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Practice Summary & Implementation Guidance

The Embrace Project Study

The Embrace Project (Embrace) focused on addressing maternal mortality and morbidity and diabetes health disparities through mental health and self-care practices that supported cultural identity.

Location	Topic Area	Setting
Utah	Preconception/Reproductive Health, Health Equity	Community, Clinical
Population Focus	NPM	Date Added
Women's/Maternal Health	NPM1: Well-Woman Visit, NPM 3: Risk-Appropriate Perinatal Care	July 2023

Contact Information

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Section 1: Practice Summary

PRACTICE DESCRIPTION

The Embrace Project (Embrace) was developed in response to striking data in Utah which demonstrates mothers who are Native Hawaiian and Pacific Islander (NHPI) experience the highest rates of severe maternal morbidity (SMM) in the state, with approximately 2% of all deliveries to NHPI mothers affected by SMM. This prevalence is more than twice the population average SMM rate in Utah (1%). SMM events are complications during pregnancy and postpartum that cause short- or long-term harm to health and, if unrecognized or untreated, can contribute to maternal deaths. Therefore, it's critical to address SMM and its risk factors to improve maternal mortality. Reproductive-aged NHPI women also have disproportionately high rates of some risk factors that may contribute to SMM, such as diabetes, obesity, and maternal mental health concerns.

Embrace was a pragmatic randomized trial of culturally-integrated interventions for health, implemented as a community-based participatory research study conducted from September 2020 to September 2022. This project sought to improve health knowledge and behaviors among NHPI women through interventions grounded in NHPI cultural concepts, heritage arts, and traditional practices. Embrace focused on physical and mental health, with an emphasis on self-care. Connection to culture was a crucial pillar of the project to make sure the health education and resources provided were relatable, accessible, and compassionate. These project elements were essential so women felt they could follow the project and take better care of themselves. This project was based on the Utah Department of Health and Human Service (DHHS) Office of Health Equity's *It Takes a Village: Giving our babies the best chance*, an AMCHP promising practice, which focused on addressing NHPI infant mortality rates.

The specific aims of the project included: 1) improve knowledge, attitudes, skills, and behaviors related to perinatal health and 2) measure changes in biometric measures related to diabetes and diabetes risk factors. Project elements included health coaching sessions with registered dietitians, screenings for social determinants of health, support from community health workers (CHWs), and integrated education to build cultural identity.

Embrace was created through a collaborative partnership between the DHHS Office of Health Equity (OHE), the University of Utah Health's Women's Health Services and The Wellness Bus (TWB), community experts, and community-based organizations, including Comunidad Materna en Utah, National Tongan American Society, Project Success Coalition, Utah Muslim Civic League, and Utah Pacific Islander Health Coalition.

CORE COMPONENTS & PRACTICE ACTIVITES

The core components of Embrace included: 1) partnerships with community-based organizations and TWB, 2) biometric screenings at TWB (baseline, 3-months, 6-months, and 9-months), 3) virtual and in-person individual health coaching sessions (IHCS) with registered dietitians, 4) social determinants of health (SDOH) screenings after each biometric screening and IHCS follow-up, 5) virtual group health coaching sessions (GHCS) for intervention group participants, 6) survey completion at baseline, 6-months, and 9-months, 7) community health workers (CHWs) who were crucial to the success of the project implementation, as they provided significant support for participants in each of these areas and made sure participants were scheduled, sent reminders, participated in SDOH screenings, connected to resources, and completed surveys, and 8) NHPI culture which was interwoven throughout all elements of the project.

