2021-2022 Evaluation of the NC Community Health Worker Standardized Core Competency Training Final Report

The University of North Carolina at Pembroke
College of Health Sciences

The University of North Carolina at Pembroke
Community Health Worker Project Final Report
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REDCap
Study data were collected and managed using REDCap electronic data capture tools hosted at the University of North Carolina at Pembroke.[1,2] REDCap (Research Electronic Data Capture) is a secure, web-based software platform designed to support data capture for research studies, providing 1) an intuitive interface for validated data capture; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to standard statistical packages, and 4) procedures for data integration and interoperability with external sources.

[1]PA Harris, R Taylor, R Thielke, J Payne, N Gonzalez, JG. Conde, Research electronic data capture (REDCap) – A metadata-driven methodology and workflow process for providing translational research informatics support, *Journal of Biomedical Informatics, 2009 Apr; 42(2): 377-81.*

[2]PA Harris, R Taylor, BL Minor, V Elliott, M Fernandez, L O'Neal, L McLeod, G Delacqua, F Delacqua, J Kirby, SN Duda, REDCap Consortium, The REDCap consortium: Building an international community of software partners, *J Biomed Inform. 2019 May 9 [doi: 10.1016/j.jbi.2019.103208]*

Table of Contents

Background: CHWs in North Carolina 3
- Impact of COVID-19 3

Progress and Updates 3
- SCCT Evaluation & Community Colleges 3
- CHW Data Repository 4

Study Purpose and Methods 4
- Overview 4
- Evaluation Goal and Objectives 4
- Participants 5
- SCCT Evaluation Methods 5
- Key Informant Interview Methods 6
- Reporting 6

Key Informant Interview (KII) Results 7
- Instructor Key Informant Interview Results 7
- CHW Program/Curriculum 7
- Teaching Formats and Technology 7
- Materials/Resources 7
- Instructor Support, Experience, and Training 8
- Recommendations for Improvements 8
- Student Key Informant Interview Results 10
- Course Content, Delivery, and Instructor Support 10
- Materials and Practical Implementation in the Field 10
- Course Impact and Opportunities 11
- Areas for Improvement and Recommendations 11

SCCT Evaluation Results 12

Participant Demographics 12

Career Impact Survey 15

Comfort Level Survey 31

Training Quality Survey 32

Pre- and Post- Tests 35

Limitations 36
- Limitations of Instructor Experience 36
- Limitations of Student Experience 37

Implications and Recommendations 37
- Instructor Recommendations 37
- Student Recommendations 37

Dissemination and Future Research 37

References 38

Background: CHWs in North Carolina

The North Carolina Community Health Worker initiative emphasizes the role of Community Health Workers (CHWs) in improving health outcomes for individuals throughout the state, particularly those from marginalized communities (NCDHHS, 2022a). North Carolinian stakeholders collaborated on building infrastructure to support the CHW workforce, including the development of core competencies (NCDHHS, 2022a) and the implementation of a community college curriculum (NCDHHS, 2022b) leading to a pathway to state certification overseen by the North Carolina Community Health Worker Association to standardize the profession (NCCHWA, 2022).

CHWs support the needs of rural populations by addressing health disparities impacting migrant laborers (Harwell et al., 2022; LePrevost et al., 2022). CHWs search online resources to locate health information for farmhands from rural North Carolina communities (LePrevost et al., 2022). These frontline staff screen patients for needs associated with social determinants of health (SDOH) (NCDHHS, 2021b). As medical professionals have not consistently screened for SDOH, this work plays a critical role in improving health outcomes for vulnerable populations (Wortman et al., 2020). CHWs also support refugees moving to the state; research has found that these CHWs credit their lived experience as members of this community with impacting their decision to pursue their career (Eluka et al., 2021). Additionally, CHWs provide community-centered support to geographically diverse locations, including Winston-Salem, by focusing their efforts within community micro-geographies to target distressed census tracts and specific zip codes (Gunderson et al., 2021).

Impact of COVID-19

At the height of the COVID-19 pandemic, CHWs supported North Carolinians through screening patients regarding their quarantine needs (NCDHHS, 2021). In addition, 350 CHWs utilized by seven vendors provided targeted support to 55 North Carolina counties facing high levels of COVID-19 within their communities (NC Department of Health and Human Services, 2021a). State infrastructure coordination supported CHW efforts to address health inequity needs exemplified during the pandemic (Grier-McEachin, 2021). North Carolina Department of Health and Human Services (NCDHHS) addressed the disproportionate impact of COVID-19 on minority populations by prioritizing efforts to increase Spanish-speaking services (NCDDHS, 2021). CHWs frequently promote NCCARE360, North Carolina's online platform connecting whole-person health care referrals to improve patient outcomes, to address health needs throughout the state (NCDHHS, 2021; Wortman et al., 2020).

Progress and Updates

SCCT Evaluation & Community Colleges

The UNCP research study team participated in CHW initiatives. Through communication with the NC CHW Advisory Board, UNCP research study team members gained insight into state-directed initiatives. The team prioritized communication with SCCT instructors in order to emphasize project goals and recruit study participants. The UNCP CHW research study team created a brief video to explain the study and the process of completing the informed consent. The incentive process changed from a certification fee waiver to an electronic gift card of $25.00, which was subsequently increased to $35.00 to enhance study participation. The research study team updated the consent in March and June 2022 to reflect these changes. The research study team revised the instructor study guide to review instructors' responsibilities and to assist with navigation of the consent process for interested participants. 352 participants from eight community colleges participated in the study from August 15, 2021, through July 15, 2022.

During June 2022, the UNCP CHW research study team introduced version two of the SCCT study. The second version of the study featured the administration of additional REDCap features to improve efficiency. The pre-and-post quizzes were adapted into a pre-and-posttest format. Printed versions of forms, including consents, testing materials, and surveys were eliminated as all study measures were

introduced within REDCap. This update of the elimination of in addition, this standard delivery of all e-surveys and forms via REDCap and the elimination of paper documents will ensure a uniform platform for the SCCT research study across the state. Furthermore, incentives for participants differed in version one and version two of the study. In version one, students that participated received a waiver for their NC CHW certificate fee, while in version two, participants received a $25 e-gift card for completion of part one of the study and another $25 e-gift card for completing part two. This amount was subsequently increased to $35 each for completion of part one, then part two. All study components were stored in the REDCap database.

CHW Data Repository

The Community Health Worker Data Repository is planned for launch in April 2023. The repository will include de-identified data from the REDCap database and a link to a website with data visualizations. The public-facing interface will highlight the demographics and geographic distribution of CHWs across North Carolina. Visualizations are currently in testing mode for this website.

Study Purpose and Methods

Overview

The University of North Carolina at Pembroke (UNCP), in partnership with the North Carolina Department of Health and Human Services – Office of Rural Health (NCDHHS-ORH), evaluated the standardized core competency training (SCCT) for North Carolina Community Health Workers (CHWs). The UNCP Community Health Worker (CHW) study team collected, analyzed, and reported data to assist the NCDHHS-ORH and interested stakeholders in understanding the effect of SCCT. Evaluation goals will determine findings to inform future iterations of the SCCT, including curriculum, training design and assessment, study instruments, and methods, resulting in a highly effective educational resource grounded in core competencies available to North Carolina's CHW students. Beginning in February 2022, UNCP worked with the North Carolina Community Health Worker Association (NCCHWA) to maintain the statewide North Carolina CHW certification. Furthermore, UNCP plans to establish an online statewide data repository from this study which provides a body of North Carolina CHW-related data to strengthen CHW education and preparedness.

Evaluation Goal and Objectives

The overall goal of this evaluation is to determine the effectiveness of the NC CHW SCCT.

The objectives of this evaluation are:

1. Participate in statewide CHWI evaluation, SCCT Train-the-Trainer, and SCCT evaluation workgroups to communicate changes and receive feedback
2. Recruit participants for SCCT evaluation
3. Administer measurement tools, enter data in the REDCap (Research Electronic Data Capture) system, and conduct quality checks
4. Conduct key informant interviews with SCCT instructors and students to gather qualitative feedback regarding their experiences.
5. Complete qualitative and quantitative analysis of data.
6. Create annual cumulative report to disseminate findings
7. Conduct presentations of findings for CHW statewide workgroups, SCCT Train-the-Trainer attendees, and at state CHW and professional conferences to disseminate findings and inform changes to SCCT curriculum and delivery
8. House data and reports on the UNCP CHW data repository and dashboard website

Evaluation questions include:

1. To what extent did the curriculum increase knowledge, skills, and capacity of CHWs?
2. What training needs exist for CHWs? What is the perspective of CHWs, vendors, and others on the CHW program?
3. What are the types of themes, concepts, and thoughts identified and used in revisions to SCCT?
4. How many stakeholders have been engaged in providing SCCT feedback?
5. How many participants agreed to participate in SCCT evaluation studies?

Participants

During the review period of August 15, 2021 through July 15, 2022, 352 participants from eight community colleges participated in the study. The following community colleges contributed during this period: Asheville-Buncombe, Catawba, Durham, Edgecombe, Forsyth, Pamlico, Robeson, and Sandhills. As classes were offered virtually, students were eligible to participate from across the state; many participants lived in a different county than the county where their community college was located. Not all eligible students consented to participate in the study; the number of participants represents a portion of students overall participating in the SCCT.

