. Programs with smaller group sizes, a high frequency of contact (e.g., weekly meetings), and a group-based delivery format have been shown to yield statistically significant effects (18,23). Furthermore, formal medical settings can provide a structured environment that enhances the benefits of these interventions (19).

Interprofessional Collaboration (IPC) Framework

Interprofessional Collaboration (IPC) is defined by the World Health Organization as a process where "multiple health workers from different professional backgrounds work together with patients, families, carers and communities to deliver the highest quality of care across settings" (24). This involves working together to achieve a common goal, with each member of the health team making a unique

contribution, thereby enhancing the benefit for patients through shared knowledge and skills (25,26). This cooperative model is a critical component of the Chronic Care Model (CCM), emphasizing that productive interactions between a prepared, proactive practice team and an informed, activated patient are essential for effective chronic illness management (24).

A crucial advancement in chronic care is the formal recognition that the healthcare team must extend beyond the clinic. Community Health Workers (CHWs) and peer supporters act as a vital link, extending the IPC team from the clinic into the community (27,28). They bridge the gap between professional healthcare services and the patient's daily life; clinicians provide the medical plan, while these community-based providers translate it into practical, culturally congruent support within the patient's own environment (29,30). This approach directly addresses social determinants of health, providing ongoing support that aligns with patients' real-world contexts (29,31).

The integration of CHWs and peers fundamentally enhances patient-centered care through the systematic use of Patient-Reported Outcomes (PROs) (32,33). PROs are data on health status, quality of life, and self-care challenges reported directly by patients and are considered "of most importance to patients and families" in treatment evaluation (33). Community providers are uniquely positioned to collect and contextualize this information during their interactions in homes and community settings (34). By relaying these insights to the clinical team, they ensure care plans are not only evidence-based but also responsive to the patient's lived experience and barriers (33,34). This continuous feedback loop, facilitated by IPC, ensures diabetes care remains truly patient-centered. Although evidence on the impact of IPC on PROs is still emerging, with some reviews noting high heterogeneity and risk of bias, the overall results indicate that IPC may affect PROs positively across outcomes such as satisfaction and quality of life (24,33).

Table 3. The Expanded IPC Team in Diabetes Care

Role	Primary Setting	Core Contribution to IPC	Basis of Authority
Clinician (MD, NP)	Clinic	Medical diagnosis, treatment planning, prescription authority	Professional licensure & specialized training
Nurse/Educator	Clinic	Direct patient education, clinical monitoring, care coordination	Professional licensure & nursing standards
Community Health Worker (CHW)	Community	Cultural bridging, health system navigation, resource connection	Formal training & connection to health system (27)
Peer Supporter	Community	Experiential sharing, emotional & appraisal support, mutual problem-solving	Lived experience with diabetes

Implementation Strategies and Sustainability

The successful implementation and long-term sustainability of community-based diabetes self-management programs are critical for their impact. This involves strategic approaches to recruitment, training, supervision, and a clear demonstration

of cost-effectiveness. Effective programs are built on a foundation of strategic recruitment and comprehensive training for both Community Health Workers (CHWs) and Peer Supporters. A highly effective strategy is to recruit Peer Leaders from individuals who have successfully completed the DSME program themselves (35,36). These graduates possess lived experience, credibility, and a deep understanding of the program's curriculum and empowerment approach. Their personal success makes them relatable and inspiring figures for new participants (35). Training for Peer Leaders, while different in focus, is also formalized. One program provided 46 hours of training over 12 weeks, led by experienced CHWs, to prepare peers for their role in providing ongoing support (35,37).

A cornerstone of developing effective and sustainable interventions is the full engagement of the community through CBPR. This approach ensures that programs are not designed in isolation but are co-created with the community they are intended to serve. Programs developed using CBPR principles are more culturally tailored, effective, and sustainable (35,38). For instance, the "Journey to Health/El Camino a la Salud" curriculum was developed and refined by a coalition of community organizations, academic institutions, and healthcare systems, ensuring it directly addressed the needs and cultural context of the Latino community in USA (35,39). This collaborative foundation builds trust and ensures the intervention is relevant and embraced by the community.

Maintaining the motivation and effectiveness of both CHWs and Peer Supporters requires structured support and appropriate incentives, which are key to reducing turnover and ensuring program longevity. High-Quality Supervision: Ongoing supervision and booster sessions are crucial. One model implemented in USA and Uganda includes monthly additional support sessions led by CHWs for Peer Leaders, providing a forum for problem-solving, continuous learning, and professional support (35,40).

The issue of incentives is a common challenge. CHWs are typically salaried members of the healthcare team, recognizing their professional role (35). In contrast, Peer Supporters, who draw on their lived experience, are often volunteers or receive modest stipends to reimburse expenses (35,41). Finding the right incentive model is essential for motivation and retention for both cadres.

Evidence on economic benefits and scalable models is increasingly robust, providing a strong argument for wider implementation and policy support. A 2025 study of older Medicare beneficiaries found that DSME was associated with significantly lower healthcare spending. Specifically, those who received DSME had 16.36% lower total medical costs and 12.83% lower total prescription costs compared to those who did not (42,43). This demonstrates a powerful economic return on investment. Both CHW and peer-led models are recognized as scalable solutions for health care centers in low-resource settings (35). Peer-assisted models, in particular, hold potential as low-cost, scalable maintenance programs. Research is actively testing peer-assisted DSME delivery to provide policymakers with a cost-effective and scalable option for wider implementation, such as within the public health system of Thailand (41).

Table 4: The key implementation considerations for both CHWs and Peer Supporters.

Implementation Factor	Community Health Worker (CHW)	Peer Supporter (PS)
Recruitment Source	Recruited from the community; may not have diabetes (35)	Often recruited from successful DSME program graduates (35)

Implementation Factor	Community Health Worker (CHW)	Peer Supporter (PS)
Training	Formal, standardized training (e.g., >160 hours plus specialized diabetes training) (35)	Formal training focused on facilitation and support (e.g., 46 hours over 12 weeks) (35,37)
Supervision	Ongoing professional supervision as part of the healthcare team (35)	Ongoing supervision and booster sessions, often provided by CHWs or program coordinators (35,41)
Incentives and Funding	Typically salaried health system employees (35)	Often volunteers or receive modest stipends
Scalability	Scalable model for achieving improvements in key outcomes (35)	Potential for low-cost, scalable long-term maintenance programs (35,41)

CONCLUSION

This review demonstrates that peer support and Community Health Worker models provide complementary, effective approaches to diabetes self-management support. The peer support and Community Health Worker models show significant value in improving clinical outcomes and self-care behaviors, with their impact being maximized when integrated within structured Interprofessional Collaboration frameworks. To fully leverage these community-based strategies, healthcare systems should formalize the integration of these roles into clinical teams, establish sustainable funding mechanisms including reimbursement models, and implement standardized training programs. While current evidence supports their effectiveness, future research should focus on direct comparisons between these approaches and long-term sustainability across diverse populations. The strategic deployment of both peer supporters and CHWs represents a crucial paradigm shift toward more comprehensive, patient-centered diabetes care that effectively bridges clinical services with community support systems.

COMPETING INTERESTS

All authors had none to declare that are no conflicts of interest related to this study.

AUTHOR'S CONTRIBUTION

Kharisma Evelynne Eka Susanto: Conceptualization, Data analysis, Writing – Original draft preparation. Evangelina Natali Theresya Lauale: Data curation, Investigation. Ikhwan Yuda Kusuma: Writing – Review and Editing.

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