Strategies to Reduce Chronic Disease: Adding Role to Community Health Workers

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Strategies to Reduce Chronic Disease: Adding Role to Community Health Workers

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Section I: Abstract

**Background:** Underserved, rural, immigrant, low-income Latinx communities need to strengthen healthcare access to improve their quality of life (Capitman et al., 2009; McCartney et al., 2019; Save the Children [STC] Organization, 2021). Non-communicable chronic disease of physical and behavioral origin is the leading cause of morbidity for adults and children in Latinx communities (Campbell et al., 2020). Estimates of greater than 30% of the Latinx populations within the United States have these health needs, with projections to reach 28% of the U.S. population by 2060 (Eghaneyan & Murphy, 2019; Ortega et al., 2018).

**Local Problem:** If poor access to preventive health care is not addressed with culturally appropriate interventions, obesity, diabetes, hypertension, and depression comorbid conditions will escalate with the expanding Latinx population growth (Brown et al., 2018; Creech et al., 2019; Oh & Ell, 2018; Silverman et al., 2018).

**Methods:** This Doctor of Nursing Practice student-led quality improvement project was part of a group educational project to teach community health workers, among other topics, about chronic disease prevention. Pre- and post-assessment surveys and curricula were created and distributed to all community health worker (CHW; students) participants of the local community organization collaboration. Educational material and screening forms were adapted to culturally appropriate English and Spanish formats (Amerson et al., 2015; Frank et al., 2021; Harris et al., 2021). Collaborative DNP student participants collected demographic data. Redundancy was avoided.

**Interventions:** The CHWs were instructed through two synchronous and one in-person educational modules. Screening tools and chronic disease educational handouts were provided
to each CHW via eHealth attachments within the online modules, aids for enriching client experiences during home visits. Bilingual symptom guides incorporated into each module allowed for role-addition health assessments by the CHWs, utilizing new knowledge of chronic disease, risks, and prevention strategies. Enhanced self-confidence since completing all components affords improved screenings, evaluations, referrals, and patient education. The educational experience was conducted in the Spring of 2023.

**Results:** The three main objectives were: (a) CHWs would have a 25% increase in knowledge of non-communicable chronic diseases for adults (diabetes, depression, obesity, and hypertension) and utilization of culturally appropriate screening tools by June 2023. A pre-assessment/post-assessment survey conducted in English was the measuring tool; (b) by June 2023, 75% of the CHWs would express a 25% improvement in confidence to integrate health assessments and utilize screening tools in their roles with adult Latinx populations; (c) by June 2023, 75% of the CHWs would appraise their confidence had increased by 25% to qualify for the USFCA SONHP Promotora certificate of participation. The goal was to teach to the level of CHW or Promotora.

**Conclusions:** Training CHWs on a role addition for health using culturally tailored, humble, evidence-based strategies to promote positive health behaviors will improve this population's mental and physical health (STC, 2021). The partner collaboration with the USF SONHP DNP program is steeped within best practice recommendations (Melnyk & Fineout-Overholt, 2018).

**Keywords:** chronic disease, community home workers, depression, diabetes, health disparities, health determinants, Hispanic, hypertension, Latinx, lay workers, Mexican, obesity, prevention, Promotora, socioeconomics
Section II: Introduction

Background

Community home workers (CHWs) are liaisons between their populations and available multidisciplinary health resources. These workers connect to this population through shared lived experiences, build trusting foundations, and impart culturally competent and humble care, often missing from conventional healthcare services (Lloyd et al., 2020; Save the Children [STC], 2021).

Chronic non-communicable diseases are the leading cause of morbidity in both adults and children in the Latino community (Campbell et al., 2020). Diabetes, depression, obesity, and hypertension are non-communicable chronic diseases adversely affected by poor access to preventive healthcare (Brown et al., 2018; Creech et al., 2019; Oh & Ell, 2018; Silverman et al., 2018). Approximately 17% of the U.S. population is Latinx, with projections expected to reach 28% by 2060 (Eghaneyan & Murphy, 2019; Ortega et al., 2018). As an example, research translated quality of life and medical costs were reduced by 20% when HbA1c levels were better controlled <7 than scarcely controlled glycemic levels HbA1c ≥9, contributing to the expanding health needs of this population with their growing numbers (Zolezzi et al., 2022).

CHWs empower Latinx women, the primary health decision-makers in most of their families, to make dietary and behavioral changes that have a direct impact on themselves and their children (Albarran et al., 2014; Hepworth et al., 2020; Murphy et al., 2018; Silverman et al., 2018). Familis promotes the protective internalization of these positive health behavior changes. Moreover, it improves the health of families and communities (Arévalo Avalos et al., 2020).
**Problem Description**

Community advocates who serve in the role of CHW need training for the added role of health advocate. Core competencies of such activity include knowledge of chronic disease, hypothesizing prevention and risk screening, case management, intervention tools, and systems navigation (Lloyd et al., 2020). Task-shifting removes barriers to mental health care (within a rural Latinx community using focus group interventions led by CHWs in Spanish) and improves crisis strategies by reducing fears of stigma and confidentiality breaches (Gonzalez et al., 2021).

**Setting**

The evidence-based change of clinical practice Doctor of Nursing Practice (DNP) project provided educational training, in collaboration with CHWs of the Fresno and Tulare Counties, California area, about non-communicable chronic diseases (diabetes, depression, obesity, and hypertension in adults) to enable the opportunity for role expansion. CHWs’ strong commitment to the local Latinx populations’ affordable healthcare access and tailoring culturally competent care is missing from conventional healthcare services (Lloyd et al., 2020), reframing the local Latinx need (Carvajal et al., 2018).

**Specific Aim**

This quality improvement (QI) project aimed to design, implement, and evaluate an educational curriculum about non-communicable chronic disease (diabetes, depression, obesity, and hypertension) for the role expansion of CHWs wishing to gain value-added education at the level of Promotora certification by June 2023. The three main objectives were (a) CHWs would have a 25% increase in knowledge of non-communicable chronic diseases for adults (diabetes, depression, obesity, and hypertension) and utilize culturally appropriate
screening by June 2023. Pre/post-assessments conducted in English would formulate the
measuring tools; (b) by June 2023, 75% of the CHWs would have expressed a 25% improvement
in confidence to integrate health assessments and would utilize screening tools in their roles in
adult Latinx populations; and (c) by June 2023, 75% of the CHWs would have appraised their
confidence increased by 25% to qualify for the participation certificate by the University of San
Francisco (USFCA) until the California State Promotora exam is available.

Available Knowledge

PICOT Question

Does the addition of community health worker role improve chronic disease (diabetes,
depression, obesity, or hypertension) management and health outcomes among rural Latinx
populations?

Search Methodology

A comprehensive literature search of culturally competent, evidence-based strategies
was performed to identify data relevant to chronic disease management for the Latinx
underserved populations serviced by CHWs. The search was conducted in phases, allowing for a
detailed exploration of the following databases: Scopus, the Cumulative Index to Nursing and
Allied Health Literature (CINAHL), PubMed, and Cochrane Systematic Reviews.

The keyword terms were CHW OR Promotora, chronic disease OR diabet* OR obesity OR
hypertension OR depression OR depress, OR Latin OR Mexic OR Hispanic, prevention, lay
workers, health disparities OR health determinants OR socioeconomics. A total of 951 studies
were found to qualify. Modifications were written in the English language, peer-reviewed, years
from 2015 through 2023, levels of evidence I through III, and quality of evidence A or B
critiqued using the Johns Hopkins Evidence-Based Practice tool (Dang et al., 2022). Additional criteria included the population observed to be Latinx, Mexican American, or Hispanic and to focus on CHW-led interventions for the management of non-communicable chronic disease (diabetes, depression, obesity, or hypertension across the lifespan). Scholarly rigor was determined using the Johns Hopkins Evidence-Based Practice tool to select the 14 chosen articles. The highest quality presented minimal proof of good quality or higher, either A or B accepted, peer-reviewed, timely for scholarly critiques, and integral to current chronic disease prevention strategic interventions by role addition of the CHWs defined the selection.

The strength of 14 studies (six Level I, three Level II, and five Level III demonstrating A or B quality) was consistently robust, validating the recommendations to have confidence in using CHWs as an efficacious, cost-effective, feasible, and internationally recognized asset (Dang et al., 2022; see Appendix A).

**Integrated Review of the Literature**

A comprehensive literature search of culturally competent, evidence-based strategies was performed to identify data relevant to chronic disease management for the Latinx underserved populations serviced by CHWs. The highest quality presented minimal proof of good quality or higher, either A or B accepted, peer-reviewed, timely for scholarly critiques, and integral to current chronic disease prevention strategic interventions by role addition of the CHWs defined the selection. Scholarly rigor was determined using the Johns Hopkins Evidence-Based Practice tools (Dang et al., 2022; see Appendix B).

**Chronic Disease Burnout**
The high prevalence of obesity among Latinx individuals places the population at higher risk for diabetes, depression, and hypertension (Gutierrez et al., 2019; Taverno Ross et al., 2020). Utilizing CHWs will diminish the escalating negative consequences of chronic disease on the Latinx communities, reframing positive health outcomes in the immediate and future timeframe (Carvajal et al., 2018).

The Latinx populations endure disparities from obesity and comorbidities and diabetes and depression. Ratios of 43% affecting Latinos and 35% of non-Hispanic Caucasians exemplify this minority population’s vulnerabilities. Consequently, evidence-based research (EBR) stipulates the symbiosis of obesity, depression, and diabetes, exacerbating the adverse consequences of each chronic disease. Colombari Figueroa et al. (2018) illustrated dramatic health promotion through reductions in obesity and lowered intensity of depressive symptoms while engaging in behavioral lifestyle strategies. Outcomes recommended by the U.S. Preventive Services Task Force on obesity, depression, and diabetes leading to weight loss, reduction of cardiometabolic risk (5%-10%), improved quality of living, and cognitive behavioral therapy integrated into one intervention led by CHWs had statistically significant outcomes (Colombari Figueroa et al., 2018; Ponce-Gonzalez et al., 2023).

In a Level I, Quality A randomized control trial (RCT), Colombari Figueroa et al. (2018) focused on Latino immigrants participating in the Vivamos Activos Fair Oaks (VARO) trial, a dual lifestyle modification opportunity. The subjects were randomized to primary usual care (UC) control \(n = 41\), case management (CM) alone \(n = 84\), or CM with a CHW advocacy \(CM + CHW; n = 82\). The RCT was designed for 24 months; VARO was based on cultural humility adaptations of a diabetes prevention program in collaboration with Stanford University and the
San Mateo Medical Center (SMMC). Every aspect of the trial, including informed consent, was provided in Spanish. Nutritional recommendations, physical activity choices, bilingual CHWs, and tailored to address social determinants of health, such as facilitating entre to local food banks, free or low-cost dance classes, and data on costs of preferred foods, paid homage to the Latinx community, focusing on self-efficacy and collective efficacy confidence building.

Combining weight loss and depressive symptom reduction interventions as one tool facilitated by CHWs incorporated “effect modification” (Colombari Figueroa et al., 2018, p. 1182). Depression levels of mild, moderate, or severe were screened using a shortened version of the CES-D validated for the Latinx population. Walking using a pedometer or accelerator tracked steps per day. Funding was provided by National Heart, Ling, and Blood Institute Grant No. R01 HL089448, and the National Institutes of Health Grant No. UL1 RR025744 (p. 1188).

CHWs, as trusted advocates, successfully implemented case management and behavioral modification choices for those randomized individuals below 100% of the federal poverty level (Colombari Figueroa et al., 2018). CM + CHW had Centers for Epidemiologic Studies - Depression scale (short version) scores lower (B coefficient = 0.72; 95% CI 0.55-0.93) than UC, a 2-point lowering mean reduction in depressive symptoms. Impoverished Latinx communities burdened with obesity, diabetes, and depression reached a statistically significant reduction in disease burden. Legislative policymakers need to enact reimbursement sources for CHWs within usual care health facilities and insurance (Colombari Figueroa et al., 2018).

Best physical activity practices miss the mark with the Latinx community. Loya (2018) recognized that variations of interventions to encourage those diagnosed with obesity, diabetes, or depression failed to stir engagement with Hispanics, who forego free moments in physical
activities. Foundational conceptual framework of social cognitive theory and use of a transtheoretical model reframed Promotora-led strategies as classified best practices. As EBR continues to substantiate richly, physical activities are efficacious in producing physical and mental health benefits, diminishing risks of chronic diseases, and easing health burdens (Loya, 2018).

Loya (2018), in a Level I, Quality A/B (high/good) study, reviewed 21 RCTs of physical activity interventions for Latinx followed PRISMA guidelines, excluding studies that included behavior modifications of children, limiting strategies to those 18 years of age or older. This streamlining of culturally tailored interventions incorporating Promotoras, a foundational theoretical framework, and in-person support sessions transformed Latinx populations from lacking strategies to reduce obesity and type 2 diabetes mellitus, funneling positive health outcomes. Since self-report measures were used, future research studies must prioritize objective measurements. Seven in 10 Latinx adults do not subscribe to the concept of a universal culture across all Latinx populations. Culturally tailored and individualized physical activities converting to vigorous choices (dancing) while heeding music preferences of various geographical locations of origin are recommended themes to appeal to older and male Latinx. Promotora or CHW advocacy is crucial (Loya, 2018).

In a Level I, Quality A RCT study, Wagner et al. (2016) demonstrated that CHWs could deliver stress-management intervention among U.S. Latinos with type 2 diabetes mellitus (T2DM). Koniak-Griffin et al.’s (2015) Level I, Quality A RCT, using a community prevention model, Su Corazon, Su Vida, was the first nonexperimental design to hypothesize that mentorship and coaching by CHWs could prove superior to traditional methods. There were
statistically significant changes: BMI ($t = 2.02$, $df = 109$, $p = .046$); weight ($t = 2.05$, $df = 109$, $p = .033$); waist circumference ($t = 2.10$, $df = 112$, $p = .038$); cardiac disease limited knowledge (paired $t = 5.69$, $df = 89$, $p < .001$), with a mean of $7.9$ ($SD \pm 2.6$) and $9.4$ ($SD \pm 1.0$), respectfully (Koniak-Griffin et al., 2015).

**CHWs are Trusted Advocates**

Two binational cohort studies demonstrated positive behavioral changes in physical activity and healthy eating choices (diet) through the acceptance and trust of the CHWs facilitating these strategies (Carvajal et al., 2018; Konia-Griffin et al., 2015).

De la Mano con la Salud, a Latino engagement group for Salud (LEGS), in a Level II, Quality A quality study, used male-to-male Promotores to formulate a 6-month pre- and post-noncontrolled feasibility study (Documet et al., 2020). The Wheel of Life tool places participants’ priorities, and collaborative and individualized written care plans duplicated stress reduction conducted in Ohio. The sample size of 89 immigrant males with low acculturation improved access to care significantly ($p = 0.001$). Two other hypotheses did not have statistically significant changes: perceived social support $>49.5\%$ to $64.5\%$ ($p = 0.06$) and binge drinking and depression symptoms ($p = 0.893$, $p = 0.210$). The small sample size, poor transportation, long working hours, and barriers to expanding social networks were noted as weaknesses within this study (Documet et al., 2020).

Gonzalez et al. (2021) found that task-shifting to remove barriers to mental health care within a rural Latinx community using focus group interventions led by CHWs in Spanish improved crisis strategies to reduce anxiety and depression, thus reducing fears of stigma and confidentiality breaches. A disproportionate number of Latinx community members were
affected by depression, anxiety, and stress during the COVID-19 pandemic, requiring equity-based, community-led interventions facilitated by CHWs. Themes of trust, removal of barriers of stigma to behavioral therapy, and addressing mild to moderate anxiety or depression were advanced during three Latinx focus groups. Removal of confidentiality worries, improved crisis interventions, referral of more serious cases, narrative therapy, and integrated social services (housing, food, income, and local policy changes) resolved low mental health literacy levels (Moon et al., 2021).

