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ORIGINAL PAPER

Patient and Community Health Worker Perceptions of Community Health Worker Clinical Integration

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Abstract

Traditional community health workers (CHWs) are expanding their role into *clinical* settings (cCHW) to support patients with care coordination and advocacy services. We investigated the potential to integrate cCHWs, via evaluation of patients' and CHWs' key demographics, needs, and abilities. This mixed-methods study, including adult patients and CHWs, was conducted in the Inland Valley of Southern California, between 2016 and 2017. Survey data, key informant interviews, and focus group discussions were evaluated to compare patient/CHW core demographics, and contrast patient-identified healthcare needs against CHW-identified cCHW service capabilities. Quantitative data were evaluated descriptively and bi-variably using two-sample independent t tests and Pearson's Chi square tests. Qualitative data were coded for emerging themes using a priori and standard grounded theory methods. Patients and CHWs were significantly similar in age, education, and income, but significantly differed in gender, race, United States generation, and marital status. For all healthcare-related services in which patients and CHWs exhibited significant differences, the odds CHWs perceived themselves capable of performing services were greater than patients' stated need of services. Patients and CHWs overlapped regarding their expectations of cCHWs. Although patients and CHWs differed somewhat, they shared many of the same expectations for cCHW integration. This information is critical to further contextualize cCHW training programs and emphasizes the need to education patients about this exciting new form of healthcare delivery. The active role of cCHWs in the clinical care team and the community may expand patient access to preventive healthcare, improve care quality, and minimize health inequities.

Keywords Clinical community health worker · Patient · Perceptions · Clinical integration

Introduction

Community health workers (CHWs) are culturally similar to the populations they serve, typically sharing ethnicity, language, and socioeconomic status. These similarities, and an understanding of healthcare complexities, make them ideal intermediaries between the healthcare access system and society [1]. In an unstable healthcare climate, delivery systems require an affordable and effective option for the provision of health services. This need may be addressed, in part, via the emerging clinic-based community health worker (cCHW) role.

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The cCHW is hired by and based out of hospital or clinic centers, and can provide relevant patient data to inform the development of an effective care plan. cCHWs can work with patients to clarify provider directives, consult on medication and treatment program compliance, support patients in obtaining home health devices, and provide critical feedback to care teams to ensure care plans are appropriately tailored to patient needs [13]. Initial cCHW studies demonstrate positive effects on patient health outcomes, such as improved chronic care management, increased access to healthcare, and increased compliance with preventive care recommendations [8, 10, 13]. Researchers have found that when cCHWs are similar to patients in communication strategy, cCHWs can assist patients and providers in overcoming communication barriers, playing a vital role in care plans for racial and ethnic minorities [3, 9, 15].

Recognizing the importance of the CHW-patient relationship in the transition of CHWs to cCHWs, the Loma Linda University Promotores Academy at San Manuel Gateway College (Promotores Academy), designed a certificate program to provide Promotores Academy-trained CHWs with cCHW skills. In this study, we aimed to assess how CHWs and patients compared demographically, how they compared in their perceived understanding of CHWs and cCHWs, and how they compared in their expectations of cCHW job functions, patient healthcare needs, and cCHW training requirements. These findings provide a better understanding of how to effectively integrate cCHWs for the purposes of individual and community health promotion.

Methods

Data for this mixed-methods, cross-sectional study were collected by trained interviewers in 2016 and 2017, as part of the Promotores Academy cCHW training needs assessment. The Promotores Academy, located in the Inland Valley region of Southern California, is a mostly low-income area with a large population of mono and bi-lingual Latinos, who are generally underserved and experience poor health outcomes [2, 12]. The needs assessment study was approved by the Loma Linda University Institutional Review Board (project identification number: 5160301).

Participants

Patients were recruited by two local, low-income healthcare organizations via convenience sampling. CHWs were recruited by Promotores Academy leadership via convenience sampling. Participants had the opportunity to enter a raffle to win a $25 Stater Bros. gift card. We collected survey data from 106 patients and 66 CHWs, and focus group/key informant interview data from 14 patients and 39 CHWs. Bilingual and bi-cultural-trained research assistants conducted focus groups and key informant interviews.

