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Abstract

Background: For the US health indicators to improve to the level of other developed countries, the use of Community Health Workers (CHWs) in vulnerable populations has been indicated as a possible long-term intervention. There are few models of long-term deployment of CHWs as part of the district level public health system in the US.

Method: In this study we interviewed CHWs who served as neighborhood-integrated health district staff assigned to low-income housing in Richmond, Virginia for 10 years. Qualitative analyses of their taped and transcribed interviews resulted in 5 themes from the interviews. The themes were Activities, Satisfaction, Strengths, Facilitation/Resources and Challenges. We highlighted quotes from the CHWs interviews for themes and summarized the findings from each theme.

Results: CHWs carried out a variety of activities daily and these were described. The CHWs were generally satisfied with their job because it enabled them to assist others. The strength of their communities was resilience, and the resources they needed more included physical resources, human resources, political support, and more comprehensive programming. Their client's challenges include transportation, mental health, and physical safety and the CHWs challenge to effectively carrying out their work with clients was trust by community members.

Conclusion: The information garnered from the CHWs would be useful in designing CHW programs at other health districts.

Keywords: Community Health Workers, Low Income Housing, Health Equity

Introduction

The Healthy People Framework 2030 by the US Department of Health and Human Services (DHHS) has as part of its foundational principles, that the health and well-being of all people and communities are essential to a thriving, equitable society and that promoting and achieving health and well-being nationwide includes working at the community level.¹ Impoverished communities of color in the Southern US became areas of concentrated poverty due to issues of racial discrimination that still continue today². The disenfranchisement results in lowered access to healthcare and economic opportunities, and lower education quality, all which result in poor health status. Such factors outside the healthcare system that contribute to poor health outcomes are termed social determinants of health.³

The US is 29th in life expectancy globally and falls within the range of high middle-income countries rather than those of high-income countries, its usual peer counter-parts in other areas⁴. Other health indices such as maternal mortality ratio and infant mortality rate also fall within the same range⁵. To align the health outcomes of the country with those of other developed countries, emphasis needs to be placed on communities where factors that induce low health status intersect, such as communities of people living in poverty. Low-income housing in many US cities are mainly populated by residents made vulnerable by disenfranchisement. Concentrated effort to improve health outcomes in poor, vulnerable communities is required to achieve the goals set out for a healthier nation by the DHHS and interventions that target social determinants of health have been found to be effective in improving health outcomes for individuals living in poverty.³

The use of Community Health Workers (CHWs) as effective interventions to improve health outcomes in low-income minority populations in the US have been documented.⁶⁻⁸ CHWs have been found to improve outcomes for both chronic non-communicable diseases and infectious diseases across the globe especially in communities having lower socio-economic status.⁹⁻¹¹ Over the last decade, CHW programs in the US have emerged as interventions to improve health outcomes in lower income communities and to tackle health disparities and reduce health inequities.^{7,12} CHWs are effective because they share demographic and cultural attributes with the population they serve and can thereby intervene as culturally competent advisors to clients. Unlike doctors, nurses, and other health professionals, they intervene at the level of the social issues that hinder a person's ability to thrive and stay healthy. They focus on tackling the social determinants of health rather than the outcome of the social determinants, diagnosed as illness in the health system.¹³⁻¹⁵ CHWs help bridge informational gaps, service gaps and gaps in availability of health care and social services that exists in communities affected by disenfranchisement due to poverty, racism, or other social constructs.^{16,17} Sabo et al. (2017)¹⁸ in their research on the advocacy work by CHWs, concluded that CHW advocacy contributes to civic engagement among historically marginalized groups and strengthen the linkages of agencies and organizations supporting people living in poverty.

Several US states now have Certification programs for CHWs and CHW certification was approved for Virginia in 2018. The Richmond/Henrico Health District of Virginia is one of 35 health districts in the state, and it started a CHW program 10 years ago to help with health outcomes in the low-income public housing estates within the district. Integration of CHWs into low income housing has been documented but these communities were located in large urban centers of New York and Boston in the Northern US.¹⁹⁻²¹ In this study we interview CHWs

working in public housing in a Southern US state where they are part of the public health department to understand their roles and their perceptions of their work and impact, and problems they encounter.

Methods

The Setting

Health Resource Centers were opened in low-income housing estates in Richmond, Virginia by the Richmond/Henrico Health District of the Virginia Department of Health starting in 2009. This was in response to the poor health outcomes occurring in these areas of concentrated poverty within the city, with hopes of intervening to improve health status of the residents. In 2011, active members of the community in advocacy were recruited as Volunteer Community Advocates to work out of the Resource Centers and assist residents to connect with social support from government agencies and non-profit organizations. People move into low-income housing when they cannot afford regular commercial housing for various reasons, and the communities have high rates of unemployment, high disease burden and high rates of uninsured or being insured by Medicaid.²³ In 2014, the volunteer role was turned into a paid position which in 2017 was converted into a full-time CHW role. In 2018, when Virginia passed the law on certification of CHWs, they were all certified, and certification became part of the requirement for the position. CHWs work out of 8 Health Resource Centers in 8 low-income housing estates within the city of Richmond, Virginia.