In a pilot CHW systematic review of RCTs in a longitudinal study, Turner et al. (2020) used the 115 Medicaid waivers in the State of Texas. The 115 Medicaid waivers for case management (CM) and services for the uninsured or low-income Latinx communities compared telephone CM versus CHW face-to-face plus CM interventions to improve uncontrolled DM2 among participants. In this Level I, Quality A (high) study, four bilingual CHWs, Promotoras certified by the Texas Department of Health and Human Services, were required to acquire additional 20-hour specialized training on diabetes epidemiology, complications, medications, treatments available, evidence-based medication adherence supports, and review/practice of motivational interviewing techniques to promote patient-centered care. The study subjects were Latinx, aged 18 years to 75 years, with a diagnosis of diabetes mellitus from either one inpatient or two outpatient visits, as defined in the registry created using electronic medical records (ICD-9-CM 250. xx or ICD-10 E10.xx or E11.xx) or HbA1c ≥ 9.0. Medicaid nationally used the parameters of HbA1c ≥ 9.0 (Turner et al., 2020). The main outcome for the dependent variables was time outcomes from the first CHW interaction until the serum level of HbA1c was < 9%. The independent variables had four CM designations: “CM 1 – no visits and one or more telephone
calls; CM2 – one visit but no calls; CM3 – one visit and one or more calls; and CM4 – two or more visits with or without calls” (Turner et al., 2020, p. 1123). Baseline measurements of 523 participants had a mean HbA1c of 10.9% ($SD = 1.7\%$). CM categories: CM1 = 51 (9.8%); CM2 = 192 (36.7%); CM3 = 44 (8.4%); and CM4 = 236 (45.4%). HbA1c control median time = 197 days (95% CI [71,548]); 41.5% reached control within six months (p.1129). CM4 achieved the highest positive outcomes of “twofold” ($p = 0.55$) above CM1, where median control took 350 days.

Telephone care only has severely limited benefits. Intensive CHW face-to-face with telephone options boosted statistically significant positive outcomes for the Latinx population, reinforcing their stature as trusted advocates within the community and cultural tailoring to patient preferences (Turner et al., 2020).

**CHW-Led Interventions are Cost-Effective**

In two CHW interventions, Adelante (United States) and Meta Salud (Mexico), Carvajal et al. (2018) used educational modules to promote physical activity, healthier diet changes, social support, community group exercise programs, and empowerment of the Latinx community, demonstrating CHWs’ strong commitment to the local Latinx populations’ affordable healthcare access and tailoring culturally to the local Latinx needs. This Level I, Quality A, cohort study had 347 participants in the United States under Pasos Adelante and 157 in Mexico under the Meta Salud interventions. Results demonstrated that variables of BMI, blood pressure, glucose levels, quality of living self-reporting, and depression symptoms improved by 10% (United States) and 14% (Mexico), showing enriched Latinx empowerment (Carvajal et al., 2018).

Culturally competent lifestyle behavioral interventions, by combining group educational sessions and subsequent four months of face-to-face visits and phone communications for adult
women, underscore the feasibility, flexibility, and success of the CHWs as mentors, coaches, and health promoters within the Latinx community (Koniak-Griffin et al., 2015). According to Koniak-Griffin et al. (2015), longitudinal research studies reinforced intensity and differential improvement, and employing language-appropriate mass media education reinforced CHW-led interventions.

The Latino Health Access Diabetes Self-Management Program (LHA-DSMP) is a retrospective observational Level II, Quality A study utilizing a community-model, Promotora-led strategy to improve serum HbA1c control in Latinx with T2DM (Slater et al., 2022). This grassroots approach proved superior to conventional ones. The results were in clinical practice (not controlled conditions) using a low, harder-to-change HbA1c of 8.0 at baseline. Results were clinically significant at 14 weeks [(mean (95% CI) HbA1c decrease = -1.1(-1.3 to -0.9; \( P < .001 \) in LHA-DSMP cohort; adjusted difference on value in HbA1c was -0.6 (-0.8 to -0.3; \( P < .001 \)). There was a 21% reduction in T2DM mortality, a 14% reduction in the risk of myocardial infarction, and a 37% reduction in the risk of renal disease, diabetic retinopathy, and neuralgia (Slater et al., 2022).

In an RCT, Wagner et al. (2016) demonstrated that CHWs can improve psychological symptoms and self-reported health among Latinos with type 2 diabetes and addressed a significant healthcare system gap. The World Health Organization, with funding from the National Institutes of Health Minority Health & Health Disparities Institute, developed a systematic review of CHW services internationally, finding improved objective indicators of health on glycemic and cortisol outcomes (Wagner et al., 2016).
A Level III, Quality A, quasi-experimental, mixed-method design pilot study combined The Diabetes Self-Management Education and Support Program (DSME; diabetic) with the National Diabetes Prevention Program (NDPP; pre-diabetic), both attributed to the Centers for Disease Control and Prevention (Joachim-Célestin et al., 2021). The CDC has kept the two diagnoses separate in qualifications for funded programs. Joining diagnoses of pre-diabetic and diabetic adults for a single strategic intervention led by CHWs would prove efficacious for Latinx populations who had limited health literacy and were impoverished. The inclusion criteria were 80% attendance of Vida Vibrante (Vibrante Life) culturally tailored to the Latinx population from the Group Lifestyle Balance curriculum designed in the New Mexico Department of Health Diabetes Control Program. Successful closing of the gap of income disparities related to abiding trust in CHW-led interventions illustrated the superiority of culturally nuanced tailoring for the Latinx, low-income populations (Joachim-Célestin et al., 2021).

A comparison of both groups of pre-diabetics and diabetics showed no statistical differences (Joachim-Célestin et al., 2021). Both groups shed weight. In the diabetic group, 53.3% had substantial weight loss, lowering the risk of cardiovascular disease by 4%-8%. In the pre-diabetic group, 44.4% lost clinically significant weight, reducing the progressive risk of diabetes by 16%. Lifestyle changes reduced the dysglycemic spectrum parallel with strategies to address social determinant inequities and gain patient value-driven care (Joachim-Célestin et al., 2021). CHWs characterize outstanding cost-benefit ratios for these underserved Latinx communities.

Goals of reaching positive treatment outcomes using value-driven healthcare, lessening the diabetes disease burden among the low-income Latinx community, and demonstrating that
CHWs remain cost-effective, feasible, and valuable resources allow for reframing healthcare inequities. Engagement in care and lower attrition rates by the Latinx populations are critical to the challenges of diabetes and escalating adverse sequelae (Joachim-Célestin et al., 2021).

**Summary/Synthesis of the Evidence**

The studies varied in size and length, with two RCTs tailored explicitly towards substantiating the EBR of CHW-led intervention efficacy. Future studies need to take what is already known and enlarge studies of high quality over extended periods to check positive health outcome changes as the Latinx population grows and ages, using the Centers for Disease Control and Prevention recommended guidelines for measurement. The findings could be generalized to Mexican-origin and Latinx genetics.

The consensus of the EBR demonstrates a convergence of affirmations about the evolving importance of engaging CHWs in employing interventions to reduce the burden of chronic diseases (diabetes, depression, obesity, and hypertension) among the Latinx population. Case management, mentoring self-management, prevention strategies, risk reduction interventions, culturally accepted appropriate screening tools, and sustainability of services, while capping fiscal constraints and expanding health access resources, has been possible when deploying CHWs with their value-added roles (Cacari Stone et al., 2022; Colombari Figueroa et al., 2018; Kim et al., 2016; Polletta et al., 2021; Turner et al., 2020).

Evidence-based solid research supports the addition of CHWs to improve chronic disease (diabetes, depression, obesity, and hypertension) management and health outcomes among rural Latinx populations. The merit of 14 studies (six Level I, three Level II, and five Level III, demonstrating A or B quality) is consistently robust, validating the recommendations to have
confidence in using CHWs as an efficacious, cost-effective, feasible, and internationally recognized asset (Dang et al., 2022). The high prevalence of obesity among Latinx individuals places the population at higher risk for diabetes, depression, and hypertension (Taverno Ross et al., 2020). Utilizing CHWs will diminish the escalating negative consequences of chronic disease on the Latinx communities, reframing positive health outcomes (Carvajal et al., 2018). See Appendix B for the full literature review evaluation table.

**Rationale**

The revised version of the Promoting Action on Research Implementation in Health Services (PARiHS) is known today as the integrated or i-PARIHS explanatory framework (see Appendix B). It is a conceptual framework (Imenda, 2014) incorporating three elements of evidence, context, and facilitation integral to knowledge translation as dynamic and synchronous change agents (Kitson & Harvey, 2016). The point of reference or constructs hold the worldviews of the CHWs, the USF School of Nursing and Health Promotion (USF SONHP) DNP academic collaborators, and STC project managers as levels of facilitators or recipients (Imenda, 2014). Beginner or novice, experienced, and expert facilitators are promoters of knowledge utilization into evidence-implemented practices within the healthcare domain(s) for underserved Latinx populations (Kitson & Harvey, 2016).

Each construct continues to develop, holding equal value (Kitson et al., 2008). The revised model relies on individuals, teams, and stakeholders to remain motivated and take ownership of practice innovations focused on cultural appropriateness, interpersonal skills, and mentoring beginning recipients to lead chronic disease prevention strategies (Kitson & Harvey, 2016). Dynamic learning must incorporate patient preferences, shared values and beliefs,
research-based evidence, and clinical expertise (Rycroft-Malone & Bucknall, 2010). A holistic purpose, skills, and role expansion continuum is inherently critical for successful knowledge translation using PARIHS (Kitson et al., 2008). The Royal College of Nursing Institute developed the PARIHS framework in the late 1990s to proceed beyond a linear pipeline model incorporating research into clinical practice (Rycroft-Malone & Bucknall, 2010). This framework was known for patient preferences, experiences, local clinical concerns, EBR, recipient clinical experiences, and efficacious change processes (Kitson et al., 2008).

Training CHWs to expand their role to include chronic disease care management using the PARIHS framework formulates an active integration of evidence, context, and facilitation of strategic interventions for the growing number of underserved Latinx communities, reducing barriers to traditional healthcare, and thus increasing opportunities for improved health outcomes. Mechanisms for change function are in sync with the EBR, the context of utilizing CHWs to culturally accepted prevention interventions of the underserved Latinx (Attieh et al., 2013). Using the CHWs’ cultural adaptation strategies will overcome barriers to healthcare utilization and increase access to risk-prevention screening tools for chronic diseases, such as diabetes, depression, obesity, and hypertension.

Phase one was the development of the concepts from 1998 to 2002, with the evidence, context, and facilitation being interdependent and empirical testing conducted (Kitson et al., 1998). Phase two incorporated local resources, physical and political, to facilitators’ experiences, with limited support from 2001 to 2003. Phase three of the PARIHS framework included evaluation from 2003 to the present (Kitson et al., 2008). The pre-test diagnostic phase included current knowledge of the CHWs of evidence and context; the facilitation process included an
educational curriculum on non-communicable chronic diseases (diabetes, depression, obesity, and hypertension); and then the post-test evaluation (Kitson & Harvey, 2016; Kitson et al., 2008; Santacroce et al., 2018).

The i-PARIHS conceptual framework supports the sustainability of an educational curriculum on chronic disease case management by the CHWs (Chinn & Kramer, 2018) using a pre-test/post-test measurement outcome, refining the three constructs with the cultural receptiveness of underserved Latinx populations and improving health outcomes. The i-PARIHS framework allows for future robust evidence-based studies.

Proposed variables included demographics of age, gender, education obtained, years working with STC organizations locally and internationally, and current health literacy (Amerson et al., 2015; Harris et al., 2021); knowledge about chronic diseases (diabetes, depression, obesity, and hypertension); confidence levels in participating in culturally focused educational training for a role addition (Amerson et al., 2015; Frank et al., 2021); confidence levels in doing risk assessments and preventive care management using screening tools; and personal interest in completing the surveys. The expected results were to improve the CHWs’ confidence level by 25% and to improve knowledge about chronic disease prevention, risks, and screening tools by 25%.

**Section III: Methods**

The educational training about non-communicable chronic diseases (diabetes, depression, obesity, and hypertension) through a three-module format (two synchronous sessions and one face-to-face session) was conducted under the facilitation of USF faculty and partner site preceptor for currently working CHWs serving the Fresno and Tulare Counties,
California area (see Appendix D). Zoom sessions were conducted, partnering with other DNP colleagues and site management by STC. Individual CHWs used laptops remotely for Zoom and gathered collectively on the USF campus for the third and final module and post-assessment opportunity.

Baseline data were previously collected from the STC CHWs who were actively employed and able to collaborate with the USF DNP program via self-administered survey questionnaires. Questions targeted current health knowledge about non-communicable chronic diseases (diabetes, depression, obesity, and hypertension), including definitions, symptoms, risks, and benefits of seeking care. During this pre-assessment, confidence in using their health knowledge and prevention screening tools, a gauge of comfort in taking the Promotora certification testing, was assessed. A blood pressure simulation using individual blood pressure kits was performed during the face-to-face module. Every CHW was given their kit to continue their skills at home for reproducible preventive teaching moments with their Latinx membership. After the third module curriculum participation, a self-guided assessment in English, identical to the pre-assessment survey, was distributed. Breakout session opportunities to share opinions and suggest improvements correlated to each module to provide tool refinement. Calculations of measurements used descriptive statistics through Excel—pre- and post-assessment questionnaires provided via the free canvas platform to obtain CHWs’ responses quickly.

The reliability and validity of the questionnaire remained strong, as this DNP student was creating it and was the sole person to inform, distribute, and evaluate results, lessening biases from multiple analysts, adding to an effective communication style, and using
straightforward statistical tools. The data remained clean, as copies of all pre/post questionnaires were secure. Using percentages allows efficacy in the measurements of the raw data. All health training modules consisted of eighth-grade reading levels to prescribe English as a second language (ESL) barrier for the CHWs.

**Context**

According to power dynamics, conducting a stakeholder analysis is foundational to the DNP project’s program design and sustainability. Conceptualization using the power versus interest tool (MindTools, n.d.) facilitates an early understanding of which players necessitate greater involvement or minimal effort to successfully translate EBR into real-time clinical practices (Weberg & Davidson, 2019). Their template masterfully simplifies which stakeholders command the most attention.

The high-power, high-interest stakeholders were the USF SONHP Chair, Dr. Maxworthy; Dr. Loomis, facilitator and point of contact and project site preceptor; and the CHWs within Fresno County, California. Additionally, Dr. Loomis held a second reader status. It remained crucial to manage these stakeholders closely, as they wielded absolute authority. Plans were to engage them intimately and frequently from design inception through completion.

The high-power, low-interest stakeholders were the Dean of the Population Health DNP program, the Dean of the Graduate SONHP, and the Affiliate Agreement/MOU office of standards, quality, risk, and patient safety. These individuals and offices need to be and have been kept periodically abreast of progress, showing satisfactory adherence to the social justice values of the USF SONHP DNP program.
The high-interest, low-power stakeholders were the DNP colleagues participating in the collaboration. Group conferencing was conducted biweekly during the first year, then weekly, demonstrating team leadership.

The low-power, low-interest stakeholders were the Latinx populations served by the CHWs of the STC Organization. Positive health outcomes and the removal of healthcare barriers remained long-term goals. See Appendix E for the Responsibility/Communication Matrix.

Knowledge translation via core curricula targeting non-communicable chronic diseases strengthened holistic care for the growing population of the Latinx community (Chinn & Kramer, 2018). A recommendation to start with EBR studies of the Latinx community in other areas was a place to begin. More extensive studies, long-term cohort studies, and inclusion within the reduction of health disparities research using linguistically appropriate, media-sensitive, and value-measured outcomes became critical to expanding the potential for positive nursing interventions. Longitudinal research studies reinforced the intensity and differential improvement, and language-appropriate mass media education reinforced CHW-led interventions (Koniak-Griffin et al., 2015). Employing the template of the DNP educational collaboration with current and future CHWs of the project and the USFCA SONHP DNP program provided one vehicle for reducing the negative health burden carried by the Latinx population (Melnyk & Fineout-Overholt, 2018).

Affording CHWs a stakeholder status for the care of the underserved, rural Latinx population was a beginning. Holding CHWs as a vital component within the interdisciplinary, holistic team approach signaled them as significant to the foundation of access to healthcare services.
Interventions

The educational training about non-communicable chronic diseases (diabetes, depression, obesity, and hypertension), through a three-module format (two synchronous sessions and one face-to-face session), was conducted under the facilitation of Dr. Loomis's DNP site preceptor for currently working CHWs serving the Fresno and Tulare Counties, California, through Zoom sessions, partnering with other DNP colleagues, and site management by STC. Individual CHWs used laptops remotely for Zoom and gathered collectively on the USF SONHP campus for the fifth module and post-assessment opportunity.

