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Heterogeneity within the Asian American community

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Abstract

Background: Educational interventions are grounded on scientific data and assumptions about the community to be served. While the Pan Asian community is composed of multiple, ethnic subgroups, it is often treated as a single group for which one health promotion program will be applicable for all of its cultural subgroups. Compounding this stereotypical view of the Pan Asian community, there is sparse data about the cultural subgroups' similarities and dissimilarities. The Asian Grocery Store based cancer education program evaluation data provided an opportunity to compare data collected under identical circumstances from members of six Asian American cultural groups.

Methods: A convenience sample of 1,202 Asian American women evaluated the cultural alignment of a cancer education program, completing baseline and follow-up surveys that included questions about their breast cancer knowledge, attitudes, and screening behaviors. Participants took part in a brief education program that facilitated adherence to recommended screening guidelines.

Results: Unique recruitment methods were needed to attract participants from each ethnic group. Impressions gained from the aggregate data revealed different insights than the disaggregate data. Statistically significant variations existed among the subgroups' breast cancer knowledge, attitudes, and screening behaviors that could contribute to health disparities among the subgroups and within the aggregate Pan Asian community.

Conclusion: Health promotion efforts of providers, educators, and policy makers can be enhanced if cultural differences are identified and taken into account when developing strategies to reduce health disparities and promote health equity.

Background

The cultural groups that make up the Pacific Islander and Asian American communities are often grouped together and considered as a single homogeneous entity. In reality,

these communities are diverse in language, culture, and history. Such differences can influence access to health information, health maintenance opportunities, health care, and health outcomes. Public health educators are

urged to create health promotion programs that recognize and take these differences into account. However, few examples can be found in the scientific literature with side-by-side comparisons of how knowledge, attitudes, and behaviors can vary among cultural subgroups who are to become the focus of behavioral interventions. This manuscript is offered to raise awareness of the similarities and differences that can exist within seemingly similar cultural subgroups in the same community and the importance of incorporating that knowledge into the educational program to customize the intervention appropriately.

As part of the evaluation of the *Asian Grocery Store-Based Cancer Education Program*, Asian American women were surveyed regarding their breast cancer knowledge, attitudes, and screening behaviors before and after participating in the brief educational intervention [1]. This large and ethnically diverse sample created the opportunity to make a comparison among the participating cultural subgroups [2-8]. The authors hypothesized that there would be no statistically significant differences in breast cancer knowledge, attitudes, and behaviors found among the cultural subgroups.

This paper compares and contrasts data collected from the 1,202 women from San Diego County who took part in the evaluation of the Asian grocery store-based program. While some of the data presented in this manuscript have previously been reported, this paper uses that and other data to demonstrate differences among cultural subgroups and how awareness of such differences can help health educators, promoters, and policy makers tailor health promotion programs for specific population subgroups.

Methods

The *Asian Grocery Store-Based Cancer Education Program* was established to reach Asian and Pacific Islander women of diverse cultures, languages, ages, and levels of acculturation, literacy and socioeconomic status [1]. Incorporating the educational program into women's routine shopping activities was anticipated to help overcome commonly reported barriers to health education, screening, and care, such as problems with transportation and lack of time [9-11].

Bilingual, bicultural community health educators helped to overcome the barriers associated with language and culture. The educators offered breast cancer information in the safe, culturally and gender aligned environment offered by the Asian grocery store. Verbal and written education materials were provided in multiple languages and dialects to help explain the American Cancer Society and National Cancer Institute's breast cancer screening guide-

lines. The educators also promoted access to California's Breast Cancer Early Detection Program's free breast cancer screening and treatment services for low-income women. They used multiple visual teaching aids, including a string of beads simulating the sizes of breast cancer lumps that can be found by various detection methods and synthetic breast models with imbedded breast abnormalities.