SCCT Evaluation Methods

The UNCP research study team recruited eligible students to participate in the study through communication with eligible course instructors and by providing study introductions to eligible classes. This study received reapproval from the IRB in September 2021 and was subsequently revised in May 2022. Initially, NCDHHS-ORH developed evaluation instruments that were entered into the Research Electronic Data Capture (REDCap) platform, securely stored on UNCP servers, to create a data repository of information collected from study participants. UNCP later became responsible for overall data collection. This database is still used to collect information via participant-entered electronic surveys. Once consent is obtained, study participants complete online surveys within the secure REDCap platform. The UNCP research study team exported de-identified responses into for analysis and reporting. Part 1 of the research includes the following pre-test and surveys which were completed during the introductory weeks of the CHW course. Part 2 of the study is submitted at the conclusion of the SCCT course, as well as additional Career Impact Surveys which are administered at set intervals in the months following the completion of their course. Participants received a $25 e-gift card for completion of part one of the study and another $25 e-gift card for completing part two. This amount was subsequently increased to $35 each for completion of part one, then part two.

Part 1 (pre-test/surveys)
‘Participant Demographics’ (contact information – name, address, email, phone)
‘Demographic Information Form’ (Participants may abstain from entering their information.)
‘Comfort Level Survey’ (measures self-assessed knowledge and attitudes towards SCCT)
‘Career Impact Survey’ (administered at the beginning of the SCCT course)
‘Pre-Test’ (administered to measure the educational suitability of the SCCT course)

Part 2 (post-test/surveys)
''Comfort Level Survey' (measures self-assessed knowledge and attitudes towards SCCT; repeated at the end of class and at 3-month, 6-month and 1-year intervals post course completion)
'Career Impact Survey' (repeated at the end of class and at 3-month, 6-month and 1-year intervals post course completion)
'Post-Test' (administered to measure the educational suitability of the SCCT course; repeated at the end of class)
‘Training Quality Survey’ (administered at the end of the course to elicit modification recommendations)
‘Final SCCT Score’ (pass/fail outcome obtained from course instructors)

Key Informant Interview Methods

The University of North Carolina at Pembroke (UNCP's) Institutional Review Board, also known as the IRB, approved this study.

The UNCP study team recruited SCCT instructor participants by sending email invitations to eligible instructors. SCCT instructors were eligible to participate in the qualitative study if they taught the SCCT course at any period during June 2021 through May 2022. Instructors were eligible for the KII process even if there were no students involved from their community college in the research study. Before agreeing to participate, individuals received a description of the interview process, including incentive eligibility, as well as the list of questions and corresponding prompts. All individuals completed an informed consent before the interview. All instructors participated in individual interviews that were scheduled for one hour in length via Zoom. All participating instructors and received one $50.00 e-gift card as an incentive. The UNCP research study team interviewed twelve instructors from six community colleges.

SCCT CHW/student participants were selected from a recruitment pool that was created using a non-probability sampling method. First, the full list of SCCT quantitative study participants was narrowed to include students that participated in the study between June 2021 and May 2022. Since Robeson Community College and Edgecombe Community College had a disproportionately high number of SCCT study participants, the number of participants recruited from these institutions was limited to 26 to correspond with the number of participants from all other colleges, combined. Then, to increase the diversity of the recruitment pool, male-identified participants or non-binary from Robeson Community College and Edgecombe Community College were made priority since there were a limited number of male and non-binary participants. Female-identified participants who also identified as a minority race within the study, like Native Hawaiian, were also included in the recruitment pool to help ensure a diverse group of interviewees.

This method created a recruitment pool of N=78 CHWs/students (26 from Robeson Community College, 26 from Edgecombe Community College, and 26 from all other colleges) who were contacted via email. The first eleven CHWs/students to respond, complete consents, and schedule their interviews were interviewed. Eleven (n=11) students participated in KIIs representing five community colleges.

Before agreeing to participate, individuals received a description of the interview process, including incentive eligibility, as well as the list of questions and corresponding prompts. All individuals completed an informed consent via REDCap before the interview. All participants completed individual interviews that were scheduled for one hour in length. Interviews were recorded and transcribed. Interviewees were assigned a study ID number known as a SID. All data were identified using only the SID. Only the UNCP CHW research study team accessed the identifying information. The UNCP's study database, known as REDCap, securely stored the transcribed data. Recordings, transcripts, and interviewer notes were kept confidential. Participants received a $50 gift card for their involvement in the one-hour Key Informant interview administered through the online platform Zoom. The UNCP research study team reviewed data to identify themes through qualitative analysis. The identities of all research participants remained anonymous throughout the communication of themes with partners.

Reporting

The UNCP study team provided quarterly reports to NCDHHS-ORH. These reports outlined project progress and milestones accomplished during set intervals throughout the project. In addition, the UNCP research study team also submitted evaluation reports to Partners in Health highlighting findings from early cohorts and recommendations for future SCCT revisions. This comprehensive final evaluation report focuses on data analysis from August 15, 2021 through July 15, 2022, details on the data repository, an update regarding the registry website's functionality, and final SCCT recommendations to improve the

CHW training process throughout the state. Study results may be published or presented at professional meetings.

Key Informant Interview (KII) Results

Key Informant Interviews (KII) were conducted with both students and instructors. These interview findings provided qualitative data which emphasized themes connected to the content, delivery, and support required to enhance and sustain the SCCT.

Instructor Key Informant Interview Results

All SCCT instructors who taught the course between August 15, 2021, and July 15, 2022 were invited to participate in the KII instructor process. All participants completed an informed consent before providing feedback through one-hour individual interviews conducted on Zoom. Twelve individuals participated in this process. Responses were de-identified, and the information shared remained anonymous.
Several themes emerged because of the interviews. Instructors addressed program benefits and challenges in the following areas: CHW program/curriculum, teaching formats and technology, materials/resources, instructor support, experience and training, and recommendations for improvement. Responses demonstrate the significant diversity of perspectives within the field, while several key themes emerged through this process.

CHW Program/Curriculum

Instructors noted the comprehensiveness of the SCCT curriculum as a strength. Instructors noted that this content overview allowed for the transfer of knowledge and the development of skills for students. Instructors emphasized that the online format of the SCCT allowed students to network with other students beyond their local communities. For example, one community college offered the CHW course in Spanish which highlighted topics impacting the Latino community. The curriculum was primarily taught virtually which allowed for students to participate from across the state.

Teaching Formats and Technology

While online learning has numerous benefits, challenges remain with virtual instruction. Some students may have unreliable internet access and may not have enough bandwidth to use their video or phone as a hot spot for internet access. Students may choose not to engage in an online environment, demonstrated by leaving their cameras off during class. Instructors reported the importance of utilizing engagement techniques to build group dynamics among their class participants. The use of online platforms created challenges for instructors when presenting the curriculum; this was easily implemented during in-person classes. Instructors expressed the difficulty in assessing student understanding and engagement when presenting the course in an online environment.

Materials/Resources

While the course textbook provided helpful content for some instructors, instructors also commented that the text was outdated and inaccessible for some students. Instructors commented that it would be beneficial to receive hands-on materials, such as blood pressure cuffs, that could be shipped to students to provide additional training. Instructors reflected those visual components, such as videos and graphics, supported student learning, though the time-intensive process to locate relevant materials became unsustainable. Instructors expressed the benefit of the creation of a position to coordinate the administration of online resources and to organize group communication among instructors. Additionally, the creation of an online space would facilitate instructor engagement and provide a common place to share resources.

Some instructors required students to develop their community resource list to further strengthen their development of practical skills. Students also completed a final project that demonstrated their community engagement to identify resources and barriers for community members. The students have utilized this

project to advocate to community stakeholders. This experience also allowed participants to describe barriers from their local communities, including the prevalence of food deserts, the absence of ob-gyn care and needs when serving formerly incarcerated people. Students bring various skill sets to the class, including their experiences utilizing motivational interviewing techniques and their efforts on equity issues. Interpersonal skills needed to work with vulnerable populations were highlighted as part of this experience. One community college recently developed a 30-hour internship which provides additional practical experience for students. Further evaluation of this internship component would determine the capacity available to offer this model to community colleges throughout the state.

Instructor Support, Experience, and Training

Instructors' personal experience and professional background provide a valuable resource for students. Instructional activities, such as role-plays, emphasize skills that further support CHW development. Instructors express their dedication to and pride in their work in the field. Many instructors report they communicate with their students even after the conclusion of the course. Instructors expressed there is a need to develop clear requirements for individuals interested in teaching the course. Instructors question whether it should be a requirement that they self-identify as a CHW in order to teach the class. While the Train the Trainer model currently provides training to instructors before they teach their initial SCCT class, some instructors commented that there was inconsistency in the implementation of the Train the Trainer model and that there was growth needed to meet expectations. An evaluation of the Train the Trainer model, as well as the implementation of clear guidelines surrounding teaching qualifications, would further strengthen instructor support and improve capacity.

Instructors expressed their interest in utilizing numerous formats and resources in order to engage students in an online environment. Many instructors emphasized their flexibility and autonomy in teaching course content. Instructors utilize interactive PowerPoints, videos, pictures, polls, and breakout rooms to facilitate small group discussion. This process allowed students to learn collaboratively and increased group cohesion. Instructors explained their determination of the course as a success is based on students' course score and individuals' interest in participating in the class.

Some instructors indicated that community colleges provide support. In some cases, administrators communicate with instructors to assess their needs. Some colleges utilize more than one instructor per course, and communication remains crucial to ensure grading practices remain aligned and instructors collaborate regarding delivery of course objectives. There is value found within collaboration efforts to strengthen workforce development, such as is the case when instructors, community colleges, and local hospitals advocate for employment opportunities.

Instructors question whether the current curriculum is developed enough to meet the needs of the workforce or whether significant revisions or additions would strengthen the delivery of the curriculum. Some instructors have developed additional CHW training within their community colleges, such as an 8-week course on motivational interviewing, to support skill development. Stakeholders should consider how instructors may best collaborate to collaborate resources. For example, several instructors expressed the need for CHWs to learn cultural competence skills to best serve the LGBTQ+ community, while other instructors referenced the creation of a course on best practices for this population. The development of a professional SCCT evaluation board under the guidance of the North Carolina Community Health Worker Association could determine when SCCT curriculum revisions and expansions are warranted.