Gap Analysis

The community CHWs had no formal training on non-communicable chronic diseases (diabetes, depression, obesity, and hypertension) to add to their role of caring for the rural Latinx population of Fresno and Tulare Counties, California. EBR strongly supported the efficacy and efficiency of using CHWs in this role addition (Baquero & Parra-Medina, 2020; Ell et al., 2016; Polletta et al., 2021; Portillo et al., 2020; Tran et al., 2014; Turner et al., 2020; Vidoni et al., 2019).

A knowledge deficit gap exists in health education to provide case management, utilize screening tools, engage in preventive strategies for chronic diseases, and facilitate improved access to care for severe diagnoses (see Appendix E). Engagement in educational modules specific to each chronic illness topic burdening the Latinx community, trial role-playing, case studies, and clinical lab-type simulations to build confidence in new skills and acquired knowledge (Chinn & Kramer, 2018) will additionally offer an opportunity for these CHWs to sit for the Promotora certification within the State of California.
These strategic interventions steered the CHWs to their additional role in the preferred best practice standards for preventing and reducing chronic diseases. Outcomes expected were (a) CHWs would express a 25% increase in confidence in non-communicable chronic disease (diabetes, depression, obesity, and hypertension), eliminate barriers to improve the health of the Latinx communities they serve; and (b) CHWs would demonstrate 25% improvement in confidence to sit for the Promotora certification, allowing for best practices to flourish among the Latinx in Fresno and Tulare Counties, California. The educational collaboration between STC, the CHWs, and USF SONHP DNP academic studies eliminated this gap.

**Gantt Chart**

A realistic timeline was critical to staying on task while providing guidelines for all stakeholders in creating logical order for the DNP QI project to fulfill actualization. The phases of plan (1), do (2), study (3), and act (4) become the living soul of the organizational structure. Phase 5 for sustainability is possible only upon completing phases one through four (see Appendix F. Gantt Chart).

Phase 1 (plan) incorporated the preliminary meeting steps with the project facilitator, Dr. Loomis—written confirmation by the project site manager and MOU agreement needed to be solidified. Gathering the committee formally was necessary to garner official approval to proceed with the QI project process. The Chair, Dr. Maxworthy (the DNP advisor), and second reader, Dr. Loomis, agreed to serve as the DNP committee’s outstanding scholarly mentors. A rigorous gap literature review showed these steps to be completed. This project is currently within Phase 4, with submission to the Scholarly Repository expected in the fall of 2023.
Phase 2 (do) held 13 tasks within the implementation portion. Essential components were project approval by the DNP committee; drafts of prospectus and manuscripts authored and refined; drafts of screening tools and pre/post-assessment surveys created and evaluated; a pilot trial of the training techniques and redrafting of all tools; continued collaboration with DNP team members; address unknown barriers; maintain refinement of teaching strategies reflecting CHWs’ choices; conduct a simulation experience during face-to-face sessions with CHWs taking blood pressures with equipment that became their own since COVID-19 precautions preclude utilization of a clinical laboratory; progress notification to stakeholders; distribution of post-assessment surveys during the third module session (face-to-face); and celebrate the graduation of CHWs for their successful health training.

During Phase 3 (study), an audit of the pre/post-assessments was conducted; an accurate fiscal budget of this QI project was developed; the data were analyzed, coupled with an interrater check to reduce biases; review of the CHWs revealed experiences determining their perspectives of success or missed opportunities; and continued notification of progress to the stakeholders was conducted As was expected, the CHWs confirmed the educational training a triumph towards their goal of role addition of aiding in the improved advocacy skills for the Latinx population they serve.

Phase 4 (act) incorporated six crucial components: complete a comprehensive QI project, employ evidence-based protocols for analyzing findings, audit lessons learned, evaluate the QI project’s efficacy and efficiency, submit the manuscript to the USF Scholar Repository, and develop and present a concise PowerPoint presentation of the DNP QI project to the academic community.
Work Breakdown Structure

In the Institute of Medicine report, a gold standard, education of health professionals was directed explicitly to evidence-based practices, QI interventions, and utilization of informatics (Hammersla et al., 2021). Four phases guided this project: Phase 1 planning, Phase 2 doing, Phase 3 studying, and Phase 4 acting—the work breakdown structure detailed concrete steps captured within each phase (see Appendix G). Best practices originated from scholarly literature guiding each development phase (Melnyk & Fineout-Overhold, 2018).

Planning proceeded with meeting with the USF facilitator and STC preceptor/manager; official confirmation of project site, preceptor, and MOU/Agreement; conducting an evidence-based literature search for gap analysis; solidifying chair, second reader, and DNP committee; submitting the proposal to USF SONHP DNP committee; submitting the prospectus to the committee; and meetings with the USF facilitator and STC preceptor for intervention rollout options.

Applications incorporated receipt of formal approval of the DNP project by the committee; creation of drafts of a manuscript, screening tools, and survey questions to dually function for pre-assessment and post-assessment measures; piloting the training with the distribution of pre-assessment questionnaires; implementation of module refinements from CHWs feedback after each module; execution of module changes; notification of progress to stakeholders as a critical communication component; continuation of DNP team collaborations; and effectuating sagacious resolutions of unknown barriers.

Studying required investigation of the following: audit pre- and post-assessment tools; develop parameters of a fiscal budget and analysis of all data received during the training,
allowing an interrater to function as a double-check, ensuring reduced project manager bias(es); review CHWs’ experiences for their perspective of a successful endeavor or not; and ensure progress report notification to stakeholders was conducted.

Acting completed the four phases. Integral to this was completing the comprehensive project, analyzing findings, auditing lessons learned, evaluating the project’s efficiencies and efficacies, completing the project manuscript suitable for submission to the Scholastic Repository (a mandatory deliverable), and holding the presentation of the DNP project.

When all four phases have been accomplished, a fifth phase, sustain, is achievable. High-level tasks were conveyed employing these phases delineated within the work breakdown structure. It entailed creating a template of modules for sustainability while networking with USFCA DNP colleagues.

**Responsibility/Communication Matrix**

QI projects demand unambiguous directions for all stakeholders to keep the timeline functional and the enthusiasm for accomplishing each phase as approved by the DNP committee. The matrix follows the communication required, the purpose of this communication, what pathway(s) were followed, the frequency of the same pathway, who received this communique, who was the owner, and the deliverables (see Appendix H). During the implementation phase, four communication categories existed: the educational curriculum started the implementation process, the development of health topic modules explicitly targeted the CHWs, the team huddles (DNP colleagues), and debriefings occurred during and post-educational training experiences. The owner of the education curriculum that started its implementation belonged to Dr. Loomis, the faculty advisor. Dr. Loomis (faculty) and preceptor)
own the module development of health topics for the CHWs. Dr. Loomis fully owns the team huddles (DNP colleagues). The DNP colleagues debriefed and addressed unknowns during the training implementation process.

The deliverables included setting up the DNP students for the Spring 2023 semester, finalizing the QI project schedule and refining the periodic module, training on each topic, progress check-ins and updates, and stress reduction with spiritual support within the team of DNP colleagues.

**SWOT Analysis**

According to power dynamics, conducting a stakeholder analysis was foundational to the DNP’s project design and sustainability (Moran et al., 2019; Salsberg et al., 2017; Weberg & Davidson, 2019). The strengths identified internally were (a) non-communicable chronic disease knowledge experts at the USF SONHP DNP program, (b) USF Jesuit mission and values, (c) USFCA social justice goals of lowering obstacles to healthcare access, (d) USFCA SONHP partnership with the partner organization of Fresno and Tulare Counties, (e) intervention driven by evidence-based literature, (f) USFCA SONHP stakeholders’ dedication to success and sustainability of the project, (g) use of reliable and valid student evaluation tools, and (g) legislative support for CHWs in other states (Mindtools, n.d.; Moran et al., 2019).

Opportunities in educational training for the CHWs on chronic diseases of diabetes, depression, obesity, and hypertension provide the foundation for an expansion of CHWs’ roles to include (a) preventive strategies for improved health outcomes, (b) increased knowledge about non-communicable chronic diseases (diabetes, depression, obesity, and hypertension); (c) sustainable collaboration between the organization and USFCA SONHP DNP academia; (d)
expansion of the CHWs workforce; and (e) enhanced CHWs ability to become certified 

Promotoras in California when legislation allows.

The educational curriculum for these CHWs would not endure without unwavering dedication, passion, and earnest stakeholders nor preserve ongoing collaborations between the community and academia. Internal weaknesses could encompass (a) CHWs’ health literacy level and ESL; (b) CHWs living geographically far away, making travel to USFCA difficult; (c) COVID-19 pandemic precautions having to change teaching options; (d) inability to use the clinical labs for simulation skills experiences; (e) a new training on non-communicable chronic diseases; (f) STC change of staff; (g) time limits for each module and synchronous schedules; (h) lack of interest and commitment from stakeholders; and (i) unknown costs associated with project implementation (lack of computers).

Discerning potential external threats needing analysis included (a) turnover of STC CHWs, (b) resources to sustain collaboration disappear, (c) burden on the sole preceptor within the STC agency, (d) future DNP students’ lack of interest in the topic, (e) faculty liaison leaving USFCA SONHP DNP program, (f) interpersonal conflicts between stakeholders, and (g) a lack of long-term sustainability of the project (see Appendix I).

Comprehensive Financial Analysis

DNP leadership requires fiscal accountability rooted in each QI project. Hours in research and project creation total 150 hours, hours in education curriculum development of sustainable modules total 75 hours, hours in the development of PowerPoint slides and free canvas site for the CHWs total 45 hours, real-time course delivery of hybrid Zoom, and face-to-face sessions total 14 hours, and the detailed executive summary time total 20 hours. Using a flat hourly rate
of $85.40 for the DNP professional wages, the project DNP time totals $23,655.80. The additional cost is for 15 blood pressure kits—one kit for each of the CHWs, one kit for the preceptor, and one kit as a demonstrator model at $46.50 each, for a total of $697.50. A one-time USFCA $200.00 grant lowered the cost to $497.50. These clinical supplies add $497.50 to the budget total of $26,459. While grant funding may be possible, the DNP student will assume the cost of blood pressure kits and stethoscopes for a community contribution (see Appendix J. Budget and Return on Investment).

**Study of the Interventions**

**Outcome Measures**

The three main objectives of the evidence-based change of practice project were (a) CHWs would have had a 25% increase in knowledge of non-communicable chronic diseases for adults (diabetes, depression, obesity, and hypertension) and utilization of culturally appropriate screening tools by June 2023. A pre-assessment/post-assessment survey conducted in English was the measuring tool. (b) By June 2023, 75% of the CHWs would have expressed a 25% improvement in confidence to integrate health assessments and utilize screening tools in their roles with adult Latinx populations. (c) By June 2023, 75% of the CHWs would have appraised their confidence increased by 25% to sit for the California Promotora certification when available.

**CQI Method and Data Collection Tools**

Baseline data were collected from the STC CHWs who were actively employed and able to collaborate with the USF SONHP DNP program via self-administered survey questionnaires using a 5-point Likert-type agreement scale. These surveys initially included demographic items
but were eliminated as a group DNP collaboration. Questions targeted current health knowledge about non-communicable chronic diseases (diabetes, depression, obesity, and hypertension), including definitions, symptoms, risks, and benefits of seeking care. During this pre-assessment, confidence in using their health knowledge and prevention screening tools, a gauge of comfort in taking the Promotora certification testing, was assessed during small-group breakout sessions. Post-three-module curriculum participation, a self-guided assessment in English identical to the pre-assessment survey, was verbally communicated during the face-to-face module, and one final question was asked on both pre/post-assessments—opportunities to share opinions and suggest improvements after each module-guided tool refinement.

**Analysis**

For qualitative responses, calculations of measurements used descriptive statistics through Free Canvas Quiz Statistics item analysis for each module. Pre-assessment and post-assessment questionnaires were electronically available for at least one week to facilitate ease of completion.

The reliability and validity of the questionnaire remained strong, as this DNP student created each and was the sole person to inform, distribute, and evaluate results, lessen biases from multiple analysts, add to an effective communication style, and use straightforward statistical tools. The data remained clean, as copies of all pre/post questionnaires were available upon request. Two additional interraters (Dr. Loomis and Dr. Kletter) reviewed each module’s questions for accuracy. Using percentages allowed efficacy in the measurements. All health training modules consisted of eighth-grade reading levels to proscribe ESL barriers for the CHWs.
Outcome measurements were calculated using the new analytical features available through the Canvas Instructure item analysis quizzes showing means, standard deviation, and percentage improvement pre- and post-module educational experience with itemized question breakdown.

Cost-benefit analysis of the potential emergency room utilization provides an economic foundation for viewing the commodity factor(s) from 2022 California Health and Human Services (CalHHS, 2022) fiscal obligations and the reduction of financial burdens by the Latinx community. Chronic medical conditions, such as stroke, diabetes, cardiovascular disease, and the need for behavioral health services, were rated by California MediCal (Medicaid) or Medicare to cost $1,200 per visit to an emergency department. Exemplars were in Fresno County at St. Agnes Medical Center and Kaiser Foundation Hospital in 2022 (Fresno Community Health Improvement Partnership, 2023). St. Agnes Emergency Department encounters totaled 711, and Kaiser Foundation Hospital Emergency Department encounters totaled 498 for the Latinx population, and each encounter is approximately $1,200. If the CHWs’ are applied, and 23 clients did not present at a local emergency room for care ($1,200 x 23 = $27,600), then the program would be cost-neutral based on the estimated cost of the project at $26,459 (Waxman & Knighten, 2023; Zolezzi et al., 2022).

**Ethical Considerations**

Ethical standards protecting the participants during this DNP QI project are embedded within the American Nurses Association (ANA, 2015) Code of Ethics, projecting from the original Nightingale’s Pledge (oath) scripted by Lystra Gretter in 1873. In 1948, the Universal Declaration
of Human Rights, Article 12, stipulated that the nurse-patient relationship established the foundation of trust. The Belmont Report mandated each nursing professional to embody the responsibilities and obligations of applying the ethical principles of respect for persons, beneficence, and justice, cited in the ANA Code of Ethics Provision 4.2. Finally, the CITI program course on human subject research, as required by the USF SONHP DNP program, was completed on May 27, 2022. I maintained all questionnaires securely, using no personal identifying information and providing options for care not to harm (counseling resources), guaranteeing the ethical criteria of the educational intervention for the CHWs. Privacy protection remained crucial to embodying the values of the USF SONHP DNP program mission. The development of this STC collaboration addressed the determinants of health, social justice, advocacy, and healthcare promotion under a moral setting in Jesuit values (USF, n.d.)

The USFCA SONHP DNP program’s core values include Jesuit values of learning, faith, service, holistic worldviews, integrity, ethics, personal knowing, religious truths, and a commitment to internationally driven social justice. Creative, innovative, culturally humble, and spiritually sage strategies to promote value-based healthcare grounded in EBR are foundational to all DNP projects (Renwanz, 2022). Hierarchical, traditional top-down leadership remains starkly ineffective in approaching the Latinx population, who value transpersonal, trusting, feelings, expression, and a home-based, culturally competent healthcare system. Miracles, spirituality, and family reverence are foundations within the Latinx community (Watson et al., 2018). Steeping my actions in transparency, creativity, and cultural humility allows for mutual learning and evolving interventions for healing without breaking human connectedness, irrespective of socioeconomic status.
Thoughts about St. Ignatius Loyola’s beliefs in prayer and reflectivity include “seeing God in all things and everyone” (Renwanz, 2022, p. 2). The community in diversity Jesuit values remain deeply embedded, surrounding the diversity of the DNP student population, USFCA SONHP’s academic environment, the STC CHWs’ humble origins, and the underserved, low-income Latinx community. It is a population that faces the effects of poverty, environmental toxicity, food scarcity, immigration issues, and the health burden of negative trends of non-communicable chronic diseases like diabetes. The triad of hearts, minds, and souls encompasses my contemplation of the ethical footprint my DNP curricula will leave with the CHWs, allowing a healing touch for the Latinx community (Renwanz, 2022).

