



health problems, such as obesity. Increasing the number of qualified Latino public health professionals including registered dietitian nutritionists (RDNs) may be a way to address Latino health through the provision of linguistic and culturally congruent care (Heiss et al., 2012; O'Toole et al., 2019).

The design and delivery of effective health promotion programs for Latinos requires the inclusion of multilevel strategies and communication channels. To effectively meet contextual needs, engaging Latino students in experiential learning opportunities that serve their communities is essential. Experiential learning provides students with career-related training, field experience, and professional development to prepare them to enter the workforce (Gavigan, 2010; Simons et al., 2012). Engaging Latino community members to inform the development and implementation of programs has resulted in significant improvements in Latino health outcomes (Balcazar et al., 2009; Messias et al., 2013).

Promotores de Salud (community health workers [CHWs]) are trusted compassionate leaders in their communities (Elder et al., 2009; Rios-Ellis, Nguyen-Rodriguez, et al., 2015). Promotores' insights into their communities' socio-environmental contexts (e.g., barriers and facilitators) related to healthy lifestyles places them in a position to serve as liaisons between interventionists and Latino community members. The CHW model in health promotion involves training of community leaders to conduct community outreach and recruitment, deliver health education, case management, provide social support, and evaluate outcomes (Koskan et al., 2013; Rios-Ellis, Becker, et al., 2015; Swider, 2002).

Given the benefits of Latino students' cultural capital and the effectiveness and success of promotores programs paired with academic training in health interventions, the California State University Long

Table 1. Topics for Student Training.

Orientation and initial training topics <sup>a,b</sup>	Ongoing training topics <sup>c,d</sup>	Focus areas <sup>e</sup>	Intervention content training topics <sup>f</sup>
1. Project overview/importance of addressing Latino childhood obesity	4. Manual of procedures	1. Adaptation of recipes to Latino culture	Content for adults/caregivers
2. Community-based participatory research	2. Formative research	2. Anthropometric measurement	1. Importance of breakfast
3. Working with Latino communities	3. Doctoral preparation	3. Community-based participatory research	2. MyPlate guidelines
4. Institutional review board	4. Manuscript development	4. Faculty and student training	3. Portion sizes
5. Ethical and responsible conduct of research	5. Motivational interviewing booster	5. Child curriculum activities for ages 3 to 5 years	4. Nutrition label reading
6. Data collection protocols and instruments	6. Curriculum vitae development	6. Child curriculum activities for ages 6 to 8 years	5. Calories and daily values
7. Anthropometric measures	7. Resumes	7. Social media	6. Sugar-sweetened beverages/identifying healthier options
8. Adult intervention curriculum	8. Public health fellowships	8. Eating on a budget	7. Sugar intake
9. Child intervention curriculum	9. Grant writing	9. Focus group transcription and analysis	8. Grocery shopping tips
10. Motivational interviewing for dietary changes	10. Reference works/EndNote	10. Health intervention	9. Culturally relevant ingredient substitutions
11. MockCharla (intervention session)	11. SPSS basics and data entry	11. Manual of procedures	10. Importance of physical activity
12. Focus areas overview	12. Quantitative analysis	12. Manuscript development	11. Sedentary behavior
13. Intervention logistics	13. Qualitative analysis	13. Recruitment	Content for children
14. Effective health education delivery	14. Abstract development	14. SPSS data entry and management	1. Eating the alphabet: Fruits and vegetables from A to Z
	15. Scientific poster development		2. Eat right with MyPlate
	16. Oral presentations		3. Keeping your body healthy
	17. Adult intervention curriculum review		4. Eat right with MyPlate
	18. Child intervention curriculum review		5. Keeping your body healthy

conference, training (research, professional, and academic development), experiential learning, and mentorship from project faculty and staff, including promotoras. Each cohort participated in a 1-to-2-week orientation and training with minor variations in focus based on the intervention time line (e.g., formative research during Year 1, development and piloting in Year 2, and intervention implementation in Years 3-5). Additionally, GRFs were engaged in ongoing trainings throughout their 1-year fellowship. Trainings were facilitated by project PIs, staff including promotoras, and faculty.

Focus areas were assigned to each GRF based on their interests to allow students to receive more in-depth training during their fellowships; nutrition-specific and childhood obesity-related research was embedded throughout the various trainings and focus areas. Students in Year 1 increased their knowledge on Latino childhood obesity and prevention through the formative research process, while students in Year 2 learned to develop the curriculum and piloted the intervention. GRFs in Years 3 to 5 were trained to deliver the curriculum and learned the content through implementation of the intervention. See Table 1 for overall training, intervention content, and focus area topics. Sanos y Fuertes study details,

intervention curriculum details, and outcomes have been published elsewhere (Frank et al., 2020).