Recommendations for Improvements

Stakeholders need to consider opportunities to build capacity of current CHW initiatives and the need to expand support of this critical workforce. Instructors recommend the creation of a professional board to review the SCCT. Additional funding would support staff needed to implement necessary improvements, strengthen resources, and provide funding for students seeking CPR certification. The development of a

marketing campaign would emphasize the value of CHWs, delineate their role, and identify their alignment with various community partners.

Instructors expressed the need for the teaching materials to be revised as there are inaccuracies in the current curriculum. Many instructors shared feedback regarding the relevance and accessibility of the course textbook. Instructors recommended the creation of a text specific to North Carolina that could be used to support the curriculum. Other instructors emphasized the need for a newer textbook due to the rapidly changing needs of American healthcare. Instructors expressed interest in the NCDHHS-ORH increasing their role in providing collaborative resources that could be offered to individual instructors across the state. Instructors also recommended the development of a monitoring system that could track students' employment after course completion to assess workforce data. Additionally, a future evaluation could survey employers to determine the impact of course completion on employees' retention and growth.

Currently, assessments are not standardized in their implementation across the state. Additionally, instructors expressed interest in offering the course in Spanish, though this is currently not implemented within most locations. The ability to build capacity to support offering the course in Spanish would strengthen the state's ability to meet the needs of the Spanish-speaking population. Due to limited resources, some community colleges interested in hiring bilingual instructors are unable to meet the need to provide the course in Spanish.

As the SCCT course was designed to be delivered in person, an evaluation of course effectiveness of the virtual delivery model would strengthen the curriculum. In response to the challenges some students experience related to technology, one community college developed an additional lesson, titled lesson zero, to introduce the learner to the online platform. Providing this for students across all community colleges could eliminate barriers to online class navigation. Instructors report they would benefit from additional strategies to strengthen their online teaching while students would benefit from receiving resources they could incorporate within their work, such as blood pressure cuffs or promotional health materials.

The addition of a practicum or an experience-based component would add an interactive element to support student learning. This practical experience could support student learning through providing an internship, practicum or service-learning opportunity for students seeking to gain experience within the field, including those who are transitioning into a new career, those who have rejoined the workforce as well as recent high school graduates. Due to highly collaborative nature of community health work, keeping the course in a synchronous format provides opportunities for connection among learners instead of the isolation experienced within a self-paced, asynchronous model which is not indicative of the realities within the field.

There are numerous recommendations regarding the need to strengthen course content. Students would benefit from updated information regarding health care systems, at the local, state, and national level, as well as advocacy resources. The concepts of cultural competence and humility are tenets that should be emphasized within all aspects of course development. Particular attention should be given to diversity and inclusion. Instructors reported that not all resources are diverse or inclusive of their population. Recommended videos should include captioning. Instructors and students may benefit from the course being reorganized from numbered lessons into modules based on content. While the first module could include foundational material, additional modules would offer instructors flexibility on when and how to teach additional content. Though the lessons currently focus on knowledge acquisition, skill building activities would strengthen the current curriculum.

The current content requires updating as information was developed before the COVID-19 pandemic. Students would also benefit from the inclusion of other topics including the safe surrender law, Medicaid changes, implicit biases, and resilience. Class participants would also benefit from learning best practices

when working with vulnerable populations, including but not limited to the LGBTQ+ community, individuals who have been incarcerated, people with autism and individuals experiencing developmental delays. The curriculum should emphasize how best to work with individuals from marginalized and vulnerable populations. The addition of part two of the SCCT may be necessary to adequately address these topics.

Although coordinating meetings with many instructors is challenging, it is a repeated theme of importance emphasized by instructors. Specific suggestions include the creation of a schedule of regular meetings to provide resources for instructors to access and share resources. These meetings may be held in-person or virtually. Instructors expressed interest in meeting on a quarterly or biannual basis. The creation of a resource library or shared folder for instructor access would strengthen available resources. The development of a bimonthly newsletter would provide trainers with pertinent information regarding updates in the field. Instructors expressed interest in sharing guest speaker recommendations, reflecting on lessons learned, and other best teaching practices. Instructors report spending eight to twenty hours outside the classroom to prepare for lessons by locating updated information and structuring activities to enhance learning. This time commitment remains a reported challenge as instructors teach this course in addition to their work in full-time positions. Instructors also report the time-intensive need to be responsive to their students' needs. The NCCHWA or NCDHHS-ORH should consider the value of training additional master trainers to teach future instructors. Instructors may benefit from additional training on sensitive topics, such as Adverse Childhood Experiences (ACEs) as well as working with individuals who have experienced incarceration. Moreover, instructors would benefit from taking continuing education courses as a requirement to remain teaching in the field. The creation of an instructor certification process may help ensure the quality of instructors remains consistently high within the field.

Student Key Informant Interview Results

Eighty-one students who participated in the study between August 15, 2021 and July 15, 2022 were invited via email to participate in the Student KII. Eleven of these students completed consent forms and participated in the interview.

Students participating had diverse educational backgrounds, from a high school diploma to a master's degree. Years of experience and job titles in the field also varied. Students reported the frequency of class meetings from two times a week 3-hour classes, one time a week, to every other week. Coursework often required a five to six-hour-a-week time commitment outside of class. Some classes were led by more than one instructor, while other classes provided an individual instructor to teach the course. The themes that emerged because of student key informant interviews include program benefits and challenges in the following areas: course content, delivery, and instructor support, materials and practical implementation in the field, course Impact and opportunities, and areas for improvement/recommendations.

Course Content, Delivery, and Instructor Support

The role of the CHW is also diverse, requiring a range of content on various topics. The learning came through the content delivered by the instructors and the diversity of the course participants. The community of learners all brought their experiences and knowledge to share and provide a different perspective on community needs. Students remarked that the training was used every day in their work. Often the instructors were identified as strengths as they provided support for students in a safe learning environment. The instructors were knowledgeable and informative and prompted discussions for students to engage further in the content. The instructors could encourage students' participation even in an online format.

Materials and Practical Implementation in the Field

The course materials were identified as a strength, including the textbook, PowerPoint slides, and videos integrated into the lessons and interactive content. The poster assignment was often mentioned as a

valuable learning experience, taking to the community to learn first-hand resources in the area where the health care workers serve. Hands-on learning with CPR mannequins and blood pressure cuffs was beneficial. The students could share the practical application of knowledge and skills learned in the course. Communicating effectively with community members was often cited as an important skill. Students reported implementing skills like addressing situations from a holistic approach and observing and asking questions, which assists in better understanding community needs. Students learned to ask open-ended and probing questions to find the root cause. This communication allowed students to break down barriers, gain community members' trust, communicate professionally, and engage in cultural competency. Additional comments included the ability to relate, self-reflect on personal bias, and experience empathy. Furthermore, the content and materials were good resources. For example, NCCARE was mentioned by several of the students as a good resource. This resource allows CHWs to provide options for community members. Students learned how to complete community assessments as well.

Course Impact and Opportunities

The impact of the course was the validation that the course is "important for my organization". The course provided adequate tools to be safe during community visits. Students reported being more confident, efficient, and intuitive while in the community and working in the field. Overall, students indicated appreciation for the course and reported that the course was "effective and very impactful." Students have seen CHW positions on LinkedIn, and the course provided growth opportunities to provide resources for CHWs in the field and connections to organizations. Although students reported no new opportunities from having the certification, students hope to see an increase in jobs available in the future.

Areas for Improvement and Recommendations

Students interviewed in the KII suggested that the course be offered in different languages to address those for whom English is their second language or provide additional support for ESL students. Additionally, students suggested offering the course at different times of the day for individuals working non-traditional hours. They also noted that some of the materials and test questions needed to be updated. Some students suggested extending the course length to delve deeper into specific topics (maternal health, infant mortality, STDs, and drug addiction). In addition, the students responded that a follow-up course would be beneficial (part 2) or another course that provided a deeper dive into special topics and/or continuing education.

Most students suggested improvement in holding classes face to face rather than online. Students also suggested that if the course is online, there should be some accountability to ensure students are engaged with their cameras during the lesson. During the lesson, students suggested increasing student collaboration through breakout rooms, increasing opportunities for real-life role-playing scenarios, updating materials as necessary, and providing an opportunity to visit community resources in person versus simply discussing the resource in an online format. Most students indicated the lesson activities were adequate; however, one student responded that some assignments (no specific assignments were identified) had little value in their work and were considered busy work.

The diversity of the participants in the course may play a significant role in the self-efficacy of utilizing technology to learn. Technology access may be a barrier to learning in an online environment. Other suggestions for areas of improvement include creating a resource map for CHWs across the state of North Carolina to better aid communities in need, providing options for live classes to be viewed later for missed classes, and offering a CHW course for supervisors. Finally, students identified that the course is not highly visible and should be marketed using testimonials from previously certified students to encourage more participation through stakeholder organizations.