All participants identified as male or female, and were at least 18 years of age. Participants were asked to read an informed consent form before completing the survey, or participating in a focus group/key informant interview.

Quantitative Survey Measures

Measures in the survey instrument reflected two elements of investigation: demographics and questions related to patient needs of healthcare services and CHWs' ability to perform services.

Demographics

CHWs and patients self-reported gender (male or female), age (in whole years), race/ethnicity (White, Hispanic or Latino, Black or African American, Native American or American Indian, Asian/Pacific Islander, or other), nativity (write-in), United States generation (first, second, third, fourth, or fifth), highest level of schooling completed (some high school, high school or equivalent, some college, trade/technical/vocational, associate degree, bachelor degree, master degree, professional degree, doctorate degree), highest level of schooling completed in the United States (same options as those that applied to highest level of schooling), marital status (single/never married, married/domestic partnership, widowed, divorced, or separated), and annual household income (< $20,000, $20,000–$39,999, $40,000-$59,999, $60,000 or more).

Patients' Need of Healthcare Services and CHWs' Ability to Perform Services

CHWs self-reported ability to perform 22 CHW-related job functions, and patients self-reported desire for CHW assistance with the same 22 CHW-related job functions, via a survey. Functions included desire for assistance in gaining access to medical services/programs, assistance in gaining access to social services/programs, building community capacity, building individual capacity, case management/care coordination, community advocacy, counseling, cultural mediation, interpretation/translation, mentoring, patient navigation, culturally appropriate health promotion/education, direct services, risk identification, social support, transportation, surveying target populations, enrollment into health insurance programs, determination of eligibility for services, provision of health screenings, referral to health care systems, or referral to social services systems.

Qualitative Semi-Structured Questions

We conducted qualitative interviews in English and Spanish. Participants discussed their knowledge, role perceptions, and expectations of cCHWs in focus groups (n = 8) and key informant interviews (n = 13). We used semi-structured interview guides with open-ended questions and encouraged participants to discuss freely, using probes. Sample questions included: "*Can you explain what a CHW does? What are the CHWs' roles and responsibilities?*", *"What do you think is the primary scope of work as a cCHW?"*. In addition, CHWs were asked: *"What type of training would you like to receive in order to work effectively as a cCHW?"*, and *"If you can choose one critical skill and/or competency that would be most needed for you to work as a cCHW, what would that be? Why?"*. Patients were also asked: *"If the hospitals or clinics in your area provided a cCHW to work with you, what type of assistance would you like to receive from him or her? Why?"*, and *"What type of training do you believe cCHWs should have? Why?"*.

Quantitative Data Analysis

We analyzed survey data in 2017 with SPSS 25.0 software (IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp).

Demographics

We evaluated the frequency of gender, age, race/ethnicity, United States generation, schooling, marital status, and annual household income subvariables within patients and CHWs using simple descriptive statistics. We then compared the association of patients and CHWs across the demographic variables with the two-sample independent t test (for age, a numerical variable) and the Pearson's Chi square test (for all other categorical variables). To adjust for small sample size distributions that violated Pearson's Chi square test assumptions, we combined variable subcategories with attention to frequency and social relevancy.

Patients' Need of Healthcare Services and CHWs' Ability to Perform Services

We evaluated the frequency of CHW and patient responses regarding the 22 CHW roles/patient healthcare needs within patients and CHWs using simple descriptive statistics. We then compared the association of patients and CHWs across the 22 CHW roles/patient healthcare needs via Pearson's Chi square tests.

Qualitative Data Analyses

We analyzed focus group and key informant interview data in 2017 with Microsoft Office products and Dedoose software (Dedoose Version 7.0.23, web application for managing, analyzing, and presenting qualitative and mixed method research data (2016). Los Angeles, CA: SocioCultural Research Consultants, LLC http://www.dedoose.com).

We recorded all interviews, then transcribed them verbatim. We analyzed the data using a combination of a priori and grounded theory methods [6, 7]. To create patient and CHW codebooks, we applied a priori codes, developed in the primary needs assessment study, across transcript excerpts to serve as the initial guide for response association with relevant themes. We then transitioned to emerging line-by-line, incident-to-incident, focused, axial, and theoretical coding to identify additional, prominent themes [6, 7]. We used the raw data, a priori codes, grounded theory identified themes, and contextual reflections to define coded categories, identify specific category properties, define relationships between categories, and highlight gaps in the resulting data and aligned the category codes, with the support of interviewer memos and field notes, to develop the codebook. We applied the codebook to all text to highlight the appearance and frequency of salient themes for comparison between patients and CHWs.