### Procedures

GRFs completed confidential assessments at scheduled times per standardized protocols and scripts. Paper-and-pencil baseline surveys were completed on the first day of orientation. The two-part (paper, quantitative; electronic, qualitative) post assessments were administered during their last week in the fellowship. Follow-up surveys were administered in summer 2019 via online survey (Qualtrics v.XM; Qualtrics, 2005). Survey items were created specifically for the project based on the goals and training content, with one being adapted from an existing validated measure.

### Measures

Knowledge and skills regarding community health intervention (11 items, D .848) and professional outcomes (professional and community dissemination subscale: 7 items, D .705; community health promotions skills subscale: 3 items, D .793) were assessed. Response

options ranged from 5 completely true to 1 completely false. Scale scores were calculated by taking the mean of responses.

Self-efficacy was evaluated for research methods (4 items,  $D = .621$ ), community health promotion (3 items,  $D = .861$ ), and professional development skills (4 items,  $D = .825$ ). A 100-mm visual analog scale measured confidence to engage in behaviors; anchors were 0 not at all confident and 100 completely confident. Scales scores were computed based on mean values for responses.

Professional development assessments evaluated receipt of training/support using the stem, "I have experienced each of the following" in five areas: application preparation (4 items,  $D = .825$ ), interdisciplinary work (1 item, single-item analyzed), conference participation (4 items,  $D = .853$ ), research methods workshops (4 items,  $D = .839$ ), and community-related experiences (9 items,  $D = .890$ ). Responses were along a 5-point Likert-type scale, ranging from 1 never to 5 all of the time; mean scores were calculated to create scale scores.

For CBPR attitude change, four items were adapted from the Student Subjective Science Attitude Change Measure (Stake & Mares, 2001). Assessed at posttest only, responses ranged from 1 not at all to 7 a great deal. Scale score was computed from the mean of items ( $D = .751$ ).

Personal development change was assessed at post-only quantitatively and qualitatively. Three items assessed change in self-efficacy regarding career goals; responses were yes or no. One item asked, "Have you researched, pursued, or obtained any health-related professional/job-related positions as a result of your participation in the Sanos y Fuertes project?" Responses were yes/no, with descriptions requested for a response of yes. Open-ended qualitative items included the following: "List three life skills you learned through participating in the Sanos y Fuertes project that you feel will help you address academic and professional challenges"; "List two reasons you are more interested in completing your degree, pursuing a certificate, traineeship, doctorate or other terminal degree"; "What are the three most important things you learned about yourself as a result of your participation in the Sanos y Fuertes project?" Please list and explain why; and "What is the one most important thing you learned from participating in the Sanos y Fuertes project?"

Perceptions about opportunities. On the follow-up survey only, GRFs were asked, "In what ways did your participation in the Sanos y Fuertes Graduate Research Fellowship help you gain academic and professional opportunities? Provide specific examples of your personal experience for each item." Nine items were listed, with responses ranging from 1 completely false to 5 completely true, with space provided to fill in examples.

Program evaluation measured utility of program components and program improvement feedback. On the

posttest, GRFs listed the three components they liked the most or felt were most rewarding with an explanation of why. On the follow-up survey, GRFs were asked to identify which components had prepared them best for their academics or career and to describe why.