Section IV: Results

Two of the three main objectives were met: CHWs would have a 25% increase in knowledge of non-communicable chronic diseases for adults (diabetes, depression/stress/suicide, obesity, and hypertension) and utilization of culturally appropriate screening tools by June 2023. Under the disease topics, Diabetes had a positive knowledge gain of 28%, and depression/stress/suicide had a positive change of 29%. Although obesity/hypertension did not equal or surpass 25%, there was still a positive change of 22%. Two modules were over the goal predictions, and the third module encouraged a sharing of knowledge networking to accomplish a 22% improvement, solidifying the successful educational knowledge translation of this DNP QI collaboration between the STC CHWs, the USFCA DNP teaching, and USFCA SONHP (see Table 1).

Table 1

Results
<table>
<thead>
<tr>
<th>Chronic Disease Topic</th>
<th>Pre-Assessment Correct Mean (avg.)</th>
<th>Post-Assessment Correct Mean (avg.)</th>
<th>Percentage Positive Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>35%</td>
<td>63%</td>
<td>28%</td>
</tr>
<tr>
<td>Depression/Stress/Suicide</td>
<td>27%</td>
<td>56%</td>
<td>29%</td>
</tr>
<tr>
<td>Obesity/High BP</td>
<td>69%</td>
<td>91%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Through the analysis, it was questioned whether the learners who identified as ESL were challenged by the phrasing of the questions. For example, for the question, “What is not true of Type II DM?” only 8% answered the question correctly (pre-assessment), and 50% answered correctly in post-assessment. When posing the question, “What is the definition of depression?” only 18% answered correctly pre-assessment, and 80% responded correctly post-assessment. Finally, questioning learners about “What are the risks of obesity and hypertension?” 38% answered correctly, and subsequently, 85% responded correctly post-assessment.

The interventions aimed to increase the CHWs’ knowledge to raise confidence by 25% in each module presented. Module one demonstrated a 28% increase, module two showed a 29% increase, and module three demonstrated a 22% increase. Two modules were over the goal predictions, and the third module, a face-to-face session, allowed group thinking and networking to encourage experiential learning, still held a 22% increase. The collaborative educational training about non-communicable chronic diseases for adults strongly justifies this QI DNP project as sound in design, delivery, and impact. This DNP QI template delivered an efficacious toolkit for enriching a role addition to STC CHWs.

**Section V: Discussion**
Summary

This DNP QI group project succeeded in producing CHW trailblazers through enhanced alliances with the Latinx community of Fresno and Tulare Counties, California. Reduced non-communicable chronic disease burdens, improved living quality, and substantive resource savings set the foundation for the sustainability and growth of CHWs to facilitate evidence-based, culturally appropriate, quality strategic interventions for the expanding Latinx population growth while promoting community-academic partnerships.

Interpretation

The description “We are the sun for our community” (Steinman et al., 2023, p. 3) has been used within evidence-based case study research adapting home-based CHWs’ role addition for reducing mental health inequities among Latinx elderly. Non-specialist interventions facilitate reductions in social determinant inequities. Motivational interviewing techniques, problem-solving and self-management support, and linguistically sensitive approaches by CHWs bolstered their trust relationships, now solidified within these communities.

Fidelity by the CHWs to their Latinx populations intersected the burden of disease with new access to traditional healthcare. CHWs’ role addition reinforced patient-centered, value-based healthcare. The outcome measures supporting goal attainment remained fluid for sustainability.

Limitations

This QI project prioritized sustainability if future DNP students at the USF are willing to maintain the teachings. Possible risks were the DNP student’s personal biases, the COVID-19
pandemic restrictions, IT technology gaps of equipment and accessibility, the possibility of CHWs dropping out of the educational curriculum or moving, leadership changes at USFCA SONHP or STC management, legislative policy priorities, immigration regulations, reimbursement billing hurdles, training priorities, and dwindling resources. Shared decision-making by stakeholders creates incentivized adaptations futuristically. Culturally competent communication between Latinx, traditional healthcare access, and CHWs as trusted non-specialist liaisons embedded in national and global EBR remains critical.

**Conclusion**

Providing a value-added educational opportunity for CHWs to expand their roles to include strategic interventions on non-communicable chronic disease care management, prevention, and risk reduction tools, all culturally tailored, has been reflected throughout the EBR literature. Training CHWs on a role addition for health using a culturally tailored, humble program based upon evidence-based strategies to promote positive health behaviors will improve this population’s mental and physical health (STC Organization, 2021). The collaboration with the USF SONHP DNP program is steeped within best practice recommendations (Melnyk & Fineout-Overholt, 2018).
Section VI: References


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Appendix A. PRISMA Flow

PRISMA FLOW Diagram for Strategies to Reduce Chronic Diseases: Role Addition to CHWs

Identification of studies via databases and registers:

- Records identified from Databases (n = 2702)
- Records removed before the screening:
  - Duplicate records released (n = 529)
  - Documents marked as ineligible by automation tools (n = 713)
- Records excluded** (n = 621)
- Records screened (n = 1509)
- Studies included in review (n = 14)

(Page et al., 2020)
### Appendix B. Evaluation Table

<table>
<thead>
<tr>
<th>Purpose of the Article or Review</th>
<th>Design/Method/Conceptual Framework</th>
<th>Sample/Setting</th>
<th>Major Variables</th>
<th>Measurement of Major Variables</th>
<th>Data Analysis</th>
<th>Study Findings</th>
<th>Level of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral &amp; subject health improvement with two CHW interventions conducted both in U.S. and in Mexico at the geographical border sites – Pasos Adelante (US), Meta Salud (Mexico) – using educational modules to promote increased physical activity and healthier diet changes; promote social support, community group exercise programs and Latinx population empowerment.</td>
<td>Cohort study Educational teachings for 12-13 weeks led by CHWs (promotoras) in curricula that featured healthy diets and benefits of physical activity using a randomized household survey.</td>
<td>Final Pasos Adelante curriculum modules conducted in Arizona at rural U.S.-Mexico border community. N=347 at baseline; 83% completed intervention; 73% completed follow-up. Note: Depression/quality of life completed by small n= 48 with positive results; started 2008. Three promotoras recruited participants from health fairs, after school events-</td>
<td>Body mass index, lipids, waist circumference, blood pressure, serum HbA1c levels, quality of life self-reporting &amp; depression; CHWs’ employment, age, having type 2 diabetes, having a family member with type 2 diabetes or severe cardiac disease.</td>
<td>Self-report assessments: demographics, health-related behaviors, health status, access to care, subjective health, specific behavioral health change objectives per module teachings – lowering unhealthy fats in cooking- added. Public health benchmarks: CDC guidelines, self-ratings were excellent, very good, good, fair, or poor health. risk factors. Mean. standard deviations, odds ratio using a 95% confidence interval.</td>
<td>Linear mixed models used: logistic regression – making a change of 10% for continuous outcomes and binary 0 to 1 for binary outcomes at 3-month follow-up of demographic and risk factors. Differences between Pasos Adelante and Meta Salud: Meta Salud participant: younger, had lower cholesterol, higher tobacco use, married, &amp; healthcare coverage (98% over 55%).</td>
<td>Level: I, high quality</td>
<td></td>
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<td>Carvajal, S. C., Huang, S., Bell, M. L., Denman, C., Guernsey de Zapien, J., Cornejo, E., Chang, J., Staten, L. K., &amp; Rosales, C. (2018). Behavioral and subjective health changes in US and Mexico border residing participants in two promotoras-led chronic disease preventive interventions. Health Education Research, 33(6), 522–534. <a href="https://doi.org/10.1093/her/cyy037">https://doi.org/10.1093/her/cyy037</a></td>
<td></td>
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<td>Strengths: CHWs strong commitment to local Latinx population’s health access and improvement; ability to tailor interventions to local Latinx population needs. Weaknesses: RTCs randomization at the community health level requiring significant funding &amp; limited statistical power if there are not multiple group level participant units; reduced efficacy if CHWs chosen as facilitators are strongly influenced by the FQHC administrators than...</td>
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<tr>
<td>Purpose of the Article or Review</td>
<td>Design/Method/Conceptual Framework</td>
<td>Sample/Setting</td>
<td>Major Variables</td>
<td>Measurement of Major Variables</td>
<td>Data Analysis</td>
<td>Study Findings</td>
<td>Level of Evidence</td>
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<td>all community settings; additional participants came from referrals by prior participants. Meta Salud completed in 2012. ( N=171, 152 \ (83%) ) completed all three questionnaires. Nine <em>promotoras</em> conducted study recruitment done outside clinical settings and included door-to-door and school outreaches. Criteria: over 18 years old, residing in community. Subjects: voluntary and could withdraw at any time. Multiple refinements of</td>
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<td>by geographic site itself. Possible study “contamination” if local community resources are used for exercise &amp; healthy eating are same site as place of medical care (FQHC). Limitations in sex (gender) of participants – higher enrollment of women - but may also be strength- the women act as extension of CHWs within family unity. Low enrollment of men remains a public health issue universally of all research studies on Latinx populations. Lack of comparison groups. Feasibility: CHWs’ effectiveness noted in many research studies, can be</td>
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<td>teaching modules and tools by Spanish first language team members, then bilingual personnel within the actual communities.</td>
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<td>translated to RTC studies incorporating adjustments to challenges.</td>
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Conclusions: Two binational cohort studies demonstrated positive behavioral changes in physical activity and healthy eating choices (diet). CHWs again prove efficacy in conducting strategies.

Recommendations: Future research adjust Pasos Adelante and Meta Salud methodologies to RCTs bridging ethical dilemma for CHWs to use some of the Latino community as controls – not to deliver or deliver after the study the effective interventions for reducing chronic
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<td>diseases in Mexican-origin individuals. Note: the curricula need adjustments to change sedentary behavior patterns to adhere with CDC-community resources for funded exercise opportunities; healthy food and drinks access; modifying strategies to individual participants are critical to reinforce lifestyle changes encouraged and mentored by CHWs; reinforcing long-term goals of EBR.</td>
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Definition of abbreviations: CDC: Center for Disease Control; CHWs: community health workers; EBR: evidence-based research; FQHC: federally qualified health center

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| Evaluate effects of a behavioral intervention for weight loss among Latino immigrants using CHWs & case management against standard care (UC) for reducing depression sx who fall below the FPL, decreasing the “synergistic” detrimental effects of obesity & depression. | Randomized to UC, case management (CM), or CM + CHW support to compare the influences of these interventions on Latinx populations. Poverty levels were an integral evaluation: Vivamos Activos Fair Oaks Trial (VAFO). VAFO based on a culturally appropriate Diabetes Prevention Program, based on self-efficacy & group efficacy behavior interventionist tools; conducted over a 24-month period of time. | Primary usual care (UC) (N=41), Clinical case management (CM) alone (n=84), or CM + CHW (n=82). 207 study subjects were randomized. CES-D scores for 174 (N=174) at 24 months (33 lost to f/u). Exclusion criteria: inability to speak Spanish, not agreeing to try weight loss, taking multiple psychotropic RX, or taking 1 anti-psychotic RX. | Inclusion criteria: obesity (BMI 30-55), at least one CHD risk factor, be 18 y/o or older, & received primary care at Fair Oaks Adult Clinic. The Stanford University & San Mateo Medical Center Institutional Review Boards granted approvals. Depression sx were measured with a short version of the CES-D for Latinx; EBR showed this version to be reliable & precise, the same as the full version, and scores ranged from 0 to 22; higher scores meant higher levels of depression. | Descriptive statistics used. Females had Higher mean CES-D scores (7.6 ±4.6) to males (5.4 ±4.2); Single, divorced, separated or widowed (8.3 ±4.9, p=0.01) had higher DX SX vs. married or living as married (6.5±4.4); < 5000 steps per day (7.9 ±4.7, p= 0.04) higher CES-D scores than subjects w/ mean ≥ 5000 steps (6.6 ±4.5); CM grp & CM + CHW grp w/subjects <below 100% FPL had significant results: CM had (B coefficient = 0.78; 95% CI 0.61-1.00; p=0.05), CM + CHW subjects CES-D decreased (B coefficient = 0.72; 95% CI 0.55-0.93; p = 0.01). | Participants < 100% Federal Poverty Level (FPL) randomized to CM + CHW had > reduced depressive SX among immigrant Latinx, (statistical significance) >those in UC (p=0.01). | Level of Evidence: I Grade: A (high)  
Worth to practice: Latinx participants < 100% of FPL in the CM & CHW strategy had a mean lowering of CES-D score of two points, a critical benefit to the poorest participants; significantly improved above UC. It is feasible to use CHW's as facilitators for this population to improve long-term outcomes of reduced obesity & depression among vulnerable and growing numbers of Latinx populations, who carry the burden of chronic diseases. Those with 100% to 400% > FPL decreased CES-D scores under CM & CM +CHW.
### Purpose of the Article or Review

- **Design/Method/Conceptual Framework**
- **Sample/Setting**
- **Major Variables**
- **Measurement of Major Variables**
- **Data Analysis**
- **Study Findings**

### Level of Evidence

- Strategies, above UC.
- Recommendations: Conduct larger multi-site studies, and seek collaboration with primary care clinical settings to utilize CHW's integration into care for Latinx communities.

### Definition of abbreviations:

- RX = medications, CHW = Community Health Worker, CM = case management, SX = symptoms, FLP = federal poverty level, UC = usual care.


### A 6-month participatory, feasibility study “De la Mano con la Salud,” with male-to-male- promotores (CHWs in Spanish) goal: improve social supports, healthcare access, depressive symptoms, & decrease binge drinking

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<td><strong>A conceptual model developed after a participatory assessment of the health of Latino men conducted w/ Latino Engagement Group for Salud (LEGS): familism, collectivism. Premises are Latinos are isolated in ELCs &amp; can benefit</strong></td>
<td><strong>Latino males, mean age of 27: (aged 18-64), median household income &lt; public ($41,490 vs $51,366).</strong></td>
<td><strong>182 participants, all Latino immigrant men consented, 89 men completed baseline questionnaire &amp; 6-month follow-up.</strong></td>
<td><strong>Independent variables are feeling alone &amp; poor social support; dependent variables are depression, barriers to care, &amp; alcohol binging. Familism = collectivism=centers on extended family; includes familial obligations,</strong></td>
<td><strong>Tool used: the Wheel of Life = 4 item scale w/good reported internal consistency (alpha =0.83) using a</strong></td>
<td><strong>Statistical analysis used IBM SPSS version 20. Exploring subsample bias, compared data from participants who completed baseline questionnaire only w/data from participants who completed both. Chi square tests of homogeneity. Dichotomized the not normal distribution of All participants had low acculturation- this measure was not used. 1/2 completed high school, all were immigrants. Hypothesis I: Perceived social support: increased from 49.5% to 64.5%, p=0.06; considered not statistically significant.</strong></td>
<td><strong>Level II – high/good quality</strong></td>
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<td><strong>Strengths: Hiring local men as promotores contributed positively to recruitment of participants, mirrored in stress reduction in Ohio.</strong></td>
<td><strong>Weaknesses: Small sample size, dispersed community, less than optimal</strong></td>
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<td>drinking among Latinx males.</td>
<td>from expanded social interaction w/others like them. Pre- post-non-controlled feasibility study. 11 Latinx immigrant males (recruited from Latino grocery stores, churches, &amp; events by flyers &amp; word-of-mouth were trained as promotores. Main intervention was offering non-directive social support, meeting in homes, libraries, places of convenience for participant.</td>
<td>Meeting in homes, libraries, places of convenience for participant.</td>
<td>perceived support from family members, and including family in important decision-making. Perceived social supports; healthcare access; drinking behavior and depression.</td>
<td>published Spanish translation, 0.686 @ baseline, 0.719 @ 6 months. Healthcare access measured = dichotomous variables (having health insurance, a regular source of car, a doctor’s visit for a checkup in past year). Drinking behavior = having @ least 5 drinks on one occasion in last 30 days= dichotomized into having had a binge drinking episode in past 30 days or not. Depression: Spanish version of the PHQ-9. Demographic questions: age, country of origin, time in the U.S., &amp; acculturation. 5-question version of the Short</td>
<td>perceived social support (low &lt; 10, high &gt; 10), depression scores mild -severe &gt;5, and # of binge drinking episodes (zero &amp; 1+). Chi square tests = significant if p&lt;0.05.</td>
<td>Hypothesis II: Access to care: 3 variables significantly increased at 6 months: having source of care (p=0.004), having a clinician visit (p=0.001) &amp; having dental care (p=0.020). % Having health insurance did not change (p=0.687). Hypothesis III: Drinking &amp; depression: binge drinking &amp; depression SX did not significantly change from baseline to 6-month follow-up (p= 0.839 and 0.210, respectively).</td>
<td>transportation systems, long working hours of participants = prevented expanding social network. Using published scales w/vulnerable populations = challenging. 4-item social support scale may have biased results toward the null, w/ a small sample. A stress reduction study used 8-item scale, able to analyze 112 participants. Lower education = may interpret scale items differently than prior validation samples. Several limitations: lack of a control group w/several threats to validity, including history &amp; selection, 27 participants excluded due to</td>
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<td>Acculturation Scale for Hispanics has internal consistency reliability alpha=0.90 in literature &amp; 0.601 in data. Low acculturation = &lt;2.99 Means (M), Standard Deviations (SD)</td>
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<td>questionnaire administered &gt; 3 mo. after enrollment. Low power w/small sample. Promotores were required to record monthly meetings w/participants, leaving only anecdotal evidence of other phone &amp; in-person meeting. Feasibility: Evidence showed male promotores guided by participatory research process= significantly improve healthcare access among Latino immigrant men. Conclusions: Trust &amp; respect = crucial in reaching marginalized groups. Cognitive interviewing may be needed. Recommendations:</td>
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<td><strong>Use male promotores in FQHCs, community health clinics to reach &amp; retain Latino immigrants.</strong></td>
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<td><strong>Level III, good quality</strong></td>
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<td><strong>Need longer intervention: 9-12 months to achieve positive health outcomes.</strong></td>
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<td><strong>Incorporate longer perceived social support scale: 8-item: results in increased reliability &amp; increased power. Check which dimensions of social support are most helpful to maximize effect of intervention.</strong></td>
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**Definition of abbreviations:** LEGS: a coalition of community members, researchers, & health & social service providers; “De la Mano con la Salud”: Lend a hand for Health; ELC: emerging Latino communities; PHQ-9: Patient Health Questionnaire.


