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Samoan Body and Soul: Adapting an Evidence-Based Obesity and Cancer Prevention Program

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Abstract

Obesity-associated chronic diseases persist in Samoan populations in the United States. Samoans and African Americans share cultural similarities such as church affiliation, perceptions of weight and body size, and obesity-related health risks. Adapting an effective energy balance intervention originally designed for African Americans—Body and Soul— might be useful in reducing obesity among U.S. Samoans. To determine potential attractiveness and adaptations, we used aspects of grounded theory to analyze key-informant and focus group interviews with 31 purposively selected Samoans in Hawaii. We incorporated participatory features into the research with Samoan community members conducting parts of the study. From interview narratives, we identified relevant themes from Samoan culture, such as *fa'aSamoa* or the Samoan way, and specific energy balance activities to include in an obesity and cancer prevention intervention for U.S.-dwelling Samoans. Our findings describe methods to address health disparities by incorporating culturally appropriate health concepts into existing evidence-based interventions.

Keywords

cancer, screening and prevention; culture / cultural competence; evidence-based practice; focus groups; illness and disease, chronic; intervention programs; interviews; obesity / overweight; Pacific Islands / Pacific Islanders

Currently, 56% to 74% of Samoans are considered obese (Keighley, McGarvey, Qusted, McCuddin, & Viali, 2007; WHO, 2007, 2011). Samoans from Samoa (the independent nation formerly called Western Samoa and held by Germany and later Britain until 1962) and American Samoa (a U.S. territory) have high migration rates to the United States, settling predominantly in Hawaii and California (Central Intelligence Agency, 2008).

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Unfortunately, the high prevalence of obesity persists among Samoans who have migrated. According to the 2007 Hawaii Behavioral Risk Factor Surveillance System (BRFSS), more than 90% of Samoans surveyed in Hawaii reported themselves as overweight or obese (based on body mass index), and 80% reported having had no exercise within the past 30 days (Centers for Disease Control and Prevention [CDC], 2008). Premature deaths from obesity-related chronic diseases including cancer contribute to Samoans having the lowest life expectancy of any ethnic group in Hawaii (Park, Braun, Horiuchi, Tottori, & Onaka, 2009).

During the 1970s, research was initiated to identify factors contributing to notable increases in obesity rates among Samoans (Keighley et al., 2007). Socio-ecological factors—political, economic, cultural, biological, and behavioral—were found to contribute to rising obesity in Samoan populations. Findings from a 2010 literature review provide detail on the convergence of these factors (Cassel, 2010) that include the effects of recent political and socio-economic changes in the Samoan jurisdictions, combined with specific Samoan cultural and biological dynamics that contribute to the current trends toward poor health in Samoans.

Politically and economically, the arbitrary division of a previously singular Samoan society contributes to rising Samoan obesity (Ezeamama, Viali, Tuitele, & McGarvey, 2006). After World War I, Samoa was developed by Germany and later by New Zealand to focus on industrial agriculture. The United States considered the deep water harbor of American Samoa as a valuable military asset until the close of World War II and later for its ability to support industrial fishing. This differential economic development, agrarian in Samoa and industrialization in American Samoa, is correlated with unique and increasing adiposity trends in both Samoan jurisdictions (Ezeamama et al., 2006). Political and economic transitions in American Samoa and Samoa served to reduce the availability of traditional dietary resources for all Samoans (Ezeamama et al., 2006; Keighley et al., 2007). At the same time, imported calorie-dense foods from the West, including energy-dense baked goods, and highly salted and canned foods, became more available and gained prominence in Samoan diets (Keighley et al., 2007).

Cultural and behavioral norms have also contributed to the epidemic increases in obesity found in Samoan populations (Elstad, Tusiofo, Rosen, & McGarvey, 2008; Hanna, 1998). Hierarchical relationships maintained through sharing food and other subsistence needs are features of Samoan culture. Mutual, freely given support during *fa'alavelave* or a life crisis is a cultural value, which often is quantified during ceremonies to help mediate these crises through community contributions of money or food (Aitaoto, Braun, Dang, & So'a, 2007; Baker, Hanna, & Baker, 1986). Gifts of non-traditional foods offered during these and other important cultural events exacerbate the detrimental effects of Western food products in Samoan life.

Finally, there are phenotypical characteristics or differences in the way food energy is processed and stored among Samoans that might explain their increased propensity toward obesity. Samoans are descendants of people who migrated via canoes over open oceans. The survivorship required for this migration favored individuals with efficient metabolisms to

protect them against starvation and exposure (Crews, 1989; Deka et al., 1994; Hubbell, Luce, & McMullin, 2005). Samoans' physiology reflects this efficient metabolic profile (Keighley et al., 2007). However, researchers examining the biological components of Samoan obesity have conceded that improving energy balance behaviors can inhibit these potential predispositions (Dai et al., 2007).

Weight control is best achieved through adherence to a diet low in fat and high in fruit and vegetable consumption, and a regular regime of physical activity (CDC, Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention and Health Promotion, 2009). Culturally appropriate interventions that can address obesogenic socio-ecological factors have been shown to improve nutrition and physical activity, and reduce chronic diseases in ethnic populations including African Americans who experience similar obesity-related health risks as Samoans (Campbell et al., 1999; Resnicow et al., 2004; Resnicow et al., 2005). Currently, 40% to 80% of African Americans in the United States are overweight or obese, contributing to the disproportionate obesity-related health risks and deaths among members of this group (CDC, National Center for Health Statistics, 2012).