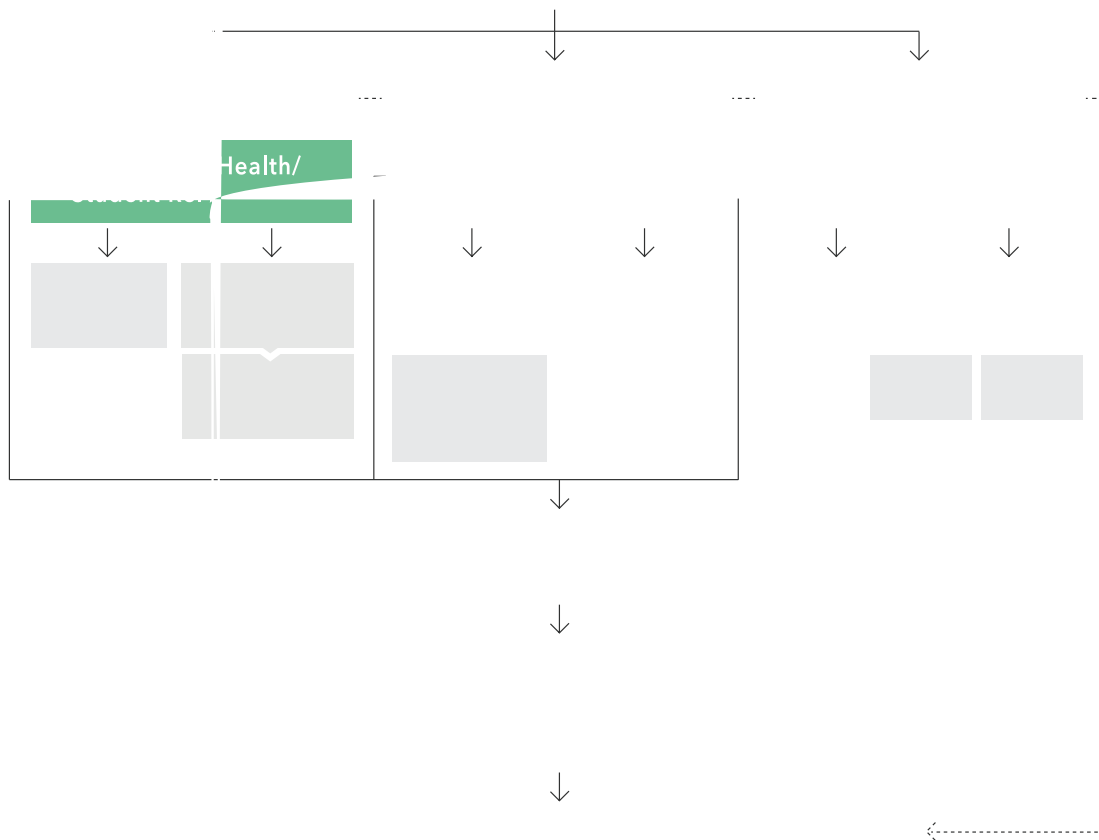
With regard to influence of promotoras, follow-up items asked how the promotoras affected the GRF's research in the community (11 items) and personal development (3 items). Responses ranged from 1 completely disagree to 5 completely agree; individual items were analyzed. A final open-ended item asked, "In what ways did the promotoras affect or influence what you've done since the fellowship?"

---

---

---





The GRFs reported gaining cultural competency. One GRF shared, “I always keep the promotoras passion and heart in mind. They motivated me to be a better provider, one who is kind and understanding.” Another shared, “They showed me that respect is of utmost importance and this has influenced my work with families.”

### Pre–Post–Follow-Up Changes

There were significant increases in skills (Figure 3) and confidence (Figure 4) between pre- and post-assessments, which were sustained at follow-up. Increases in community health skills included understanding of research ethics and considerations when working with the Latino community, age and culturally relevant health education techniques, and CBPR methods. Dissemination skills gained encompassed improving oral presentations at professional conferences and in the community and using both English- and Spanish-language skills. Community health promotion involved independent and team work to address community needs and implement health promotion programs.

Students reported increased confidence in planning culturally resonant interventions and administering evaluations, contributing to obesity prevention in Latino communities, and successfully writing an abstract for conference presentation.

### Discussion

The findings of this experiential fellowship are consistent with the literature on best practices for CBPR and provide a model training platform for practical application of National Standards for Culturally and Linguistically Appropriate Services in health and health care (Office of Minority Health, 2013). The integration of CHWs into the research and training team affirms their effectiveness and contributions to building a healthy society (Kangovi et al., 2018).

Duran et al.’s (2019) National Study of Promising Practices in CBPR noted that “bridging social capital” or the ability of community and academic partners to effectively interact across differences as one of seven factors most likely to contribute to community health in the short and long term. In the fellowship training, disciplinary and