Results

Quantitative Results

Demographics

There was a significant association between patient and CHW gender, χ^2 (1) = 3.95, p = .047; CHWs were 2.35 times more likely to be female. There was no significant association between patient and CHW age; patients and CHWs were in their mid to late-40 s. There was a significant association between patient and CHW race, χ^2 (2) = 41.5, p < .001; all CHWs were Hispanic/Latino and a patient was 1.21 times more likely to be Hispanic/Latino than White, Black/African American, Asian/Pacific Islander, or other. There was a significant association between patient and CHW United States generation, χ^2 (2) = 69.59, p < .001; CHWs were 39.3 times more likely to be first generation United States citizens. There was no significant association between patient and CHW level of highest education completed; approximately 20% of patients and 20% of CHWs completed undergraduate or graduate educations. There was no significant association between patient and CHW level of highest United States education completed; approximately 20% of patients and 20% of CHWs completed undergraduate or graduate educations

in the United States. There was a significant association between patient and CHW marital status, χ^2 (4) = 16.85, $p = .002$; CHWs were 3.08 times more likely to be married. There was no significant association between patient and CHW annual household income; patient and CHW homes earned less than $20,000 per year (see Table 1).

Patients' Need of Healthcare Services and CHWs' Ability to Perform Services

There were significant differences between patients' need of healthcare services and CHWs' self-reported ability to perform services across 19 of 22 surveyed services. For all services in which patients and CHWs exhibited significant differences, the odds CHWs perceived themselves capable of performing the services were greater than patients' stated need of the services (see Table 2). There was no significant association between patient and CHW response with respect to *provide direct services, determine eligibility for services*, and *provide health screenings*.

Qualitative Results

Common themes associated were knowledge and perceptions of CHWs, expectations of cCHWs, and expectations of cCHW training and education highlight the importance of communication, resources, service provision, and advocacy, for patients and CHWs (see Table 3).

Table 1 Summary of significant and non-significant associations between patient and CHW demographics

	Patient (n = 106) *n* (%)	CHW (n = 66) *n* (%)	p value
Gender	n = 106	n = 66	
Male	26 (24.5)	8 (12.1)	**.047**
Female	80 (75.5)	58 (87.9)	
Age	n = 100	n = 54	
	48.2 (± 17.8)[a]	45.6 (± 8.5)[a]	.213[b]
Race	n = 106	n = 66	
White	32 (30.2)	0 (0)	**< .001**
Hispanic or Latino	58 (54.7)	66 (100)	
Other	16 (15.1)	0 (0)	
United States (US) generation	n = 100	n = 62	
1st	27 (27.0)	58 (93.5)	**< .001**
2nd	23 (23.0)	4 (6.5)	
3rd–5th	50 (50.0)	0 (0)	
Highest schooling	n = 100	n = 62	
High school diploma equivalent (GED) or less	45 (45.0)	32 (51.6)	.472
Some college credit, no degree; trade/technical/vocational training	35 (35.0)	16 (25.8)	
Undergraduate; graduate	20 (20.0)	14 (22.6)	
Highest US schooling	n = 89	n = 54	
High school diploma equivalent (GED) or less	36 (40.4)	26 (48.1)	.357
Some college credit, no degree; trade/technical/vocational training	37 (41.6)	16 (29.6)	
Undergraduate; graduate	16 (18.0)	12 (22.2)	
Marital status	n = 103	n = 66	
Single, never married	32 (31.1)	7 (10.6)	**.002**
Married or in domestic partnership	44 (42.7)	46 (69.7)	
Widowed	6 (5.8)	0 (0)	
Divorced	16 (15.5)	9 (13.6)	
Separated	5 (4.9)	4 (6.1)	
Annual income	n = 99	n = 50	
< $20,000	64 (64.6)	36 (72.0)	.367
$20,000 or more	35 (35.4)	14 (28.0)	

Values expressed as n (%) and reflective of the valid percent within groups, except: [a]Mean ± Standard Deviation