A promising evidence-based intervention that may work among Samoans in the United States is Body and Soul, a program of the National Cancer Institute (NCI) designed for implementation in Black churches. Body and Soul is a proven faith-based nutrition and physical activity intervention that incorporates African American community norms to address obesogenic factors on the behavioral, interpersonal, cultural, and institutional levels (Resnicow et al., 2004). The faith-based community's capacity to address policy and economic obesity determinants is developed through the components of this intervention. The Body and Soul program represents a synthesis of two randomized controlled trials conducted with African American churches: the "Black Churches United for Better Health" trial and the "Eat for Life Trial" (Resnicow et al., 2000).

Program components from the two trials found instrumental in improving nutrition and physical activity among participants were combined to create the current Body and Soul program. These components included support of the church pastor, changes in church dietary policies to encourage the availability of fruits and vegetables at church functions, church activities that support physical activity and healthy eating, and peer-to-peer support among program participants. The initial studies were conducted with 64 African American churches in the United States and demonstrated significant increases in daily fruit and vegetable consumption among the intervention group participants (Resnicow et al., 2004). This formative research led to a large-scale, nationwide dissemination of the Body and Soul program by the American Cancer Society and the NCI in 2004 (Campbell, Resnicow, Carr, Wang, & Williams, 2007). Currently, the Body and Soul intervention components designed to promote healthy African American diets in churches have been extended to include other health topics such as diabetes management and organ donation (Andrews et al., 2012; Williams et al., 2013).

Body and Soul might suit Samoan communities in the United States for several reasons. Samoans and African Americans have similar perceptions concerning personal self-image

and body size. Although ideal body sizes in both African American and Samoans are of slim individuals, these two ethnic groups do not have the strong negative self-perceptions related to being overweight or obese as found in non-Hispanic Whites (Brewis, McGarvey, Jones, & Swinburn, 1998; Duncan, Anton, Newton, & Perri, 2003; Okosun, Choi, Matamoros, & Dever, 2001). In addition, the church is considered an important institution in both cultures.

In African American culture, churches are influential. According to the 2007 U.S. Religious Landscape Survey, 87% of Blacks identify with a religion, 83% are Christian. Black churches historically have supported the political, economic, social, health, and spiritual needs of congregants (Campbell, Hudson, et al., 2007). African American pastors are often a source of leadership for social action and serve to establish churches as visible, credible, and respected community institutions (Campbell, Resnicow, et al., 2007). The integrity of the Black church also supports health promotion activities by countermanding the historic distrust of public health and medical agencies by African Americans (Lincoln & Mamiya, 1990).

The primacy of religion in Samoan life is reflected in the national mottos of American Samoa and Samoa, which are “Let God Be First” and “Samoa Is Founded on God,” respectively (University of Hawaii, 2013). Furthermore the *fai’fea’u* or minister/pastor is accorded great authority in the church and other secular domains in the Samoan jurisdictions (Baker et al., 1986). In migrant Samoan communities, churches serve as the framework for organizing Samoan society by replacing the traditional village/clan structure found in Samoa (Aitaoto et al., 2007). Migrant Samoan churches have been identified as a primary social institution functioning to maintain *fa’aSamoa* or the Samoan way (Aitaoto et al., 2007; Bell, Swinburn, Amosa, & Scragg, 2001; Levy-Storms & Wallace, 2003).

Faith-based settings in Samoan migrant communities have been successfully engaged to improve health. Examples include the use of churches to improve breast cancer screening rates among Samoans in California (Levy-Storms & Wallace, 2003). In New Zealand, churches have been used to promote healthy nutrition and physical activity in migrant Samoans and Tongans (Bell et al., 2001; Simmons et al., 1998). In Hawaii, an estimated 85% to 90% of Samoans belong to a Samoan church (Mishra, Luce-Aoelua, & Hubbell, 2000). Hawaii’s Samoan church members reported that they attend church functions often, about 3 to 7 times per week (Aitaoto et al., 2007).

Research on the use of faith-based interventions to address obesity among Samoans in Hawaii and the United States is lacking. In this study, we sought to address three primary aims in three distinct research phases. First, we intended to corroborate or disconfirm information found in the scientific literature suggesting the importance of socio-ecological factors, including cultural factors, related to obesity with migrant Samoan populations in Hawaii. Next, we hoped to determine whether diet and physical activity are relevant issues for migrant Samoans in Hawaii, and whether churches could be viable settings to promote health. Finally, we planned to identify the important features for potentially adapting and culturally tailoring an energy balance program, such as Body and Soul, for migrant Samoan populations living in Hawaii and possibly the continental United States.

Method

Design

The research was conducted in Honolulu in 2010–2011. We used qualitative interviewing methods and utilized aspects of grounded theory to conduct the study (see Figure 1) that included the following: (a) a 2-hour pilot interview held with a Samoan pastor; (b) individual interviews approximately 90 minutes in duration, held with four Samoan community key informants; and (c) four 2-hour focus groups conducted with a total of 26 members of a Samoan church (Patton, 2002). Six church members led the focus groups, matched by age and gender to be appropriate to lead each group. We prepared these church members to conduct the qualitative interviews during a separate 3-hour training session. In addition, these trained moderators assisted with the refinement of the interview questions and the analysis of the focus group interview data.