Core Components & Practice Activities

Core Component	Activities	Operational Details
Partnerships	Mobilize partnerships to create and implement the project	Partnerships with community-based organizations (CBOs), TWB, and research team members (including those from DHHS OHE, TWB, UofU OB/GYN, and UofU Osher Center for Integrative Health, DHHS MCH, DHHS HEAL) were foundational to the creation and/or implementation of the project.
Community health workers (CHWs)	Recruitment, enrollment, and retention of participants	CHWs recruited, enrolled, and retained participants throughout the study and connected with participants through trust and relationships.
Cultural framework	NHPI culture was interwoven throughout all elements of the project for the intervention group	A cultural framework was created to build cultural identity. It was also incorporated into recruitment, enrollment, IHCS, GHCS, NHPI support groups, welcome, self-care, and thank you packets for the intervention group.
Intervention: individual health coaching sessions (IHCS)	First 60-minute one-on-one IHCS and second 30-minute one-on-one IHCS	Education on nutrition, physical health and movement, and self-care was provided for all participants. For the intervention group, education was culturally tailored.
Intervention: group health coaching sessions (GHCS)	First 90-minute GHCS and second 90-minute GHCS	Culturally grounded education on health and well-being directly linked with cultural elements of NHPI traditions and heritage arts was provided for the intervention group.
Biometric screenings	Baseline, 3-month, 6-month, and 9-month biometric screenings	Participants completed biometric screenings at baseline, 3-month, 6-month, and 9-month intervals.

Survey completion	All REDCap surveys at enrollment/baseline, 6-months, and 9-months	Routinely assessed the impact of the intervention and education gained through the project, including knowledge, attitudes, beliefs, and behaviors.
SDOH and resource connection	SDOH screenings after baseline, 1st IHCS, 3-month, 2nd IHCS, and 6-month screenings	CHWs conducted a SDOH screening following each touch point to assist if participants have any social needs, such as rent relief, health insurance assistance, transportation, etc.

HEALTH EQUITY

Embrace was created with a health equity mindset. The project's creation and implementation included all elements of the health equity mindset, including that Embrace: 1) was intentional, strategic, and open-minded about partnerships; 2) addressed health in context; 3) profoundly recognized and valued lived experience; 4) fostered power building and sharing; and 5) operated with flexibility, adjusted quickly, and advanced in uncertainty.

Embrace was created to address high rates of maternal mortality and morbidity, including maternal deaths and SMM. In order to address these disparities, it was necessary to understand the lived experiences of women and mothers. Firstly, the recognition that women and mothers are often pillars of support and caretakers in their families and communities was critical to creating an intervention that would really work for women and mothers. Acknowledgment of this context informed what methods of support would be beneficial for women in the project. As the focus of Embrace was on NHPI women, we prioritized embracing cultural identity and connecting cultural components to health and well-being. Ensuring women's needs were met through SDOH screenings was crucial to support the women. SDOH screenings and providing follow-up resources were used to help address different dimensions affecting health and well-being. For example, TWB, a mobile unit, met community members in key neighborhoods instead of requiring participants to travel for biometric screenings and health coaching.

CHWs were foundational to the project. They already had established trust with community members, and were able to connect with community members in a crucial way. CHWs also recognized how self-care not only impacted the women themselves, but their larger families and communities. They also recognized the importance of connecting identity with culture and health. In addition, CHWs conducted SDOH screenings and connected participants to resources. They also sent 12 self-care text messages to participants every two weeks, which focused on nutrition and self-care, to remind participants to take a moment for themselves for gratitude, deep breathing, and repeating their mantras. Because they were able to provide support for participants through these various touch points, participants shared their appreciation for the support and care received from CHWs and registered dietitians.

While Embrace focused on NHPI women, the project was intentionally designed to be inclusive of women who identify as being part of any racial or ethnic minority group as various racial and ethnic minority groups also face health disparities. Embrace partnered with CBOs and CHWs who serve these communities to better connect with these diverse groups of women. CBOs and CHWs also provided essential feedback to make sure project

processes were appropriate. Community feedback was also a crucial element throughout the course of the project. Embrace incorporated community feedback throughout the project to ensure processes were accessible and fit into women's lives in a way that worked best for them.

EVIDENCE OF EFFECTIVENESS

Embrace was a pragmatic, randomized trial of culturally-responsive interventions for behavior change and mental health among NHPI reproductive-aged women, which employed community-based participatory research principles. NHPI women were randomized into a culturally-adapted intervention group or a standard intervention group. To broaden comparisons, participants who identified as Black or African American, Hispanic or Latina, and refugee or new American were assigned to a comparison group. The study aimed to have 160 women ages 18–44 enrolled, with 102 women who identified as NHPI and 58 women who identified as other racial and ethnic minority women. The final number of study participants included 102 NHPI women and 53 women who identified as other racial and ethnic minority women. The study had two cohorts. Cohort 1 (April 2021–2022) included 82 women, and Cohort 2 (August 2021–October 2022) included 73 women.