Interviews

A 3-page interview guide was developed by one of the faculty researchers and four students were trained on using the questionnaire guide and conducted the interviews, with another of the

faculty researchers present at each interview. The questionnaire contained 16 open-ended questions.

IRB approval was obtained from our University and the State Department of Health. All CHWs working for the Richmond Health District are chosen from residents of the low-income community they will work in. They are residents who have been active in community organizing and other aspects of community life. The health district then trains them using both apprenticeship and course work to enable their certification by the State. We reached out to current CHWs through email and former ones through the Virginia Association of Community Health Workers (VACHW) with an announcement made at the monthly meeting and a notice in the association newsletter. Each CHW was sent an email inviting them to participate and when they accepted the invitation, they were sent an informed consent form through DocuSign and an interview date and time was scheduled. Nine CHWs, two of whom were former employees and seven who were current employees of the Community Health Program in the Richmond/Henrico Health District of the Virginia Department of Health were interviewed between June 1st and August 30th 2021 for a response rate of 88.9%. The online platform, Zoom was used for the interviews which were taped and transcribed using the Zoom transcribing feature. The interviews were conducted by one of the researchers with one or 2 undergraduate research assistants and they took approximately 45-60 minutes.

Data Analysis

The faculty who developed the questionnaire developed the coding apriori, and indicated 8 possible themes. Two students who did not take part in the interviews were trained on the theme identification and coding transcripts using basic content analysis as described by Stewart (1992)²⁴. The two student researchers reviewed the tapes and transcripts and did the coding. The

codes were reduced to 6 by the students merging topics which seemed related. The faculty who was at each interview, reviewed the transcript of the interviews and the coding submitted by the two students. Discrepancies were resolved using her knowledge from being in each interview and reviewing the videos and transcripts, and further reduced the themes to 5. We tried to code as many statements made by the CHWs, but saturation of themes was not used as a criteria because our analyses are based on narrative and individual experiences, and we focused on looking for similar thoughts and ideas between narratives rather finding all the themes possible from the narratives.²⁵

Results

All the CHWs interviewed worked in the low-income housing estates within Richmond, Virginia. All identified as African-American and one identified as both African-American and Latina. Five (5) coded themes were highlighted from the transcripts: Activities (that CHWs mentioned they did and what they said about their typical day on the job), Satisfaction (what they liked about their job and clients that made a lasting impression), Strengths (how their community is strong and resilient), Facilitation/Resources (things that they thought would facilitate carrying out their tasks), and Challenges (they faced in their job).

Activities

CHWs said that their daily activities varied based on the ongoing issues within the community. They related that their duties could go from planning health information sessions, to walking around the community to provide information such as passing out leaflets or checking on residents in their homes, to emergency situations such as injecting naloxone to resuscitate an individual with an overdose. Events planned included informational sessions for community

members such as on diabetes management, General Educational Development (GED) informational sessions and learning how to insert a child car seat properly, which they usually scheduled for new mothers once a month and where free car seats were provided. There are several preventative health initiatives that are provided in the Health Resource Center such as sexually transmitted infection (STI) testing, vaccinations, disease screening and birth control provision, and CHWs schedule clients for these services weekly for when the Nurse Practitioner visits. They also organize activities for the children in the community as explained by CHW8 in this quote “So we took them to the Washington Zoo and to the African American Museum in DC and then we took them out to a sit down meal, so that they would know how you will sit your utensils on the table your plates and forks and cups”. A major part of their responsibilities includes being available to help community members with issues of access to healthcare such as filling out forms for Medicaid and/or Medicare and linking clients to a primary care provider or specialist. Other activities were specific for intervening on issues associated with lower income such as directing someone to where to get assistance for their rent payment and assisting clients to get food or furniture from local non-profit organizations.

The daily activities of the CHWs was further elucidated by the question about their typical day. A typical day for the CHWs begins with checking emails, voicemails, and texts to see what people need or if there are any emergencies. They handle whatever is needed from the Health Resource Center clinic days eg following up with Primary Care Physician (PCP) referral for a client. They also do blood glucose screening and diabetes screening for walk-in clients and sometimes they did screenings days when they asked clients to come in to get either their blood sugar or blood pressure checked for free. They do food distribution of food donations by churches and other charities to clients, sometimes packaging them and taking them door to door

based on the needs of each community member. Transporting clients to and from locations such as doctor's appointments was also mentioned by several CHWs, as well as outreach by walking door to door to make sure people are safe in their homes especially if there is someone with a known diagnosis of depression. If it is a slow day, the CHWs might walk around the premises interact with the people going about their daily activities and give them information about the resources available at the Resource Center. Due to the COVID pandemic, CHWs worked mostly remotely in 2020 and 2021, and their social media usage increased, giving more weight to social media engagement in their work, for example, CHW6 mentioned that at the height of the COVID-19 pandemic when people were not leaving their homes, "how many likes you get on a post is how many people you reach that day."