Boldface indicates statistical significance ($p < .05$)

Calculated with Pearson's Chi square tests, except: [b]calculated via two-sample independent t-test

Table 2 Summary of significant and non-significant associations between patient healthcare needs and CHW job functions

	Patient (n = 106) *n* (%)	CHW (n = 66) *n* (%)	p value	χ^2 (1)	OR
Assistance in gaining access to medical services and programs					
NN/NP (n = 100)	70 (70.0)	30 (30.0)	**.008**	7.08	2.35
N/P (n = 72)	36 (50.0)	36 (50.0)			
Assistance in gaining access to social services or programs					
NN/NP (n = 95)	73 (76.8)	22 (23.2)	< **.001**	20.77	4.44
N/P (n = 77)	33 (42.9)	44 (57.1)			
Building community capacity					
NN/NP (n = 115)	96 (83.5)	19 (16.5)	< **.001**	70.06	24.74
N/P (n = 57)	10 (17.5)	47 (82.5)			
Building individual capacity					
NN/NP (n = 119)	96 (80.7)	10 (18.9)	< **.001**	59.23	18.70
N/P (n = 53)	23 (19.3)	43 (81.1)			
Case management/care coordination					
NN/NP (n = 120)	83 (69.2)	37 (30.8)	**.002**	9.54	2.80
N/P (n = 52)	23 (44.2)	29 (55.8)			
Community advocacy					
NN/NP (n = 113)	89 (78.8)	24 (21.2)	< **.001**	40.89	9.21
N/P (n = 59)	17 (28.8)	42 (71.2)			
Counseling					
NN/NP (n = 106)	75 (70.8)	31 (29.2)	**.002**	9.73	2.75
N/P (n = 66)	31 (47.0)	35 (53.0)			
Cultural mediation					
NN/NP (n = 140)	100 (71.4)	40 (28.6)	< **.001**	30.57	10.83
N/P (n = 32)	6 (18.8)	26 (81.3)			
Interpretation/translation					
NN/NP (n = 137)	94 (68.6)	43 (31.4)	< **.001**	13.89	4.11
N/P (n = 35)	12 (34.3)	23 (65.7)			
Mentoring					
NN/NP (n = 143)	96 (67.1)	47 (32.9)	< **.001**	12.10	4.30
N/P (n = 28)	9 (32.1)	19 (67.9)			
Patient navigation					
NN/NP (n = 117)	83 (70.9)	34 (29.1)	< **.001**	13.42	3.40
N/P (n = 55)	23 (41.8)	32 (58.2)			
Provide culturally appropriate health promotion/education					
NN/NP (n = 113)	92 (81.4)	21 (18.6)	< **.001**	54.55	14.10
N/P (n = 59)	14 (23.7)	45 (76.3)			
Provide direct services					
NN/NP (n = 131)	87 (66.4)	44 (33.6)	.21	5.32	
N/P (n = 41)	19 (46.3)	22 (53.7)			
Risk identification					
NN/NP (n = 123)	95 (77.2)	28 (22.8)	< **.001**	44.48	11.7
N/P (n = 49)	11 (22.4)	38 (77.6)			
Social support					
NN/NP (n = 103)	83 (80.6)	20 (19.4)	< **.001**	39.01	8.30
N/P (n = 69)	23 (33.3)	46 (66.7)			
Transportation					
NN/NP (n = 136)	90 (66.2)	46 (33.8)	**.017**	5.69	2.44
N/P (n = 36)	16 (44.4)	20 (55.6)			

Table 2 (continued)

