

# Mending the Gaps: Community Health Workers in the Age of the Affordable Care Act

Early J.O.<sup>1,\*</sup>, Breckwich Vásquez, V.A.<sup>1</sup>, Sylvia Elena Sobrinho Herrera<sup>2</sup>

<sup>1</sup>School of Nursing and Health Studies, University of Washington Bothell, USA

<sup>2</sup>College of Health Sciences (ESCS), Brazil

Copyright©2016 by authors, all rights reserved. Authors agree that this article remains permanently open access under the terms of the Creative Commons Attribution License 4.0 International License

**Abstract** The Affordable Care Act recognizes Community Health Workers (CHWs) as lay health professionals that promote positive health behaviors and outcomes for patients in medically underserved communities. Despite this validation, there remains a lack of awareness, and some controversy, about the role of CHWs, the value of their work, and ultimately how their roles relate to primary care. The purpose of this feature article is to increase awareness about the contributions of community health workers to primary prevention and to report several key issues identified in the literature and from organizations working with CHWS about their evolving and multifaceted role in improving primary care and population health.

**Keywords** Community Health Workers, CHWS, Lay Health Promotion, Primary Care

behaviors and outcomes for patients in medically underserved communities." [1] Despite this validation, there remains a lack of awareness, and some controversy, about the role of CHWs, the value of their work, and ultimately how they contribute and operate within the broader context of the U.S. health system.

The purpose of this feature article is to increase health professionals' awareness about the contributions of community health workers to primary prevention, and to highlight several key issues in CHWs' evolving role, including: common descriptive characteristics of community health workers as found in the literature; CHWs' role as community liaisons to organizations and healthcare systems; outcomes associated with CHW-assisted health interventions; the impact of lay health promotion on communities and self; challenges in recruiting, training and supporting CHWs; and finally, recommendations for future research.

## 1. Introduction

Community Health Workers (CHWs) play a distinct and valuable role in improving the health of individuals and communities. In the United States, CHWs serve on the front lines of health promotion and primary care. They work to improve health literacy by delivering health messages in culturally relevant ways. By navigating people to health services and resources, they reduce health disparities in vulnerable and marginalized communities. They often serve as a connectors and cultural liaisons to ethnic non-majority groups and health systems. The body of research relating to CHWs and lay health promotion spans over fifty years and includes thousands of publications. CHWs, also known as Lay Health Advisors (or *promotoras* or *promotores* in Latino/a communities), have rich histories and a longstanding place in population and global health. However, the role of the Community Health Worker in the U.S. health system is still evolving. The 2010 Affordable Care Act described CHWs as "health care professionals," and highlighted their work in promoting "positive health

## 2. Descriptive Characteristics of CHWs

The role of Community Health Worker varies by community, and national studies that contribute to a comprehensive CHW "profile" are few. The largest U.S. survey to date of CHWs was conducted by the Arizona Prevention Research Center (AzPRC) at the University of Arizona in 2014. The National Community Health Worker Advocacy Survey (NCHWAS) was developed to assess the state of CHWs as a profession and the impact of CHW community advocacy to address health disparities [2]. The survey was distributed online and through local, state, and national CHW professional organizations, and included over 1,767 self-identified CHWs. The participants represented 45 of 50 states and 4 of 14 U.S. territories. Demographic data indicated from the 2014 NCHWAS revealed that 89% of CHWs completing the survey item on gender self-identified as female and the average age in years was 45, with a range of 20 years to 77 years. In addition, most of the CHWs participating in the survey were Hispanic/Latina/o (45%), followed by non-Hispanic White (23%), Black/African

American (20%), American Indian/Alaska Native (10%), Other (4%), and Asian/Pacific Islander (2%).<sup>2</sup> These findings were similar to findings from an earlier version of NCHWAS survey as reported by Ingram and colleagues in 2012 [3]. In their article, Ingram et al. (2012) provided descriptive information relating to CHW roles, activities and training. Like findings from the 2014 NCHWAS survey, Ingram et al. (2012) found that most CHWs were female (92%), and self-identified as Hispanic/Latina/o (72.8%) [3].