Of the several thousand women who took part in the brief cancer education program, 1,202 agreed to help evaluate the program. The participants in this convenience sample signed Human Research Protections Program-approved consent documents, completed baseline surveys, and took part in the cancer education program. Two weeks post baseline, telephone calls were initiated to conduct a follow-up survey. For women who could not be reached after 10 telephone attempts, the follow-up survey was mailed with a hand-written cover letter of explanation and a stamped self-addressed envelope. Letters and surveys were provided in the language the participant preferred to use at baseline. The baseline survey collected women's socio-demographic characteristics including age, ethnicity, and primary language, plus their baseline breast cancer knowledge, attitudes, and screening behaviors. For the follow-up telephone survey, women reported their screening behaviors, barriers to screening, and suggestions to improve screening access. Since screening guidelines begin at age 20, only the data for the women 20 years and older (1,190) are reported here. The majority of the women in this age group (1,131) belonged to one of six cultural groups. This paper compares the data for those six groups.

Results

Effectiveness of the Asian Grocery Stores to Attract a Diverse Sample of Pacific Asians

An excellent example of the importance of recognizing that Asian and Pacific Islander sub-communities have unique characteristics emerged during the midpoint evaluation of the sample's socio-demographic data. A comparison of the proportion of each group represented in the sample disclosed an under-representation of Japanese, Asian Indian, Korean, Cambodian, Laotian, Hmong, and all Pacific Islander communities. Expanding the number of participating Asian grocery stores resolved the under-representation of only the Japanese, Asian Indian, and Korean communities. Further study is required to understand if the remaining groups were present, but reluctant to participate in the research study, or if they actually conducted their shopping chores in other, as yet, unidentified Asian or mainstream grocery stores.

Variation in Baseline Screening Adherence Rates

Promoting adherence to early breast cancer detection guidelines is a crucial step toward reducing breast cancer

Table 1: Adherence to Breast Cancer Screening Guidelines by Age and Ethnicity at Baseline

Ethnic Group	BSE N = 1087* over age 20 (includes unspecified ages)	Annual Clinical Breast Exam N = 490* age 40 and over	Annual Mammography N = 490* age 40 and over	Annual Mammography N = 219* age 50 and over
Asian Indian N = 125	37%	55%	64%	81%
Chinese N = 302	26%	53%	34%	35%
Filipino N = 248	46%	48%	53%	58%
Japanese N = 47	38%	59%	72%	74%
Korean N = 123	31%	49%	22%	29%
Vietnamese N = 275	26%	54%	39%	33%
Full Sample N = 1190	33%	52%	44%	47%
X ²	.0005	N/S	.0005	.0005

* The numbers represent only women who provided valid data for these questions.

mortality rates. Within the aggregate screening data, the clinical breast exam screening (CBE) rate among women 40 and older was 52% while the annual mammography rate among women 50 and older was 47% [2]. Those rates were far below the 70% screening target rate set in the National Cancer Institute's and the American Cancer Society's Year 2000 Goals, suggesting a cohort at significant risk of late stage breast cancer detection [12]. However, statistically significant differences in screening rates were seen in several categories (Tables 1). For women in the 40 and older age group, Japanese American, the highest reported rate of annual mammography (72%), while Korean American women had the lowest rate (22%), with other groups falling in between. For women 50 years and older, 81% of Asian Indian women reported having had a mammogram in the past 12 months, compared to only 29% of the Korean American subgroup.

Knowing where similarities exist in a field of contrasting data is equally important in the creation of health promotion strategies. In addition to the lower-than-optimal rates of annual CBE for all subgroups, the subgroups all reported higher CBE adherence rates than breast self-examination (BSE) rates, and all but Korean women had equal or higher mammography rates than BSE rates (Table 1). While a higher adherence to the guidelines for annual mammogram is preferred since it has been shown effectively to reduce mortality rates, the trio of screening options is recommended as a means of finding those breast cancers that will predictably be missed in a proportion of mammograms and clinical breast exams.

There is a considerable difference in health outcomes between women who may not be adhering to the exact recommended guidelines for annual screening and those who have never been screened. Table 2 shows the statistically significant variations by ethnic group and age of women who report never having had a mammogram. This data underscores the legitimate need for screening promotion programs that are focused on the cultural groups with the greatest proportion of never screened women.