Qualitative interviewing can incorporate aspects of community-based participatory research (CBPR) principles by including community members, providing opportunities to build knowledge, and establishing collective research priorities that are meaningful to all participants (Minkler & Wallerstein, 2003). We sought to adhere to CBPR principles outlined by Barbara Israel (Minkler & Wallerstein, 2003), which included the engagement and participation of Hawaii's Samoan community members throughout the study. The use of community-member interviewers built the community's capacity to conduct research. In addition, the focus group interviews served to create emancipatory knowledge within the community concerning potential issues surrounding obesity and health. At the same time, the research team was open to the possibility that obesity and health issues might not be relevant community concerns found during the interviews. The community-member-led interviews identified the goals, objectives, and activities of any proposed project directly from the community involved, which enhanced the likelihood for community ownership, adoption, and maintenance of any potential intervention (Minkler & Wallerstein, 2003). Finally, all study findings were vetted with and reported to community members.

Recruitment and Sample

We purposively selected participants for all interview types relative to their perceived ability to provide information-rich, illuminative, in-depth data concerning each phase of the study. Individuals working with Hawaii's Samoan community identified and referred potential study participants. Aspects of grounded theory supported the inquiry and analysis methods we used in this exploratory qualitative study. Our team applied the information obtained from the pilot key-informant interview in an iterative fashion to inform and refine the inquiry for the subsequent key-informant interviews; this in turn guided the questions we posed to the focus group participants (Charmaz, 2006).

The study was reviewed and approved by the University of Hawaii's Institutional Review Board (IRB). All participants were provided with IRB-approved printed copies of the study documents, which included a study overview and the study consent forms in both English and Samoan. These forms were reviewed with each participant orally. We emphasized

voluntary participation in the study, and only participants who provided written informed consent were subsequently interviewed.

Phase 1: The initial interview—The objective of the initial key-informant interview was to obtain a firsthand understanding of Samoan cultural values and practices, to complement our understanding from the literature. During this aspect of the study, we sought to obtain practical information concerning the functioning and operation of a Samoan church in Hawaii so that any subsequent research could be conducted in a culturally sensitive manner. Finally, the etic perspective of our lead researcher, an African American male from the eastern coast of the continental United States, warranted our efforts to obtain information about this investigator's suitability for the current study, and to learn, incorporate, and become responsive to Samoan social norms (Patton, 2002).

A 46-year-old Samoan pastor from a church located in rural Honolulu with a congregation of approximately 200 members of Samoan ancestry was selected for the initial key-informant interview. Although born in American Samoa, he attended college in Honolulu and completed seminary training in Samoa. As the head of an ecumenical council of 26 Samoan churches, this pastor had an established leadership role among other Samoan pastors in Hawaii. We expected that an interview with this particular key informant could provide basic information about conducting a church-based health intervention such as Body and Soul, and valuable cultural information about Samoans living in Hawaii and within Samoan jurisdictions. Recruitment of this particular person represented a purposive, politically important sampling of an informant with positional influence within the Samoan community (Patton, 2002).

Phase 2: The key informants—We conducted interviews with two distinct types of key informants, either self-described church members or non-church members to determine whether the church or another institution would be an appropriate setting for Samoan health promotion. We used this quota sampling frame to obtain perspectives from these distinct groups about using the church versus another community-based setting for a planned intervention (Maxwell, 2005).

To address potential gender-related differences, we held interviews with influential Samoan women and men from each group. Key informants included a 42-year-old non-church affiliated woman, a 46-year-old non-church affiliated man, a 69-year-old church affiliated woman, and a 50-year-old church affiliated man. All of the key informants recruited for the study were recommended by other Samoans as community leaders either by their vocations, or their leadership of a Samoan organization in Hawaii.

Phase 3: The focus group participants—Focus group participants were church members, recruited from the Samoan church led by the pastor from the initial interview. This setting was identified by key informants as the most appropriate for implementing a health promotion intervention to migrant Samoans in Hawaii. The aim of this phase was to hear church members' perspectives on the role of nutrition and physical activity in health and to identify components of an energy balance program, such as Body and Soul, which might need to be culturally tailored for Samoan populations. Participants were recruited

using the church's regular communications channels, including in-person announcements during church service and the distribution of print materials at church. The researcher provided an overview of the study and solicited church members to join the study during a regular church service. Other recruitment methods included posting printed promotional materials in both English and Samoan at prominent locations in the church.

Four focus groups were held with a total of 26 participants (see Table 1). Participants were stratified by age and gender to address cultural norms that could deter free conversation. For example, women and men rarely congregate together, and younger adults might not talk freely in groups with older adults (Aitaoto et al., 2007). Thus, one group included seven men ages 25 to 49, the second included six men above the age of 50, the third included six women ages 25 to 49, and the fourth included seven women above the age of 50. Based on participant preferences, two of the focus groups with younger adults were conducted in English, whereas focus groups with older participants were held in Samoan.

Six bilingual moderators, three men and three women, were recruited for their ability to hold the groups in either the Samoan or English language. The recruited moderators were trained by the researcher to conduct the focus group interviews during a 3-hour training session held before the first set of focus groups. Each member of the moderating team had a distinct responsibility in facilitating the groups, either leading the discussion, audio taping the session, or taking written notes and collecting other documentation in support of the group.

Status according to gender and age concordance were considered in assigning moderators to focus groups, because this form of social ranking was found to be an important Samoan cultural norm in the literature and during key-informant interviews (Aitaoto et al., 2007; Krueger & Casey, 2000). In addition, the emic perspective of these moderators served to enhance disclosure among participants, who might have been reticent to share sensitive personal and cultural information with an outside researcher. All moderating team members signed non-disclosure agreements to protect the confidentiality of focus group participants and discourage disclosure of the discussion.