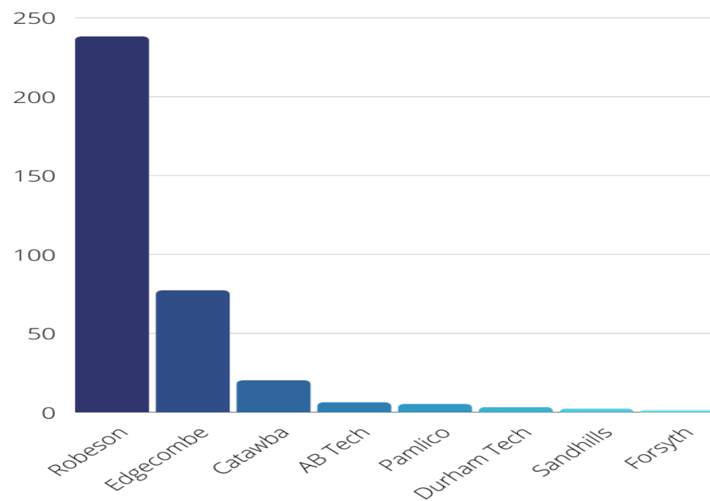
SCCT Evaluation Results

Three hundred and fifty-two individuals participated in the Standardized Core Competencies Training study between August 15, 2021, and July 15, 2022; 174 individuals participated in 2021, and 178 individuals participated in 2022. When reviewing this data, it is essential to note the following: not all SCCT course participants opted in to participate in the study, not every participant responded to all items on the survey instruments, and some instruments or specific responses were illegible, incomplete, or missing. Therefore, for each summary table provided below, *n* is the number of responding participants for each item, and the percentage reflects the proportion of responding participants to the item out of the total SCCT study participants from August 15, 2021, to July 15, 2022 (352 total responding participants). In some categories, *n* exceeds 100%. This is due to participants selecting more than one answer; therefore, the total responses are over 352. Only minor edits to punctuation, grammar, terms, or names have been made for de-identification purposes or to clarify participants' responses. Breakdown information has been provided for select colleges, but not all. Data for individual colleges can be provided upon request.

Participant Demographics

Number of Community College Participants Represented
N=352

Catawba Valley CC	20
Durham Tech	3
Edgecombe CC	77
Robeson CC	238
Sandhills CC	2
Pamlico CC	5
Forsyth CC	1
AB Tech	6



Participant Home County
n= 227, 64.5% of participants responded

Beaufort	3	Franklin	2	Mecklenburg	38	Union	1
Bertie	2	Gaston	2	Mitchell	1	Vance	6
Bladen	2	Gates	1	Nash	5	Wake	14
Brunswick	2	Granville	4	New Hanover	3	Warren	1
Buncombe	9	Guilford	4	Northampton	2	Wayne	5
Burke	2	Halifax	2	Onslow	3	Wilson	4
Cabarrus	6	Harnett	4	Orange	2	Cobb County (GA)	1
Catawba	1	Haywood	1	Pender	1	Monroe County (NY)	1
Cherokee	1	Henderson	2	Pitt	10	Greenwood County (SC)	1
Cleveland	5	Hertford	2	Randolph	1	York County (SC)	1

Craven	2	Hoke	3	Richmond	1	Cameron County (TX)	1
Cumberland	2	Iredell	3	Robeson	6	Brunswick County (VA)	1
Dare	2	Jackson	2	Rowan	2		
Davidson	1	Johnston	7	Rutherford	1		
Duplin	3	Lee	1	Sampson	2		
Durham	10	Lenoir	2	Stokes	1		
Edgecombe	5	Lincoln	1	Surry	1		
Forsyth	6	Macon	2	Transylvania	1		

How did you hear about the Standardized Core Competency Training (SCCT)?
n=240, 68.2%

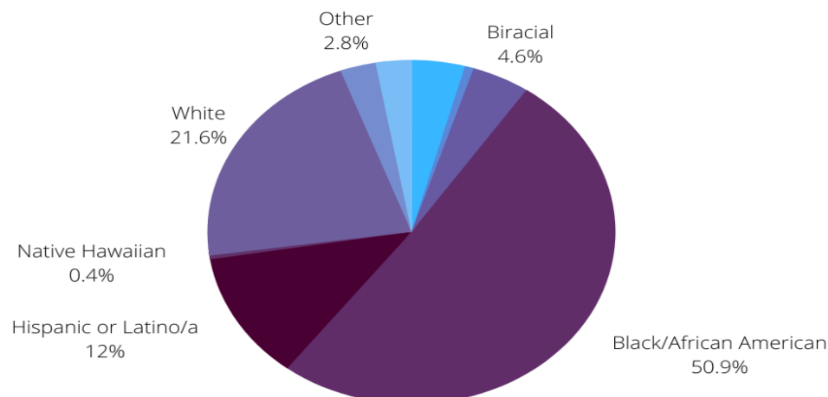
Brochure/flier on campus	4
Brochure/flier off campus	7
Instructor	101
Employer	85
Word of mouth	15
Other	27
Prefer not to reply	1

Participants reported hearing about the SCCT from a variety of sources. The data illustrates that most individuals heard about the SCCT via instructors, employers, or other source(s). Written responses are listed by type in the chart below.

Employer	1
CHW class	8
Community college	4
Community organization	4
NCCHWA	2
Online/email	4
Job searching	2

What is your race or ethnic background? Mark all that apply.
n= 283, 80.4%

American Indian	12	Biracial/Two or More	13
Asian/Pacific Islander	2	Other	8
Black/African American	144	Prefer not to reply	8
Hispanic or Latino/a	34		
Native Hawaiian	1		
White	61		



Are you Hispanic or Latino/a?
n= 233, 66.2%

No	197
Prefer not to reply	2
Yes	34

What gender do you identify as?
n= 233, 66.2%

Female	207
Male	21
Non-binary	2
No Information	2
Other	1

Roughly 90% of participants reported their gender as female. Data from 2020-2021 also reflected that most study participants reported their gender as female.

What sexual orientation do you identify with?
n= 234, 66.5%

Bisexual	12
Gay	3
Lesbian	4
Queer	2
Straight	206
Other	3
Prefer not to reply	3
No Information	1

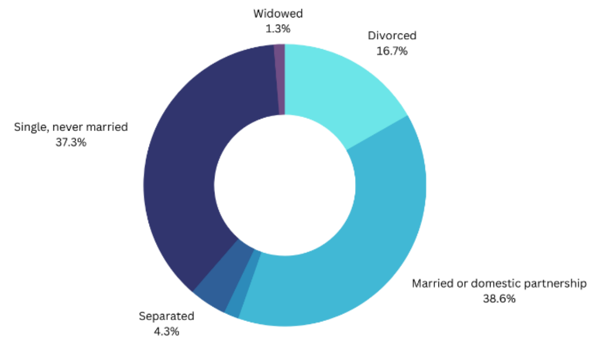
- Gender-neutral in attraction as well
- Pansexual x 2

What languages are you fluent in? Mark all that apply.
n= 272, 77.3%

Creole	1
English	231
French	1
Spanish	37
Other	2

What is your marital status?
n= 233, 66.2%

Divorced	39
Married or domestic partnership	90
Prefer not to reply	4
Separated	10
Single, never married	87
Widowed	3



Marital status amongst participants was comparable throughout all colleges, with various marital statuses for each college. Most participants selected being single, never married, or married/domestic partnership for their responses.

Career Impact Survey

Participants were asked to complete the following data from the Career Impact Survey upon starting and at the end of the course. The tables differentiate pre- and post-survey data.

When it comes to work as a CHW, I am currently:
n= 225, 63.9%

	Pre- **n= 225, 63.9%**	Post- **n= 185, 52.6%**
Volunteer - Full time	4	1
Volunteer - Part-time	6	2
Employed - Full time	152	119
Employed - Part-time	14	17
Employed - Looking for a new job	5	9
Not working - Looking for work as a CHW	11	12
Not working as a CHW	31	22
Not working - not looking for work	1	1
Prefer not to reply	1	2

Responses were written regarding the question, if not working as a CHW, what is your title, are tabulated in the chart below.

Consultant/coach/program coordinator	6
Case manager/care coordinator	5
Director/manager/supervisor/team lead	5
CHW	4
Peer Specialist	4
Community Staff	4
Administrative team	2
Other	2
CPSS	2
Not applicable	3

Study participants wrote their current job or volunteer titles which are compiled in the chart below as follows:

Healthcare corporation	36
Not-for-profit	26
Government-affiliated	9
Medical care offices/clinics	6
Educational	4
Technology business	4
Other	3
Not applicable	5

Regarding the question, what is your current or desired job title, written responses collected were grouped as follows:

CHW or CHW specialist	24
Community support/outreach	11
Administration/management	10
Healthcare	9
Care or case coordination	8
Other	2

COVID support	3
Educator	3
Maternal health	2
Not applicable	2

In the pre-Career Impact Survey, forty-three out of the 225 participants, roughly 19%, reported not working, with 11 out of 43 looking for work as a CHW. The post-survey reflects similar data; thirty-five out of the 185 participants who answered this question (roughly 19%) reported not working. However, there was about a 10% increase in students post-survey than pre-survey, indicating they are looking for work as a CHW.

I am working, volunteering, or looking for work with:

	Pre- **n= 412, 117%**	Post- **n= 417, 118.5%**
Health clinic/hospital	81	74
Private practice	27	37
Pharmacy	9	13
Educational institution	25	29
Community-based organization	102	93
Faith-based organization	34	32
Local government/organization	44	53
State government/organization	56	57
Tribal government/organization	5	10
Prefer not to reply	12	6
Other	17	13

Additional comments that were written are tabulated as follows:

Open to opportunities	3
Private sector	3
Current employer	2
Medical corporation	2
Adult daycare center	1
Home Health	1
Non-profit	1
State contract	1

What are the most common settings where you interact with your clients/participants?

	Pre- **n= 309, 87.8%**	Post- **n= 274, 78%**
Clinical settings (such as doctor offices and hospitals)	52	49
Community settings (such as libraries, schools, parks, and senior centers)	99	89
Worksite setting (such as farms and factories)	32	28
Housing unit (client's home, shelters, homeless, migrant camp)	72	58
Prefer not to reply	4	4
Other	50	46

Answers that were written in are summarized in the chart below. Remote/Virtual/Phone is the most common answer provided.