Satisfaction

The CHWs spoke often about how satisfied they were with their job. They shared the stories of clients that made lasting impressions on them. CHW1 told us about a woman that would always come in for a second check-up after seeing her PCP because she trusted the CHW and wanted to double-check her results and the information she was provided by the PCP. CHW2 and CHW6 shared the story about two teenage boys of a single mother who did not adequately respond to their needs, but the boys grew up at the resource center with the CHW looking after them and guiding them and they became accomplished, kind young men, with both graduating high school and one going on into the military. CHW5 shared her satisfaction after she was able to prevent a man from getting scammed out of his security deposit at the new apartment he was moving to from the public housing. CHW8 told us of a time she was able to get a family that just moved

into public housing an air-conditioning unit in the middle of the summer for a low cost from the catholic charity, Caritas.

The common theme in all the experiences they shared, was that the CHWs derived joy from all the situations where they were able to help their clients. All of them cited being able to help people and seeing clients get the resources they need, as their favorite part of their job, and CHW9 said that working with her community and helping them was her greatest motivation for doing her job.

“It was just rewarding... that I am still able to somehow, some way, give hope. For me, that's big, because I honestly don't think that I would have made it this far. If I was not in the type of job that I'm in, because when there were days that I had no reason to get up, they were my reason to get up, because I knew that if I stayed in the bed or I went into a depression, then the people that I serve and the people who look up to me, and look to me to hear from me daily, it wouldn't be good for them. So, this job, keeps me going on”

Strengths

From the interviews we can summarize that CHWs draw inspiration and strength from their communities. The CHWs shared how proud they were of their community members for their ability to persevere in the face of adversity. Their community members have faced a tremendous amount of trauma and hardship, and the CHWs greatly admire their strength and resilience. CHW6 said that “being poor in of itself and surviving is a skill that you master”. Others

verbalized what they believed to be the source of the community members' strength and said that they're strong because they don't give up. The CHWs have watched community members come together to support each other and have come to realize that their strength and resilience are key components of who they are.

Facilitation/Resources

From the interviews we grouped the resources that CHWs said would make their jobs easier into 3 categories: physical resources, human resources and political support, and comprehensive programs.

Physical resources

The physical resources that the CHWs said would make their jobs easier are more mobile technology such as tablets, access to resource center vans, and a larger budget. One CHW stated that tablets would be useful when carrying out door-to-door outreach because inputting data on their client contact using a personal phone can be an arduous and time-consuming process. Two CHWs stated that having access to a resource van to transport clients would be helpful.

CHW5 stated "I know this may be a long shot, but being able to have a resource center van, or truck or car would help a lot, because we use our own cars but just sometimes it is hard for us to keep up with it as well." Having a vehicle had a two-fold benefit from the CHWs perspective in that it would allow them to rely less on using their own cars to transport clients, and clients

would have greater access to reliable transportation for specific appointments made by CHWs for them. Finally, nearly all the CHWs said that a larger budget would make their job easier.

Human resources and more support

The CHWs also expressed a desire for more human resources. One of the CHWs said that having a larger team of dedicated CHWs would help with the allocation of the work, especially when urgent cases come in.

“I want to have a team of community health workers that are all working together to fully support the community.” CHW7

CHW9 expressed that more support from city officials would be helpful and shared her belief that having them show up in the community would be very meaningful. She also went on to say that having other sources of donations and contributions other than just churches would be beneficial.

Comprehensive programs

Another common thread of factors that the CHWs said would make their jobs easier would be more comprehensive programs and resources that could be used to help people with issues of varying levels of severity regardless of an individual’s financial situation. CHW2 elaborated on this using an example dealing with homelessness.

“We have a resource where we can call if a person is homeless. But if they're not at a critical state of sleeping outside, then, they respond with, 'we don't have anything for you right now,' it could be a situation where the person is living with someone, and they may be in an unsafe situation but because they're not literally sleeping on a beach, they're at the bottom of the list, and so if I could just get the resources to understand and be realistic about people situation so that people don't have to be in dire need before their housing situation alleviated to serious.”

Challenges

We grouped the challenges into client challenges and CHW challenges. For the client challenges we identified - Transportation and Childcare, Mental Health, Safety and for the CHW challenges we identified- Transportation, Mental Health and Trust.