| Explore promotores’ perspectives on branching out to reduce barriers to E-B mental health care w/in a rural, Latinx | Qualitative study using focus group perspectives; informed consent w/IRB approvals, in Spanish. | 16 included Promotores; inclusion: worked w/Latinx; identified as a promotora; recruitment from | 14 Female 2 Male Primary language = Spanish = 100% Education: LOR =12-48 yrs. Themes Means (M), standard deviations (SD), M age = 48.88 y/o, range = 25-65, SD = 10.65 M LOR = 28.12 SD = 11.46 CHW- “Task-shifting” Theme 1a: Promotores are trusted caretakers of their community. |
|---------------------------------|-----------------------------------|-----------------|-------------------|---------------------------------|---------------|---------------|-------------------|

<p>| | <strong>Level III, good quality</strong> |
| Strengths: promotoras = culturally appropriate for Latinx community; | | | | | | | |</p>
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<td>Community-stigma issues.</td>
<td>Focus group transcripts into NVivo, Version 10. Used principles of thematic analysis - not model framework to guide coding.</td>
<td>a FQHC. Convenience sampling - 3 focus groups in a low-income, rural CA community at the US-Mexican border.</td>
<td>6 had &lt; 12 yrs. 10 &gt; 14 yrs. Work: 6 = full-time 5 = part-time 5 = no</td>
<td>range= descriptive statistics</td>
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<td>Theme 1b: Mental health delivery – fall w/in role of promotoras &amp; benefit the community. Theme 2a: Anxiety &amp; depression are important, lots of denial. Theme 2b: BT positive interventions. Theme 2c: Promotores can do BT w/supports. Theme 3: Barriers perceived to future delivery - low mental health literacy.</td>
<td>Positive perspectives by these CHWs; input for concrete tools to improve CHW role; evidence-based interventions to reduce anxiety &amp; depression; barrier reduction of confidentiality worries by Latinx; improved crisis interventions – in native language by a trusted CHW. Addressing mild to moderate mental health issues by promotores; allows more serious cases to be cared for with lack of clinicians/resources. Weaknesses: Small # of participants; focus groups - not individual interviews; not an implementation study. Recommendations: Future research</td>
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See if diabetes self-management education (DSME) improved general emotional distress &/or health specific distress -T2DM

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| Gutierrez, A. P., Fortmann, A. L., Savin, K., Clark, T. L., & Gallo, L. C. (2019). Effectiveness of diabetes self-management education programs for US Latinos at improving emotional distress, a systematic review. *Science of Diabetes Self-Management and Care, 45*(1), 13–33. [https://doi.org/10.1177/0145721718819451](https://doi.org/10.1177/0145721718819451) | Systematic review - followed PRISMA guidelines. Risk of bias using EPHPP quality assessment tool by 2 independent reviewers; PRISMA – online databases; PsychINFO, CINAHL | 15 studies included. Initial yield = 1,367 articles, hand searching +7 more; 291 removed as duplicates; 943 excluded; 140 reviewed; 125 were excluded; final sample of 15 included. Grey literature excluded. | DSME intervention & curriculum content; cultural tailoring; emotional distress intervention content; distress outcome assess; tools used for assessment methods. Descriptive statistics Means, standard deviations. Raw mean differences (D) & effect sizes (d); standard effect sizes discussed with 2 reviewers, a 3rd to breach discrepancies until consensus reached. PHQ-9, MOS health distress | Quality of evidence & research bias (using EPHPP): selection bias 3 = weak quality/high bias; 2= moderate quality/bias; 1= strong quality/low bias: 10 = #3. Study design: 11= #1- strong quality, 4 = #2- moderate quality. Global rating: 1 was #1= strong quality; 3 = 11 of 15 studies received a weak rating of evidence quality. Attempts to contact authors of 4 articles with missing quantitative data w/no success; heterogeneity in both intervention dosage and content; meta-analysis of effect sizes not conducted per | Level II; high quality Strengths: ADA confirms in 2016 routine screenings for emotional distress as beneficial, disease control is improved thru DSME; CBT interventions Weaknesses: studies with small sample sizes, studies had multiple
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<td>PubMed, and CENTRAL Search: database inception thru April 2018.</td>
<td>scale; DDS; PROMIS Anxiety Subscale; CES-D; PAID; BDI-II Tools for depression and distress.</td>
<td>#2 moderate quality; 11 = #3, weak quality. Less frequent contact, automated calls, in English, or not content covering emotional distress.</td>
<td>Cochrane systematic review guidelines.</td>
<td>behavioral outcomes; no quantitative analysis of effect size w/either individual or aggregate; differentiation between depression or DSME interventions; not most current publications part of 15 selected; little psychosocial content; lack of integrative T2DM education with BT; contact done at end of intervention not with maintenance/follow-up. Conclusions: No strong evidence to support DSME for Latinx adults w/T2DM improve emotional distress in this systematic review. Recommendations: Pursue evidence-based “robust” studies that utilize strong methodology</td>
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<td>tools should be conducted. Critical to incorporate cultural tailoring for symptom reduction in the Latinx population. Goal of reducing emotional distress both general &amp; health specific (T2DM) for the Latinx populations, an increasing underserved, growing sector in the US. RCTs (include reporting of medications, psychotherapy, &amp; other concomitant care &amp; intent to treat care) need to be conducted specifically tailored to the growing Latinx population.</td>
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**Definition of abbreviations:** DSME: diabetic self-management education; T2DM: type 2 diabetes; BT: behavioral therapy; ADA: the American Diabetes Association; EPHPP: Effective Public Health Practice Project Quality Assessment Tool for Quantitative Studies (bias checking in public health interventions); BDI-II: Beck Depression Inventory-II; CBT: cognitive behavioral therapy; CES-D: Center for Epidemiologic Studies Depression Scale; DDS: Diabetes Distress Scale; MOS: Medical Outcomes Study; PAID: Problem areas in Diabetes Questionnaire; PHQ-9: Patient Health Questionnaire; PROMIS: Patient Reported Outcomes Measurement Information System; RCTs: randomized controlled trial studies.

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<td>Query if joining strategies for diagnoses of pre-diabetic &amp; diabetic adults into a single intervention led by CHWs would prove efficacious for Latinx populations, even with limited health literacy &amp; low incomes; substantiate cost-effectiveness</td>
<td>Pilot study: Quasi-experimental mixed-method design, combining DSMES (those with diabetes) &amp; NDPP (pre-diabetic) provided in two programs under the CDC prevue. See if the results diminish the inequality gap of low socioeconomic status &amp; literacy levels.</td>
<td>Pilot mix-method done in Inland Empire Region of Southern CA, participants lack health insurance, and has highest rates of DM mortality in CA; 33 participants, 4 male, 29 female, 18 had no diabetes (pre-diabetes &amp; risk), 15 were DX with DM.</td>
<td>MD referral: 25 did not have one; 28 were married/living with a partner, four were either single, widowed, or divorced; all 33 had knowledge of diabetes.</td>
<td>Weight, A1C hgb (glycosylated hemoglobin), height, BMI, BMI categories (overweight or obese), Diabetes status, marital status, education level, language, family and/or friends’ attendance, diabetes knowledge, &amp; recruitment type.</td>
<td>Quantitative data analysis was done using SPSS version 22; Primary = wt. change; chi-square tests for baseline difference between gender, diabetes dx, recruitment setting (md-referred or community recruited), and family/friends (FF) attendance. A t test to check wt., A1CC and knowledge differences between DM &amp; NDM dx grps; and Wilcoxon tests for pre- &amp; post-changes. Data inspections for outliers happened prior to analyses. Themes using critical quotes used the 2017 computer software program MAxQDA (v.12, Berlin, GDR) to code verbatim, Both groups (pre-diabetes &amp; diabetics) had no statistical grp differences. DM grp 53.3% had significant wt. loss, reducing CVD risk by 4-8%; the NDM grp – 44.4% had significant wt. loss, reducing DM risk by 16%.</td>
<td>Level of evidence: III Grade A</td>
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Worth to practice: Evidence-based research for CHWs let diabetes prevention & self-management strategy encourages lifestyle changes for families across dysglycemic spectrum, reduces diabetic chronic disease burden, & lessens disparities in impoverished Latinx communities. Feasible for CHWs to use these strategies locally & nationally. Recommendations: Focus on utilizing CHW-led interventions via legislative changes, lifestyle changes to reduce dysglycemic lab values, address social determinants of health, and...
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<td>Evaluation of both the feasibility &amp; outcomes of promotora-led lifestyle behavioral change intervention(s) within the community of overweight, immigrant Latinas who have limited access to healthcare.</td>
<td>Randomized controlled trial design using a community prevention model.</td>
<td>223 women aged 35-64 years, low income, &lt; 8th grade education, Hispanic communities.</td>
<td>Culturally competent lifestyle behavioral interventions: 8 group educational sessions of “Su Corazon, Su Vida” classes, then 4 months of home visits &amp; telephone calls for individualizing teaching &amp; coaching; Control group had same length educational program &amp; follow-up.</td>
<td>Descriptive Statistics: Means &amp; standard deviations. Baseline, 6 months, &amp; 9 months of dietary habits via questionnaire, accelerometer reading of physical activity, clinical measures (BMI, weight, waist circumference, blood pressure, lipids, and blood glucose).</td>
<td>Cardio metric outcomes: BMI pre-treatment = 11 women, BMI = 32.37 (5.00) decreased post - 9 months to 31.96 (5.30) $P = &lt;.05$; Blood pressure: pre: 111.97 (13,18) – post-9 months 110.63 (14.29); daily steps baseline 8,571 daily – post 9 months 8,577 maintaining activity level; usual group baseline 8,571- post 9 months 7,241.</td>
<td>Latina women in the intervention group had significant improvement in dietary habits, by waist circumference, and weight (lower BMI), increased knowledge of cardiac disease, &amp; both high attendance &amp; high retention rates showed acceptability of the promotoras teaching efficacy &amp; feasibility of utilizing this methodology of Level I High Quality. Reduction of health risks of obesity, cardiac disease, sedentary lifestyle, chronic disease sequelae is possible when culturally competent lifestyle behavioral interventions are strategically available: targets of accessible, affordable, language appropriate including mass media education. Longitudinal research studies for...</td>
<td>Improve chronic disease burden for Latinx populations.</td>
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Definition of abbreviations: DSMES = The Diabetes Self-Management Education & Support program; NDPP = the National Diabetes Prevention Program; CDC = Centers for Disease Control & Prevention; DM = diabetes mellitus; SPSS = Statistical Package for the Social Sciences

Purpose of the Article or Review

This review aims to engage Latinx populations to increase physical activities, as strong EBR has proven is effective in physical & mental health benefits, reducing risks of chronic disease burden.

Design/Method/Conceptual Framework

Conceptual frameworks = transtheoretical model & social cognitive theory, Promotora-led interventions were identified as best practices.

Sample/Setting

Searches followed PRISMA guidelines; 21 RCT done in the U.S.; only RCTs that did not include behaviors of children were included.

Major Variables

Best practices for increasing physical activity (PA); age 18 & older, theoretical frameworks identified; World Health organizational global physical activity questionnaire, Pregnancy PA questionnaire; daily steps via accelerometers, follow-up times ranges from three to 24 months- 62% had 3-6 months; educational sessions on PA.

Measurement of Major Variables

Self-report measures used; pedometers, virtual advisor on computer at senior centers; descriptive statistics with means & percentages used.

Data Analysis

81% of studies mentioned cultural tailoring as integral to strategies; most studies used walking as PA; theory foundation studies using capability behaviors showed statistically significant increases in PA.

Study Findings

The use of promotoras increased trust & nuanced cultural appropriateness of strategies. Engaging in 1 hour per day of PA reduces chronic disease burden; choosing music that focuses on country of origin increases participation in activities. Most used walking as PA.

Level of Evidence

Worth to practice: Effective culturally tailored physical activity strategies have been lacking in Latinx communities, putting them at risk for obesity & DM2. Theory frameworks translated into walking facilitated by promotoras showed reduced risk of obesity & DM2 dx.

Conclusions: Culturally tailored strategies improved health outcomes in Latinx populations.