Embrace used an outcome, impact, and process evaluation design. Outcome: Embrace evaluated maternal health and diabetes-related outcomes at baseline, during the intervention, and post-intervention. Impact: Upon completion of Embrace, we conducted participant focus groups to learn about experiences, including elements enjoyed, as well as suggestions for future improvements. Process: Feedback was gathered throughout the project to inform improvements.

Preliminary analyses suggest improvements in mental health indicators of depression and anxiety at 6-months compared to baseline. Average self-care scores showed improvements in some domains of the brief resilience scale at 6-months, as compared to baseline. Finally, preliminary analyses suggest overall improvements in some physical activity and nutrition indicators at 6-months compared to baseline; however, biometric screening results varied among groups at 6-months compared to baseline, with a longer project duration needed to capture these changes over time. The project was also successful at identifying patients with undetected prediabetes and diabetes. Regarding qualitative data analyses, preliminary findings suggest the impact of social needs support through SDOH screenings.

For additional information on the data analyses, contact Ban Naes from the DHHS OHE at bnaes@utah.gov. Finalized results are in preparation for future submission for publication.

COLLABORATORS AND PARTNERS

The Embrace research team included multiple partnerships thanks to leaders from the Utah Department of Health and Human Services (DHHS) Office of Health Equity (OHE), University of Utah Health's The Wellness Bus (TWB), University of Utah's Osher Center for Integrative Health, and cultural advisors from the community. Partnerships with TWB and community-based organizations (CBOs) were foundational for Embrace. The DHHS OHE partnered with organizations from past projects (including [It Takes a Village, Bridging Communities and Clinics, and the COVID Community Partnership]) along with new organizations to make sure we supported participants across all the groups. TWB was the main implementer of the project, as their mobile health unit conducts chronic disease testing, which includes biometric health screenings and health coaching from a registered dietitian, and offers Connect2Health, a volunteer-run social determinants of health prescription service. Five CBOs were contracted by the DHHS OHE and each CBO employed community health workers (CHWs). At the beginning of Embrace, biweekly meetings were held with CBOs and CHWs to provide training, support, and technical assistance, which turned to monthly in the last three months of the project (July–September 2022). Office hours were held every Tuesday and Thursday March 2021 through April 2022 for CHWs to answer questions and provide further support. Project staff were also available by email and phone to provide technical assistance for CHWs.

Other stakeholders and partnerships were also vital for Embrace, including internal DHHS partnerships with the Office of Maternal and Child Health and the Healthy Environments Active Living program, where partners could provide expertise and feedback on project elements.

In addition, cultural advisors were sustained from a previous project, It Takes a Village: Giving our babies the best chance (ITAV), focused on infant mortality disparities within NHPI communities in Utah, which is designated as an AMCHP promising practice. The DHHS OHE partnered with the same cultural advisors and a facilitator to develop the culturally-grounded intervention for Embrace. Communication and meetings with advisors were held from February 2021–September 2021.

Through the Utah Pacific Islander Health Coalition, we partnered with Child and Family Empowerment Services, a clinical mental health service provider focused on NHPI and multicultural families in Utah, to provide support groups for NHPI women who participated in Embrace.

Practice Collaborators and Partners

Partner/ Collaborator	How are they involved in decision-making throughout practice processes?	How are you partnering with this group?	Does this stakeholder have lived experience/come from a community impacted by the practice?

Embrace research team	Embrace research team members provided support, knowledge, and expertise from the beginning of the project through the end of the project	Partnered with new and previous team members through previous projects	Yes, Embrace research team members came from a variety of backgrounds including public health practitioners, academics, medical providers, registered dietitians, and students who have worked with communities closely or are from the communities involved in the project
The Wellness Bus (TWB)	TWB provided expertise, support, staffing, and use of the bus in developing intervention protocol and intervention	Partnered through contracts and monthly meetings to discuss sustainability progress, provided services, and linked with CBOs and CHWs to reach new communities	Yes, TWB staff provided chronic disease testing in key neighborhoods, hired people who are representative of the communities served and CHWs, and connected clients to resources through the student-run group, Connect2Health, following SDOH screening.
Community-based organizations (CBOs)/community health workers (CHWs)	CHWs and CBOs provided feedback, support, and ultimately upheld the study through direct interactions with participants	Partnered through contracts. For the project, CHWs recruited, enrolled, and retained women throughout the project. Currently, meeting quarterly to discuss sustainability progress and provide support and resources	Yes, CHWs directly serve participants and have established trust with their community members. CHWs are representatives of their communities and have lived experience.
Native Hawaiian and Pacific Islander (NHPI) cultural advisors	NHPI cultural advisors provided guidance, education, and feedback throughout the intervention development and implementation	Partnered through contracts and monthly or quarterly meetings	Yes, cultural advisors identify as NHPI women. They are well-versed in NHPI cultural identity, traditions, and heritage arts.

