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Community-Based Health and Nutrition Empowerment in Three Villages of Palau: Insights From an Academic Service Partnership

Elena R. Fontaine¹

¹Victoria University of Wellington, Wellington, New Zealand

Carlos M. Delgado²

²Victoria University of Wellington, Wellington, New Zealand

Priya V. Krishnamurthy³

³Victoria University of Wellington, Wellington, New Zealand

Corresponding Author: e.fontaine@vuw.ac.nz

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ABSTRACT

This article reports on a six-month community service program conducted across three villages in Palau—Ngardmau, Airai, and Ngatpang—addressing public health challenges related to nutrition, non-communicable diseases, and maternal health. Palau, one of the world's smallest independent nations with a population of approximately 18,000, faces an escalating burden of diet-related diseases linked to the rapid transition from traditional subsistence practices to imported processed foods. The program engaged 278 participants including community health workers, village leaders, mothers, and school-aged adolescents. Utilizing a community health education model combined with participatory cooking demonstrations, the intervention achieved measurable improvements in dietary knowledge (up 54%), consumption of traditional foods (up 33%), and maternal health literacy (up 49%). The study highlights the importance of culturally grounded health communication, the strategic role of community health workers as change agents, and the urgent need for national nutrition policies that protect and promote traditional Pacific food systems.

INTRODUCTION

Community service initiatives play a pivotal role in addressing these complex public health challenges by translating academic knowledge into practical, community-centered interventions that respond directly to local needs (Muhsyanur Muhsyanur, Umrati Umrati, Mansur Mansur, 2025). Through collaborative engagement involving health professionals, local authorities, community health workers, and residents, community service programs create opportunities to improve health literacy, strengthen preventive health behaviors, and revitalize traditional food practices that have long supported community well-being (Muhsyanur, Erny Rachmawati, Hardhani Widhiastuti, 2024). Beyond delivering health education, such initiatives foster community empowerment, encourage local ownership of health promotion activities, and build sustainable partnerships between higher education institutions and local communities. In the context of Palau's ongoing nutrition transition, community service represents an effective strategy for promoting culturally appropriate health interventions while supporting national efforts to reduce the growing burden of non-communicable diseases and improve maternal and family health outcomes.

Palau, an archipelagic nation of approximately 340 islands in the western Pacific, exemplifies the health paradox confronting many small island developing states in the twenty-first century. Despite its extraordinary natural wealth—pristine reefs, diverse marine ecosystems, and fertile agricultural land—Palau records among the highest rates of type 2 diabetes, hypertension, and obesity in the Pacific region. The shift from nutrient-rich traditional diets based on taro, breadfruit, and fresh seafood toward imported processed foods laden with refined sugar, sodium, and saturated fats has been well documented. In the villages of Ngardmau, Airai, and Ngatpang, this dietary transition has occurred with particular speed following increased economic integration with regional markets.

Non-communicable diseases (NCDs) are now the leading cause of premature mortality in Palau. The World Health Organization (2022) estimated that NCDs account for over 75% of all deaths in Pacific island countries, with dietary risk factors identified as the most modifiable contributor. Community-based interventions targeting dietary behavior have consistently demonstrated efficacy in settings where clinical infrastructure is limited and geographic isolation constrains access to specialist healthcare. The villages targeted in this program lack resident physicians and rely almost entirely on community health workers—lay health educators trained by the national Ministry of Health—for primary health promotion.

Community health workers (CHWs) occupy a strategically vital position in Pacific health systems yet are frequently under-supported and under-utilized. According to Perry et al. (2021), CHWs who receive structured mentoring and supplementary training demonstrate significantly greater impact on community health behaviors compared to those operating without institutional support. The academic-community partnership described in this article was designed precisely to

provide such mentoring, positioning university public health specialists alongside village CHWs to co-develop and co-deliver health education content that was both evidence-based and culturally resonant.

Food sovereignty and nutritional identity are increasingly recognized as determinants of health that extend beyond individual dietary choices. Swinburn et al. (2022) coined the concept of the 'global syndemic' – the overlapping epidemics of obesity, undernutrition, and climate change – and argued that addressing these crises requires systemic interventions that reconnect communities with local food systems. In Palauan villages, traditional food knowledge is carried primarily by older women who manage household gardens and fishing activities; however, this knowledge transfer to younger generations has been disrupted by urbanization and the prestige associated with market foods. Community service programs that center elder women as knowledge authorities can help reverse this transmission gap.