Regarding education level, findings from both studies<sup>2,3</sup> indicated that most CHWs had at least a high school education or equivalent (GED). In the AzPRC (2014) article, less than 1% of the 1,194 CHWs completing this item on the NCHWAS survey, reported they had less than a high school degree, while 6% indicated “other,” and 12% indicated their highest level of education was high school or equivalent (GED) [2]. Sixty-eight percent of the CHWs in this same study indicated they had some college or a college degree while 14% indicated they had a graduate degree [2].

In terms of income, most of the CHWs in the latest AzPRC (2014) study who answered the question about income (69%) reported they worked for pay, and the majority of those CHWs (81%) reported earning less than \$50,000 per year (which could include mix of CHW work and other jobs). CHWs that worked as volunteers and who were unpaid (47%) worked an average of 12 hours [2].

Ingram et al. (2012) also reported that most U.S. CHWs in their sample (n= 371) indicated that they served along border regions (62.6%), and in the West (42.9%), and South (34.4%) [3]. CHWs in the sample were also more likely to work with a non-profit or grassroots organization (36.7%) or community health center (27.2%) compared to clinics or hospitals (19.1%), the health department (8.5%) or “other” (8.5%) [3].

Regarding CHW activities and roles, findings from both the 2014 and 2012 NCHWAS surveys demonstrated that CHWs typically participate in a range of activities, inside and outside of clinical settings. CHWs conduct outreach work, linking individuals to health systems, health care, and social services, and may serve as peer counselors and lay health educators. CHWs also reported disseminating health information to a wide variety of audiences and addressing both chronic and infectious disease, with a focus on prevention. Topic most commonly reported, included: accessing health services, diabetes, behavioral/mental health, nutrition, cancer, alcohol and substance abuse, maternal and child health, tuberculosis, HIV, and the management of chronic diseases [2,3]. Recent studies indicate that more experienced CHWs are becoming involved with research and evaluation activities [4].

### 3. CHWs as Trusted Liaisons between Health Organizations and Communities

The unique role of the CHW in the U.S. healthcare system provides real advantages. CHWs can leverage their

knowledge, relationships and trust within the community to forward prevention efforts with the goal of improving healthy behaviors among those they serve.<sup>3</sup> Studies generally recognize that CHWs are more likely to have effective skills for engaging patients that help to facilitate lifestyle improvements, including modifications in diet and exercise [5,6]. Cultural understanding and community trust-building are essential skills required when working with any community, but especially within marginalized and high-risk populations. In Australia, for example, CHWs with a history of injection drug use, successfully worked with patients who also injected illegal drugs [7]. Results indicated CHWs’ personal experience of drug use became an asset, enabling them to build trust with clients, and creating non-judgmental interactions that helped clients become active participants in the management of their healthcare.

It is common and necessary that social and personal characteristics strongly shape CHW roles and their work. According to Ileana Ponce-Gonzalez of Migrant Clinician’s Network (2016), an organization that trains and supports CHWs throughout the Pacific Northwest:

*“CHWs are particularly valuable in communities that serve marginalized populations such as immigrants and seasonal migrants, since those communities often lack enough adequately-trained staff to reach this hidden community and a dearth of interventions that appropriately address the social determinants of health that most strongly impact the population [8].”*

### 4. Outcomes Associated with CHW-assisted Health Interventions

CHWs are uniquely positioned to facilitate change in non-majority, vulnerable, and marginalized communities experiencing inequitable access to health services. Several studies indicate that CHW-led programs and interventions achieve better health outcomes than approaches that do not [9,10,11,12,13,14,15,16,17,18,19]. The literature consistently demonstrates that CHW’s roles in primary prevention are substantial in ways that are more often documented using qualitative measures, such as: increasing self-efficacy and feelings of social connectivity; [19,20,21,22,23] improving trust between vulnerable populations and healthcare providers [20]; improving motivation of participants to participate and remain in health programs and activities [10,23], and promoting and enhancing cultural understanding [2,5,7,19, 24]—all factors that are associated with positive health outcomes [25,24].

In a study conducted in Los Angeles, CHWs worked alongside health professionals in a low-income, largely Latino community. They implemented a culturally tailored intervention that involved group education (8 classes) followed by 4 months of individual teaching and coaching (home visits and telephone calls), with the goal of improving lifestyle behaviors related to smoking, diet, and exercise.