	Pre-	Post-
Remotely/Virtual/Phone (including call centers, work from home, customer service, etc.	30	28
Food distributions sites/COVID-testing and vaccination sites	4	1
In Community/Community Events/Public	3	3
Currently not working as a CHW	2	0
Other	2	3
Private and government entities	1	4
Unemployed	0	1

What is your overall role in the health care team? Mark all that apply.

	Pre- **n= 426, 121%**	Post- **n= 379, 107.7%**
Facilitate access to care/services (escort to services, care navigation, translation, appointment reminders, etc.)	87	70
Provide referrals and follow-up	133	114
Direct care services (Blood sugar monitoring, blood pressure monitoring, mental health assessment, etc.)	26	23
Primary prevention (Disease prevention)	34	34
Secondary prevention (Halt/slow progression of the disease, prevent disease-related complications)	22	19
Community development/empowerment/advocacy	107	102
Other	13	15
Prefer not to reply	4	2

Written statements regarding this question are compiled as follows:

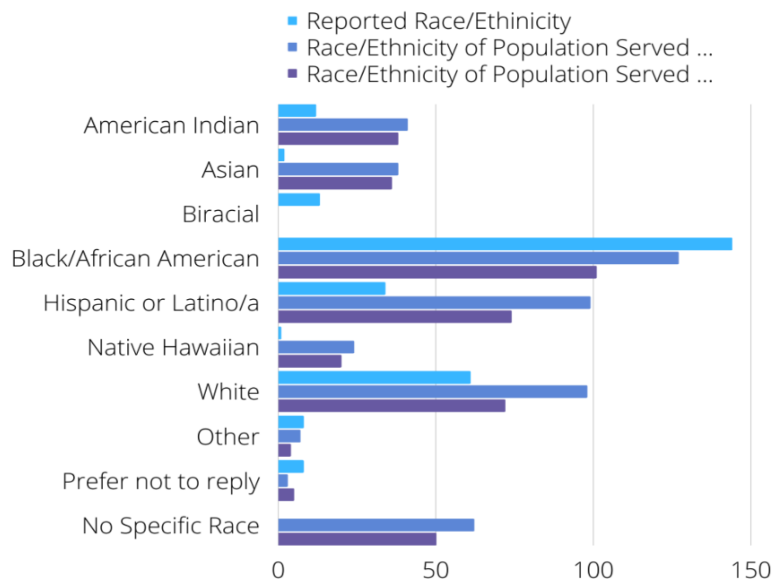
Case management/resource coordination	5	Employment	1
COVID-19	3	Volunteer	1
Community Outreach	2	Not applicable	1

Most participants reported their role as providing referrals and follow-up and in community development/empowerment/advocacy in both pre-and post-surveys. Similarly, data from 2020-2021 also reflected that most participants reported their role as providing referrals and follow-up and in community development/empowerment/advocacy.

What specific ethnic/racial populations are you currently/formerly/expecting to work with?

	Pre- **n= 499, 142%**	Post- **n= 400, 114%**
American Indian/Alaska Native	41	38
Asian American	38	36
Black or African American	127	101
Caucasian	98	72
Hispanic or Latino	99	74
Native Hawaiian or other Pacific Islander	24	20

No Specific Race/Ethnicity	62	50
Prefer not to reply	3	5
Other	7	4



Black/African American, Caucasian, or Hispanic/Latino are the three backgrounds most frequently selected for both pre-and post-surveys. When comparing this background to the reported race or ethnic background of study participants, Black/African American, Caucasian, and Hispanic/Latino were among the three most frequently selected backgrounds. 'Biracial' was not included in this item but was included in this illustration because it is listed as an option under self-reported backgrounds.

Apart from English, do you speak the language of the population you currently/formerly/expect to serve?

	Pre- **n= 186, 52.8%**	Post- **n= 156, 44%**
No	131	102
Yes	50	49
Prefer not to reply	5	5

Participants were asked, 'What languages do you speak (not including English)?' The data below illustrates participant responses.

	Pre-	Post-
English	1	2
n/a	1	2
Spanish	34	30
Teochew	0	1

The following question relates to the specific populations you are currently/formerly/expecting to work with. Age groups:

	Pre- **n= 313, 88.9%**	Post- **n= 252, 71.6%**
0-10 years	21	19
11-18 years	31	28
19-64 years	103	70
65+ years	65	49
No specific age	92	86
Prefer not to reply	1	0

Roughly one-third of participants reported currently/formerly/expecting to work with individuals between 19 and 64 years of age. The age group was selected the most frequently in the pre-survey responses. However, the post-survey responses reflect no specific age as the most frequently selected group, with over one-third of participants selecting this answer.

The following question relates to the specific populations you are currently/formerly/expecting to work with. Other population groups:

	Pre- **n= 1299, 369%**	Post- **n= 1053, 299%**
Pregnant women	67	57
Men	91	71
Women	99	75
Gay, Lesbian, Bisexual, and/or Transgender	61	50
Families	92	69
Children	59	44
Immigrants/Refugees	53	46
Low Income	105	80
Rural populations	71	59
People with disabilities	71	66
People with mental health needs	72	58
People with substance use disorders	62	49
People for whom English is not their first language	58	45
Farmworkers and families	40	37
Individuals experiencing homelessness	75	55
Uninsured	72	59
Veterans	49	42
First Peoples	16	15
No Specific population groups	80	70
Prefer not to apply	2	3
Others	4	3

Answers that are written in are summarized in the chart below.

	Pre-	Post-
All health conditions	1	1
Formerly Incarcerated	1	0
Varies	5	0

The following question relates to the specific populations you are currently/formerly/expecting to work with. Health topics/issues groups - chronic conditions:

	Pre- **n= 571, 162%**	Post- **n= 461, 131%**
Asthma	78	69
Diabetes	101	83
Chronic obstructive pulmonary disease (COPD)	72	63
Cancer	78	61
Cardiovascular Disease	82	63
HIV/AIDS	67	48
Prefer not to reply	35	28
Other	58	46

Answers that were written in are summarized in the chart below. COVID-19 is the most common health answer provided.

	Pre-	Post-
COVID-19	14	25
All health conditions	12	9
Maternal/child health	5	2
Substance misuse	3	0
Chronic disease	2	0
Social determinants of health	2	1
Disability	1	0
Domestic Violence	0	1
Food Insecurity	0	1
Hepatitis C	1	0
Health Coaching	1	0
Various health conditions	1	0
Not sure or N/A	1	1

The following question relates to the specific populations you are currently/formerly/expecting to work with. Health topics/issues groups:

	Pre- **n= 1168, 331.8%**	Post- **n= 1078, 306.25%**
Alcohol/substance use prevention or treatment (with young adults)	50	55
Alcohol/substance use prevention or treatment (with adults)	62	58
Physical or developmental disability	62	56
Medication education/monitoring/adherence	77	66
Compliance with medical appointment	71	53
Oral Health	28	34
Older adult health (Alzheimer's, osteoporosis, fall prevention, arthritis, etc.)	48	47
Environmental Health	48	48
Physical activity	65	54
Nutrition/Weight loss	65	52
Tobacco cessation (With young adults)	34	40
Tobacco cessation (With adults)	49	43
HIV/AIDS prevention	46	39

Immunizations	72	67
Injury prevention or control	34	41
Maternal and child health	51	43
Mental health issues (With young adults)	57	56
Mental health issues (With adults)	71	61
Occupational health	32	30
Sexual/reproductive health (Sexually Transmitted Infection (STI) prevention/education, family planning, etc.) (with young adults)	42	41
Sexual/reproductive health (STI prevention/education, family planning, etc.) (with adults)	42	40
Prefer not to reply	27	24
Other	35	30

Answers that are written in are summarized in the chart below. COVID-19 is the most common health answer provided. In the chart below, responses under 'Other' include answers such as domestic violence, teaching mindfulness/stress reduction/self-hypnosis, and health topics/issues determined by the company.

	Pre-	Post-
All/No Specific Group	7	7
Covid-19/Covid related	15	17
Domestic Violence	0	1
Other	3	2
Survival needs - food, rent, utilities, employment	2	1

The following question relates to your continued work as a Community Health Worker (CHW). In the past year, have you received any promotions that have not yet been reported on this survey?

	Pre- **n= 186, 52.8%**	Post- **n= 156, 44.3%**
No	169	135
Yes	8	13
Prefer not to reply	9	8

Participants were asked to list their new role or title. Answers that are written in are summarized in the chart below.

	Pre-	Post-
CHW/CHW type role or title	4	5
Director/Manager/Supervisor	1	3
Coordinator type role/title	2	1
Permanent Employment	1	1

The following question relates to your continued work as a Community Health Worker (CHW). In the past year, have you received any work incentives not previously reported in this survey?

	Pre- **n= 190, 54%**	Post- **n= 163, 46.3%**
No	142	119
Don't know	7	9
Pay/wage increase	15	17
Bonus	9	6
Prefer not to reply	13	11

Other	4	1

The following question relates to your continued work as a Community Health Worker (CHW). Please estimate how much money you earn in a year for work as a CHW. Include gas/mileage, meals, etc. Mark only one.