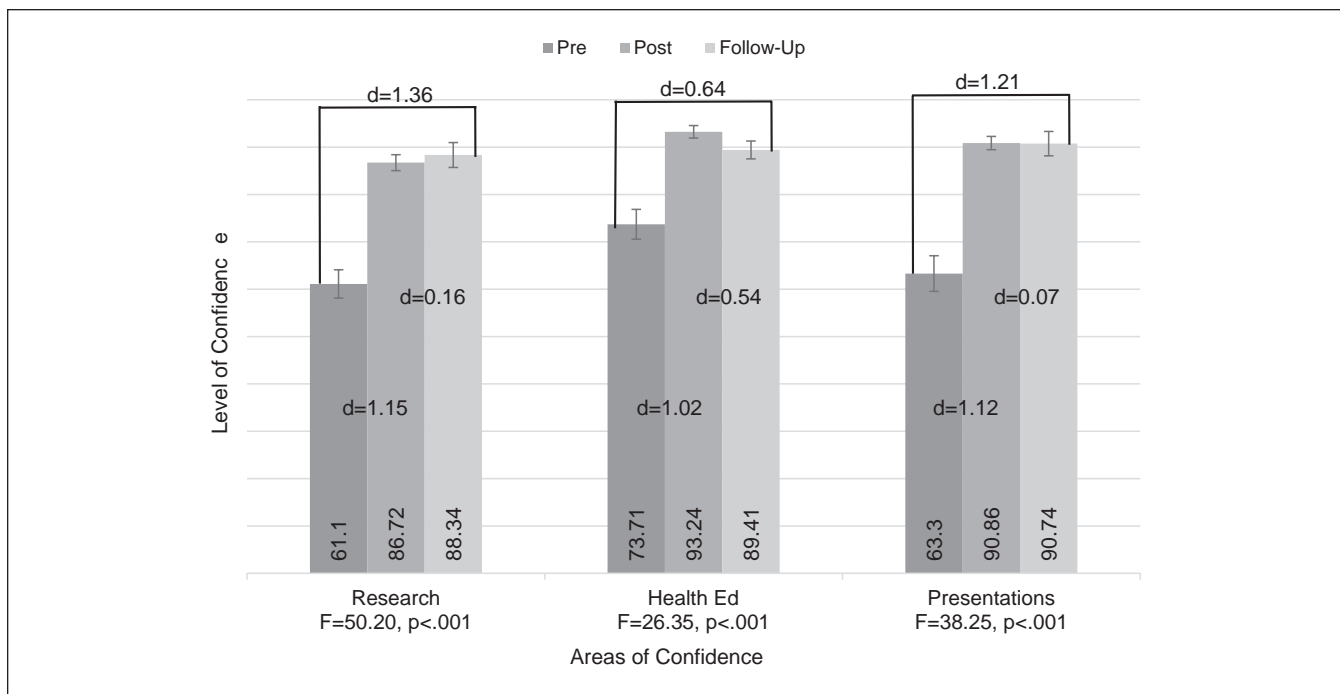


Figure 4.



---

### Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was funded by the U.S. Department of Agriculture, Grant #2011-67002-30152.

### ORCID iD

Melawhy L. Garcia  <https://orcid.org/0000-0001-6310-6927>

### References

- Baezconde-Garbanati, L., Ochoa, C. Y., Murphy, S. T., Moran, M. B., Rodriguez, Y. L., Barahona, R., & Garcia, L. (2020). Es Tiempo: Engaging Latinas in cervical cancer research. In A. Ramirez & E. Trapido (Eds.), *Advancing the science of cancer in Latinos* (pp. 179–186). Springer. [https://doi.org/10.1007/978-3-030-29286-7\\_17](https://doi.org/10.1007/978-3-030-29286-7_17)
- Balcazar, H. G., Byrd, T. L., Ortiz, M., Tondapu, S. R., & Chavez, M. (2009). A randomized community intervention to improve hypertension control among Mexican Americans: Using the promotoras de salud community outreach model. *Journal of Health Care for the Poor and Underserved*, 20(4), 1079–1094. <https://doi.org/10.1353/hpu.0.0209>
- Biro, F. M., & Wien, M. (2010). Childhood obesity and adult morbidities. *American Journal of Clinical Nutrition*

- Simons, L., Fehr, L., Blank, N., Connell, H., Georganas, D., Fernandez, D., & Peterson, V. (2012). Lessons learned from experiential learning: What do students learn from a practicum/internship? *International Journal of Teaching and Learning in Higher Education* 24(3), 325–334.
- Stake, J. E., & Mares, K. R. (2001). Science enrichment programs for gifted high school girls and boys: Predictors of program impact on science confidence and motivation. *Journal of Research in Science Teaching* 38(10), 1065–1088. <https://doi.org/10.1002/tea.10001>
- Stringer, E. I., Hendrix, J. D., Swartzel, K. A., Williams, J. B., & Schilling, M. W. (2019). Evaluating the effectiveness of integrating food science lessons in high school biology curriculum in comparison to high school chemistry curriculum. *Journal of Food Science Education* 18(1), 21–28. <https://doi.org/10.1111/1541-4329.12153>
- Swider, S. M. (2002). Outcome effectiveness of community health workers: An integrative literature review. *Public Health Nursing*, 19(1), 11–20. <https://doi.org/10.1046/j.1525-1446.2002.19003.x>
- Ward, Z. J., Long, M. W., Resch, S. C., Giles, C. M., Craddock, A. L., & Gortmaker, S. L. (2017). Simulation of growth trajectories of childhood obesity into adulthood. *New England Journal of Medicine* 377, 2145–2153. <https://doi.org/10.1056/NEJMoa1703860>