Latina CHWs (*promotoras*) motivated behavioral change through videos, role play (skits), and culturally-appropriate brochures. They achieved better attendance at classes than the control group and influenced greater more positive behavioral responses to individual coaching—factors cited as vital for improving outcomes in dietary habits, waist circumference, and physical activity [26].

Another study described how *promotoras* provided education that was specific and appropriate to the people they served—Spanish-speaking farmworkers in North Carolina [24]. Sharing a common culture, these CHWs understood community needs, language, and barriers, enabling them to better share information and facilitate lifestyle changes that resulted in improved outcomes. Similarly, in an Oregon study, CHWs who utilized popular education methods (participatory methods used by Paulo Freire to engage poor communities) within their Latino and African-American communities were able to promote wellness and self-efficacy [27]. CHWs introduced experiential methods such as *dinámicas* (games with an educational purpose), socio-dramas (short skits illustrating a problem), small group work and other techniques to improve the acquisition and retention of healthcare knowledge. Community members acquired a stronger belief in their ability to create and effect changes in their health.

CHW-led activities have positive results in the management of chronic diseases, most notably diabetes, which in many cases involves lifestyle changes as well as medication management [26,28,29]. Otero-Sabogal and Arretz (2010) reported that team-led disease management programs involving CHWs resulted in improved glycemic control among patients vs. at baseline. Results also indicated higher satisfaction with overall care among these patients *and* their physicians [28]. Empirical outcomes from additional studies show that CHWs are effective in helping patients manage glycemic levels, cholesterol, and hemoglobin (A1c) [6,23]. However, the Rothschild study found no effect on blood pressure control, adherence to medications, or glucose self-monitoring. In another study, *promotoras* demonstrated RN-level accuracy when using non-invasive tools to screen for diabetes and cardio-vascular disease in a Latino migrant farmworker population [29].

These interventions show that CHWs increase the cost-effectiveness of traditional healthcare delivery systems. However, the entire notion of *effectiveness* may be changing, with less focus on precise financial return on investment (ROI), and more emphasis on general health outcomes and reduction in disparities [30]. Relative to this perspective, CHWs have proven they can achieve both and are essential partners in supporting primary prevention. Laura Flores Cantrell, Senior Program Officer for the Washington Dental Services Foundation, provided the following example of how CHWs are helping to improve oral health disparities among communities in Washington State:

*“To reduce oral health disparities in the state of Washington, [we are] investing in engaging, training and expanding CHW programs. In only the first several months of this effort, over 250 CHWs were trained to address oral health. As a result, CHWs are playing a critical role in building individuals’ understanding of the interrelationship between oral health and overall health, identifying risk and protective factors that influence oral health in specific communities, and sharing oral health knowledge, tools and resources available in communities to connect people to care” [31].*

## 5. Transforming Self and Community

Playing a vital role in improving outcomes in the communities they serve has led to positive effects on CHWs themselves. In North Carolina, CHWs (referred to as Lay Health Advisors in the study) conducted a pesticide safety education program targeting farmworker families. After the program, in-depth interviews with the CHWs revealed an increase in self-efficacy and perceived empowerment, resulting in improved ability to teach and impact their community [24]. CHWs have grown in their work as advocates, promoting the idea that they are leaders in the community, and able to influence community decisions [32]. For *promotoras* in another study, the role was transformative, nurturing a stronger sense of self-efficacy and confidence, which in turn led to greater effectiveness as they interacted with healthcare consumers in their community [33].

Looking more broadly at the effectiveness of CHWs, evidence points toward significant impacts on communities as a whole [24,34]. As CHWs are increasingly integrated into health systems, and part of health teams serving vulnerable and marginalized populations of which they are a part, we see reductions in health disparities, increased use of health services and improved health outcomes [9,35,36,37,38,39]. Ponce-Gonzalez (2016b) explains, “CHWs’ non-judgmental nature, their ability to listen and work well with patience over time, fosters meaningful use of the health and social service system and improves health and well-being in communities with complex needs.”<sup>39</sup> These community-level improvements increase general awareness of health issues in communities facing the challenges of poverty, language barriers, and poor access to healthcare services [37,27].