Measures

Structured open-ended interview questions were used across all research phases to obtain data about the relevance of health, physical activity, and nutrition in the Samoan community. Questions used for the pastor interview were specifically designed to corroborate information found in the scientific literature concerning health and obesity. This initial interview also served to provide practical information about Hawaii's Samoan culture and the functioning of Hawaii's Samoan churches. The questions used in subsequent key-informant interviews were designed to obtain information about the relevance of diet and physical activity among migrant Samoans, identify an appropriate intervention setting, and obtain preliminary information on potential culturally appropriate activities that would support improved physical activity and nutrition (see Table 2). Focus group questions were designed to assess potential use of the church for an intervention with church members, as churches were identified as the best intervention setting, and to solicit more detailed information about the types of activities that these church members might find useful to promote improved nutrition and physical activity (see Table 3).

Data Analysis

The taped responses of all interviews were transcribed by a professional transcriber. The two focus group interviews that were conducted in Samoan were first translated into English and then transcribed. The initial analysis of the transcribed interviews was conducted by the researcher to enhance the opportunity for cultural immersion. During this analysis, we used aspects of grounded theory and included a detailed line-by-line examination of the transcription, allowing for the creation of a descriptive summation of the participant's responses, or codes (Charmaz, 2006). Situations where the respondent's own words provided the best explanation of these concepts were captured as "in-vivo" codes during this initial coding process (Bracht, 1988; Charmaz, 2006).

During the second step of the data analysis, we applied a focused coding process (Charmaz, 2006). Patterns found within the initially coded data were combined and organized into concepts or themes that captured the essence of the participant's responses. This secondary data analysis included a "situational analysis," or the creation of a "map" of the relationships between the various interrelated concepts (Clarke, 2005). Also, an axial coding strategy was used, whereby the contrasts between opposing themes in the interviews were identified to reveal distinctions between some categories of coded responses.

Memo writing was used to describe the data overall as it related to a conceptual model, which included components from the Social Ecological Model (Smedley & Syme, 2001). Our use of the Social Ecological Model provided a data organizing framework and facilitated the assessment of concordance between interview data with the information found in the scientific literature. In addition, our use of this particular model served to support the possible application of Body and Soul, an intervention that consists of socio-ecological approaches to address obesity.

The consistency of the theoretical concepts identified from the key-informant interviews, who were recruited to obtain distinct community perspectives, with those found during the focus groups supported theoretical saturation (Charmaz, 2006; Clarke, 2005). Two independent reviewers were recruited to each randomly code selected print copies of the interview transcripts to assess intercoder agreement (Patton, 2002). Results of these reviews were compared during a team meeting with these reviewers. Direct tabulation of the number and labels of codes created by the reviewers and the researcher were calculated. Comparisons between these three independent coding schemes were found to be 90% concordant.

All research findings were reviewed with the five key informants and six focus group moderators to insure the accuracy of these findings, and to provide additional insights. This member-checking process also supports aspects of CBPR methods, specifically that research is done in a transparent fashion and that findings are shared through open collaboration and communication between the participants and the researcher (Charmaz, 2006; Minkler & Wallerstein, 2003).

Finally, the emergent themes vetted with the participants and moderators were added as a coding framework in a qualitative data analysis software package, NVivo (QSR

International, 2008). This qualitative data analysis software complemented and supported the data analysis process. The software allowed for easy access to data extracted from a variety of sources and from across multiple interview types.

Results

A critical objective of the initial key-informant interview was to obtain information about our research team's suitability for conducting any research within Hawaii's Samoan community as "outsiders." This interview afforded the team an opportunity to learn firsthand from a respected Samoan community leader in Hawaii about Samoan social norms, and how to be responsive to and incorporate this knowledge into the research plan (Patton, 2002). The participant also affirmed information found in the extensive review of the scientific literature, that socio-ecological factors (including economic, cultural, and behavioral factors) were components associated with obesogenic trends currently found among Samoans. Finally, during this interview, we obtained precursory information about the relevance of nutritional health and the feasibility of using Samoan churches for a diet and physical activity intervention. This interview also served to secure the pastor's support to conduct additional interviews with church members.

The subsequent key-informant interviews determined that the church was the most appropriate setting to reach a broad spectrum and high number of Samoans in Hawaii concerning physical activity and nutrition. These participants provided more detailed information about the social functioning of Samoan communities in Hawaii across age and gender groups. Samoan churches supported ceremonies hallmarking significant events that were attended by church congregants and remarkably also attended by many Samoans who were not church members. In addition, these participants reinforced information concerning the adoption of Westernized dietary patterns as factors in the current trends toward obesity. Finally, these interviews provided preliminary suggestions about possible components of a culturally appropriate diet and exercise program for use in Samoan churches.

The focus group participants confirmed that Samoan attitudes toward weight and body size were consistent with African American perspectives. Focus group participants also identified the important features for adapting and culturally tailoring an intervention, such as Body and Soul, for Samoans. Although the focus group participants varied in their own health promotion activities, all supported adopting activities in the church to promote healthy diet and exercise, and many had specific suggestions for the church-based programs.

Interview participants across all phases of this study provided useful information on health and for potentially adapting a physical activity and nutrition program to Samoan churches. This information was grouped into seven primary and two underlying themes identified in the analysis: (a) the relevance of *fa'a Samoa* or the Samoan way in Samoan culture (33 participant references), (b) conducting culturally appropriate research (24 participant references), (c) Hawaii's Samoan community norms (7 participant references) that also included social support and pressure (6 participant references) and the role of Samoan churches (32 participant references) as underlying themes, (d) acculturation challenges (48 participant references), (e) perceptions of health among Hawaii's Samoans (18 participant

references), (f) perceptions of physical activity and nutrition (16 participant references), and (g) features of a culturally appropriate intervention (9 participant references).