Child and Family Empowerment Services (CFES)	OHE partnered with CFES halfway through the project to provide support groups for NHPI women	Partnership occurred through the Utah Pacific Islander Health Coalition, with continuing implementation of support groups	Yes, CFES is focused on NHPI and culturally responsive counseling approaches.

REPLICATION

This practice has not been replicated in any other locations or with any other populations.

INTERNAL CAPACITY

Embrace had a team of dedicated staff vital to the creation, development, implementation, and sustainability of the practice. The project director (1.0 FTE), evaluator (1.0 FTE), coordinator (1.0 FTE) , and research assistant (0.75 FTE) developed the project alongside TWB and the U of U OB/GYN division, other staff at the DHHS OHE, Office of Maternal and Child Health, and Healthy Environment Active Living program, and cultural advisors. The project director is the director of the DHHS OHE, and accessed and leveraged state of Utah resources and partnerships to accomplish the goals. The project director also holds expertise in public health research design, data analysis, and evaluation, and is a fellow at the National Institutes of Health National Institute of Minority Health and Health Disparities in the area of translational health disparities research. She also collaborated with multiple projects focused on achieving and moving toward health equity. The project evaluator has extensive expertise in development and evaluation of community-based interventions and research involving disparate communities, including through ITAV and the Utah Women and Girls research study, as well as extensive experience in REDCap project development. The project coordinator has extensive experience in managing community contracts and monitoring grant activities and budget management, as well as experience and trusted relationships with community-based, health, and other organizations. She also worked and has overseen all CLAS Standards for the DHHS OHE. The research assistant was hired to provide support, technical assistance, and expertise to all those involved in the project. In addition, a DHHS OHE mental health specialist assisted in creation of the self-care practices, and DHHS OHE epidemiologists conducted and assisted with data analysis and interpretation. Finally, the DHHS Public Affairs and Education Office reviewed all materials and translated the materials into Spanish.

Partnerships with the University of Utah Health's The Wellness Bus (TWB) included TWB manager, and registered dietitian. Additionally, a TWB hired a second registered dietitian (0.5 FTE) specifically for Embrace. Further partnerships included the University of Utah Health Obstetrics and Gynecology Division, Osher Center for Integrative Health at the University of Utah, and the DHHS Office of Maternal and Child Health, the DHHS Healthy Environment Active Living Program, and the Perinatal Mortality Review Committee. Finally, partnerships with contracted community-based organizations who hired community health workers to support women through touchpoints and social determinants of health screenings to build their capacity.

Although DHHS OHE had the internal capacity to implement Embrace, there were some details which could have made for "ideal implementation," such as an automated text message system to send more personalized

reminders through the further use of REDCap and a registered dietitian with the same cultural background as the intervention group.

PRACTICE TIMELINE

The following tables provide a timeline of Embrace's creation, development, implementation, and sustainability activities.

Phase: Planning/Pre-Implementation		
Activity Description	**Time Needed**	**Responsible Party**
Creation of Health Disparities Profiles (MMM and diabetes/gestational diabetes)	November 2020–January 2021 (updated in January 2022)	DHHS OHE
Weekly meetings with Embrace team (TWB, UofU OB/GYN, and UofU Osher Center for Integrative Health)	Weekly: January 2021–May 2021	DHHS OHE, TWB, Embrace team
IHCS materials	February 2021–April 2021	DHHS OHE, TWB
REDCap projects setup	3 months (Feb–April 2021); ongoing maintenance as needed throughout project	DHHS OHE
Provide training for CHWs	Onboarding training March 2021; ongoing trainings provided throughout project	DHHS OHE
Train RDs with mental health and self-care training	First initial training session 1-hour with DHHS OHE mental health specialist; ongoing throughout project	DHHS OHE
Embrace evaluation plan	4 months (Jan–April 2021); ongoing evaluation	DHHS OHE, UofU OB/GYN