Client Challenges

Transportation and Childcare

Many clients experience issues with both transportation and childcare and these issues oftentimes go hand in hand. Many do not have consistent access to private transportation, and if they do, the price of gas is often a limiting factor to going to appointments scheduled by CHWs. Most clients rely on public transportation which can also be expensive and time-consuming. Additionally, many clients don't have access to or can't afford childcare when they are away from home for appointments ranging from job interviews to seeing physicians. This forces them to either bring their children with them wherever they go, leave them unattended, or stay at home themselves.

CHW6 discussed how they occasionally had donated bus tickets that they were able to give residents for free rides. Unfortunately, she also explained that they always ran out quickly because transportation issues are so ubiquitous within the community.

Mental Health

CHWs identified mental health of the community members and of the CHWs as a challenge due to the many negative social factors in the communities such as housing insecurity, food insecurity and violence which led to high level of unaddressed mental health issues. Many CHWs described mental illness as a major issue that permeates the lives of the community members. CHWs stated that when clients are severely depressed, they would provide encouragement and connect them with mental health resources. CHW5 shared an emotional anecdote about a client she helped who later revealed that she was previously considering suicide.

“We didn't realize it at that time, but she told us if it wasn't for the Resource Center, she honestly was thinking about committing suicide. It really touched me to know what we do help people and it saved a girl's life, because even though we talked to her, we never knew that she was on you know that verge of wanting to end herself, because of how she felt.”

Substance Abuse and mental illness also go hand in hand in the community and CHW2 referred to a time where she couldn't fully assist a client stating “I couldn't really assist the client like I wanted to because, there was no resource there for me to help this client with, unless they were really at the edge and about to commit suicide or hurt someone else or situation with substance

abuse unless they said, today I am ready to quit, then we could refer them to a residential treatment center, otherwise there are very limited tools to help them”

Safety

Multiple CHWs cited substance abuse and violence as major issues that negatively impacts community members’ feelings about safety and security. CHW2 communicated an example which frustrated her, about a client who was abusing drugs ended up in the hospital and was released immediately after they were no longer critical. The individual was then placed right back into the environment where they started abusing drugs in the first place with no further support, and she found this to be incredibly aggravating. Several other CHWs shared their experiences with violence in the community as many had witnessed shootings in broad daylight. One also verbalized her sorrow over the fact that that community members had to face this type of violence every day. She also purported that the prevalence of these issues in the community contributes to feelings of confinement and being trapped, with people not wanting to leave their apartment or socialize within the premises of the low-income community.

CHW9 then went on to describe how part of her job as CHW is to deconstruct this mindset that has been systematically ingrained into the minds of the community members. She said that there exists an invisible wall that traps people within the community and she’s trying to show people that there’s a way out and that things can be different.

CHW Challenges

Transportation

Several community health workers talked about how they would frequently use their own cars to drive clients to appointments to alleviate some of the burden of transportation but they were not compensated for mileage for such use of their vehicles.

Mental Health

The following statement by one of the CHWs highlights the reasons CHWs deal with mental health issues- “I’ve been at the Resource Center when there’s been a shootout happening outside, and we’ve all had to drop to our knees, this is real life. And I’m a community health worker now and I can go home at night to a house, outside of the community. It’s the structure, by which they have taken these communities and have made them a fortress. And some people get out. And some people don’t. Some people become part of the system and their mind is programmed to never leave. As a CHW, I am part of the system that is trying to deprogram what the system has already put in place.” The CHWs see violence and hear about traumatic issues in people’s lives frequently and they acknowledged that this led to mental health challenges especially because they are closely linked to community members they are trying to help.

Throughout their interviews, many CHWs asserted that for the amount of work they do, they are underpaid and overlooked. The breadth of their responsibilities and the sheer quantity of work they do are not commensurate with their pay nor recognition. One CHW shared that she left the job because the pay was so low and she was unable to support her family.

“There was cap in hours and they never paid overtime so if it was a Saturday, you would have to take time off during the week, so you could do your community work, such as to manage a table for an event on the weekend”

Another CHW expressed her opinion on working with other health professionals in teams.

“You're constantly having to validate your position, not only like your work position but the fact that you are part of the service team. Just constantly having to validate yourself in different circles, like, you know, this is the planning committee for how you're going to do this or that in the community, but who are you? I don't have a Masters, I'm not a social worker, I'm not this I'm not that. But I am who I am, and I belong here.”

Trust

Establishing trust and building relationships with clients was perceived by most CHWs to be the most important challenge of their job. CHW5 attributed this to the fact that so many people have burned community members and made false promises in the past.

“And I believe it's just been, you know, just from the past and it's unfortunate that you can do really good but it takes one bad apple to put a bad taste in their mouth. They've had a lot of people promise things or, you know, promise to stay around but then it's like, it just stops after they get their survey done, or it's like it just stops after the summer's over with... Being able to get them to trust you and to know that you check on the resources you've linked them to.”