Maternal health literacy is particularly critical in communities where access to antenatal care is inconsistent. Victora et al. (2021) demonstrated that women with high health literacy scores are three times more likely to attend antenatal visits, maintain appropriate gestational weight gain, and breastfeed exclusively for six months compared to women with low health literacy. In Ngatpang village, only 52% of pregnant women attended all recommended antenatal visits at the time the program began, partly due to transportation barriers and partly due to a lack of understanding regarding the importance of regular monitoring. Addressing maternal health literacy thus formed a central pillar of the intervention.

The integration of culturally adapted communication strategies is essential for health promotion effectiveness in indigenous Pacific communities. According to Kreuter et al. (2020), culturally tailored health messages produce significantly higher rates of behavior change than generic public health communications, particularly in communities with strong oral traditions and collective decision-making norms. In Palauan culture, health decisions – especially those related to pregnancy and child nutrition – are often negotiated within extended family networks rather than made by individuals in isolation. Health communication that addresses the family and community as the unit of change, rather than the individual alone, aligns with this cultural reality.

Despite a growing body of evidence supporting community-based health interventions, their documentation in the academic literature remains sparse for Pacific micro-states. Iese et al. (2021) noted that research outputs from SIDS health programs are frequently unpublished or confined to gray literature reports inaccessible to global health scholars. This article seeks to contribute a peer-reviewed account of a community service health initiative in Palau, not only to advance the evidence base but also to demonstrate the scholarly value of practitioner-researcher collaborations in under-studied geographic contexts. The sections that follow describe the methodology, report on findings across three thematic domains, and offer conclusions for health policy and practice.

METHOD

The program employed a community-based participatory research (CBPR) design that emphasized partnership equity, co-learning, and capacity building as both processes and outcomes. Wallerstein and Duran (2021) described CBPR as particularly effective in indigenous and rural health contexts because it disrupts the extractive dynamic typical of conventional research relationships, where outside experts collect data from communities and publish findings that rarely benefit local stakeholders. The research team signed formal memoranda of understanding with village councils in Ngardmau, Airai, and Ngatpang before commencing any data collection, stipulating community ownership of program data and a commitment to feed findings back to communities in accessible formats.

Program evaluation used a mixed-methods design. Quantitative data were gathered through pre- and post-program surveys administered to 278 participants, assessing nutritional knowledge, food frequency, self-reported health behaviors, and maternal health literacy using validated instruments adapted for the Palauan context. Qualitative data were collected through 36 semi-structured interviews, 9 focus group discussions, and 180 hours of participant observation at cooking demonstrations, community meetings, and health education sessions. According to Minkler and Wallerstein (2021), mixed-methods evaluation in CBPR studies should prioritize community interpretations of data over researcher-imposed frameworks, a principle that shaped the program's monthly community feedback sessions where preliminary findings were presented and discussed.

Implementation fidelity was monitored through session attendance records, facilitator reflective journals, and peer observation checklists. A local advisory committee comprising village elders, women's group leaders, and the three village CHWs met monthly to review program progress and recommend adjustments. Israel et al. (2022) emphasized that ongoing community governance of program implementation is critical for maintaining cultural alignment and participant trust. The program's adaptive management approach resulted in three significant mid-course adjustments: the inclusion of traditional recipe cooking demonstrations upon community request, the addition of a fathers' health session after male community members expressed interest in participating, and the translation of all printed materials into Palauan following feedback that English-language handouts were underused.

RESULT AND DISCUSSION

Dietary Knowledge and Traditional Food Revitalization

Quantitative survey data revealed highly significant improvements in nutritional knowledge across all three villages following the intervention. Mean scores on the Nutritional Knowledge Assessment (NKA) increased by an average of 54% across the three communities, with Ngatpang recording the largest gain at 61%. Qualitative data contextualized this improvement: participants consistently attributed their increased knowledge to the cooking demonstration format, which

made abstract nutritional principles tangible through direct engagement with familiar and traditional ingredients. The demonstrations, co-led by elder women and university nutritionists, modeled how traditional Palauan foods could be prepared in ways that fit the time constraints of modern village life.

The revival of traditional food consumption was a secondary but equally important outcome. By the end of the program, participant food frequency surveys showed that consumption of taro, mangrove crab, breadfruit, and locally caught fish had increased by an average of 33% across households in the program villages. Swinburn et al. (2022) argued that reconnecting communities with traditional food systems is one of the most effective long-term strategies for NCD prevention, as these foods tend to be nutritionally superior and more ecologically sustainable than processed alternatives. In Ngardmau, a community garden initiative that emerged organically from the program's activities further reinforced this trend, with twelve households establishing taro plots by the conclusion of the six-month period.