Other studies show how CHWs’ work may lead them to increase their level of civic engagement and community health advocacy. Farquhar and co-authors (2008) found that using a community-engaged (e.g. popular education) approach to health promotion increased the number of CHWs/promotores who participated at community events, the number holding leadership positions, and CHWs’ reported sense of community solidarity [40]. Sabo and colleagues (2013) surveyed a U.S. sample of 371 CHWs

(53% Latina/o) and found that over 75% of them were participating in some form of advocacy, ranging from promoting change within their organizations (77%) to participating in civic efforts (57%) to engaging in political advocacy (46%) [41].

There is also evidence of a gradual shift in focus among CHWs over time: shifting away from the "micro" to the "macro" view. Alfaro-Trujillo, Valles-Medina, and Vargas-Ojeda(2012) examined characteristics of CHWs / promotores serving communities on the Texas-Mexico border, and through mixed methods, observed a "transformation" from CHWs' initial attention to individual and family health to concerns for the larger community.<sup>42</sup> Hence, providing additional training and programs to strengthen CHWs' "collective efficacy" (e.g. ability to achieve a task or goal as a group) and advocacy skills may further enhance positive social change within their communities [41].

## 6. Improving Recruitment, Training and Retention of CHWs

Examining the motivations of individuals, mostly women, for becoming CHWs can inform recruitment and retention efforts. Ramirez-Valles (1999) was one of the first to publish on the topic of motivators and facilitators for becoming a CHW.<sup>43</sup> Personal development and self-actualization emerged as primary themes in the narratives of *promotoras*. Ramirez-Valles (2001) explored this topic further and determined that there are four categories that describe women's motives for becoming a CHW: getting out, serving, learning, and women's betterment [44]. The story of Maria, who became a CHW after immigrating to New York from Puerto Rico illustrates this pattern. Becoming a CHW enabled her to serve her community, which she describes as a labor of love, and 'her passion'; it also enabled her to participate in work that she felt improved her own life [45]. These compelling personal narratives shed light on the nature and motivating factors that lead many people (primarily women) into community health work as well as factors that keep them engaged in it (e.g., providing ongoing opportunities for self and professional development; working with communities to initiate change, etc.).

Research has also shown that a CHWs' experiences with "success" also impact their motivation to continue as a CHW [38]. Programs and organizations that address social determinants are more likely to achieve improved health outcomes, and this can have a positive impact on a CHW's feelings about their work and sense of fulfillment. For example, Cherrington et al. (2008) showed that interventions focused exclusively on diabetes achieved greater success when CHWs were more aware of non-medical issues that impacted health outcomes and lifestyle, such as one's proximity to stores with fresh fruits and vegetables, one's income level, and physical environment [38]. CHWs can be more successful when interventions account for these

broader socio-ecological factors, and support CHWs efforts to address them.

Additional factors, such as cross-cultural communication and cultural humility can impact CHW recruitment and retention. Health professionals and clinicians who display greater cultural humility and understanding are more likely to perceive CHWs as valuable contributors to a healthcare team [5]. Cultural humility is also a key factor to improving quality of healthcare for non-majority and marginalized populations [4,37.5].

Immigration status may serve as a barrier to recruitment and advancement of promotores/as. Eleanor Marsh, President of the Washington Hispanic Nurses Association, offers this explanation:

*"A person's undocumented status is a double jeopardy for them. It is challenging to address the needs of their communities, while they, themselves, suffer daily stress due to laws preventing them from receiving compensation and certificates for their professional development. For example, a promotora leader who was given the opportunity to participate in a health-related training workshop confided in me that she could not accept the opportunity due to laws surrounding her immigration status. Yet, she still contributes directly to improving the health of those in her community while organizations and the larger society benefit from her efforts but turn a blind eye to her situation (Marsh, 2016)" [47].*

Finally, despite strong commitment among CHWs, low pay remains a factor in retaining experienced CHWs [38]. Some CHWs are not paid and are expected to volunteer their time as an act of "service" [2]. Alfaro-Trujillo and colleagues (2012) found that for many CHWs, "the monetary compensation is a fee necessary to cover the expenses involved in community work" [42]. Furthermore, some CHWs who are paid indicate that the compensation they receive is not high enough; some are required to obtain additional work to help support their families [42]. Cantrell (2016b) argues, "For the CHW workforce to expand and thrive, it is important to secure a sustainable funding mechanism" [48]. With studies emerging showing the cost-effectiveness of CHW and lay health promotion programs, and the reimbursement for CHWs through the ACA, compensation should be a priority issue for organizations working with CHWs [49].