CHW5 indicated that CHWs take surveys for the kind of programming community members want. “We take surveys, its no use to have a program that no one wants. If they feel you are not listening to their voice and concerns, then they are not going to come to you and they are not going to trust your voice.”

CHW1 said

“I've been working in this community for the last nine years. And so a lot of people trust me now at this point, but before it was hard to get them to trust because so many people tell them they're going to do something and don't do it.”

CHW9 mentioned that when they brought a vaccination team to the community and were going door to door to get people vaccinated, one of the residents said to her “You guys are here to talk about COVID, but no one has come to our community to discuss our food shortage, our apartment complexes that have mold and mildew, the fact that we don't have proper garbage disposal, you know these kinds of things that are health issues in our community”

Discussion

Dunn et al. (2021)²⁶ surveyed employers of CHWs in Texas and indicated that there was a need to survey CHWs, and Maes et al. (2014)¹⁶ called for application of ethnographic research to inform setting up CHW programs and for better administration of such programs to serve communities effectively. Swartz (2013)²⁷ called for closer attention to the experiences of CHWs when designing public health policies for communities as critical information for improving, evaluating and designing new CHW interventions could be garnered from such interviews. In this study we interviewed Community Health Workers working in low-income housing Communities in Richmond, Virginia for their perceptions and motivations for their work.

Pittman et al. (2015)²⁸ highlighted that lack of professional recognition was one of the hinderances to the effective usage of CHWs in improving healthcare delivery in the US. Ozano et al. (2018)²⁹ in their interviews of CHWs in Cambodia found inadequate resources, lack of professional recognition from other health professionals and difficulty with getting community

members to make behavioral changes as challenges to their work. We found similar challenges reported by CHWs in this study. The challenges that CHWs face in terms of professional recognition has been found for the CHWs working with Latinx communities in Nebraska also, but the issue seems to be global, as studies in other regions of the world have found the same results of lack of professional recognition and inadequate resources.³⁰⁻³³ With the global critical shortage in health workforce brought about by the COVID-19 pandemic, there is a need for global recognition and standardization of CHWs training and certification to a global standard, to empower them to perform essential health duties during and after the current COVID-19 pandemic. They need to be seen as a valuable part of the global health system that support services to poorer communities within countries and that can be called upon in health emergencies and for everyday public health work.

The challenge of high workload for CHWs due to serving in highly impoverished communities has been found by others and in this study.^{32,33} This could be alleviated by identifying, recruiting and training more CHWs from within such high poverty communities. For example, students finishing high school in the community who are not headed to tertiary educational institutions could be recruited to the CHW position which could be a stepping-stone to a career ladder in healthcare.

Laurenzi et al. (2021)³⁴ found that in South Africa's Eastern Cape province, community health workers spoke about difficulties finding adequate solutions to their clients needs and we found this in this study with CHWs saying that not being able to help a client was their biggest frustration with their job. They also mentioned bureaucratic hinderances to being able to help their clients with some resources only given when people are in dire need, which some clients do not fall into. Bhaumik et al. (2020)¹¹ reviewed the use of CHWs as health resource for

management of the COVID-19 pandemic in India and determined that CHWs could play a critical role in management of pandemics, but more implementation research is needed. The case had been made for the use of CHWs in pandemic response both in the US and globally^{35,36} but standardization of their training and provision of adequate resources and professional recognition is needed for such a deployment on a large scale. The need to incorporate CHWs into state healthcare systems has been highlighted as a way to improve quality of health care delivery and lower costs.³⁷

Sabo et al. (2017)¹⁸, in their research of the work of CHWs on advocacy concluded that CHW advocacy contributes to civic engagement among historically marginalized groups and strengthens the linkages of agencies supporting people living in poverty to work together. We found that advocacy on behalf of their communities to the State Health Department and other government agencies was an important part of the work of CHWs. Ingram et al (2008)³⁸ found that in Arizona, CHWs provided advocacy to local politicians as part of their advocacy work, and this can be seen in CHW9 advocating for city officials to visit the local income community.

We found that the CHWs indicated that they dealt with high amount of stress and that members of their communities experienced high rates of mental health issues and they did not have enough resources to assist clients. Wellness programs for Community Health Workers should be offered by their employers and such programs should include mental health counselling. CHW programs should make mental health counseling a major part of the intervention they provide in low-income communities.³⁹⁻⁴¹

All the CHWs interviewed were female and it is possible that experiences of male CHWs will differ from those of female CHWs. There were no male CHWs in the Richmond Health District at the time of the interviews and our outreach to former CHWs did not result in any male CHWs

reaching out to us. Male CHW experiences could differ because they would probably have more interaction with male clients. Also, Alfaro-Trujillo et al. (2012)⁴² profiled volunteer CHWs working for a Non-Profit organization at the US-Mexico border and found them to be mainly female. Across the globe CHWs are mainly female and there has been no assessment looking at male CHW experiences specifically that we could find. Eluka et al. (2021)⁴³ interviewed 10 CHWs who work with refugee communities in the US and only 2 were male and they also point out the issue of lack of male CHWs and therefore the difficulty in documenting if their experiences differ from those of females and if there are ways they could be used more effectively in communities.