Table 2: Women Who Reported Never Having Had a Mammogram by Age and Ethnicity

Ethnic Group	Women age 40-49 N = 271	Women age 50 and over N = 219
Asian Indian	46%	19%
Chinese	66%	66%
Filipino	52%	42%
Japanese	30%	26%
Korean	85%	71%
Vietnamese	56%	67%
Full sample	58%	53%
X ²	.007	.0005

The influence of age on breast cancer knowledge, attitudes, and behaviors was evaluated to determine if it interacted differently among the various ethnic groups. Age proved to be a factor only in predicting the overall BSE screening rates, with statistically significant differ-

Table 3: BSE Screening Adherence Rates by Age and Ethnicity

Ethnic Group	N = 449* Age 20 to 39	N = 271 *Age 40 to 49	N = 219* Age 50 and over
Asian Indian N = 125	31%	43%	50%
Chinese N = 302	27%	25%	33%
Filipino N = 248	46%	48%	50%
Japanese N = 47	13%	60%	47%
Korean N = 123	32%	22%	29%
Vietnamese N = 275	20%	33%	30%
Full Sample N = 1190	31%	37%	39%
X ²	.008	.02	N/S

* The numbers represent only women who provided valid data for these questions.

ences among younger women in the subgroups (Table 3). While the benefits of BSE in prolonging life continue to be debated [13-17] for women aged 20-39, BSE is the primary method for the early detection of breast cancer [13]. For older groups, it is women's best way of detecting breast cancer between CBE and mammography screenings and those that were missed by these two screening methods. Hence it continues to be recommended by the American Cancer Society and the National Cancer Institute. BSE screening adherence was lowest (31%) in the youngest age group, ranging from 46% among Filipinas to 13% among Japanese American women, and highest among the 50 and over age group (39%).

Variation in English as a Native Language

Language is a barrier that is widely recognized as a contributor to health disparities because it limits access to health promotion information and health care. Most participants (93.1%) reported a primary language other than

English. Among the subgroups, English as a native language varied significantly, with Japanese American women reporting the highest frequency of English as a native language (15%) and Vietnamese women, the lowest (1%) (Table 4). Literacy levels for English were not evaluated since the program was being offered in the women's native language as a way of emphasizing the information's relevance to the community of Pan Asian women.

Variation in Study Retention Rates

With so many women reporting English as a second language, the overall study retention rate (67%) was likely to have been facilitated by having same language data collectors conduct the follow-up telephone surveys as the baseline surveys. Significant differences in retention rates were noted (p < .02), with Korean women having the highest rate of follow-up survey participation (76%) and Asian Indian women, the lowest (56%) (Table 4).

Table 4: Differences in Retention, Knowledge Preferences, Perceptions, and Primary Language by Cultural Sub-groups.

Questions	Asian Indian ¹	Chinese ¹	Filipino ¹	Japanese ¹	Korean ¹	Vietnamese ¹	Chi-square significance
Retained in study through follow up	56%	67%	69%	62%	76%	65%	.02
Breast cancer knowledge reported sufficient	44%	37%	40%	43%	17%	45%	.0005
Willing to share breast cancer knowledge with family and friends	87%	95%	97%	87%	84%	91%	.001
Perceived receptivity of family and friends to breast cancer knowledge	65%	73%	75%	76%	86%	68%	.0005
Prefer to get knowledge from classroom setting	24%	18%	21%	30%	36%	22%	.002
Prefer to get new health knowledge by mail	81%	74%	68%	66%	76%	52%	.0005
Prefer to get new health knowledge by telephone	24%	19%	31%	23%	34%	38%	.0005
Receive free information in the future to keep family healthy	83%	95%	92%	72%	89%	95%	.0005
Willing to receive information of personal nature	81%	91%	91%	72%	84%	91%	.002
English as a Native Language	7%	6%	7%	15%	2%	1%	.001

¹ The numbers represent only women who provided valid data for these questions.

Table 5: Adherence to Screening Guidelines at Follow-Up among Women Who Were Non-Adherent by Age and Ethnicity.