	Patient (n = 106) *n* (%)	CHW (n = 66) *n* (%)	p value	χ^2 (1)	OR
Conducting surveys of target population					
NN/NP (n = 130)	98 (75.4)	32 (24.6)	**< .001**	42.61	13.02
N/P (n = 42)	8 (19.0)	34 (81.0)			
Enroll population into health insurance programs					
NN/NP (n = 130)	88 (67.7)	42 (32.3)	**.004**	8.28	2.79
N/P (n = 42)	18 (42.9)	24 (57.1)			
Determine eligibility for services					
NN/NP (n = 140)	86 (61.4)	54 (38.6)	.910	0.013	
N/P (n = 32)	20 (62.5)	12 (37.5)			
Provide health screenings					
NN/NP (n = 132)	84 (63.6)	48 (36.4)	.325	0.97	
N/P (n = 40)	22 (55.0)	18 (45.0)			
Refer population to health care systems					
NN/NP (n = 96)	85 (88.5)	11 (11.5)	**< .001**	66.55	20.24
N/P (n = 76)	21 (27.6)	55 (72.4)			
Refer population to social services systems					
NN/NP (n = 108)	89 (82.4)	19 (17.6)	**< .001**	52.10	12.95
N/P (n = 64)	17 (26.6)	47 (73.4)			
Other					
NN/NP (n = 154)	102 (66.2)	52 (33.8)	**< .001**	13.20	6.90
N/P (n = 18)	4 (22.2)	14 (77.8)			

Values expressed as n (%) and reflective of the valid percent

Boldface indicates statistical significance ($p < .05$)

NN/NP not needed (by patients)/not performed (by CHWs), *N/P* needed (by patients)/performed (by CHWs), *OR* odds ratio

Knowledge of CHWs

CHW knowledge of CHWs was largely derived from experiences across one or more self-identified CHW specialties. CHWs self-aligned primarily as general CHWs or mental health CHWs, but many assumed more than one specialized role simultaneously. Most patients expressed a confirmatory understanding of the CHW role. However, when asked for examples of CHW functions, patients tended to misalign CHWs with licensed medical professionals.

CHWs recognized the need to connect patients with health/social services through established referrals or personal recommendations, and connect with the community on an interpersonal/social level. Patients also viewed CHWs, appropriately, as a liaison between patients and the healthcare system, and a support for educational questions before and after medical/social service appointments.

Perceptions of cCHWs

CHWs felt the role was often underfunded and/or not culturally supported, and struggled with patient compliance issues. CHWs also expressed resentment toward the bureaucracy that stifled the role, particularly with respect to stigma associated with patient use of CHW services. Contrastingly, and likely a consequence of CHW passion for the work associated with the role, patients largely expressed positive feelings toward CHWs, noting instances when CHWs expedited services and engaged in constructive interactions with patients and patients' families.

All CHWs and patients noted cCHWs should be heavily involved in providing communication assistance between patients and licensed medical professionals, serving as healthcare navigational assistants. Patients also expected social support from CHWs via personal interactions and counseling. This support was desired across service interactions, such as chronic care management. Some CHWs and most patients indicated cCHWs should actively provide medical/social services. CHWs viewed aspects of the cCHW role in other members of the multidisciplinary team, indicating that the cCHW role is largely an extension of existing team assets.

Expectations of cCHWs

CHWs and patients primarily felt cCHWs should complete communication training with emphasis on interpersonal

Table 3 CHW and patient themes across cCHW knowledge, perceptions, expectations, and training needs