Other limitations of our study include that only 9 CHWs were interviewed for this study and all worked in Richmond, Virginia and they were state employees. Having CHWs as state health department employees is not yet the norm in the US. Most CHWs are employed by hospital systems and Non-Profit organizations and the uniqueness of this long-term deployment of CHWs by a state health system to work in an area of concentrated poverty is what makes this study unique and relevant for public health policy in the US. Also, the CHWs were all African-American, working in communities of close to 100% minority population in a medium sized US city. Our results may not be applicable to larger cities or to rural areas of the US or populations with different demographics.

In conclusion, we were able to better understand the role of CHWs and garner useful information for other health districts in starting or adjusting their CHW programs. We found 5 coded themes from the interviews. We were able to outline the activities and the interventions CHWs carryout from the theme, Activities. The theme, Satisfaction indicated that CHWs loved their jobs mainly because they derived satisfaction from helping others. From the theme, Strengths, CHWs

indicated that the community resilience was the main strength in their communities, and they listed needing more resources such as vehicles, computer tablets and more staff as well as more programming for clients and more community partners from the theme Facilitation/Resources. From the Challenges theme, we found that the challenge of inadequate mental health support for the community members and also for CHWs, and the challenges of transportation, childcare, and physical safety for clients, and the CHWs had the challenges of using their personal transportation for work, and also making sure they earned and maintained the trust of the community.

References

1. US Department of Health and Human Services. 2020. Healthy People 2030 Framework. <https://health.gov/healthypeople/about/healthy-people-2030-framework>
2. Wilkerson, I. (2020). *Caste: The origins of our discontents*. Random House.
3. Kunitz SJ. Sex, race and social role--history and the social determinants of health. *Int J Epidemiol*. 2007 Feb;36(1):3-10. doi: 10.1093/ije/dyl296.
4. OECD (Organisation for Economic Co-operation and Development) 2021. Health status - life expectancy at birth - OECD Data. Retrieved December 25. <https://data.oecd.org/healthstat/life-expectancy-at-birth.htm>

5. Emanuel EJ, Gudbranson E, Van Parys J, Gørtz M, Helgeland J, Skinner J. Comparing Health Outcomes of Privileged US Citizens With Those of Average Residents of Other Developed Countries. *JAMA Intern Med.* 2021 Mar 1;181(3):339-344. doi: 10.1001/jamainternmed.2020.7484. PMID: 33369633; PMCID: PMC7770612.
6. Perry HB, Zulliger R, Rogers MM. Community health workers in low-, middle-, and high-income countries: an overview of their history, recent evolution, and current effectiveness. *Annu Rev Public Health.* 2014;35:399-421. doi: 10.1146/annurev-publhealth-032013-182354.
7. Kangovi S, Grande D, Trinh-Shevrin C. From rhetoric to reality--community health workers in post-reform U.S. health care. *N Engl J Med.* 2015 Jun 11;372(24):2277-9. doi: 10.1056/NEJMp1502569.
8. Vohra AS, Chua RFM, Besser SA, Alcain CF, Basnet S, Battle B, Coplan MJ, Liao JK, Tabit CE. Community Health Workers Reduce Rehospitalizations and Emergency Department Visits for Low-Socioeconomic Urban Patients With Heart Failure. *Crit Pathw Cardiol.* 2020 Sep;19(3):139-145. doi: 10.1097/HPC.0000000000000220.
9. Levitt NS, Puoane T, Denman CA, Abrahams-Gessel S, Surka S, Mendoza C, Khanam M, Alam S, Gaziano TA. Referral outcomes of individuals identified at high risk of cardiovascular disease by community health workers in Bangladesh, Guatemala, Mexico, and South Africa. *Glob Health Action.* 2015 Apr 7;8:26318. doi: 10.3402/gha.v8.26318.
10. Arrossi S, Thouyaret L, Herrero R, Campanera A, Magdaleno A, Cuberli M, Barletta P, Laudi R, Orellana L; EMA Study team. Effect of self-collection of HPV DNA offered by community health workers at home visits on uptake of screening for cervical cancer (the