	Pre- **n= 186, 52.8%**	Post- **n= 156, 44.3%**
Some money earned	69	75
Zero	22	15
Prefer not to reply	54	39
Don't know	41	27

Please enter a dollar amount for your earnings in a year as a CHW:

	Pre-	Post-		Pre-	Post-		Pre-	Post-
Less than $15,000	1		$36,000 - $40,000	18		Over $60,000	1	
$15,000 - $20,000	3		$41,000 - $45,000	12		Hourly Pay	2	
$21,000 - $25,000	2		$46,000 - $50,000	3				
$26,000 - $29,000	1		$51,000 - $55,000	3				
$30,000 - $35,000	9		$56,000 - $60,000	2				

About 12% of participants in the pre-Career Impact Survey who answered this question reported not earning money for their work as a CHW; that is 10% less than participants who answered this question in 2020-2021. However, in the post-Career Impact Survey, only 9% of participants who answered this question reported not earning money for their work as a CHW. In addition, over half of participants (51%) selected "Prefer not to reply" or "Don't know" in the pre-survey. In comparison, only 42% of participants selected "Prefer not to reply" or "Don't know" in the post-survey.

The following question relates to your continued work as a Community Health Worker (CHW). How is your position funded? Mark all that apply.

	Pre- **n= 228, 64.8%**	Post- **n= 190, 54%**
Not funded, I volunteer	7	3
Not funded, but the organization provides travel assistance	1	0
Government funding	72	58
Employers' general budget	32	24
Grants	56	56
Third-party reimbursement (Medicare)	1	1
Third-party reimbursement (Medicaid)	4	3
Don't know	33	26
Other	9	7
Prefer not to reply	13	12

Answers that are written in are summarized in the chart below. Not currently working as a CHW is the most common health answer provided.

	Pre-	Post-
Currently not working as a CHW	4	2
Private/For-Profit Entity	2	0
Government Entity	1	2
Donations	1	0

Non-Profit Entity	1	0
Company provides everything but 3rd party pays mileage	0	1

The following question relates to your continued work as a Community Health Worker (CHW). What is the estimated number of unduplicated clients that you serve in a year? Mark only one.

	Pre- **n= 186, 52.8%**	Post- **n= 156, 44.3%**
0-100	42	30
101-500	34	16
501-1000	18	36
1001	13	16
Don't Know	64	48
No information	1	0
Prefer not to reply	14	10

The following question relates to your continued work as a Community Health Worker (CHW). How many hours of supervision do you receive every week, on average?

	Pre- **n= 185, 52.6%**	Post- **n= 156, 44.3%**
Zero	39	35
More than zero	106	88
No information	1	0
Prefer not to reply	39	33

Participants were asked to write in the number of hours of supervision they received every week. Answers that were written in are summarized in the chart below. For example, responses under 'Other' in the chart below include answers like daily, weekly, less than one hour a week, every other week, barely receiving supervision, and working independently.

Hours of supervision per week	Pre-	Post-
1-9 hours	62	53
10-19 hours	10	7
20+ hours	23	10
Other	3	8

In both the pre-and post-Career Impact Surveys, more than half the number of participants reported receiving supervision than those that reported not receiving supervision. In addition, those who received supervision reported a wide range of hours of supervision received each week.

Do you feel this amount of supervision to be adequate for your needs?

	Pre- **n= 185, 52.6%**	Post- **n= 156,44.3%**
No	11	10
No information	1	0
Yes	137	122
Prefer not to reply	36	24

Approximately 75% of respondents report they receive adequate supervision to meet their needs in the pre-Career Impact Survey. In comparison, almost 80% of participants report they receive adequate supervision to meet their needs in the post-Career Impact Survey.

The following question relates to your continued work as a Community Health Worker (CHW). Who supervises your work as a CHW? Mark all that apply.

	Pre- **n= 224, 63.6%**	Post- **n= 191, 54.3%**
A senior CHW	63	64
Volunteer Coordinator	0	1
Administrator	63	60
Medical Director	3	3
Physician	2	1
Nurse	6	4
Social Worker	19	13
Other medical/social provider	7	2
Prefer not to reply	20	16
Other	40	27
No Information	1	0

Participants were asked to identify 'Other' medical/social provider or supervisor supervising their work as a CHW. Answers that are written in are summarized in the charts below.

'Other' medical/social provider	**Pre-**	**Post-**
CHW	3	1
Director/Manager	2	0
Lay Health Supervisor	0	1
Other	1	0

'Other' supervisor:	**Pre-**	**Post-**
Director/Manager/Supervisor	19	17
Currently not employed as a CHW	4	2
Care Coordinator/Coordinator	3	3
Other	2	3
N/A	1	1

The following question relates to your continued work as a Community Health Worker (CHW). How is supervision performed? Mark all that apply.

	Pre- **n= 431, 122%**	Post- **n= 244, 69.3%**
Face-to-face interview/chat	88	75
Telephone interview/chat	103	88
Submitting paper records (schedules, written reports, timesheets, chart notes etc.)	63	57
Submitting electronic records (schedules, written reports, timesheets, chart notes etc.)	95	0
Chart reviews of your clients	46	0
Other	16	13
Prefer not to reply	19	11
No Information	1	0

Written responses regarding this topic are summarized in the chart below.

Not currently employed as CHW	13
Email/written correspondence	5
Video/audio/online chat	4
In-person meetings/site visits	3
Phone	1
CEO	1
Time monitoring	1
Not applicable	4
Office visits	1

Based on the data provided by participants in the pre-survey, supervision is primarily performed via telephone interview/chat or via submitting electronic records (schedules, written reports, timesheets, chart notes, etc.). However, recipients who completed the post-survey reported that supervision is primarily performed via telephone interview/chat or face-to-face interview/chat. Similarly, 2020-2021 data indicates that supervision is primarily performed via face-to-face interview/chat or telephone interview/chat.

The following question relates to your continued work as a Community Health Worker (CHW). How is your job performance tracked/evaluated? Mark all that apply.

	Pre- **n= 353, 100.3%**	Post- **n= 309, %**
Summarizing, analyzing, and reporting on clinical impacts or outcomes (client blood pressure levels, A1C levels, cholesterol levels, etc.)	35	36
Tracking non-clinical impacts or outcomes (tracking referrals, appointment compliance, medication adherence, etc.)	61	54
Performance evaluation	89	90
Satisfaction survey/assessment from yourself	19	22
Satisfaction survey/assessment from clients	24	15
Number and category of clients served	55	53
Cost savings	6	5
Don’t know	32	11
Prefer not to reply	18	16
Other	13	7
No Information	1	0

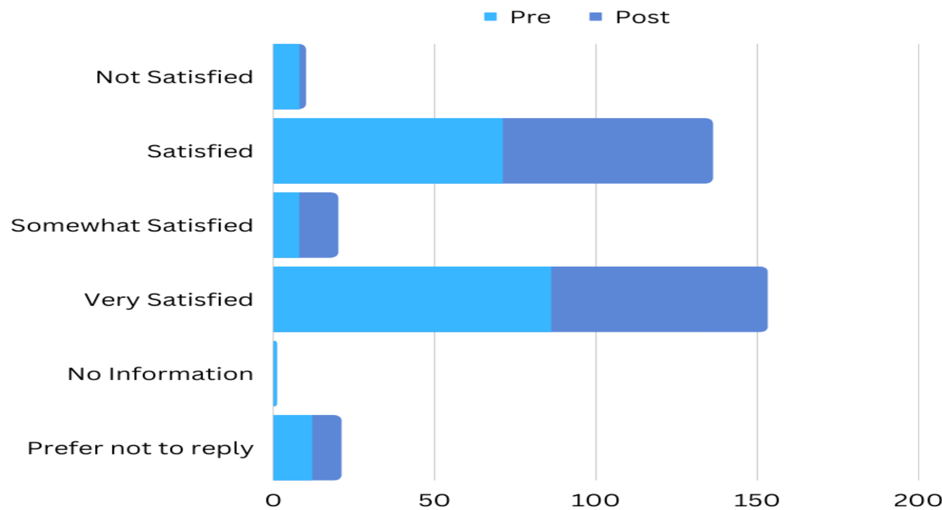
Answers that were written in are summarized in the chart below.

	Pre-	Post-
Currently not working as a CHW	4	2
Number of Community Events	2	1
Other	2	2
N/A	2	0
Referrals	1	1

For both pre and post-surveys, the number one response for how participant job performance is tracked/evaluated is via performance evaluation. At the same time, cost savings was the least reported way to evaluate job performance.

How do you currently rate your job satisfaction? Mark only one.

	Pre- **n= 186, 52.8%**	Post- **n= 155, 44%**
I am not satisfied	8	2
I am satisfied	71	65
I am somewhat satisfied	8	12
I am very satisfied	86	67
No information	1	0
Prefer not to reply	12	9



Roughly 85% of participants reported being satisfied or very satisfied with their job.

Do you feel you are helping your clients achieve their health goals? Mark only one.

	Pre- **n= 186, 52.8%**	Post- **n= 156, 44.3%**
Mostly no	3	2
Mostly yes	57	44
No	3	3
No information	1	0
Prefer not to reply	16	13
Somewhat	18	12
Yes	88	82

Do you feel you are an important part of the medical team at your place of work?

	Pre- **n= 186, 52.8%**	Post- **n= 156, 44.3%**
Mostly no	6	3
Mostly yes	28	26
No	10	6
No information	1	0
Prefer not to reply	16	15
Somewhat	19	14
Yes	106	92

How do you feel about your work, employers, and supervisors? What makes you feel supported? What would be most helpful to you?

The experience of CHWs varies dramatically in terms of management support. Many participants commented that they felt very supported by their employers and supervisors. Participants expressed appreciation for the opportunity to receive training and tools to enhance their job performance. Participants commented that it is very important to them that their supervisors are responsive and provide feedback. Meetings help to strengthen the team. Some employers recognize the importance of balancing the client's needs with the needs of the staff.

CHWs experienced a sense of teamwork and comradery within their work environment. Constructive feedback and continuing education are necessary tools. It is important to have freedom and flexibility within the job to complete tasks. It is valuable for employers to recognize the importance of work while balancing the needs of CHWs' personal lives.