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<td>self-care of DM, &amp; leisure time activities.</td>
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<td>effectiveness for Latinx utilizing Promotoras, a theoretical framework, and in-person formats.</td>
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<td>Limitations: pedometers may have influenced the desire to increase PA.</td>
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<td>Weakness: Underrepresentation of elderly &amp; male participants: 7 in 10 Latinx adults do not believe there is a universal culture among Latinx.</td>
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<td>Recommendation: Conduct research studies that appeal to older &amp; male Latinx participants; include dancing, a more vigorous PA (than walking); incorporate objective measurements (not just self-reporting); delving into grant studies for larger</td>
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<td>Disproportionate numbers of Latino community affected by depression, anxiety, &amp; stress during this COVID-19 pandemic requiring equity-based, community-led intervention facilitated by promotores.</td>
<td>Tracking sheets to identify unique participants enrolled in Latino Health Access’s Emotional Wellness program - both pre-COVID-19 March 2019 - February 2020; and COVID-19 period March - June 2020. Regression models developed to compare referrals pre &amp; during the pandemic. Observational study using de-identified</td>
<td>346 enrolled pre-COVID-19; 1,090 enrolled during COVID-19; ages 5-86. Promotores referred participants to the LHA.</td>
<td>Of 776 unique participants; Latino n = 763, 98.3%; female n = 594, 76.5%; aged 25-44 n = 400, 51.5%, and from Santa Ana, CA n = 503, 64.8%; increased male participation (P&lt;.001); increased people aged 45-64 - 30.1% vs 37.9%, P=.03; ethnicity did not change: 98.1% pre-pandemic vs 98.6% pandemic, P=.83.</td>
<td>Pearson’s X2 tests on monthly aggregation assessments. Independent t tests to assess significance of services provided.</td>
<td>Missing data due to transition to virtual service delivery &amp; rapid expansion of LHA program due to COVID-19 pandemic. Ratio of services to participants increased from average of 4.0 in pre-pandemic to 4.3 in pandemic (P=.54) showing each participant received &gt; greater # of services.</td>
<td>Referrals change from primarily mental health services &amp; disease management pre-COVID-19 to affordable housing support, food assistance, and suplemental income during the pandemic. Promotores understood LHA participants’ needs in real time; prevention information, education, and resources; civic engagement opportunities for housing crisis, and non partisan voter engagement messaging.</td>
<td>Level III High quality Strengths: Promotores effectively provided an equity response decreasing health disparities by engagement in interventions that went to root causes, upstream strategies bridging gaps in services, and improvement of culturally appropriate wellness services including narrative therapy, integrated social services (housing, food, income, local policy changes).</td>
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Definition of abbreviations: DX = diagnosis; DM2 = type 2 diabetes; PA = physical activity; RCTs = random controlled trials

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<td>tracking data collected by Latino Health Access’s Bienestar Emocional Wellness program (LHA).</td>
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<td>Weaknesses: LHA participants – high proportion uninsured, immigrant backgrounds, &amp; ineligible to mainstream services – have a disproportionate need to be reliant on community-based organizations like LHA (no insurance or Medicaid). Virtual collection of participation data during pandemic; limitations with linkage of study to outcomes. Feasibility: The promotora model of equity response for community mental health interventions during COVID-19 pandemic utilized culturally appropriate tools, talents of promotora-facilitated programming.</td>
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<td>&amp; having this model become a strongly trusted intervention for integrated for both mental health &amp; social services (not the traditional health system that perpetuated health inequities).</td>
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**Recommendations:**
Continue to support with designated funding the programs like LHA who use *promotores* championing of mental wellness strategies to reduce the COVID-19 pandemic impact on underserved & systematically disadvantaged Latinx populations as a template for future wellness promotion.

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<th>Provide a description of CHW’s roles in a diabetes self-</th>
<th>A retrospective qualitative inductive analysis: open</th>
<th>Eligible participants = 30-70 years old; poorly</th>
<th>Teachings: Signs &amp; SX of glucose levels (termed low &amp;</th>
<th>Coding conducted – “thematic saturation.” Atlas.ti qualitative</th>
<th>634 encounter reports (average = 4.4 visits per study participant).</th>
<th>CHWs found three themes: 3 main obstacles to</th>
<th>Level III High/good quality</th>
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<td>Strengths:</td>
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<td>management intervention; qualitatively examine content of CHWs home visits to demonstrate efficacy of CHWs as team members of PC out in the community.</td>
<td>text home visit encounters from Peer Support for Achieving Independence in Diabetes (Peer AID). RTC trial of low-income individuals w/poorly controlled diabetes. An NIH-funded RTC testing the effectiveness of a home-based diabetes self-management intervention delivered by CHWs. CHW = bilingual, bicultural employee of Public Health of Seattle, King County, living in same area as participants. Written consents in Spanish were obtained from each participant.</td>
<td>controlled T2DM [HbA1c &gt; 8.0%], poor [household income &lt; 250% of the federal poverty line]; and lived in King County, Washington. Recruitment from 3 places: a large public hospital, a VA medical center, &amp; a community health clinic. I=n=145 randomized; C (usual care) n=142; Total n = 287.</td>
<td>high blood sugar); T2DM interacts w/food; RX treatments for diabetes. Food insecurity, safety for physical activities.</td>
<td>data analysis software – organized coding systems. CHWs: health coaching &amp; MI skills taught. HbA1c serum levels @ baseline, four home visits (some had a fifth visit) &amp; post-intervention serum level. 17 educational protocols used by CHWs. Ex: Food insecurity = + positive, application for SNAP completed.</td>
<td>Three major CHW roles: teaching core diabetes knowledge w/self-management skills; facilitating connection w/community resources; &amp; accessible support (not usual in PC settings). optimal disease control: #1: gaps in diabetes knowledge &amp; self-management skills. #2 socioeconomic conditions. #3 healthcare systems complexities. CHW intervention did not significantly improve HbA1c, was effective w/subgroup who HbA1c &gt; 10%.</td>
<td>“In depth analysis of rich information by experienced CHWs in the field.” CHWs have time not available in traditional clinical care settings. CHWs saw participants in homes, 1st hand knowledge of actual foods on hand, leaky roof, lack of sidewalk &amp; dearth of opportunities for physical activity in geographical settings; lack of access to fresh produce/food scarcity, &amp; safety issues for standard clinical recommendations by PC traditional healthcare. Weaknesses: Forms not developed for qualitative analysis; CHWs’...</td>
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<td>data not uniformly collected; no direct quotes from study participants - CHWs’ summary of each visit; only one coder to review &amp; code encounter forms; only two CHWs used, decreased generalizability of study.</td>
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<td>Feasibility/Conclusions: CHWs are critical in healthcare system for impoverished populations, adding key roles not assumed by traditional clinical PC teams. It is feasible to utilize their skillset in the field to broaden access to care for communities steeped in familism.</td>
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<td>CHWs can provide the why patients struggle with</td>
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Definition of abbreviations: T2DM: Type two diabetes mellitus; PC: primary care; SX: symptoms; SNAP: Supplemental Nutrition Assistance Program; RX: medications.


This research study critiqued the efficacy of a community-model health strategy to...
### Purpose of the Article or Review

Improve T2DM management in a Latinx population.

### Design/Method/Conceptual Framework

Management Program (LHA-DSMP) with usual care. Community-initiated promotor/a interventions, developed & implemented via “grassroots” driven actions, - engendered trust & engagement superior to those by healthcare organizations, government agencies, or universities.

Less formal hierarchical information sharing, facilitating support between peers, and promotor/a-led engagement of Latinx populations (residents). Shared cultural environments,

### Sample/Setting

Pre-diabetes, or a loved one w/diabetes. Intervention: n=305. Usual care (comparison) n=383 Registry Pts. = participants.

### Major Variables

National origin, & preferred language via intake form.

Clinical indicators: HbA1c measured baseline, between modules 2 & 3; & post 12th session. Must have completed 10 of 12 sessions. Could make up 2 sessions w/promotor/a in one-on-one or small-group format. Comparison cohort extracted from FQHC.

### Measurement of Major Variables

Stratified subgroups of HbA1c (<7.0%, 7.0%-7.9%, 8.0%-8.9%, and >9.0%)

### Data Analysis

CI) of -1.2 (-1.3 to -0.9; P<.001).

Usual care: 8.4+2.0 to 8.1 + 1.8, a mean difference (95% CI) of -0.3 (-0.4 to -0.2; P<.001).

The unadjusted & adjusted difference-in-differences (95%CI) were statistically significant favoring the LHA-DSMP intervention.

### Study Findings

DSMP even w/low baseline levels of 8.0 = clinically meaningful, associated w/a 21% reduction in T2DM mortality risk, 14% reduction in risk of MI; & 37% reduction in risk of microvascular complications (kidney disease, vision loss, & nerve damage).

### Level of Evidence

displayed personal motivation(s) to join & complete the process (Not RTC). Due to immigrant status, disclosing place of birth = great trust.

Weaknesses:

Limited time for follow-up. Able to see practice results, not controlled conditions checking efficacy.

Self-selection biases may influence positive results.

Feasibility:

Greater feasibility, lower costs, opportunity to evaluate treatment effectiveness; no data on diabetes duration for each participant; combining 2 separate data sets, overlap elements was limited not allowing a look at the mechanism of
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<td>languages, lived experiences to recognize community needs. Retrospective, comparative, observational cohort study analyzed from 2 cohorts of Latinx adults’ w/type 2 diabetes mellitus (T2DM). Cohort #1 = interventional; Cohort #2 = usual care; similar clinical &amp; demographic characteristics. Recruited from Santa Ana; 89% w/income &lt; $30,000; 48.7% uninsured; 78.2% residents are Latinx; 69.2% = U.S. citizens. 90.5% of LHA participants are</td>
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<td>effect (group difference in changes in knowledge, behaviors &amp; access to care). Conclusions: This study reinforces a successful community-initiated promotor/a-led strategy to improve glycemic control in Latinx population w/T2DM collaborative efforts w/an academic setting = success! Recommendations: Peer support (promotores/as-led interventions) in a community-initiated self-management intervention; Larger sample size, longitudinal studies need to be researched.</td>
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<td>🇲🇽/Hispanic. Recruitment by word-of-mouth, outreach by promotoras/as &amp; local community clinic referrals. DX of T2DM required. 12-week duration - LHA-DSMP between 2014-2016. Conducted at the University of California.</td>
<td>Latino preschool children have high rates of obesity, higher than other racial/ethnic backgrounds. Few culturally tailored interventions are available focused on this age group.</td>
<td>A convenience subsample of 12 families was analyzed from the initial 50 families recruited by the promotoras in their own social networks: Mexican-origin, low acculturation, dual-parent households.</td>
<td>Completeness (dose delivered): introduced topics of nutrition, sedentary behavior &amp; physical activity strategies; set smart goals, review/discuss achievements/barriers; interactive activities;</td>
<td>Rating scales of survey questions, No=1; Partially =2; Yes =3. Sample items: What were the dates &amp; times of weekly session (attendance)? During the lesson, did you discuss the family’s barriers &amp; successes in</td>
<td>50 families enrolled; 49 (98%) attended all 10 interventions and follow-up assessments. Measures: weekly attendance to project coordinator.</td>
<td>Criteria of evidence of completeness (both promotoras and families) and fidelity (observation) was set at 2.75 on a 3-pt. scale. Criteria for Reach was set to 80%. Overall acceptable implementation required three of four data sources</td>
<td>Level III High quality</td>
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Definition of abbreviations: FQHC: Federally Qualified Health Center; Pts: patients; MI= myocardial infarction (heart attack)


Latino preschool children have high rates of obesity, higher than other racial/ethnic backgrounds. Few culturally tailored interventions are available focused on this age group.

Using a logic model framework, assessment of reach, implementation, fidelity, & completeness of ANDALE, a promotora-led 10 week, home-based program intervention.

A convenience subsample of 12 families was analyzed from the initial 50 families recruited by the promotoras in their own social networks: Mexican-origin, low acculturation, dual-parent households.

Completeness (dose delivered): introduced topics of nutrition, sedentary behavior & physical activity strategies; set smart goals, review/discuss achievements/barriers; interactive activities;

Rating scales of survey questions, No=1; Partially =2; Yes =3.

Sample items: What were the dates & times of weekly session (attendance)? During the lesson, did you discuss the family’s barriers & successes in

50 families enrolled; 49 (98%) attended all 10 interventions and follow-up assessments. Measures: weekly attendance to project coordinator.

Criteria of evidence of completeness (both promotoras and families) and fidelity (observation) was set at 2.75 on a 3-pt. scale. Criteria for Reach was set to 80%. Overall acceptable implementation required three of four data sources

Level III High quality

Limitations: small sample size – 12 families subset; network from promotoras own circle of families already engaged with; a need for testing of surveys and interrater reliability for observations are
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<td>Purpose was to determine if ANDALE, a <em>promotora</em>-led home-based intervention pilot study, would prove efficacious in Latino preschool children and carried out as planned.</td>
<td>75% of families in subset met the criteria.</td>
<td>flexibility in collaboration, positive feedback, discussion interactions, supportive environment across all ages within family unit.</td>
<td>SMART goals from prior week? Did you &amp; your child participate in a physical activity break during the lesson? Did you give the family the opportunity to raise concerns during the lessons? Were the session(s) modified to meet the needs/challenges of each family? Two similar versions of the survey created, one for <em>promotoras</em>, one for patients with language modifications according to educational levels.</td>
<td>(75%) met the criteria. High implementation = &gt; 75% of criteria; low implementation = &lt; 75% of criteria. 9/12 = 75%, had high implementation criteria. 11 of 12 families had attended all 10 sessions, 1 family met 6 of the 10 sessions; reach was 92%. 8/12 rates 2.75 for dose delivered (66%) for <em>promotoras</em>; family perceptions had 10/12 rating of dose delivered at 2.75, (83%); and fidelity observation had 10/12 (83%) rated 2.75.</td>
<td>limitations. <em>Promotoras</em> individual characteristics create biases that may influence outcomes. Future research requires larger sampling sizes, clear communiqué to <em>promotoras</em> about essential elements; and sufficient resources for data collection implementation to enable accuracy and reduce cohort biases.</td>
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<p>| A pilot CHW longitudinal study using the 115 Medicaid Waiver in the | A systematic review of RCTs by CHW-led interventions using a EMRs | Patients aged 18-75 years old; Hispanic/Latinx; DX (HbA1c ≥ 6.5%) diabetes | HbA1c &gt;9% received CM for &gt;6 months: CM1 = telephone only; CM1 = calendar time to DM control | CM types: CM1 = 51 (9.85); CM2 = 192 (36.7%); CM3 = 44 (8.4%); CM4 = 236 | DM control lowest probability using CM1 (only telephone); than either CM2 face- | Level of evidence: I Grade: A (High) Worth to practice: Galvanizes support |</p>
<table>
<thead>
<tr>
<th>Purpose of the Article or Review</th>
<th>Design/Method/Conceptual Framework</th>
<th>Sample/Setting</th>
<th>Major Variables</th>
<th>Measurement of Major Variables</th>
<th>Data Analysis</th>
<th>Study Findings</th>
<th>Level of Evidence</th>
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<tr>
<td>State of Texas for Medicaid managed care &amp; services for the uninsured Latinx, low-income communities to address diabetic care &amp; case management comparing telephoned CHW CM or Face-to-Face based CM.</td>
<td>registry, (ICD-9-CM250.xx or ICD-10 E10.xx or E11.xx). 4 bilingual CHWs (promotoras) certified by the Texas Dept. of HHS &amp; 20 hrs. of specific training on diabetes epidemiology; complications; medications; tx goals; &amp; evidence-based RX adherence supports; MI review &amp; practice to promote patient-centered care.</td>
<td>at 1 (one) inpatient or 2 outpatient visits; Patients with HbA1c ≥9% met the criteria for face-to-face sessions with CHWs. N=523; baseline mean HbA1c 10.9% (SD = 1.7%); mean age 57.9n (SD =10); 58.5% females; 87.6% Latinx; 55.5% uninsured. All DM patients seen in study clinics N=11,150; First A1c &gt;9% N=2175; at least 2 visits N=2012; Seen by a CHW case manager N=827; Last A1c &gt;9 before first CHW encounter N= 606; &gt; 6 months f/u &amp; 2 HbA1c tests after first CHW encounter</td>
<td>CM2 = clinic visit but no calls; CM3 = clinic visit &amp; calls; CM4 ≥2 visits ± calls.</td>
<td>(HbA1c &lt; 9%) evaluated in Cox proportional hazards model using logistic regression. Descriptive statistics – Mean, median, Standard deviation, percentages.</td>
<td>(45.4%). Median time to HbA1c control = 197 days (95% CI [71,548]); 41.5% reached control within 6 months. CM2 = CM1 results. Adjusted odds of rapid control ≤ 6 months “twofold” &gt; for CM2 (p=0.04) and CM$ (p=0.055) vs CM1. Median control (days) CM1= 350; CM2 = 159; CM3 = 281; CM4 = 197.</td>
<td>to-face in clinic or CM4 f2f &amp; telephone calls by CHWs.</td>
<td>for best practices of using CHWs to provide interventions for low-income Latinx populations with DM, increasing returns on investments (cost benefit ratios).</td>
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| Ethical standards: Both University of Texas Health Science Center @ San Antonio & the University Health system judged exempt from patient consent. |

| Conclusions: There is limited benefit for telephone only care management of uncontrolled diabetic Latinx patients. |

| Recommendations: Future studies need to categorize characteristics of patients with uncontrolled DM |
### Purpose of the Article or Review
- Design/Method/Conceptual Framework
- Sample/Setting
- Major Variables
- Measurement of Major Variables
- Data Analysis
- Study Findings
- Level of Evidence

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<th>Measurement of Major Variables</th>
<th>Data Analysis</th>
<th>Study Findings</th>
<th>Level of Evidence</th>
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<tr>
<td>Appraise the efficacy of a CHW-delivered stress-management</td>
<td>A randomized, controlled trial (RTC) compared CHW-given diabetes</td>
<td>Diabetes Education N = 46; Diabetes Education &amp; Stress</td>
<td>Psychosocial variables, urinary cortisol, HbA1c</td>
<td>Psychosocial measures, HbA1c serum &amp; urinary cortisol levels obtained @</td>
<td>Diabetes distress: 5-item U.S. Spanish language version of Problem Areas in</td>
<td>HbA1c, diabetes distress, &amp; urinary cortisol measures were not significant.</td>
<td>Level I High quality Strengths: CHWs are effective in who might not require higher levels of intensive F2F CHW strategies. Sustainability is challenged by infrastructure of physical clinical settings, CHWs alloted time, and adaptations to foster Latinx populations’ resource utilization. Legislative polices need to recognize the positive, powerful influence CHWs have as trusted advocates for the vulnerable Latinx communities carrying the escalating burden of DM chronic disease.</td>
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- Population: N=523.
- Exclusion: first HbA1c < 9% N=8975; < 2 visits N=163; Last HbA1c <9% N=221; <6months f/u or < HbA1c tests N=83.