- EMA study): a population-based cluster-randomised trial. *Lancet Glob Health*. 2015 Feb;3(2):e85-94. doi: 10.1016/S2214-109X(14)70354-7.
11. Bhaumik S, Moola S, Tyagi J, Nambiar D, Kakoti M. Community health workers for pandemic response: a rapid evidence synthesis. *BMJ Glob Health*. 2020 Jun;5(6):e002769. doi: 10.1136/bmjgh-2020-002769
 12. Landers SJ, Stover GN. Community health workers--practice and promise. *Am J Public Health*. 2011 Dec;101(12):2198. doi: 10.2105/AJPH.2011.300371.
 13. Katigbak C, Van Devanter N, Islam N, Trinh-Shevrin C. Partners in health: a conceptual framework for the role of community health workers in facilitating patients' adoption of healthy behaviors. *Am J Public Health*. 2015 May;105(5):872-80. doi: 10.2105/AJPH.2014.302411
 14. Hartzler AL, Tuzzio L, Hsu C, Wagner EH. Roles and Functions of Community Health Workers in Primary Care. *Ann Fam Med*. 2018 May;16(3):240-245. doi: 10.1370/afm.2208.
 15. Haines A, de Barros EF, Berlin A, Heymann DL, Harris MJ. National UK programme of community health workers for COVID-19 response. *Lancet*. 2020 Apr 11;395(10231):1173-1175. doi: 10.1016/S0140-6736(20)30735-2.
 16. Maes K, Closser S, Kalofonos I. Listening to community health workers: how ethnographic research can inform positive relationships among community health workers, health institutions, and communities. *Am J Public Health*. 2014 May;104(5):e5-9. doi: 10.2105/AJPH.2014.301907.
 17. Early J, Gonzalez C, Gordon-Dseagu V, Robles-Calderon L. Use of Mobile Health (mHealth) Technologies and Interventions Among Community Health Workers Globally:

- A Scoping Review. *Health Promot Pract.* 2019 Nov;20(6):805-817. doi: 10.1177/1524839919855391. Epub 2019 Jun 10. PMID: 31179777.
18. Sabo S, Flores M, Wennerstrom A, Bell ML, Verdugo L, Carvajal S, Ingram M. Community Health Workers Promote Civic Engagement and Organizational Capacity to Impact Policy. *J Community Health.* 2017 Dec;42(6):1197-1203. doi: 10.1007/s10900-017-0370-3.
 19. Bowen DJ, Bhosrekar SG, Rorie JA, Goodman R, Thomas G, Maxwell NI, Smith E. Resident health advocates in public housing family developments. *Fam Community Health.* 2015 Apr-Jun;38(2):141-8. doi: 10.1097/FCH.000000000000068.
 20. Freeman AL, Li T, Kaplan SA, Ellen IG, Gourevitch MN, Young A, Doran KM. Community Health Worker Intervention in Subsidized Housing: New York City, 2016-2017. *Am J Public Health.* 2020 May;110(5):689-692. doi: 10.2105/AJPH.2019.305544.
 21. Quintiliani LM, Whiteley JA, Murillo J, Lara R, Jean C, Quinn EK, Kane J, Crouter SE, Heeren TC, Bowen DJ. Community health worker-delivered weight management intervention among public housing residents: A feasibility study. *Prev Med Rep.* 2021 Mar 16;22:101360. doi: 10.1016/j.pmedr.2021.101360.
 22. Obasanjo I, Griffin M, Scott A, Oberoi S, Westhoff C, Shelton P, Toney S. A Case Study of a Community Health Worker Program Located in Low-Income Housing in Richmond, Virginia. *J Community Health.* 2022 Jan 10:1–8. doi: 10.1007/s10900-021-01057-1.
 23. Stewart M. Approaches to Audiotape and Videotape Analysis: Interpreting the Interactions between Physicians and Patients. Crabtree BF and Miller WL. Eds. *Doing Qualitative Research.* Newbury Park: Sage.1992.

24. Saunders B, Sim J, Kingstone T, et al. Saturation in qualitative research: Exploring its conceptualization and Operationalization. *Quality & Quantity*. 2017 52(4):1893-1907. doi:10.1007/s11135-017-0574-8.
25. Dunn M, Peterson Johnson E, Smith B, Cooper M, Bhakta N. Perspectives on Workforce Development Needs for Community Health Workers (CHWs): Results from a Statewide Survey of CHW Employers. *J Community Health*. 2021 Oct;46(5):1020-1028. doi: 10.1007/s10900-021-00986-1.
26. Swartz A. Legacy, legitimacy, and possibility: an exploration of community health worker experience across the generations in Khayelitsha, South Africa. *Med Anthropol Q*. 2013 Jun;27(2):139-54. doi: 10.1111/maq.12020
27. Pittman M, Sunderland A. Bringing Community Health Workers into the Mainstream of U.S. Health Care. National Academy of Medicine, June 24, 2020. <https://nam.edu/perspectives-2015-bringing-community-health-workers-into-the-mainstream-of-u-s-health-care-2/>.
28. Ozano K, Simkhada P, Thann K, Khatri R. Improving local health through community health workers in Cambodia: challenges and solutions. *Hum Resour Health*. 2018 Jan 6;16(1):2. doi: 10.1186/s12960-017-0262-8.
29. Palmer-Wackerly AL, Chaidez V, Wayment C, Baker J, Adams A, Wheeler LA. Listening to the Voices of Community Health Workers: A Multilevel, Culture-Centered Approach to Overcoming Structural Barriers in U.S. Latinx Communities. *Qual Health Res*. 2020 Feb;30(3):423-436. doi: 10.1177/1049732319855963.
30. Ndimba SD, Sidat M, Give C, Ormel H, Kok MC, Taegtmeier M. Supervision of community health workers in Mozambique: a qualitative study of factors influencing

motivation and programme implementation. *Hum Resour Health*. 2015 Sep 1;13:63. doi: 10.1186/s12960-015-0063-x.