## 7. Discussion

Given CHWs benefit to population health and to their own health and development, expanded and improved efforts to train and support CHWs are warranted. Evidence is clear that CHWs can benefit from specific training that improves skills, increases confidence, and promotes a more contextualized view of client needs [50]. Historically, specific training for CHWs has been inconsistent. However, Kash, May &

Tai-Seale (2007) indicated that valuable trends in CHW professional development are emerging, including formal schooling at the community college level, on-the-job training for improving standards of care, and certification at the state level.<sup>22</sup> This uneven landscape may limit the recognition and perception of CHWs as valued members of health-care teams. In fact, a lack of state certification has been shown to impact RN's perception of CHWs' ability to deliver quality healthcare in a team setting [51]. RNs in the study showed more acceptance of working with CHWs in team-based care if the CHWs had completed state certification. This provides impetus for improved and/or expanded training and support for CHWs at the state level. States such as California, Texas, and Massachusetts provide individual certification and training for CHWs as well as for organizations that provide training for CHWs.

However, what is meant by “training” can differ vastly from one state to the next due in large part to the ongoing debate about what constitutes a common core of competencies for CHWs [52,54]. In addition, certification, in some states, can cost over \$1,000 and this is not affordable for prospective CHWs. In addition, access to certification training may be a problem for those living outside of urban areas and may also be inaccessible due to language barriers. For example, not all states, even those serving burgeoning Latino/Hispanic populations, offer trainings in Spanish. Moreover, since not all states require CHW certification, there may be a lack of incentive to complete it—especially in light of certification costs and other barriers previously mentioned. Finally, there is currently no published evidence that CHW certification increases employment opportunities, improves working conditions, and/or increases pay compared to CHWs that are not certified [54].

Overall, there is significant evidence that health programs involving CHWs report more favorable outcomes than those that do not, so efforts to further integrate and support the CHWs as contributors to the health system and into team-based approaches to healthcare delivery are warranted. Research has shown that team-based approaches to healthcare delivery that partner with CHWs enhance a patient's self-management skills, feelings of trust, clinical outcomes, and satisfaction with overall care [28].

## 8. Conclusions

The road ahead offers great opportunities for CHWs and their role in primary care, though in many cases, this will depend on effective policy changes and a continued effort to increase awareness of how CHWs play a valuable role in health promotion, prevention, advocacy and research. Most states are still trying to determine the best way forward. However, there is much to learn from states such as Massachusetts and Minnesota, which have modeled how CHWs can be engaged in authentic collaboration with allies in health care, public health, academia, non-profits and charitable organizations to lead policy change, advance

health equity, and expand the role of CHWs [1]. In Massachusetts and Minnesota, policy changes and certification programs for CHWs were informed by organized assessments of the CHW workforce, establishing groups to respond to and review the assessment findings, and finally taking legislative action to support integration of CHWs into the healthcare system [55]. In Massachusetts, the following were identified as key elements in a successful campaign to enact legislation requiring the state to develop a CHW certification program: 1) nurturing CHW leadership and organizational capacity; 2) defining CHW workforce issues as linked to politically salient problems; 3) building viable policy proposals; and 4) pursuing an advocacy strategy.<sup>1</sup> However, as mentioned previously, increasing certification programs alone does not result in increased employment opportunities for CHWs [54]. Effective advocacy to promote the role of CHWs is needed as well as increased public understanding of the vital role CHWs play within the broader healthcare system.

Furthermore, creating opportunities for inter-professional education as part of certification programs, or offering CHW trainings in partnership with medical schools, hospitals, clinics, and community health centers, will help to enhance the integration of CHWs into team-based primary care models. Moving forward, there is a need to explore the impact of CHW certification on the integration of CHWs within organizations, especially within healthcare systems. There is also a need for researchers to further examine the complex (and sometimes competing) forces that support or inhibit the recognition and integration of CHWs as valuable contributors to primary care and community health. These will be the first steps to achieving a broader, deeper, and ultimately more effective team-based approach to population health and healthcare within the U.S. health system.