While many comments reflected the supportive nature of supervisors, other managers demonstrated a disharmonious and ineffective leadership style. Some employers lacked organization. Supervisors can be viewed as creating a toxic workplace by demonstrating bullying behavior. The issues of low pay and benefits received comments from multiple participants. There can be issues when there are discrepancies in pay between management and CHWs.

Staff were required to pay out of pocket to provide basic supplies instead of receiving materials as part of their position. More funds to assist clients struggling with COVID-19 were needed. Increased involvement from community-based organizations would strengthen CHW efforts within the field. More marketing materials would enhance communication and transparency regarding CHW initiatives. Participants expressed that increased support and resources are necessary to serve the community. Participants do express some concern with experiencing burnout, though weekly meetings prove helpful in providing support.

It can be challenging to support clients' needs due to current limitations in procedures and practices. Nevertheless, CHWs emphasize how client goals must be met. Some staff do not feel recognized for their contributions or communicated with by their supervisors regarding work initiatives.

There was a reference to the fact that some people do not take COVID seriously, which impacts employee morale. CHWs do not like to be micromanaged in their work. Having an open-door policy helps participants be able to express concerns. It would be valuable for CHWs to receive clarity regarding their job description. Constant reporting creates bureaucratic issues that take time away from helping clients. CHWs believe they could make an even more significant impact by serving clients. More training on specific topics like mental health and diabetes would prove helpful. CHWs could benefit from more support from experienced leaders. Rural communities could use additional resources. There is interest in volunteering time in the field when this aligns with family responsibilities.

Finding new ways to navigate systems and provide support would be helpful. Community health work can be very draining, and it is important to build camaraderie and support by learning from team members to avoid isolation. Staff shortages negatively impact staff and clients. CHWs would benefit from a plan to improve workflow and provide additional training. It may be problematic for CHWs to utilize personal vehicles for travel for their work without enough mileage reimbursement to provide support.
Some participants communicate regularly with their supervisors through chat and monthly reports. There is value to being placed in a work field that best meets their skillset. Participants are pleased they translate services for clients. There is an appreciation for the fact that employers are training volunteers to assist in community health work. Participants commented that it would be helpful to be allotted budgets in their work to allow for program implementation. Strategic planning is necessary to ensure continuity with job performance.

Participants referenced the altruistic nature of their profession and how their work helps people, which is of great importance to them. It was emphasized that CHWs serve clients without judgment, leading to support and trust. The importance of CHWs' role within the rural environment was particularly noted. CHWs learn core competencies to provide support to clients. The specific individual within the position makes a difference in determining whether the work is effective. Considering how work needs will change as the COVID-19 pandemic shifts are valuable. CHWs value addressing issues surrounding social determinants of health. Though the principle behind NCCARE360 is recognized, there are concerns this creates additional bureaucratic obstacles to prevent clients from accessing care. Advocacy not only for clients but for the CHWs themselves supports this necessary work.

What is the highest degree or level of school you have completed? (If currently enrolled, mark the highest degree already received). Mark only one.

	Pre- **n= 33, 9.4%**	Post- **n= 25, 7.1%**
Associate degree	5	1
Bachelor's degree	12	4
High school diploma, GED, or equivalent	3	4
Other	2	5
Prefer not to reply	1	2
Some college credit, no degree	9	7
Trade/technical/vocational training	1	2

In the pre-survey, only two participants reported having a master's degree, while five participants reported having a master's degree post-survey. Only participants that selected “Not working as a CHW,” “Not working – not looking for work,” or “Prefer not to reply” for the first question in the Career Impact Survey answered this question (automatically populated when these responses are selected).

Do you currently hold any health-related degree, license, or certificate?

	Pre- **n= 214, 60.8%**	Post- **n= 176, 50%**
No	95	72
Prefer not to reply	9	10
Yes	110	94

For participants’ written comments, results were tabulated as follows:

BA/BS degree	20
Master's degree	12
Peer support specialist	8
Associate degree	6
Medical assistant	8
Peer support	8
Registered nurse	6
Nursing Assistant	6
Social work/counseling/addictions	6
Certificate	4
CHW	4
Wellness/life coach	4
Medical billing	2
Healthcare/other	17

In both the pre-and post-surveys, more than 50% of participants indicated they currently hold a health-related degree, license, or certificate with various health-related degrees/licenses/certificates reported. However, 44% of participants in the pre-survey and 44% in the post-survey who responded to this question indicate not currently holding any health-related degree, license, or certificate. Only participants that selected “Not working as a CHW,” “Not working – not looking for work,” or “Prefer not to reply” for the first question in the Career Impact Survey answered this question (automatically populated when these responses are selected).

In the past year, have you attended any continuing education class, training, or any other educational opportunities (including the SCCT) that you have not yet reported in this survey?

	Pre- **n= 214, 60.8%**	Post- **n= 175, 49.7%**
No	89	77
Prefer not to reply	6	4
Yes	119	94

Roughly 42% of participants in the pre-survey indicate they have not attended any continuing education class, training, or any other educational opportunities. Likewise, 44% of participants in the post-survey reported they had not attended any continuing education class, training, or any other educational opportunities.

In the past year, how much time have you spent on training/education that has not yet been reported in this survey?

	Pre- **n= 177, 50.3%**	Post- **n= 176, 50%**
1 - 8 hours	22	29
2 - 3 days	30	15
Attended the SCCT only	3	10
More than 3 days	111	85
No information	2	0
Prefer not to reply	9	10
Zero	0	27

Almost half of all pre-and post-surveys participants indicate spending time on training/education that was not yet reported in this survey within the last year.

What best describes the training you received? Mark all that apply.

	Pre- **n= 479, 136%**	Post- **n= 385, 109.4%**
Classroom lecture	60	47
Hands-on demonstration	50	30
Web-based class	148	124
Live web-based seminar	107	100
Conference/meeting	85	65
Prefer not to reply	21	16
Other	8	3

Please specify the training names or topics.

ADHD	1	Diabetes prevention	1	Master's degree courses	2
AHEC courses	6	Goal/life coaching	3	Medicaid	1
Autism	1	Harm reduction	4	Medical terminology	1
Bachelor's degree courses	1	Health literacy	2	Mental Health First Aid	5
Case management	2	Healthcare billing and coding	2	Motivational interviewing	5
Certified peer support specialist training	7	Healthcare Marketplace	2	NC CARE 360	5
Child abuse and neglect	1	HIPPA	1	Notary public courses	2
Chronic care management	2	HIV/AIDS	4	OSHA standards	1
CHW summit	1	Associate degree courses	1	Pharmacy tech courses	2
Communications/public speaking	1	Infection control	1	Phlebotomy certification courses	3
COVID-19	21	Lactation	2	Secondary trauma	1
CPR	7	LGBTQ+ populations	1	Social determinants of health	3
Crisis intervention	1	Loaves and fishes training	3	Supervising CHWs	1
Cultural diversity and humility	11	Massage therapy certification courses	1	Trauma-informed care	3

How was the training funded? Mark all that apply.
n= 294, 83.5%

	Pre- **n= 294, 83.5%**	Post- **n= 231, 65.6%**
Employer-provided	88	66
Paid for by the employer	62	68
Paid for by you personally	49	28
Government provided (free of charge)	38	31
Privately provided (free of charge)	29	19
Prefer not to reply	21	13
Other	6	6
No Information	1	0

Answers that were written in are summarized in the chart below.

	Pre-	Post-
Grant Funded	2	2
Scholarship/Financial Aid	2	2
Multiple Sources	1	0
N/A or Not Sure	1	2

Almost three-fourths of participants (74%) in the pre-survey reported they did not pay for training themselves; instead, training was either provided by the employer or paid for by the employer, private entity, or government. Approximately 80% of participants in the post-survey who answered this question reported an employer-provided training or training was paid for by the employer, private entity, or government. Responses are somewhat varied in both pre-and post-surveys.

Participants offered additional comments reflecting how improvements can be made to the Standardized Core Competency Training (SCCT), to this study, or in the lives and careers of Community Health Workers in North Carolina. Comments were grouped into various themes. First, participants expressed

interest in additional CHW opportunities, including specialized training, online training, annual training, and training provided by NC AHEC training. Participants reflected on the need to increase the accessibility of the course, including offering the course in languages other than English and allowing individuals who are undocumented to take the course. In addition to the focus on training, several participants expressed concerns about the certification/recertification process. While several participants commented on the excellent quality of the course, other participants wrote that the current content of the SCCT is too simplistic.

Comfort Level Survey

The comfort level survey measures self-efficacy related to knowledge and skills commonly associated with CHW roles. The survey contains 19 items using a Likert rating scale. Participants to rate their confidence with skills such as motivational interviewing, conducting home visits, and promoting wellness. Participants are also asked to rate their confidence with knowledge of topics such as health needs of formally incarcerated people, chronic disease management, and material health.

The following table compares responses from the Comfort Level Survey administered at the start of each CHW class and again at the end of each class. This tool measures self-efficacy related to CHW knowledge and skills. 133 participants' paired scores indicate a 19.5% increase in positive responses related to self-efficiency. A paired t-test was conducted to determine the significance of the difference between the two means. The null hypothesis was rejected, indicating a statistically significant difference in the pre and post-responses as evidenced by the t-score (t=9.8365), which is much higher than the critical value for the df score of 132.

Comfort level survey t-Test: Paired two sample for means

	First	*Second*
Mean	3.082706767	3.683419074
Variance	0.461020973	0.194912489
Observations	133	133
Hypothesized Mean Difference	0	
df	132	
t Stat	-9.836567522	
P(T<=t) two-tail	1.82977E-17	

Training Quality Survey

Participants are asked to complete the Training Quality Survey after completing the course.