31. Kok MC, Vallières F, Tulloch O, Kumar MB, Kea AZ, Karuga R, Ndima SD, Chikaphupha K, Theobald S, Taegtmeier M. Does supportive supervision enhance community health worker motivation? A mixed-methods study in four African countries. *Health Policy Plan*. 2018 Nov 1;33(9):988-998. doi: 10.1093/heapol/czy082.
32. Kawade A, Gore M, Lele P, Chavan U, Pinnock H, Smith P, Juvekar S; RESPIRE collaboration. Interplaying role of healthcare activist and homemaker: a mixed-methods exploration of the workload of community health workers (Accredited Social Health Activists) in India. *Hum Resour Health*. 2021 Jan 6;19(1):7. doi: 10.1186/s12960-020-00546-z.
33. Laurenzi CA, Skeen S, Rabie S, Coetzee BJ, Notholi V, Bishop J, Chademana E, Tomlinson M. Balancing roles and blurring boundaries: Community health workers' experiences of navigating the crossroads between personal and professional life in rural South Africa. *Health Soc Care Community*. 2021 Sep;29(5):1249-1259. doi: 10.1111/hsc.13153.
34. Ballard M, Bancroft E, Nesbit J, Johnson A, Holeman I, Foth J, Rogers D, Yang J, Nardella J, Olsen H, Raghavan M, Panjabi R, Alban R, Malaba S, Christiansen M, Rapp S, Schechter J, Aylward P, Rogers A, Sebisaho J, Ako C, Choudhury N, Westgate C, Mbeya J, Schwarz R, Bonds MH, Adamjee R, Bishop J, Yembrick A, Flood D, McLaughlin M, Palazuelos D. Prioritising the role of community health workers in the COVID-19 response. *BMJ Glob Health*. 2020 Jun;5(6):e002550. doi: 10.1136/bmjgh-2020-002550.

35. Palafox B, Renedo A, Lasco G, Palileo-Villanueva L, Balabanova D, McKee M.
Maintaining population health in low- and middle-income countries during the COVID-19 pandemic: Why we should be investing in Community Health Workers. *Trop Med Int Health*. 2021 Jan;26(1):20-22. doi: 10.1111/tmi.13498
36. Blackman K, Scotti S. Incorporating Community Health Workers into State Health Care Systems: Options for Policymakers. National Conference of State Legislators. 2015.
Retrieved December 27, 2021.
<https://www.ncsl.org/Portals/1/Documents/Health/CHWbrief2015.pdf>
37. Ingram M, Sabo S, Rothers J, Wennerstrom A, de Zapien JG. Community Health Workers and community advocacy: addressing health disparities. *J Community Health*. 2008 Dec;33(6):417-24. doi: 10.1007/s10900-008-9111-y
38. Friedman J, Akre S. COVID-19 and the Drug Overdose Crisis: Uncovering the Deadliest Months in the United States, January–July 2020. *Am J Public Health*. 2021 Jul;111(7):1284-1291. doi: 10.2105/AJPH.2021.306256.
39. O'Connor DB, Wilding S, Ferguson E, Cleare S, Wetherall K, McClelland H, Melson AJ, Niedzwiedz C, O'Carroll R, Platt S, Snowcroft E, Watson B, Zortea TC, Robb KA, O'Connor R. Effects of Covid-19-related Worry and Rumination on Mental Health and Wellbeing During the Pandemic: Longitudinal Analyses of Adults in the UK COVID-19 Mental Health & Wellbeing Study. *PsyArXiv*. 2021 July 6. doi:10.31234/osf.io/r8cdw.
40. Sances MW, Campbell AL. State Policy and Mental Health Outcomes under COVID-19. *J Health Polit Policy Law*. 2021 Oct 1;46(5):811-830. doi: 10.1215/03616878-9155991.

41. 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 Jun;37(3):583-90. doi: 10.1007/s10900-011-9486-z.
42. Eluka NN, Morrison SD, Sienkiewicz HS. "The Wheel of My Work": Community Health Worker Perspectives and Experiences with Facilitating Refugee Access to Primary Care Services. *Health Equity*. 2021 Apr 28;5(1):253-260. doi: 10.1089/heap.2020.0150.