---

## REFERENCES

- [1] Mason, T, Wilkinson, G, Nannini, A, Martin, CM, Fox, D, Hirsch, G. Winning Policy Change to Promote Community Health Workers: Lessons from Massachusetts in the Health Reform Era. *American Journal of Public Health*. 2012; 101, 12.
- [2] Arizona Prevention Research Center [AzPRC] (2014). National community health worker advocacy survey: 2014 preliminary data report for the United States and Territories. Zuckerman College of Public Health. University of Arizona. Retrieved at michwa.org.
- [3] Ingram, M, Reinschmidt, KM, Schachter, KA, Davidson, CL, Sabo, SJ, De Zapien, JG, Carvajal, SC. Establishing a Professional Profile of Community Health Workers: Results from a National Study of Roles, Activities and Training. *J Community Health*. 2012; 37, 529 - 537.
- [4] St John, JA, Johnson, CM, Sharkey, JR, Dean, WR, Arandia, G. Empowerment of promotoras as promotora-researchers in the Comidas Saludables & Gente Sana en las Colonias del Sur de Tejas (Healthy Food and Healthy People in South Texas

- Colonias) program. *J Prim Prev.* 2013; 34(1-2), 41-57. doi: 10.1007/s10935-013-0296-1.
- [5] Mobula, LM, Okoye, MT, Boulware, LE, Carson, KA, Masrsteller, JA, Cooper, LA. Cultural Competence and Perceptions of Community Health Workers' Effectiveness for Reducing Health Care Disparities. *Journal of Primary Care and Community Health.* 2015; 6(1), 10-15.
- [6] Rothschild, S, Martin, M, Swider, S, Lynas, C, Janssen, I, Avery, E, Powell, L. Mexican American Trial of Community Health Workers: A Randomized Controlled Trial of a Community Health Worker Intervention of Mexican-Americans with Type 2 Diabetes. *Am Journal Public Health.* 2014; 104, 8.
- [7] Morgan, K, Lee, J, Sebar, B. Community health workers: A bridge to healthcare for people who inject drugs. Population and Social Health Research Program, School of Medicine, Griffith University, Gold Coast, Australia. *International Journal of Drug Policy.* 2015; 26, 380-387.
- [8] Ponce-Gonzalez, I (2016a). Personal communication, January 4, 2016.
- [9] Arcury, TA, Marin, A, Snively, BM, Hernandez-Pelletier, M, Quandt, SA (2009). Reducing farmworker residential pesticide exposure: evaluation of a lay health advisor intervention. *Health Promot Pract.* 10(3), 447-455. doi: 10.1177/15248399073014091524839907301409
- [10] Balcazar, H, Alvarado, M, Hollen, ML, et al. Salud Para Su Corazon-NCLR: a comprehensive Promotora outreach program to promote heart-healthy behaviors among hispanics. *Health Promot Pract.* 2006; 7(1), 68-77. doi: 7/1/68 [pii]10.1177/1524839904266799.
- [11] Borges, WJ, Ostwald, SK. Improving foot self-care behaviors with Pies Sanos. *West J Nurs Res.* 2008;30(3), 325-341; discussion 342-329. doi: 0193945907303104 [pii]10.1177/0193945907303104.
- [12] Fernandez, ME, McCurdy, SA, Arvey, SR, et al. (2009). HPV knowledge, attitudes, and cultural beliefs among Hispanic men and women living on the Texas-Mexico border. *Ethn Health.* 14(6), 607-624. doi: 10.1080/13557850903248621917310884.
- [13] Forster-Cox, SC, Mangadu, T, Jacquez, B, & Corona, A. The effectiveness of the promotora (community health worker) model of intervention for improving pesticide safety in US/Mexico border homes. *Calif. J. Health Promo.* 2007;5, 62-75.
- [14] Ingram M, Sabo, S, Rothers, J, Wennerstrom, A, de Zapien, JG. Community Health Workers and Community Advocacy: Addressing Health Disparities. *J Community Health.* 2008; 33, 417-424.