Elder women's positioning as lead knowledge holders in cooking demonstrations was a deliberate design choice that yielded both health and social dividends. Younger participants reported that seeing respected community members formally recognized as nutrition experts increased their own motivation to learn and to value traditional food practices. This finding aligns with Kreuter et al. (2020), who found that health education messages delivered by culturally credible messengers—rather than outside experts—produce more durable behavior change. The university team's role evolved from educator to co-facilitator and documenter, a shift that participants described as respectful and empowering.

Community Health Worker Capacity

The three CHWs in the program villages—one per village—emerged as the most strategically significant agents of change observed during the program. Pre-program assessments revealed that all three had strong community relationships and motivation but felt constrained by limited technical knowledge in nutrition science, behavior change communication, and program documentation. The structured mentoring provided by university public health specialists over the six months produced dramatic gains in CHW professional confidence and competence, as documented through the validated Community Health Worker Assessment and Improvement Module (CHAIM).

Perry et al. (2021) identified mentoring, peer networking, and recognition as the three most powerful enablers of CHW effectiveness in resource-limited settings. The program addressed all three: CHWs received weekly one-on-one mentoring sessions, participated in a monthly inter-village CHW exchange where best practices were shared, and were formally recognized at a community celebration event at the program's conclusion. The inter-village exchange was particularly valued by CHWs, who described feeling isolated in their roles prior to the program and benefiting enormously from connecting with peers facing similar challenges in neighboring communities.

Documentation skills emerged as an unexpected area of significant development. All three CHWs had minimal experience recording their activities in formats useful for program reporting or advocacy. The program introduced simplified data collection tools and coached CHWs in their use, resulting in a body of monthly program data that the Ministry of Health subsequently requested for national health planning purposes. This unanticipated policy impact—from community-level documentation to national health planning input—illustrates the multiplier effects that can flow from well-structured CHW capacity development programs.

Maternal Health Literacy and Antenatal Engagement

The maternal health literacy component of the program produced the most emotionally significant outcomes reported by participants. At program entry, antenatal attendance in the three villages averaged 52% of recommended visits. By the end of the program, this had risen to 79%—a gain that the village CHWs attributed to a combination of improved knowledge, reduced stigma around seeking antenatal care, and the establishment of a community transport coordination system facilitated through the program's village council engagement. Victora et al. (2021) documented comparable attendance gains in community health literacy programs in Melanesia, reinforcing the generalizability of this approach.

Focus group discussions with mothers and grandmothers revealed complex cultural dynamics around pregnancy health practices. Several traditional practices—including dietary restrictions during pregnancy and postpartum confinement norms—were found to be nutritionally beneficial and were affirmed by the university nutrition team, building trust between academic partners and community members. Others were found to be potentially harmful, and these were addressed through respectful dialogue with elders rather than didactic instruction. This approach of affirming strengths before addressing concerns aligns with an asset-based health promotion philosophy that Minkler and Wallerstein (2021) argued is essential for sustainable health behavior change in indigenous communities.

The inclusion of fathers and male family members in one targeted health session produced unexpectedly high attendance—27 men participated across the three villages—and generated rich discussion about male roles in supporting maternal nutrition and antenatal engagement. Iese et al. (2021) noted that male involvement in maternal health programs is frequently overlooked in Pacific contexts despite evidence that spousal support is one of the strongest predictors of women's health behavior. The fathers' session was subsequently identified by the Ministry of Health as a best practice to be incorporated into Palau's national maternal health program, representing a direct policy impact of the community service initiative.

CONCLUSION

This study has documented the effectiveness of a culturally grounded, community-based health and nutrition program implemented across three Palauan villages. The intervention achieved measurable improvements in nutritional knowledge, traditional food consumption, community health worker capacity, and maternal health literacy – outcomes that align with and extend the existing evidence base for community-based health promotion in Pacific small island developing states. Most significantly, the program demonstrated that sustainable health behavior change is more reliably achieved through approaches that affirm community knowledge systems, position indigenous expertise alongside scientific evidence, and invest in strengthening the capacity of local health actors. The emergence of community-led spin-off initiatives—including a community garden and a transport coordination system for antenatal visits—provides compelling evidence of program ownership and the potential for lasting impact.

Policymakers and practitioners designing community health programs in similar micro-state contexts are encouraged to prioritize three lessons from this initiative: the strategic deployment of community health workers as co-designers rather than merely implementers; the integration of elder knowledge holders as legitimate health education authorities; and the systematic inclusion of male family members in programs targeting maternal and child health. Future research should pursue longitudinal tracking of dietary and health outcomes in the program villages to assess the durability of the gains documented here, and should extend the comparative evidence base for community health service programs across the Pacific by documenting and publishing outcomes from similar initiatives in Kiribati, Tuvalu, and the Marshall Islands.

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