Quantitative findings	Qualitative findings	
	CHW identified	Patient identified
Assistance in gaining access to medical services and programs Assistance in gaining access to social services or programs Building community capacity Building individual capacity Case management/care coordination Community advocacy Counseling Cultural mediation Interpretation/translation Mentoring Patient navigation Provide culturally appropriate health promotion/education Risk identification Social support Transportation Conducting surveys of target population Enroll population into health insurance programs Refer population to health care systems Refer population to social services systems	Knowledge and perceptions of CHWs Personal cross-role experience "*I was part of community mental health work and I have been a community health worker for basic workshops for 16 subjects, so not just a community worker for mental health, yes there are many different community workers at different levels, but always the first title is a community worker*" (P6, 11/29, FG2) Positive patient and community connection "*The focus we give to being a health worker is education - educate the community and specifically, women. Women are empowered through the education we give them. That's invaluable....to feel the satisfaction that every day [we] have the power to transform*," and "*For me, it has been the most satisfactory personal growth, but besides that I like to focus on the youth, youth outreach, the kids out there is what gives me a lot of passion to want to work with the community, how to improve the community, security, health, all in one, but the little ones that are growing, they are my passion*" (P5, 12/1, FG2) Resource frustration "*At the organizational level of agencies there…are some people who take advantage of promotores, community workers. Even though sometimes they have the money to pay for our services or support us, they don't. So they take us in as volunteers and do not reimburses our services*" (P4, 11/29, FG1) Patient compliance frustration "*I've noticed that people waver, and that is the most frustrating thing, that the help is there and it's like the saying says, you can take a horse to drink water, but if the river is right there and they don't want it, as much as you force them, they won't drink it... and that's when I get more frustrated, they're thirsty, the water is there, and they don't want it*" (P1, 11/29, FG1)	Medical professionals "*[I] like the idea of the [community health] worker being an LVN, so they can assess whether they need physical therapy, or help that way…they might recommend you see a doctor*" (EPICP1, 5/16, FG3) Consultative liaisons "*The community health worker visiting people out in the community, answering questions that would be pertinent to their particular case, making referrals, I would assume, and just being not only an advocate but maybe more than that, would be a friend. Somebody that could be called upon*" (EPICP, 2/15, KII2)
	Expectations of CHWs and cCHWs Communication "*Three words: information, orientation, and tracking. Because you give the information to people with the objective that they will become familiar with the information when they receive it and that they learn more during the lecture. Then it is necessary to follow up with that person and see that they accept the services and that the person accepts that they have a problem…Follow up and ask them, call them, see how it's going, how they feel*" (P3, 11/29, FG1) Resource facilitation "*Well the ability to interact with the community and share the resources I have...that's everything*" (P6, 12/01, FG2) Passion *It is very important to approach someone with education, with love, with charisma, with tenderness…it's so important to say, "Good morning, How are you? How has your day been? How do you feel? What can I do for you?"* (PL, 11/29, FG2) Medical service provision "*Well I think that if in the future, the community health workers will function as clinical health workers, for me I really like the clinical part, the examinations, sampling, results, it has attracted my attention, that area*" (PNo, 12/01, FG2)	Service coordination "*Recommendations to various agencies, government agencies, that could help in various ways. Food services, financial help that's available, and things like that*" (EPICP, 6/16, FG3) Communication "*[CHWs should be] updating with the hospital if they tell me anything I should know about, you know, that's going on with that. For the most part just keep me in the loop with the hospital or your doctor for anything I should know*" (SACHSP, KII5)

Table 3 (continued)

Quantitative findings	Qualitative findings	
	CHW identified	Patient identified
Not applicable	Expectations of cCHW training and education	
	Communication "B*e a link to the patients, for example, if a doctor diagnosed someone with diabetes, give them all the information, teach them to make or use tools, because so many times the doctor just gives it to you, um ... you are already a diabetic, you're taking this and the other and you don't even know what the process is or how to handle the ... so I would like to see those services in the clinics because I know that the doctor has very little time with patients and the nurses are also doing their work, so having a community, a clinical worker who is in charge of explaining how to use instruments as a ... so they can accept their disease and learn how they can make changes with the resources provided and have everything they need to make those changes, in their... chronic condition*" (P3, 11/29. FG1) Medical service provision "*How to take blood pressure, how to do medical check-ups, how to give first aid is all very important. It's a lot of things that have to go together, it's something very integral*" (PNo, 12/01, FG2) Advocacy "*The health worker is the one who is going to connect, just as he said (P1), the individuals with groups in the community to take advantage of those resources. Resources that the community needs in every area, because many times we focus only on health, but it's nothing more than health if it isn't comprehensive, it has to be integral, physical, social, economic, mental, spiritual, everything. We have to cover everything. The whole program. Not just health. Because there is too much of a need.*" (P2, 11/29, FG1)	Medical care delivery "*For my son, individual therapy… he was a new born in a car accident, so he still needs therapy for his leg, that we have we have to go to a different facility for that, so it would be nice to have it*" (P, SACHS, KII2) Personal experience "*Well life experiences to start with…you learn so much on the way of doing things at home with your own loved ones that when you decide to get into that field, then usually you not only learn because you really want to be there to learn*" (P2, EPIC, FG3)

interactions, cultural competency, and medical jargon interpretation. CHW desire for cCHW communication training was supported with a need for cCHWs to understand causes and symptoms of highly prevalent conditions, including mapping and diagramming prevalent conditions, recognizing individuals in crisis, and identifying relevant literature to converse easily with other medical professionals and patients. CHWs and patients supported cCHW training in medical care delivery with attention to proper diagnosis procedures and referral processes. To a lesser extent, CHWs noted cCHWs should have training in patient advocacy, including methods to enhance community advocacy and an appreciation and/or understanding of faith-based principles that would impact patient care delivery.