- [15] Larkey, L. Las mujeres saludables: reaching Latinas for breast, cervical and colorectal cancer prevention and screening. *J Community Health.* 2006; 31(1), 69-77.
- [16] Lewin, S, Munabi-Babigumira, S, Glenton, C, et al. Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases. *Cochrane Database Syst Rev.* 2010;(3), CD004015. doi: 10.1002/14651858.CD004015.pub3
- [17] Lujan, J, Ostwald, SK, Ortiz, M. Promotora diabetes intervention for Mexican Americans. *Diabetes Educ.* 2007; 33(4), 660-670. doi: 33/4/660 0.1177/0145721707304080
- [18] Ramos, RL, Green, NL, Shulman, LC. Pasa la Voz: using peer driven interventions to increase Latinas' access to and utilization of HIV prevention and testing services. *J Health Care Poor Underserved.* 2009; 20(1), 29-35. doi: 10.1353/hpu.0.0124S1548686908100043
- [19] Reinschmidt, KM, Hunter, J B, Fernandez, ML, Lacy-Martinez, CR, Guernsey de Zapien, J, Meister, J. Understanding the success of promotoras in increasing chronic diseases screening. *J Health Care Poor Underserved.* 2006; 17(2), 256-264.
- [20] Ayon, C. Service needs among Latino immigrant families: implications for social work practice. *Soc Work.* 2014; 59 (1), 13-23.
- [21] Glenton, C, Colvin, CJ, Carlsen, B, et al. Barriers and facilitators to the implementation of lay health worker programmes to improve access to maternal and child health: qualitative evidence synthesis. *Cochrane Database Syst Rev.* 2013; 10, CD010414. doi: 10.1002/14651858.CD010414.pub 2,
- [22] Kash, B, May, M, Tai-Seale, M. Community health worker training and certification programs in the United States: Findings from a national survey. *Health Policy.* 2007; 80, 32-42.
- [23] Konkiak-Griffin, D, et al. A community Health worker-led lifestyle behavior intervention for Latina (Hispanic) women: Feasibility and outcomes of a randomized controlled trial. *International Journal of Nursing Studies.* 2015; 52, 75-87.
- [24] Trejo, G, Arcury, TA, Grzywacz, JG, Tapia, J, Quandt, S. Barriers and Facilitators for Promotoras' Success in Delivering Pesticide Safety Education to Latino Farmworker Families: La Familia Sana. *Journal of Agromedicine.* 2013; 18, 75-86.
- [25] Keller, C, Records, K, Coe, K, et al. Promotoras' roles in integrative validity and treatment fidelity efforts in randomized controlled trials. *Fam Community Health.* 2012; 35(2), 120-129. doi: 10.1097/FCH.0b013e31824650a600003727-201204000-00006.
- [26] Ryabov, I. Cost-effectiveness of Community Health Workers in controlling diabetes epidemic on the U.S.-Mexican border. *Public Health.* 2014; 128, 636-642.
- [27] Wiggins, N, Johnson, D, Avilac, M, et al. Using popular education for community empowerment: perspectives of Community Health Workers in the Poder es Salud/Power for Health program. *Critical Public Health.* 2009; 19, 1, 11-22.
- [28] Otero-Sabogal, R, Arretz, D, et al. Physician-community health worker partnering to support diabetes self-management in primary care. *Quality in Primary Care.* 2010; 18, 363-72.
- [29] Thompson, R. et al. Risk Screening for Cardiovascular Disease and Diabetes in Latino Migrant Farmworkers: A Role for the Community Health Work. *J Community Health.* 40, 2015; 131-137.
- [30] Rush, Carl H. Return on Investment from Employment of Community Health Workers. *J Ambulatory Care Manage.* 2012; 35, 2, 133-137.
- [31] Flores Cantrell, L. (2016a). Personal communication. January 8, 2016.
- [32] Ingram M, Sabo, S, Rothers, J, Wennerstrom, A, de Zapien,