Definition of abbreviations: CM= care management; DX = diagnosis; DM= diabetes mellitus; HbA1c = hemoglobin A1c (glycemic levels in the blood or serum glucose levels to check for three months of dysglycemia); CHW = community health worker; MI = motivational interviewing; Dept. HHS = Department of Health and Human Services

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<th>Data Analysis</th>
<th>Study Findings</th>
<th>Level of Evidence</th>
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<td>(SM) intervention on psychosocial, serum HbA1c levels, &amp; urinary cortisol levels in U.S. Latinx with T2DM.</td>
<td>education (DE; one group session) to DE plus CHW-provided SM (DE &amp; SM over 8 focused sessions).</td>
<td>Management $N = 61$. Recruitment: from the “Brownstone Clinic” (an outpatient clinic at Hartford Hospital, serving low-income patients with diabetes), 80% Latinos. Participants: adults, Hartford residents, self-identified Latino or Hispanic, Spanish speaking, ambulatory, had type 2 diabetes &gt;6 months (past), most recent HbA1c in last year &gt; 7.0. Exclusions by chart review: medical instability, intensive medical treatment,</td>
<td>Participants were paid $10.00 for each interview assessment and $10.00 for each biological assessment. Interviews conducted in participant’s home.</td>
<td>baseline &amp; 3 - month posttreatment. Diabetes distress: 5-item U.S. Spanish language version of Problem Areas in Diabetes (PAID), scaled 0-4 @ alpha= 0.92. Diabetes self-care: key diabetes self-care activities over past 7 days: physical activity, self-monitoring of blood glucose, medication adherence, &amp; foot care: Scores 0 = 0 days, 7 = 7 days. Self -reported health status: “would you say your health is…?” 1= excellent; 5= poor.</td>
<td>Diabetes (PAID), scaled 0-4@ alpha= 0.92. Education was a covariate in analyses: 34% high school graduates vs 15% who did not graduate, $p=.025$. Among 61 subjects in DE &amp; SM, 11 (18%) attended every session.</td>
<td>HbA1c &amp; diabetes distress improved if participant had higher frequencies of coming to SM sessions; greater improvements in HbA1c levels &amp; lower diabetes distress.</td>
<td>Latino communities; can be skilled at utilizing stress-management interventions locally. Weaknesses: Sample size was small. Feasibility: It is a feasible program and can be enlarged to greater number of communities. 1st RCT showed CHWs have positive impact on mental health in Latinos &amp; others with type 2 diabetes in reducing negative symptoms. Recommendations: Conduct additional larger population studies; strategies to encourage regular attendance may improve HbA1c levels &amp; lower diabetes emotional distress.</td>
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<td>bipolar disorder or thought disorder; suicide attempt or psychiatric hospitalization in past 2 yrs. All recruits were first evaluated by the Hispanic Health Council: introduced to what a study participant entailed and obtained culturally appropriate informed consent in Spanish, all sessions in Spanish.</td>
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Appendix C. PARiHS Conceptual Framework

For knowledge transition diagram visualization.
Appendix D. Agency Letter of Support

From: Mitchell, SaRonn smitchell@savethechildren.org
Subject: Save the Children and USF Partnership
Date: October 31, 2021, at 5:32 PM
To: Jo Ann Loomis (jaloomis2@usfca.edu) jaloomis2@usfca.edu

To Whom it May Concern:

It gives me great pleasure to be in partnership with USF and its students to bring much needed support and training to Save the Children’s partner staff and the communities we serve. Our new and bold endeavor of building a Community Health Worker program, for example, will not only support families with understanding the importance of identifying a medical home, but will support our Early Childhood Coordinators/home visitors with a variety of interventions that will improve the overall quality of life and productivity for the communities they serve.

Since 2012, Save the Children and University of San Francisco have worked together in partnership to promote positive health outcomes for families and children in California’s Central Valley. The USF students have provided health education and training for Early Childhood Coordinators/home visitors on topics such as breastfeeding education, oral health, child and family nutrition, and the effects of toxic stress and violence on children.

The USF students were able to accompany the home visitors to provide nursing support with early childhood developmental screenings. These home visits were highlights of the experiences for USF students with the intention of providing them with deeper insight into some of the health needs of the families we serve, in rural America. This learning experience was vast in its approach as it included meeting program families and working with them on a one-to-one basis helped teach the need and create the ‘heart’ for many of the students to consider living and working in rural California. Working with the early childhood coordinators was an important part of these experiences, as they provided insight into the community needs to the USF students who many live and attend school in urban San Francisco.

Today, as we continue our work together, we will co-design a Community Health Worker training program for our local Early Childhood Coordinators/home visitors. Like our Early Childhood Coordinator, Community Health Workers literally meet families where they live, and see their economic, physical, and related mental health struggles on a daily basis. The Early Childhood Coordinators will be strategically positioned to provide support for the whole person as they assess the wide array of environmental, economic, and social determinants of health for this population. They visit with parents in their homes and see first-hand the effects of poverty, language barriers, and other social disadvantages that affect physical and mental health. This educational program will be designed to equip and enlarge the skills, attitudes, and behaviors of the early childhood coordinators as CHW to assess the whole person, in respect for the individual circumstances and needs of parents and families in the community, especially those families who experience traumatic and adverse determinants of health.

We are committed to creating new approaches to support systemic and collaborative community health-based initiatives that promote among other things, optimal birth outcomes and positive family and child outcomes. Furthermore, our early childhood coordinators will be better equipped during regular home visits to support families. Early Childhood Coordinators will provide families with health-related knowledge and tools to be better advocates for themselves as parents and for their children.

Warmly, SaRonn Mitchell

SENIOR SPECIALIST, EARLY CHILDHOOD CA & WA—
Rural Education Mobile: 559*313*7070
## Appendix E. Gap Analysis

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<th>CHW’s Current Practice Gap</th>
<th>Gap in Role Gap</th>
<th>Gap – Knowledge Deficit</th>
<th>Knowledge Deficit Strategic Interventions</th>
<th>Preferred Best Practice(s) – Role Addition</th>
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<tr>
<td>CHW’s advocacy, trust foundation, facilitator for Latino community.</td>
<td>CHW’s do not have health training in chronic diseases (diabetes, obesity, HTN, depression). EBR strongly supports the efficacy &amp; efficiency of using CHWs in role addition.</td>
<td>CHWs need specific health knowledge to provide case management, utilize screening tools, engage in preventive strategies, &amp; facilitate access for serious diagnoses.</td>
<td>CHWs will engage in educational modules specific to each chronic illness topic burdening the Latino community, trial role-playing, case studies &amp; clinical lab simulations to build confidence in new knowledge/skills and consider setting for the Promotora certification.</td>
<td>CHWs will express a 25% increase in confidence of the non-communicable chronic diseases (diabetes, obesity, HTN, depression) eliminating barriers to improving the health of the Latino communities they serve. CHWs will demonstrate 25% improvement in confidence to sit for the Promotora certification, allowing for best practices to flourish among the Latino in Fresno County, CA.</td>
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## Appendix F. Gantt Chart

### Strategies to Reduce Chronic Diseases - A Save the Children GANTT Chart

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<tr>
<th>Phase</th>
<th>Actions</th>
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<td><strong>Conduct Data &amp; conduct inter-rater checks</strong></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td><strong>Review daily practices - ACCESS or PDA</strong></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td><strong>Notification of Progress to Stakeholders</strong></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>Completed</td>
</tr>
<tr>
<td><strong>Phase 4 (Act)</strong></td>
<td><strong>Conduct Final Audits of Project</strong></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td><strong>Auditor Findings</strong></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td><strong>Audit lesson learned</strong></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td><strong>Evaluate project efficacy &amp; efficiency</strong></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td><strong>Submit manuscript to JDSU School Repository</strong></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td><strong>Present DNP QI project using PPT</strong></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>Completed</td>
</tr>
</tbody>
</table>
Appendix G. Work Breakdown Structure

DNP - STC's role
CHW's role

Phase 1 (Plan)
- Meet with STC facilitator: Dr. Loonis
- Confirm Project site, Preceptor, & MOH/Agreement
- Conduct Evidence-based Literature searches - Gaps
- Chair, 2nd Reader & Committee Solidified
- Submit Proposal to USFCA SONHP DNP Committee
- Submit Prospectus to USFCA SONHP DNP Committee
- Meet with STC facilitator to STC team - Loonis role out

Phase 2 (Do)
- Project Approval by DNP Committee
- Drafts of manuscript, screening tools & surveys
- Pilot/Teaching & distribute (pre-assessment) surveys
- Implement module revisions from CHW feedback
- Implement module changes from CHWs & feedback
- Notify progress to stakeholders (critical piece)
- Continue collaborating with STC - DNP team
- Unknown Barriers Addressed

Phase 3 (Study)
- Conduct audit of Pre & Post Assessments
- Develop Fiscal budget of Education
- Analyze Data from DNP project & interpret results
- Progress Report - notification to stakeholders
- Complete Project: Presentation, Manuscript, SCHG5 or not

Phase 4 (Act)
- Complete Comprehensive Project - CFR
- Analyze Findings
- Audit Lessons Learned
- Evaluate Project Efficiency & Impact
- Complete Project Manuscript, Submit to Scholaristic Boards
- PRESENT DNP PROJECT

Phase 5 (Sustain)
- Create Template of Modules for sustainability
- Continue Networking with USFCA DNP colleagues
- GRADUATE
## Appendix H. Responsibility/Communication Matrix

<table>
<thead>
<tr>
<th>Level of Power</th>
<th>Keep Satisfied</th>
<th>Manage Closely</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High Power, Low Interest</td>
<td>High Power, High Interest</td>
</tr>
<tr>
<td>Low Power, Low Interest</td>
<td>- The Latinx populations served by the CHWs in the Fresno County, CA area under the STC umbrella of care.</td>
<td>- USFCA SONHP DNP program STC colleagues who are participating in the project</td>
</tr>
<tr>
<td>Low Power, High Interest</td>
<td>- USFCA SONHP DNP Chair - Dr. Maxworthy</td>
<td>- USFCA SONHP Academic Facilitator for Save the Children (STC) collaborations – Dr. Loomis</td>
</tr>
<tr>
<td>High Power, Low Interest</td>
<td>- STC Senior Specialist- Point of contact/preceptor - Ms. SaRonn Mitchell</td>
<td>- Community Home Workers (CHWs) of the STC collaboration</td>
</tr>
<tr>
<td>High Power, High Interest</td>
<td>- Affiliate Agreement/MOU Office</td>
<td>- 2nd Reader of DNP project – Dr. Loomis</td>
</tr>
</tbody>
</table>

**Level of Interest**
## Appendix I. SWOT Analysis

<table>
<thead>
<tr>
<th>Internal attributes of the organization</th>
<th>Favorable/Helpful</th>
<th>Unfavorable/Harmful</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td>• Non-communicable Chronic Disease Knowledge experts at USFCA SONHP DNP program</td>
<td>• CHWs live far away, travel is difficult</td>
</tr>
<tr>
<td></td>
<td>• SONHP partnership with STC of Fresno &amp; Tulare counties, CA</td>
<td>• New Educational training on non-communicable chronic diseases</td>
</tr>
<tr>
<td></td>
<td>• Jesuit Mission &amp; Values of USFCA</td>
<td>• CHWs' health literacy &amp; ESL</td>
</tr>
<tr>
<td></td>
<td>• USFCA SONHP social justice goals of lowering obstacles to healthcare access</td>
<td>• COVID-19 pandemic precautions changing teaching options.</td>
</tr>
<tr>
<td></td>
<td>• Intervention driven &amp; supported by evidence-based literature</td>
<td>• Inability to use USFCA clinical labs</td>
</tr>
<tr>
<td></td>
<td>• USFCA SONHP stakeholders’ dedication to success &amp; sustainability of project</td>
<td>• STC change of staff</td>
</tr>
<tr>
<td></td>
<td>• Reliable &amp; valid student evaluation tools</td>
<td>• Time limits for each module &amp; synchronous schedule</td>
</tr>
<tr>
<td></td>
<td>• Legislative support for CHWs in other states</td>
<td>• Lack of interest &amp; commitment from stakeholders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Unknown costs associated with project implementation (lack of computers)</td>
</tr>
<tr>
<td>External attributes of the organization</td>
<td><strong>Opportunities</strong></td>
<td><strong>Threats</strong></td>
</tr>
<tr>
<td></td>
<td>• Develop sustainable collaboration with STC organization &amp; USFCA SONHP DNP academy</td>
<td>• Turnover of CHWs of STC in Fresno &amp; Tulare Counties</td>
</tr>
<tr>
<td></td>
<td>• Sustainability of Project for future CHW learners</td>
<td>• Resources to sustain collaboration disappear</td>
</tr>
<tr>
<td></td>
<td>• Expand CHWs’ roles to include preventative strategies for non-communicable chronic diseases</td>
<td>• Burden on preceptors in STC agency (only one)</td>
</tr>
<tr>
<td></td>
<td>• Increase knowledge about non-communicable chronic diseases (diabetes, depression, obesity, hypertension)</td>
<td>• Future DNP students’ lack of interest in topic</td>
</tr>
<tr>
<td></td>
<td>• Enhance CHWs’ ability to become certified Promotors</td>
<td>• Faculty liaison leaving USFCA SONHP DNP program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Interpersonal conflicts between stakeholders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lack of long-term sustainability of the project</td>
</tr>
</tbody>
</table>

Adapted from: SWOT en.svg (2020, November 5).Wikimedia Commons, the free media repository. Retrieved 23:09, August 13, 2021
from https://commons.wikimedia.org/wiki/index.php?curid=20368802
Appendix J. Proforma (Budget and Cost-Benefit Ratio)

Budget 2023-2025

<table>
<thead>
<tr>
<th>Activity or Purchase</th>
<th>Hours or #’s Purchased</th>
<th>Rate per Hour</th>
<th>Flat Rate</th>
<th>Cost 2023 Project Total</th>
<th>2024 Project Total (10% increase)</th>
<th>2025 Project Forecast (10% increase)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research and Project Creation</td>
<td>150</td>
<td>$85.40</td>
<td>N/A</td>
<td>$12,810.00</td>
<td>$12,810.00</td>
<td>$14,091.00</td>
</tr>
<tr>
<td>Education Curriculum Development Modules</td>
<td>75</td>
<td>$85.40</td>
<td>N/A</td>
<td>$6,405.00</td>
<td>$6,405.00</td>
<td>$6,405.00</td>
</tr>
<tr>
<td>Power Point Slides: CHW’s Free Canvas Site Developments</td>
<td>15 X 3 modules = 45</td>
<td>$85.40</td>
<td>N/A</td>
<td>$3,843.00</td>
<td>$3,843.00</td>
<td>$3,843.00</td>
</tr>
<tr>
<td>Realtime Course Delivery (Zoom &amp; JIT) Modules, orientation &amp; Training = 14</td>
<td>20</td>
<td>$85.40</td>
<td>N/A</td>
<td>$1,195.60</td>
<td>$1,195.60</td>
<td>$1,195.60</td>
</tr>
<tr>
<td>Detailed Executive Summary</td>
<td>20</td>
<td>$85.40</td>
<td>N/A</td>
<td>$1,708.00</td>
<td>$1,708.00</td>
<td>$1,708.00</td>
</tr>
<tr>
<td>Blood Pressure Kits Including Stethoscopes</td>
<td>15</td>
<td>N/A</td>
<td>$46.50</td>
<td>$697.50 *** (1 X USFCA $200.00 Grant)</td>
<td>$697.50 *** (1 X USFCA $200.00 Grant)</td>
<td>$767.25</td>
</tr>
<tr>
<td>Total Costs*</td>
<td></td>
<td></td>
<td></td>
<td>$26,459.10</td>
<td>$26,459.10</td>
<td>$28,009.85</td>
</tr>
</tbody>
</table>

*Tuition costs for the USFCA DNP program
**Extrapolated to 2025 forecasting for sustainability

DEFINITIONS:

1. CHWs’ Free Canvas Site is an online instructional teaching module access without cost for each community health worker to access without geographical restrictions.
2. Blood Pressure Kits: include sphygmomanometer, stethoscope, replacement parts, and carrying case.
3. Realtime course delivery: contact between DNP teacher, USFCA DNP collaborators, SONHP professors, STC preceptors/mentors, and staff STC Community Health Workers.