Relevance of Samoan Culture: Fa'aSamoa

A key Samoan cultural concept is *fa'aSamoa*, which literally means the Samoan way. This concept of *fa'aSamoa* incorporates four major tenets: (a) a strong belief in the spiritual; (b) a hierarchical social orientation, with generational, gender, and status-related norms; (c) the honoring of hierarchical and interpersonal relationships and obligations; and (d) the importance of the traditional Samoan lifestyle (Aitaoto et al., 2007). The pastor expressed that *fa'aSamoa* is viewed as a form of respect rendered by providing service to the community as whole and consistent with a person's social role. He stated,

At an early age you are taught to respect your elders, but it is actually heightened as a person accepts more responsibilities within the village. In the village you have the young men's and the women's society, each level has very specific roles. You have to fulfill those roles. They all learn their roles by serving, and rendering service is a part of demonstrating respect.

The communal and hierarchal structure of Samoan society is embodied in a *matai* or chief system (Hubbell et al., 2005). Typically, the eldest member of a family or group of families is responsible for decision making among family members. This hierarchal *matai* leadership structure extends to the community and village. Gender roles are also important in the Samoan community (Hubbell et al., 2005). The pastor stated,

In the family setting, males have *fa'alavelave* or a family gathering to address trouble, and the *matai* gives suggestions to the families that are under his tutelage, and we usually try to fulfill that suggestion.

Conducting Culturally Appropriate Research

All key-informant participants provided insights into community perceptions and ways for an external researcher to navigate within the community in an appropriate manner. It is expected that an outsider or *palangi* be aware of some the aspects of *fa'aSamoa*, particularly those related to demonstrating respect. Outsiders should have an awareness of Samoan generational, gender, and status-related cultural norms. Some accommodation is given by community members for outsiders who have limited knowledge of cultural practices, if these individuals demonstrate an overall attitude of respect for the community. The pastor stated,

And so that is probably the finer dynamics of the *fa'aSamoa*, which the underlying concept is respect. If you just respect your fellow human beings then you shouldn't have any problems.

Another key informant said,

It wouldn't be a bad idea to know a little bit about our culture. You know, usually when we go to church you know where to sit [among elders, men, or women], and that you're not going to go right up to the person's face. And, well the respect, it's usually common sense, you know, the respect that you would show other people—it's the same thing.

Hawaii's Samoan Community Norms

Samoan communities in Hawaii were described by all key informants as being part of the close-knit Samoan social networks that are established in Hawaii. Networks include informal communications through familial links, and are also established through attendance at social events including festivals, wedding, and funerals. Formal networks include a local language school, a high school alumni association, and various other social and athletic groups. Migrant community members choose to remain socially and politically connected in Hawaii, and with their friends and relatives in the Samoan jurisdictions. A variety of communications channels are used within these networks, including advanced cell phones and the Internet. One key informant stated,

I am involved with our Fagaitua [American Samoan] High School Alumni Association in Hawaii. We also have our own local golf club like a Samoan social group. You mingle then you get involved with someone you just met, at a wedding or something, that's how it works, just like a network. There is a lot of technology these days that we use to stay connected. Basically the number-one technology is our phone. One of the tools is email, and computer networks. If you go online, it's also Samoa News, to learn about things going on [in Samoa] these days.

Social Support and Pressure

The Samoan community networks found in Hawaii are imbued with systems to provide social support, according to key informants. A motivating factor within Samoan communities is social pressure. The extensive social connections and communications found among Samoans in Hawaii provide a vehicle for the increased scrutiny of individual and group behaviors. The networks and channels that support social connectivity also support the delivery of reinforcing or sanctioning feedback concerning these behaviors. Social pressure is exerted toward individuals and groups to build conformity with traditional practices, adherence with communal support systems, and regard for the community's leadership structure. A key informant stated,

Social pressure is very big in the Samoan community. It is like everything is constantly being watched ... everything is up for comment. There is kind of an ultra-concern about things appearing and looking good. So, there is shame that is attached if your family or your chief [if your] donation amount is [not] respectable or whatever.

The Role of the Samoan Church in Hawaii

The church was described by all participants as an important setting for the articulation of cultural practices, including ceremonies such as weddings, providing support for community members during family gatherings, and teaching the Samoan way to young people in migrant communities. Congregants' use of the Samoan language is an important part of Hawaii's Samoan churches, providing opportunities for community members to converse and socialize in Samoan. Samoan church pastors in Hawaii take on the village chief role within their congregations (Aitaoto et al., 2007). However, there is conflict that is associated with this newfound role of the pastor as a community leader, particularly when there are

differences between objectives related to Christian values, and those of community leadership. The pastor stated,

We are trying to teach the younger generation, or their kids, about what the *fa'aSamoa* is, and this is within the church setting. And so I think the church has taken upon that village setting outside of Samoa. It is like a village setting, you teach each aspect of the village, first that you need to serve to become a matai. However, the church is different than the village setting, you have your hierarchy in the village, and the pastor has taken on the role as the high chief of the village. It does sometime conflict with the church's role to promote spiritual values.

All key informants, regardless of their membership status, described the church in Hawaii as the best setting to broadly reach the local Samoan community. One key informant stated,

Well with the church-based setting, if you really got it [an intervention] going you will have a kind of multiplier effect. You get that church to change ... the churches are all part of a system and so you could really have some widespread change.

Agreement about using the church as an intervention setting resonated with focus group participants. A focus group participant states,

I think the church is the only common ground that we Samoans have together as a community.

A notable feature of the Samoan church in Hawaii is its use in traditional ceremonies hallmarking significant events including birthdays, weddings, and funerals.