Discussion

Patients and CHWs were significantly different with respect to gender, race, generation, and marital status, but exhibited no significant differences with respect to age, education, and annual household income. Differences rested largely in unchangeable factors (except marital status), and similarities existed largely across modifiable factors (except age). This finding is encouraging, because it appears to indicate CHWs and patients shared similar life experiences, an important asset for cCHWs in clinical care teams to better connect busy providers and patients. These likenesses may also be associated with the high-level of common response regarding perceptions and expectations of cCHWs within the qualitative data. However, CHW diversity should ideally be expanded to reflect patient demographics, even in majority Latino areas, such as the location of our study.

For 19 of the 22 cCHW job functions/patient healthcare needs, CHWs demonstrated higher levels of perceived capacity to perform services than patients indicated they needed these same services; however, patients positively indicated they desired assistance across all services. This overall agreement with job functions and expectations is further validated by the qualitative data, where we found a sizeable overlap between CHW-identified cCHW job functions and patient-identified healthcare needs. For example, both stakeholders highly valued effective interpersonal communication to build community capacity and ensure adequate navigation through the healthcare system. Communication skill-building models to develop the cCHW-patient relationship have proven effective at reducing patient distress and increasing mental wellbeing, and may allow greater focus on patients and, by nature of the cCHW role, community health [16]. This general positive evaluation does not negate the need for a greater evaluation of the significant differences. For example, do patients require a different set of services than CHWs or cCHWs can fulfill? A more concise understanding of patient projected service needs may better define how the cCHW role can fold into the healthcare system.

Concerningly, we did discover patient and CHW alignment in some misinterpretation of the cCHW role. Patients and CHWs often mischaracterized cCHWs, associating them with skills reserved for other medical professionals (i.e., direct care delivery). Some of this direct care delivery extends beyond the legal capacity of the cCHW and is appropriately reserved for licensed medical professionals. However, there is a clear indication that CHWs and patients desire greater cCHW involvement in patient treatment.

We do not advocate for cCHWs to serve as less costly replacements for other licensed medical professionals; however, in an overburdened healthcare system, cCHWs could assume tasks not specifically reserved to licensed care, acting as a role extension to support patients. CHWs represent an affordable and effective role in the delivery of health services [4, 5, 11]. Folding cCHWs into the healthcare delivery process may allow for a more manageable workload for licensed medical professionals, improving their ability to provide effective clinical prevention and address public health needs. This finding aligns with current research, in which interprofessional healthcare team members identified patient healthcare barriers associated with social determinants of health, healthcare system complexities, and patient mistrust of the healthcare system [14]. They suggested a cCHW-like role could mitigate these issues and improve patient health outcomes by enhancing patient and community trust.

Strengths and Limitations

We used a theory-based, validated instrument and conceptually driven data analysis models to guide our inquiry. Possible limitations of our study are its cross-sectional design, reliance on self-reported data which is potentially subject to recall bias and reactivity to the assessment situation, participant recruitment via convenience sampling and their affiliation with local stakeholders, possibly affecting the ability to generalize to broader populations. However, in a changing healthcare system that reflects the increasingly diverse demographics in the United States, our findings are likely to be relevant beyond our study.

Conclusions

CHW integration into clinical settings presents a unique opportunity to bridge a divide between healthcare and the community it serves. We may capitalize upon patient and CHW similarities, and CHW desire to connect patients to health and social services, to expand patient access to healthcare, improve quality of healthcare, and minimize health inequities.

Although an understanding of cCHW roles and responsibilities is evolving, it is evident that patient and CHW stakeholders are eager for new solutions and are aligned in their desire for cCHW integration into clinical care settings. As we learn more about these stakeholders, we can develop cCHW training and certificate programs and clinical-care integration programs that account for the dynamic cCHW-patient relationship, and ultimately result in improved working conditions for health-care professionals and better health outcomes for patients.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest. No financial disclosures were reported by the authors of this paper. The data collection and analyses processes were approved by the Loma Linda University Institutional Review Board (project identification number: 5160301).

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