Cost – Benefits

Emergency Room Utilization (Commodity) - 2022

<table>
<thead>
<tr>
<th>Commodity Utilization Factor(s) 2023 CHICIS Statistics</th>
<th>Number of Visits by Latine Population</th>
<th>Rate of Per Visit Medical or Medicare Savings</th>
<th>Fresno County ED Encounters - St. Agnes Medical Center 2022</th>
<th>Fresno County ED Encounters-Ranier Foundation Hospital 2022</th>
<th>Total Visits in 2 Fresno County Emergency Departments-2022</th>
<th>Fresno County Example of 2 Emergency Room Visits during 2022 Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>100,000 X 40.8% - 40,800</td>
<td>$1,200.00</td>
<td>71,162 visits X 40.8% X 0.1% = 29,034 X 1% = 290.34</td>
<td>49,785 visits X 41.8% = 20,810.13 X 1% = 208.10</td>
<td>1% combined = 290 + 208 = 498 visits</td>
<td>498 ER visits X $1,200 saved = $597,600.00</td>
</tr>
<tr>
<td>Adults with Diabetes</td>
<td>571,458 X 12.2% = 69,718</td>
<td>$1,200.00</td>
<td>71,162 visits X 12.2% X 8,682 X 1% = 868.2</td>
<td>49,785 visits X 12.2% = 6,073.77 X 1% = 60.74</td>
<td>1% combined = 87 + 61 = 148 visits</td>
<td>148 ER visits X $1,200 saved = $177,600</td>
</tr>
<tr>
<td>Adults with Heart Disease</td>
<td>571,458 X 6.5% = 37,145</td>
<td>$1,200.00</td>
<td>71,162 visits X 6.5% X 4,626 X 1% = 46.26</td>
<td>49,785 visits X 6.5% = 3,236.025 X 1% = 32.36</td>
<td>1% combined = 46 + 32 = 78 visits</td>
<td>78 ER visits X $1,200 saved = $93,600</td>
</tr>
</tbody>
</table>
### Commodity Utilization Factor(s) 2022 CAHHS Statistics

<table>
<thead>
<tr>
<th>Adults Needing &amp; Not Receiving Behavioral Health Care Services</th>
<th>Number of Visits by Latino Population</th>
<th>Rate of Per Visit Medicare Savings</th>
<th>Fresno County ED Encounters – St. Agnes Medical Center 2022</th>
<th>Fresno County ED Encounters – Kaiser Foundation Hospital 2022</th>
<th>Total Visits in 2 Fresno County Emergency Departments – 2022</th>
<th>Fresno County Example of 2 Emergency Room Visits during 2022 Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>100,000 X 51.9% = 51,900</td>
<td>$1,200.00</td>
<td>71,162 visits X 51.9% = 36,933 X 1% = 369.33</td>
<td>49,785 visits X 51.9% = 25,838.415 X 1% = 258.38</td>
<td>1% combined = 369 + 258 = 627 visits</td>
<td>627 ER visits X $1,200 saved = $752,400</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>571,458 Population of Latinos in Fresno 2022</td>
<td>$1,200 Per diagnosis (4 DX)</td>
<td>71,162 Basic Emergency Room Visits in 2022 X 1% = 711.62 (792.75 – 711.62 = 81.13 with multiple visit codes)</td>
<td>49,785 Basic Emergency Room Visits in 2022 X 1% = 497.85 (559.58 – 497.85 = 61.73 with multiple visit codes)</td>
<td>120,047 Basic Emergency Room Visits in 2 Fresno County Hosp. in 2022 X 1% = 1,209.47 or 1,209 total ER utilization</td>
<td>498 + 148 + 78 + 627 = 1,311 – 1,209 = 142 visits with multiple codes.</td>
</tr>
<tr>
<td></td>
<td>1209 ER visits X $1,200</td>
<td></td>
<td></td>
<td>1209 ER visits X $1,200 = $1,450,800.00/ $26,459.10 = 54.8</td>
<td>1209 ER visits X $1,200 = $1,450,800.00/ $29,495.68 = 49.18</td>
<td>1209 ER visits X $1,200 Reduced Expenditures = $1,450,800.00</td>
</tr>
</tbody>
</table>

### Net Cost Benefit:

- Total Benefits – Total Costs = Net Benefit
- Reduced Cost of decreased ER expenditures - Total Cost of Project Creation (Education & Curriculum Development, CHWs’ Free Canvas Site Module Development, & Realtime Course Delivery) = Net Benefits
- $1,450,800.00 - $26,459.10 = $1,424,340.90

### Cost Benefit Ratio:

- Total Benefits divided by Total Costs = Cost-Benefit Ratio
- $1,405,800/26,459.10 = 54.8
Appendix K. Statement of Non-Research Determination

Doctor of Nursing Practice
Statement of Non-Research Determination (SOD) Form

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

General Information

Last Name: Renwanz
First Name: Ingrid

CWID Number: 20620852
Semester/Year: Summer 2022

Course Name & Number: N7005 Population Health Leadership and Teamwork in Project Planning -01

Chairperson Name: Dr. Juli C. Maxworthy
Advisor Name: Dr. Juli C. Maxworthy

Second Reader Name: Dr. J. Loomis

Project Description

1. Title of Project:

   Strategies to Reduce Chronic Disease: Adding Role to Community Health Workers

2. Brief Description of Project:

   Community health coordinator workers (CHWs) are liaisons between the populations they serve and the available multidisciplinary health resources. These workers connect to this population through shared lived experiences, building trust foundations, and imparting culturally competent care, which is missing from conventional healthcare services (Lloyd et al., 2020).

   Chronic non-communicable diseases are the leading cause of morbidity in adults in the Latino community (Campbell et al., 2020). Diabetes, hypertension, obesity, and depression are non-communicable chronic diseases adversely affected by poor access to preventive health care (Brown et al., 2018; Creech et al., 2021; Ho et al., 2018; Silverman et al., 2018). Approximately 17% of the U.S. population is Latino, with projections expected to reach 28% by 2060 (Eghaneian & Murphy, 2019; Ortega et al., 2018). The health needs of this population are expanding with their growing numbers.

   Providing a value-added educational opportunity for community health coordinator workers to expand their roles to include strategic interventions on non-communicable chronic disease care management, prevention, and risk reduction tools, all culturally appropriate, is reflected throughout the evidence-based...
3. AIM Statement: What are you trying to accomplish?

This quality improvement project aims to design, generate, and evaluate an educational curriculum about non-communicable chronic diseases (diabetes, obesity, hypertension, and depression) for the role expansion of Save The Children community health worker (CHW) workers. The project will be conducted in partnership with Save The Children’s SONHP DNP program (Appendix A) to provide one vehicle for reducing the burden of the Latinx population, a best practice (Melnyk, & Fineout-Overholt, 2019).

**Objectives:**

1. Community health worker students (CHWs) will have a 25% increase in knowledge of non-communicable chronic diseases for adults (diabetes, obesity, hypertension, & depression) and utilization of screening tools culturally appropriate by June 2023. I am using an English pre-assessment/post-assessment survey as a measurement tool.
2. By June 2023, 75% of the CHWs will express a 25% improvement in confidence to integrate health assessments and utilize screenings in their roles within the adult Latinx populations.
3. By June 2023, 75% of the CHWs will appraise their confidence has increased by 25% to sit for the Promotora certification.

1. Brief Description of Intervention (150 words):

The quality improvement intervention is an educational training experience about non-communicable chronic diseases (diabetes, obesity, hypertension, and depression) for the Save The Children (STC) community health worker (CHW) workers covering Fresno County, California. Providing health knowledge for role addition closes an access disparity gap within traditional care for expanding Latinx communities. The curriculum includes presenting specific health issues during synchronous modules on chronic health conditions negatively impacting the Latinx population. During the spring of 2022, five modules, one on each topic, will be taught, four via synchronous Zoom and the final one face-to-face. Baseline assessment and knowledge gained is to be undertaken by survey questionnaires, measured by descriptive statistics. The objective of increasing knowledge by 25%, expressing confidence improvement by 25%, and confidence to sit for the Promotora certification by 25% reflect best knowledge translation practices. This quality improvement project is part of a larger DNP group collaboration designed to create an enriching curriculum at the level of Promotora certification.

4a. How will this intervention be implemented?

The advantage of electronic knowledge transmission holds. The educational training about non-communicable chronic diseases (diabetes, obesity, hypertension, and depression) through a five-module format, four synchronous sessions, and one face-to-face session, will be conducted under the facilitation of Dr. Loomis’s DNP STC collaboration with Ms. SaRonn Mitchell, Senior Case Manager, and site preceptor for currently working CHWs serving the Fresno County, California area. Zoom sessions, partnering with other DNP colleagues to create an enriched encompassing whole curriculum at the level of Promotora Certification, and site management by STC. Individual CHWs will use laptops remotely for ZOOM and gather collectively on the USFCA SONHP campus for the fifth module and post-assessment opportunity.

Conceptualization of the educational training has been between two high-power, high-interest stakeholders: Dr. Loomis, facilitator for the STC collaboration for the USFCA SONHP DNP program, and Ms. SaRonn Mitchell, Senior Specialist, Early Childhood STC point of contact and project site preceptor.
The CHWs and the USFCA SONHP Chair, Dr. Maxworthy, complete these invaluable stakeholders for the intervention. Engagement from design inception through completion frequently (biweekly to weekly) via emails, flyer attachments, questionnaires, and Zoom sessions serve to notify, update, appraise and refine this project.

The high-power, low-interest stakeholders (Dean of the Population Health Leadership DNP program, the Graduate SONHP, and the Affiliate Agreement/MOU office) will receive email updates monthly to qualify as periodically. The DNP colleagues participating, the high-interest, and low-interest stakeholders, will be conferred with during biweekly conferences, then weekly or more often as required. The low-power, low-interest stakeholders, are the Latinitx community served by the CHWs of the STC organization. Long-term goals encompass positive health outcomes and decreased disparities in access to care. The CHWs will deliver communication in their role expansion post-intervention.

5. Outcome measurements: How will you know that a change is an improvement?

Baseline data will be collected from the Save The Children (STC) community health worker students (CHWs) who are actively employed and able to collaborate with the USFCA SONHP DNP program via self-administered survey questionnaires using a five-point Likert-type agreement scale. These surveys will include demographic items to maintain individual privacy guarding each CHW's identity by not having any CHW's personal data. Questions will target current health knowledge about non-communicable chronic diseases (diabetes, obesity, hypertension, and depression), including definitions, symptoms, risks, and benefits of seeking care. During this pre-assessment, confidence in using their health knowledge and prevention screening tools, a gauge of comfort taking the Promotora certification testing, will also be assessed. Post-five-module curriculum participation, a self-guided assessment in English identical to the pre-assessment survey, will be distributed. I will include opportunities to share opinions and suggest improvements after each module to provide refinement of tools.

For qualitative responses, calculations of measurements will use descriptive statistics through Excel and Qualtrics. Pre-assessment and post-assessment questionnaires will be provided on paper and via email for ease of choice.

The reliability and validity of the questionnaire remain strong as this DNP student is creating it and will be the sole person to inform, distribute and evaluate results lessening biases from multiple analysts, adding to an effective communication style, and using straightforward statistical tools. The data will remain clean as copies of all pre/post questionnaires will be available upon request. An additional interrater will review for accuracy. Using percentages allows efficacy in the measurements of the raw data. All health training modules will consist of eighth-grade reading levels to proscribe ESL barriers for the CHWs.

Ethical standards protecting the participants during this DNP quality improvement project are inherent within the American Nurses Association (ANA) Code of Ethics (COE) (ANA, 2015), projecting from the original Nightingale's Pledge (oath) scripted by Lystra Gretter in 1873. In 1948 the Universal Declaration of Human Rights, Article 12 stipulated that the nurse-patient relationship established the foundation of trust. The Belmont Report mandates each nursing professional to embody the responsibilities and obligations of applying the ethical principles of respect for persons, beneficence, and justice cited in the ANA COE Provision 4.2 (ANA, 2015). Finally, the CITI Program course on Human Subjects Research, as required by the USFCA SONHP DNP program, was completed on May 27, 2022 (Appendix B). I will maintain all questionnaires securely, using no personal identifying information and providing options for care not to harm (counseling resources), guaranteeing the ethical criteria of the educational intervention for the community homeworkers. Privacy protection remains crucial to embodying the values of the mission of the USFCA SONHP DNP program. The development of this STC collaboration addresses the determinants of health, social justice, advocacy, and healthcare promotion under a moral setting in Jesuit values (USF, n.d.).
DNP Statement of Determination

Evidence-Based Change of Practice Project Checklist*

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749A/E

Project Title: Strategies to Reduce Chronic Disease: Adding Role to Community Home Workers

<table>
<thead>
<tr>
<th>Mark an “X” under “Yes” or “No” for each of the following statements:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim of the project is to improve the process or delivery of care with established/accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The specific aim is to improve performance on a specific service or program and is a part of usual care. All participants will receive standard of care.</td>
<td></td>
<td>X</td>
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<tr>
<td>The project is not designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does not follow a protocol that overrides clinical decision-making.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does not develop paradigms or untested methods or new untested standards.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does not seek to test an intervention that is beyond current science and experience.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project has no funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., not a personal research project that is dependent upon the voluntary participation of colleagues, students and/or patients.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>If there is an intent to, or possibility of publishing your work, you and supervising faculty and agency oversight committee are comfortable with the following statement in your methods section: “This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board.”</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Answer Key:
- If the answer to all of these items is “Yes”, the project can be considered an evidence-based activity that does not meet the definition of research. IRB review is not required. Keep a copy of this checklist in your files.
- If the answer to any of these questions is “No”, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.
To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: [http://answers.hhs.gov/onrp/categories/1569](http://answers.hhs.gov/onrp/categories/1569)

**UNIVERSITY OF SAN FRANCISCO | School of Nursing and Health Professions**

**DNP Statement of Determination**

**Evidence-Based Change of Practice Project Checklist Outcome**

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

- This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). This student may proceed with implementation.

☐ This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

**Comments:**
Appendix L. Facilitator Guide

Facilitator focus and activity
What the facilitator looks at
What the facilitator does

Characteristics of the innovation
Underlying knowledge sources
Clarity
Degree of fit (compatibility or contestability)
Degree of novelty
Likely boundaries
Instability
Relative advantage

Problem identification
Acquiring/appraising evidence
Baseline context & boundary assessment
Stakeholder mapping

Inner context: local level
Formal & informal leadership support
Culture
Post-experience of change
Mechanisms for embedding change
Evaluation & feedback processes
Local context assessment
Communication & feedback
Networking
Boundary assessment & spanning
Negotiating & influencing
Policies & procedures
Structuring learning

Inner context: organisational level
Organisational priorities
Structure
Leadership & senior management support
Systems & processes
Culture
History of innovation & change
Absorptive capacity
Stakeholder engagement
Communication & feedback
Marketing & presentation
Networking
Boundary spanning
Negotiating & influencing
Policies & procedures

Outer context
Policy drivers & priorities
Incentives & mandates
Regulatory frameworks
Environmental (instability)
Inter-organisational networks & relationships