A range of Samoan community members in Hawaii, including those who might not be church members, typically attend these ceremonies held at Samoan churches. It was remarkable that one of the key informants, a self-described non-church member, was found attending a birthday celebration and *to'onai* or cultural feast for a respected Samoan community patriarch after a Sunday service at a Samoan church. This participant's attendance as a non-church member at a church function served to confirm that Samoan churches are capable of reaching non-church members.

Acculturation Challenges

The interviews provided new insights into cultural practices among Hawaii Samoans not immediately found in the scientific literature. The pastor and other key informants described intra-generational challenges to traditional Samoan practices. These challenges represented a desire among Hawaii's Samoan populations to negotiate the communal and hierarchal aspects of *fa'aSamoa* within the context of the individualist Westernized cultures found in Hawaii. These conflicts create a rift between older and younger generations of Samoans in Hawaii that often emerge during activities in the church. The pastor stated,

Overall everyone practices [fa'aSamoa] on a very basic level, but I'm speaking for the older generation. But those who are born and raised here, that is where we see the conflict, probably more generational than anything. For some, the transition is difficult, only because those who are born and raised here they are questioning

everything that [is] happening with the fa'aSamoa. Whereas in Samoa they just would go ahead and do it.

Perceptions of Health

All participants agreed that the traditional practice of *fa'aSamoa* historically involved health promotion features. People harvested foods from the land and sea to share among community members. The work was hard. Thus, health, physical activity, and good nutrition were integrated aspects of the Samoan way and conceived as being part of overall personal and communal well-being. However, issues related to economics, migration, and acculturation have transformed traditional practices, particularly those protocols supporting familial and communal functions, or *fa'alavelave*. Typically, these functions that are part of family gatherings can involve bestowing gifts and communal meals or *to'onai* (Puaina, Aga, Pouesi, & Hubbell, 2008).

Westernization of these cultural practices included the transformation of the traditional items used in the gift exchanges and the foods that are served during communal meals.

As one participant stated,

Back then you fish, you hunt, or farm your foods—chicken and stuff like that, and that's what people used, the stuff from their land and the sea. Then you exercised when you do whatever outdoors as part of your physical activity. We don't see that now, especially outside of Samoa. Westernized ways and everything has been a big part of these new health issues.

A focus group participant confirmed,

Our brothers and sisters in Samoa are just so much different than us. I mean if you look at them, they're really well proportioned. You know, like, slim, healthy. I guess it's just the lifestyle—they do still live off the land. They have to earn what they eat. They fish. And then us being Americanized—we're so dependent on these benefits that we have that we kinda like forget who we are.

This participant's observation of differences in the physical stature of Samoans versus American Samoans exemplifies the effects of contrasting economic development between these two polities. Current obesity prevalence in Samoa is lower than in American Samoa; however, trends in both jurisdictions are increasing. Each country is at a unique stage of an epidemiologic transition from infectious to chronic disease that includes the prevalence of obesity, relative to different rates of economic growth (Ezeamama et al., 2006).

Focus group participants provided more detail about perceptions of health among Hawaii's Samoan church members. These participants reinforced key-informant disclosures that described lack of negative self-perceptions related to large body sizes and weight, similar to African Americans. One focus group participant declared, "Samoans are built for power not for speed." The statement was indicative of this lack of negative self-perceptions about body size among Samoans. However, across all interviews, there was an acknowledgment that the current trends toward obesity are becoming a primary health concern among Samoans in Hawaii. Another focus group participant underscored that problem stating,

I have relatives that are sick from cancer and diabetes, and that have died. Because of that I've become more aware of the severity of being overweight. But I also think that culturally there is a perception especially for us Samoans that big is healthy. I know growing up, there's a healthy "bigness." I do believe that you can be big boned and healthy, but a lot of us are big or obese in an unhealthy way now.

Perceptions of Physical Activity and Nutrition

Although focus group participants acknowledged concerns found in Hawaii's Samoan community about the importance of exercise and diet, participants varied widely in their familial and personal strategies to promote healthy energy balance. Several participants in each of the four focus groups performed regular physical activity; the most common activity was walking. Several older members of the men's and women's groups worked to maintain a healthy lifestyle. One participant stated,

I take the effort to try and get up, go for a walk. People would just sit around at my house and eat, I kind of like to get up and just try and be active in any way I can.

All focus group participants discussed the current challenges and barriers they faced as they began to recognize a need to improve their diets and increase exercise. These challenges were related to food costs and availabilities, time limitations, and lack of resources to help them exercise regularly. Work, family, and other obligations were seen as barriers to participants being physically active. As one focus group participant stated,

I would buy organic foods, but it is too expensive. The farmer's markets are sometimes cheaper, but that's when the convenience of time becomes a factor.

Another focus group member said,

I don't have much time for exercise, I work through the evening. Basically my schedule during the week day is I get up, take my boys to school, then I come and see if the wife has any errands.

Features of an Intervention

The pastor reported that cultural activities within his church did not currently support health as a major concern. However, he was open to the idea of incorporating exercise and nutrition education programs into his church's activities. Other key informants and focus groups participants had specific suggestions about implementing a diet and exercise intervention in the church that adhered to their cultural values. They suggested that health promotion activities can be integrated into cultural training for youth and the traditional events and ceremonies held in the church. A focus group participant stated,

This [the church] is where we teach our kids the ways of Samoa. I like the idea about starting a church garden for the children and elders to participate in together and exercise.