- JG. Community Health Workers and Community Advocacy: Addressing Health Disparities. *J Community Health*. 2008; 33, 417-424.
- [33] Squires, A, O'Brien, M. Becoming a Promotora: A Transformative Process for Female Community Health Workers. *Hispanic Journal of Behavioral Sciences*. 2012; 34(3), 457-473.
- [34] Eng E, Young, R. Lay health advisors as community change agents. *Fam Community Health*. 1992;15, 24-40
- [35] Ayon, C, Pena, V, Naddy, MBG. Promotoras' efforts to reduce alcohol use among Latino youths: Engaging Latino parents in prevention efforts. *Journal of Ethnic and Cultural Diversity in Social Work*. 2006; 23, 129-137.
- [36] Baquero, B, Ayala, GX, Arredondo, EM, et al. Secretos de la Buena Vida: processes of dietary change via a tailored nutrition communication intervention for Latinas. *Health Educ Res*. 2009; 24(5), 855-866. doi: 10.1093/her/cyp022cy p022.
- [37] Breckwich-Vásquez V, Kim NJ, Torres E, Karr C. 4C's Complement CBPR to Address Health Equity: Application to a Rural Washington Case Study. Submitted to *Progress in Community Health Partnerships: Research, Education, and Action* on October 28, 2015.
- [38] Cherrington, A, Ayala, GX, et al. Implementing the Community Health Worker Model Within Diabetes Management Challenges and Lessons Learned From Programs Across the United States. *The Diabetes Educator*. 2008; 34, 5.
- [39] Ponce-Gonzalez, I. (2016b). Personal communication, January 4, 2016.
- [40] Farquhar, S, Wiggins, N, Michael, Y, Luhr, G, Jordan, J, Lopez, A. "Sitting in different chairs:" roles of the community health workers in the Poder es Salud/Power for Health project. *Education For Health: Change In Learning & Practice (Network: Towards Unity For Health)*. 2008; 21(2).
- [41] Sabo, S, Ingram, M, Reinschmidt, KM. Predictors and a framework for fostering community advocacy as a community health worker core function to eliminate health disparities. *Am J Public Health*. 2013; 103(7), e67-73. doi: 10.2105/AJPH.2012.301108.
- [42] Alfaro-Trujillo, B, Valles-Medina, AM, Vargas-Ojeda, AC. Profiles, perceptions and motivations of Community Health Workers of NGOs in a border city of US-Mexico. *J Community Health*. 2012; 37(3): 583-590. doi: 10.1007/s10900-011-9486-z.
- [43] Ramirez-Valles, Jesus. Changing Women: The Narrative Construction of Personal Change Through Community Health Work Among Women in Mexico. *Health Education & Behavior*. 1999; 26 (1), 25-42.
- [44] Ramirez-Valles, Jesus. "I Was Not Invited to Be a [CHW] . . . I Asked to Be One": Motives for Community Mobilization Among Women Community Health Workers in Mexico. *Health Education & Behavior*. 2001; 28 (2), 150-165.
- [45] Murphy, M, Matos, S. Building Relationships and Changing Lives A Community Health Worker Story *J Ambulatory Care Manager*. 2011; 34, 4, 375-376.
- [46] Blanco, CE. Promotoras: A culturally sensitive intervention for Hispanic breastfeeding women. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*. 2001; 40(s1), S19-S19.
- [47] Marsh, T, Derose, KP, Rios, M, Cohen, D. Promotoras as data collectors in a large study of physical activity in parks. *Health Promot Pract*. 2015;16(3), 354-361. doi: 10.1177/1524839914563076 1524839914563076.
- [48] Flores Cantrell, L. (2016b). Personal communication. January 8, 2016.
- [49] Ryabov, I. Cost-effectiveness of Community Health Workers in Controlling diabetes epidemic on the U.S.-Mexican border. *Public Health*. 2014; 128, 636-642.
- [50] Ruiz, Y, et al. Lessons Learned from a Community-Academic Initiative: The Development of a Core Competency-based Training for Community Health Workers. *American Journal of Public Health*. 2012; 102, 12.
- [51] Siemon M, Shuster G, Boursaw, B. The Impact of State Certification of Community Health Workers on Team Climate Among Registered Nurses in the United States. *J Community Health*. 2015; 40, 2015-2021.
- [52] Arvey, SR, Fernandez, ME. Identifying core elements of effective community health worker programs: A research agenda. *American Journal of Public Health*. 2012; 102 (9), pp. 1633 - 1637.
- [53] Ponce-Gonzalez, I. (2016c). Personal communication, January 4, 2016.
- [54] Eyster, L, Bovbjerg, RR, eds. Promising approaches to integrating community health workers into health systems: Four cases. The Urban Institute. 2013.
- [55] Rosenthal, E, Brownstein, JL, Nell, J. Community Health Workers: Part of the Solution. *Health Affairs*. 2010;29, 7.