Did the instructors do a good job overall?
n=179, 50.9%

Yes	161
Mostly yes	15
No	1
Somewhat	2

Most participants indicated that the SCCT was delivered well by instructors. However, only half of the total participants responded to this question. Therefore, this is not a complete picture of participants' opinions of instructors' performance.

Written responses regarding instructor experience are outlined in the chart below.

Knowledgeable	36	Students not held accountable	5
Responsive	19	Resources provided	3
Excellent overall	15	Interactive	3
Clear instructions provided	13	Content too basic	2
Class well organized/positive facilitation skills	12	Fair	1
Patient	8	Hurried presentation	1
Respectful/professional	7	Instructor lacked experience	1
Supportive	7	Technology issues	1
Passionate about subject content	5	Not applicable	7

Was the training easy to follow and understand?
n=179, 50.9%

Yes	162
Mostly yes	10
No	1
Mostly no	1
Somewhat	5

Written responses are summarized in the chart below.

Training easy to follow	51
Informational PowerPoints/online content	9
Instructor supported learning	5
Redundancy	4
Many errors	3
Not applicable	3
Benefit of guest speakers	1
Difficulty in understanding instructions	1
Issues with textbook	1

Almost all participants (96%) indicated the wording of the SCCT materials was clear or mostly clear. However, only half of the participants responded to this question. Therefore, this is not a complete picture of how students perceived the clarity of wording in the materials.

Was the wording of the materials clear?
n=179, 50.9%

Yes	151
Mostly Yes	23
No	1
Somewhat	4

Participant comments are organized as follows:

Clear information	41
Presentation errors	7
Not applicable	5
Beneficial textbook	1
Textbook concerns	2

Did the training keep you engaged?
n=179, 50.9%

Yes	141
Mostly Yes	26
No	1
Mostly No	1
Somewhat	10

About 93% of participants indicated that the SCCT training was engaging or mostly engaging. However, only half of the total participants responded to this question. Therefore, this is not a complete picture of student engagement with the training.

A review of written responses is listed below.

Engaging content	54
Issues with presentation	6
Not applicable	5
Technology concerns	3

Was the quality of the content consistent throughout the course?
n=179, 50.9%

Yes	160
Mostly yes	13
No	1
Somewhat	5

Almost all participants (96%) indicated that the quality of the content was consistent throughout the course. However, only half of the participants responded to this question. Therefore, this is not a complete picture of how students rated the consistency of content quality.

Written comments are compiled below as follows:

Excellent quality	37
Not applicable	8
Required updated information	1

Was the content in-depth enough?
n=179, 50.9%

Yes	145
Mostly yes	21
No	3
Mostly no	2
Somewhat	8

Individuals' written comments are grouped in the chart below.

In-depth content provided	24
Time limitations prevent the addition of more information, but more depth would be helpful.	6
Not applicable	6
Amount of depth varied	4
Updated information needed	2

Several study participants encouraged the inclusion of more information on specific topics, including the following recommendations:

Assessments	1
Children's mental health	1
Current community issues	1
Insurance	1
Motivational Interviewing	1
Outreach	1
Trauma-informed care	1

Most participants indicated that the content was in-depth enough or mostly in-depth enough. However, only half of the participants responded to this question. Therefore, this is not a complete picture of how students rated the depth of content.

Were your training expectations fulfilled?
n=179, 50.9%

Yes	159
Mostly yes	13
No	2
Somewhat	4
Prefer not to reply	1

Most participants indicated that the training expectations were fulfilled. However, only half of the participants responded to this question. Therefore, this is not a complete picture of the fulfillment of student expectations.

Participants' written comments are grouped in the chart below.

Training expectations fulfilled	37
Not applicable	7
Recommend Photovoice sharing during class	1
Recommend more certification information	1
Recommend more training on medical needs	1

Would you recommend this training to a colleague or friend?
n=179, 50.9%

Response	Count
Yes	165
Mostly yes	6
No	1
Mostly no	2
Somewhat	4
Prefer not to reply	1

95% of participants reported they would recommend this training to a colleague or friend or mostly indicated they would recommend it to a colleague or friend. However, only half of the participants responded to this question. Therefore, this is not a complete picture of students who would recommend the training.

Additional written comments are listed below.

Comment	Count
Recommend the training	43
Not applicable	5
Yes, if they could take my instructor(s)	2
Yes, if speak English	1
Yes, if time is available to complete	1
Yes, if no human service background	1
Yes, but it may prove challenging	1
No, due to discussion board requirement	1

Will this training help you better deliver services to your clients?
n=179, 50.9%

Response	Count
Yes	160
Mostly yes	10
No	2
Somewhat	6
Prefer not to respond	1

Most participants indicate that this training will help them better deliver client services. However, only half of the participants responded to this question. Therefore, this is not a complete picture of how students think the training will impact their service delivery.

When asked to provide additional comments, respondents focused on increasing training opportunities on the following topics: working with the formerly incarcerated, human trafficking, case management, and increasing the number of guest speakers. Another comment focused on the value of certification connected to the course. Thirteen respondents emphasized the need for additional training in the field.

Pre- and Post- Tests

The following table compares responses from the pre-test administered at the start of each CHW class and the post-test administered at the end of each class. This tool measures knowledge using a series of multiple-choice and true-false questions. The items are the same on the pre and post-tests. Only 49 participants completed both the pre and the post-test. Participants' paired scores indicate a 29.8% increase in scores. A paired t-test was conducted to determine the significance of the difference between the two means. The null hypothesis was rejected, indicating a statistically significant difference in the pre

and post-responses as evidenced by the t-score (t=6.0264), which is much higher than the critical value for the df score of 48.

Pre and post-test t-test paired two sample for means

	Pre-Test (Quizzes)	*Post-Test (Final Exam)*
Mean	63.04467733	92.85714286
Variance	1155.259645	35.33333333
Observations	49	49
Hypothesized Mean Difference	0	
df	48	
t Stat	6.026493973	
P(T<=t) two-tail	2.28428E-07	

Students' Final Grades (pass/fail)
n=291

Pass	223
Fail	29
Not reported/Not available	100

Student's Final Grades (pass/fail) by Race/Ethnicity

	Pass	**Fail**	**Race or Score Not Reported/Not Available**
Hispanic	25	1	3
Black/African American	101	3	19
White	44	1	9
Native American	7	1	1
Two or More	11	1	0
Other	6	0	1

Limitations

Age data was not collected for individuals who participated in the study during the years 2021 or 2022. Additionally, not all CHW SCCT participants opted to be part of this study; participants who have opted to take part in this study are a subset of all CHW SCCT participants. Many participants did not complete all the measures. There was a low return rate for posttests resulting in a lower sample of pre-post pairs. There were no three-month, six-month or one year follow-up comfort level surveys returned.

Limitations of Instructor Experience

Community college instructors reported spending a great deal of time updating resources and adapting printed materials to online resources. Instructors shared that increased communication regarding the updates of state priorities and the certification process would be beneficial as instructors frequently field student questions on topics they are uninformed to answer. Working as an SCCT instructor is often an experience in isolation. Instructors experienced the duplication of work as they often created course

material individually that would be beneficial to share with their larger group. Instructors shared that they would benefit from opportunities to participate in information-sharing sessions with one another to collaborate on resources. Furthermore, not all instructors provided adequate teaching materials and visual aid kits, limiting the course experience for both instructors and students.

Limitations of Student Experience

Students expressed the limitations due to the natural restrictions within a virtual environment. The ability to foster peer learning in an online class proves challenging. Some students also struggled with understanding how to utilize the technology necessary to take the course. While diverse perspectives help convey many perspectives, students currently employed as CHWs express already knowing the information covered. More user-friendly resources in place of the textbook could strengthen student engagement.

Implications and Recommendations

Overall, the SCCT appears to be an effective training program for CHWs in NC. Measures of self-efficacy and knowledge gained show significant growth. Students have mostly positive feedback about the course and report that the course is directly applicable to their work as a CHW.

Instructor Recommendations

An evaluation of the implementation of the Train-the-Trainer curriculum would assess the strengths and limitations of the current instructor training model. Instructors expressed interest in virtual and in-person meetings to collaborate on class content. A review of the requirements to teach the course would ensure that all instructors are qualified to teach at the community college level. Instructors emphasize that a part two training would cover many additional resources regarding the unique communities CHWs engage with throughout the state. Additionally, stakeholders recommend that additional grant funds could support purchasing health resources mailed to student participants. Funding to support the creation of a curriculum task force could determine the creation of updated resources to foster student learning in place of the current textbook. Instructors expressed interest in adding available guest speaker recommendations to serve as class resources by developing an online hub for instructor resources connected to engagement and facilitation. Some community colleges were able to provide hands-on materials. For those who did not have the same experience, providing resources for students versus watching the instructor manipulate materials would be helpful for students learning via an online platform.

Student Recommendations

Students may benefit from creating additional CHW courses that focus on the needs of specific populations considering the recent COVID-19 pandemic. Additionally, many participants recommended the course to other potential students and expressed interest in the state certification process.

Dissemination and Future Research

The team may present study findings at research conferences and will continue to communicate plans for research dissemination with partners. UNCP will conduct virtual presentations on the evaluation process and study findings to North Carolina stakeholders, including NCDHHS-ORH and community college administration. The final report will be emailed to all study participants, as promised in the study consent. The NC CHW data repository website will visually represent research findings.

As part of the Centers for Disease Control and Prevention’s Community Health Workers for COVID Response and Resilient Communities grant, the UNCP CHW project team will continue the evaluation of the SCCT into 2023. In addition to SCCT evaluation, UNCP and the NCCHWA will continue to operate the statewide North Carolina CHW certification process and CHW registry for the state. Implementing a data repository remains a priority during the next year of grant funding

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