Social and peer-oriented activities should be part of an intervention and include opportunities for practice-based learning such as cooking demonstrations. Some mentioned that social pressure could be used in the intervention, in the form of light competition among

subgroups, women versus men, and so forth, and not between individuals. A focus group participant stated,

I think a treadmill would help me and the church be active, and to spend time with my sisters. For me exercising, talking with my sisters and laughing is therapy for my health.

Another focus group member said,

We could have a cooking day where we can learn how to cook our traditional comfort foods in a healthier way. Get everybody in the church involved so they can influence others to you know do the same thing and it can be like a chain.

Discussion

We conducted qualitative interviews with key informants and church members to determine the potential feasibility of adapting a national evidence-based health promotion program originally designed for African Americans for Samoans living in the United States. Samoans have been described as sharing with African Americans similar trends toward obesity and chronic disease, perception of weight and body size, and strong church affinity. Our use of qualitative research methods to conduct the study helped to corroborate information found in the literature that supported Samoan churches as a setting for a potential obesity-control intervention. The inquiry results also helped us identify challenges and supports toward establishing community-based programs to promote health, healthy nutrition, and physical activity among Hawaii's Samoans. Finally, Hawaii's Samoan community members identified possible cultural and setting-appropriate health promotion activities that could be implemented for this purpose.

Our use of qualitative research proved to be an efficient approach to help guide the adaptation of health promotion interventions to fit specific populations. Qualitative interviews with and conducted by Samoan community members served to uncover underlying socio-ecological factors that contribute strongly to obesogenic trends in Samoans in the jurisdictions, and Hawaii. These included changes in the vocational structure of Samoan society, combined with influences because of migration/acculturation into Western societies, modified cultural norms surrounding the adoption of Westernized diets, and the prominence of Western foods within cultural practices. The identification of key factors contributing to poor health outcomes in Samoans served to distinguish leverage points for interventions that can be used to improve health and help assess the suitability of candidate disease prevention programs.

Previous qualitative research conducted with Samoans has helped our understanding of obesogenic determinants and their effects on health, and have provided insights into addressing these influences. Many articles describe the collectivist and hierarchal nature of Samoan culture as a characteristic that can provide opportunities to facilitate changes in the health of Samoans. These articles describe the close-knit features of Samoan communities, and increasing affinity toward the adoption of healthy traditional cultural practices, particularly concerning diet and physical activity (Aitaoto et al., 2007; Elstad et al., 2008; Hubbell et al., 2005). These articles as well as our current research identify community

strengths that include the application of collectively focused strategies and the engagement of specific cultural institutions including the use of the traditional chief system of governance and churches to address Samoan health (Aitaoto et al., 2007; Elstad et al., 2008; Hubbell et al., 2005).

Body and Soul's intervention components incorporate a socio-ecological approach to health by concurrently addressing socio-cultural and behavioral factors to improve energy balance among participants. Our analysis of interviews with Samoans in Hawaii identified a similar set of socio-ecological factors that contribute toward the community's obesogenic trends. All interview participants identified economic challenges, such as the limited availability and the high costs of procuring healthy foods; social and cultural challenges, such as Samoan community activities that encourage poor nutrition; and behavioral challenges, such as time constraints that limit exercise and healthy eating opportunities.

Our findings included several strengths of Hawaii's Samoan community that would endorse a socio-ecological, community-based approach to improve diet and exercise. The hierarchal nature of the Samoan community and its support systems can ensure the uptake of any program that has gained support of the chief or pastor. Peer support and pressure exerted among migrant Samoan church and community members could be used to modify existing social norms concerning diet and exercise. The cultural training of youth that occurs in Hawaii's Samoan churches might prove ideal for activities that support the re-adoption of healthy traditional foods and preparation methods. These activities could bridge the current discord between older and younger Samoans living in Hawaii.

The essential elements of the Body and Soul program might be suited to incorporate the strengths of migrant Samoan communities and churches in the United States. Church activities that can serve to fulfill the four key components of Body and Soul include pastoral involvement, church activities to promote diet and exercise, peer support for improved diet and exercise among church members, and the development of community and church policies that promote energy balance. Body and Soul's components directly address the suggestions of church members regarding an intervention. The church member suggestions are to (a) obtain the support of leaders for the intervention program; (b) include the church pastor in healthy nutrition and exercise; (c) provide training on traditional food acquisition methods, conducting cooking demonstrations and peer-supported exercise programs; and (d) develop and enhance church/community gardens with efforts from both elders and youth.

Body and Soul's four key program components also allow flexibility in program implementation. Our understanding of the relevant cultural supports and challenges to healthy diets and improved physical activity faced by Samoans in Hawaii allows us the ability to tailor the program to address the church's needs, preferences, and resources. For example, the church chosen for this interview is situated on prime agricultural land where grapefruit, coconut, and breadfruit trees abound. The church pastor can emphasize the importance of diet and physical activity as part of spiritual health during a sermon and challenge members to use the traditional foods found on church property as part of church meals. This sole activity can serve to address all four program components while

incorporating hierarchical communal norms, social connectivity and support, and traditional village modeling.

Culturally appropriate approaches should be used to provide dietary counseling to church members. This would include the establishment of gender-specific support groups to promote dietary change, rather than personal interviews used originally in Body and Soul. For women, these support groups could be formulated as healthy recipe sharing groups, Zumba or exercise classes, and trainings on traditional food preparation methods. Groups for men might include sports (basketball, football, rugby), hiking, or how to learn traditional farming/gardening methods. Finally, a key feature will be to elevate the prominence of fruits, vegetables, and healthy traditional Samoan foods such as taro, breadfruit, tropical fruits, and fish to be served during celebrations and cultural meals. Our intent will be to work with church and community members to design specific intervention activities and policies that are appropriate within the context of Body and Soul's four active components.