Development of intervention with cultural advisor	February 2021–November 2021; ongoing as needed	DHHS OHE
Printed materials (Welcome and thank you packets; Health coaching booklet)	April 2021–August 2021	DHHS OHE
Technical support tools created	5 months (Feb–June 2021); ongoing as needed	DHHS OHE

Phase: Implementation		
Activity Description	Time Needed	Responsible Party
Cohort 1 implementation (recruitment, enrollment, and retention)	March 2021–April 2022	DHHS OHE, CBOs/CHWs, TWB, Embrace team
Cohort 2 implementation (recruitment, enrollment, and retention)	August 2021–October 2022	DHHS OHE, CBOs/CHWs, TWB, Embrace team
Creation and implementation of NHPI Support Groups	June 2021–May 2022	DHHS OHE, UPIHC, CFES

Phase: Sustainability		
Activity Description	Time Needed	Responsible Party
Sustainability plan	Ongoing	DHHS OHE

Quarterly meetings with CBOs/CHWs, TWB, and CFES	Ongoing (once per quarter)	DHHS OHE
Meet with Embrace team members (Principal Investigators, researchers, assistants, RDs, etc.)	Monthly	DHHS OHE
Data analysis	Ongoing	DHHS OHE

PRACTICE COST

The following table shows the cost of the practice. The DHHS OHE understood and recognized the importance of community involvement, which required significant funding resources must be allocated to community partners in order to have meaningful community engagement. As seen in the table, a large portion of the funding went directly to community-based organizations and community health workers.

Budget			
Activity/Item	Brief Description	Quantity	Total
CBOs and CHWs	CHWs from 5 CBOs who served communities along the Wasatch Front. CHWs helped participants through every phase of the project.	5 CBOs and 16 CHWs	$246,000.00
Participant incentives	Incentives provided to participants at milestones of the project	155 participants	$7,000.00
The Wellness Bus	Registered dietitians met with study	2 registered dietitians and	$50,000.00

	participants and tracked progress. TWB traveled to key locations along the Wasatch Front to increase accessibility to project components and resources.	availability at key locations	
		Total:	**$303,000.00**

LESSONS LEARNED

A key lesson learned from Embrace is that culturally-tailored interventions are meaningful in NHPI communities. CHWs and intervention group participants shared how special it was for them to connect their culture to their health, and appreciated the culturally grounded elements of the intervention. Another important lesson is that NHPI communities requested more in-person or group activities. Participants who received the standard intervention shared they wanted to have more opportunities to engage with other study participants and community members. This participant request is a recommendation for future iterations of this project, as one limitation faced throughout Embrace was the COVID-19 pandemic, which did not allow for in-person meetings. Another lesson learned was the importance of timelines. Overlap of cohorts due to the short length of the study, caused pressure on CHW capacity to meaningfully engage participants. An extended timeline would have allowed for longer, non-overlapping cohorts. This timeline might have led to more meaningful interactions between CHWs and the participants in the study, as well as more time to observe study outcomes beyond 9-months.

NEXT STEPS

Embrace developed a sustainability plan, which includes two work plans. One focuses on sustaining the project as is, and the other includes additional activities if future funding is secured. Currently, Embrace plans to publish materials on the DHHS OHE website to share with other researchers, stakeholders, and the general public. Future improvements could include offering more in-person or group activities where participants could connect with each other. The timeline of the project is recommended to be adjusted for additional time to provide more meaningful participant engagement. If additional funding is secured, Embrace would like to expand, and address health disparities among new populations to advance health equity in a culturally competent manner. In summary, further opportunities to replicate Embrace with other communities are recommended.

RESOURCES PROVIDED

Please visit https://healthequity.utah.gov/ for all materials listed:

- Embrace sustainability plan

- Embrace self-care packets (to be published)
- Embrace welcome and thank you packets (to be published)
- Embrace group health coaching sessions (to be published)
- Healthy Eating Plate for Pacific Islanders

APPENDIX

Please visit https://healthequity.utah.gov/ for any appendix materials