There are several limitations to this research. First, there was a lack of cultural concordance between the community of interest (Samoan) and our research team. A second limitation is related to our recruitment of participants through quota sampling methods. This method can introduce response bias; participants recruited might have an affinity toward the research topic or commonalities with each other on relevant factors related to the inquiry. The perspectives of church members selected for focus group interviews might not be generalizable to the majority of Samoan churches or church members in Hawaii. In addition, a social desirability bias might have been a factor guiding responses during the focus group interviews. Although we made an effort to segregate focus group members by age and gender, some participants might have deferred their comments during these groups to accommodate community members with a higher status. Finally, our use of bilingual moderators who served the dual roles as translators and transcribers is a limitation in that the translated transcript copy might have been filtered by moderators to protect cultural decorum and not accurately reflect the true nature of the focus group discussions.

Despite these limitations, the rich detailed data provided by the study participants were useful to meet the exploratory purposes of this research (Clarke, 2005). During this investigation, we sought information concerning the effect of being community "outsiders." We believe that this research followed the suggestions of Hawaii's Samoan community concerning our adherence to cultural protocols. Our use of aspects of grounded theory to incorporate information gained from each research phase in an iterative manner was intended to address any limitations relative to the sampling design. Finally, the follow-up review sessions with the interview and focus group participants intended to minimize any inaccuracy in translation, interpretation, and the possible application of findings to a health promotion program.

Conclusion

Churches have a tremendous potential to reach medically underserved populations to reduce disparities while promoting overall health. For both African Americans and Samoans dwelling in the United States, churches are established, trusted, and well-attended

organizations capable of addressing the welfare of congregants and the community. This study laid a foundation for the adaptation of Body and Soul, a proven faith-based, health promotion program for use in Hawaii's Samoan churches (Resnicow et al., 2004). This research is precursory to our planned investigations to eventually test an obesity prevention program in Hawaii's Samoan churches and assess the program's suitability for dissemination to Samoan churches across the United States. The findings from our investigation demonstrated the value of qualitative research methods to inform the adaptation of evidence-based health promotion programs for populations experiencing health disparities. In addition, the methods used in this study can help guide the cross-cultural adaptation of other existing health promotion interventions. Finally, this research identifies potential intervention strategies that might be useful with migrant populations from distinct Pacific Island jurisdictions, similar to Samoans, who experience poor health outcomes related to energy balance.

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Figure 1.
Overview of the study's design and research issues addressed in each phase.

Table 1

Focus Group Demographics.

	Group 1		Group 2		Group 3		Group 4		Participant Totals, <i>n</i> = 26
	Young Adult Females, <i>n</i> = 6	<i>n</i> (%)	Older Adult Females, <i>n</i> = 7	<i>n</i> (%)	Young Adult Males, <i>n</i> = 7	<i>n</i> (%)	Older Adult Males, <i>n</i> = 6	<i>n</i> (%)	
Age									
25–29	1 (17)	—	—	—	1 (14)	—	—	—	2 (8)
30–39	2 (33)	—	—	—	3 (43)	—	—	—	5 (19)
40–49	3 (50)	—	—	—	3 (43)	—	—	—	6 (23)
50–59	—	—	2 (29)	—	—	—	3 (50)	—	5 (19)
60+	—	—	5 (71)	—	—	—	3 (50)	—	8 (31)
Age range, years	28–44	—	50–90	—	25–47	—	56–79	—	25–90
<i>M</i> age, years	37.1	—	64.8	—	36.8	—	63.5	—	50.6

Table 2

Questions for Pilot and Key Informant Interviews.

Interview Questions	Pilot Phase	Key-Informant Phase
Did you migrate from Samoa or were you born in Hawaii?	x	
What is the migration status of your (community/church) members, are they predominantly locally born or migrated from Samoa?	x	x
What does <i>fa'aSamoa</i> or the Samoan way mean to you?	x	
As a person outside of the church, what aspects of <i>fa'aSamoa</i> are important for me to know?	x	
As a person from outside of the Samoan community, what is important for me to know about working in the community?	x	x
What types of activities do you use to support <i>fa'aSamoa</i> at church?	x	
As a (community/church) leader, what types of activities do you consider, or use to support Samoan community members?		x
What is your opinion about the success of the <i>fa'aSamoa</i> or community support activities?	x	x
Does the migration status of your church members affect participation in activities that support <i>fa'aSamoa</i> ?	x	
What aspects of <i>fa'aSamoa</i> promote good health, including physical activity and nutrition?	x	
What types of activities do church members do to promote health including physical activity and nutrition while at church?	x	
In your opinion, are the Samoans who attend churches locally very different than Samoans who do not?		x
What is your opinion about the overall health of the Samoan community?	x	x
Do you believe physical activity and nutrition are important issues?	x	x
What would be a good place to reach local Samoans regarding physical activity and nutrition education?		x
What would be the important parts of a project promoting physical activity and nutrition in the Samoan church/community?		x

Table 3

Questions for Key-Informant and Focus Group Interviews.

Interview Questions	Key-Informant Phase	Focus Group Phase
What is your opinion about the overall health of the Samoan community?	x	x
Do you believe physical activity and nutrition are important issues?	x	x
What would be a good place to reach local Samoans regarding physical activity and nutrition education?	x	
What would be the important parts of a project promoting physical activity and nutrition in the Samoan church/community?	x	x
What does being healthy mean to you?		x
How important is your health to you?		x
What are the things you do to maintain a reasonably healthy lifestyle?		x
What does eating healthy mean to you?		x
What does physical activity mean to you?		x