Ethnic Group	BSE in past month among women age over 20 N = 448*	Women age 40 and over who were screened or set up screening appointment N = 165*	Women age 50 and over who were screened or set up screening appointment N = 83*
Asian Indian N = 125	11%	20%	0%
Chinese N = 302	25%	36%	60%
Filipino N = 248	35%	33%	45%
Japanese N = 47	0%	0%	0%
Korean N = 123	13%	5%	0%
Vietnamese N = 275	38%	41%	52%
X ²	.0005	.02	.009

* The numbers represent only women who provided valid data for these questions.

Variation in Adequacy of Knowledge

Overall, while 38% of the women felt that they had sufficient information about breast cancer, there were significant differences in the women's perceived adequacy of their knowledge by ethnic subgroup (Table 4). Vietnamese women (45%) were the most likely to report that they had sufficient knowledge and Korean women least likely (17%), thereby demonstrating the absence of a correlation between women's perceptions of the adequacy of their knowledge and their reported screening behaviors.

Variation in Women's Sharing of Information

Lending support to the value of "word-of-mouth" campaigns, such as the American Cancer Society's "Tell-a-Friend" program, 92% of all women reported that they were willing to share their knowledge with their family and friends. However, there was significant variation in women's willingness to share their knowledge among the subgroups, ranging from 84% for Korean women to 97% for Filipinas (Table 4). Women's perception of their family and friends' willingness to receive information also showed significant variation, ranging from 65% for Asian Indian women to 86% for Korean women (Table 4).

Variation in Preferences for Receiving Health Information

Several options were offered for women to receive future health information: by mail, telephone, or in a classroom setting. Interest in attending a class to receive health information was low in all groups (23%), but showed significant variation among the subgroups, with Korean women showing the most interest (36%) and Chinese women showing the least interest (18%) (Table 3). Interest in receiving information by mail was greater in general

(68%) but varied significantly among the subgroups, with a large proportion of Asian Indian women interested (81%) in this method versus 52% of Vietnamese women. While women were less interested in receiving information by phone than by mail, interest levels varied significantly. Vietnamese women were most interested in receiving information by phone (38%) in contrast to Chinese women who were least likely (19%). Although most women reported a willingness to receive free information that could help keep their families healthy, there were significant differences among the subgroups (Table 4). Vietnamese (95%) and Chinese women (95%) were most receptive; Japanese women, least receptive (72%). Equally encouraging, most women were willing to receive health information of a personal nature, but again, there were significant differences among the groups. (Table 4)

Variation in Adherence to Screening Guidelines at Follow-up

BSE was anticipated to be the easiest screening measure in which to identify post-intervention changes. While an overall shift toward BSE adherence did occur at follow up, statistically significant differences were seen among the groups (Table 5). Adherence to BSE screening guidelines among the previously non-adherent women ranged between no change for the Japanese American women to 38% among the Vietnamese women.

Women were also asked if they set up an appointment for breast cancer screening or actually been screened during the interval since baseline. While follow up telephone calls were initiated at two weeks post intervention, reaching the women and actually completing the follow up survey usually took several additional weeks, leaving

ample time for women to schedule or undergo screening if the intervention had prompted them to engage in that activity. Among women aged 40 and older and 50 and older, there was a positive shift toward screening uptake, but one that varied significantly among the ethnic groups ($p < .02$ and $.009$, respectively) (Table 5). Sixty percent of Chinese and 52% of Vietnamese American aged 50 and older who were non-adherent at baseline, reported that they had, or had scheduled, a mammogram in the interval. By contrast, the groups of Asian Indian and Japanese American women over 50 showed no change in adherence to screening guidelines at follow up. Given that the women in these two groups had reported the highest baseline mammography screening rate (81% and 74%, respectively), the non-adherent women in these two ethnic groups may represent a subgroup of women who are resistant to adopting the Western screening methods even though the screening methods are widely used within their own cultural groups [18].

Discussion

While Asian and Pacific Islander women have one of the lowest rates of breast cancer, it has been shown that the longer Asian women live in the United States, the greater their risk of developing breast cancer. This pattern of increasing risk makes the promotion of early detection options of great importance [19-27]. Previous reports claimed that Asian and Pacific Islander women have the lowest breast cancer screening rates [28-30]. In spite of the recent controversy regarding the efficacy of breast cancer screening guidelines in reducing breast cancer mortality rates, the consensus of opinion is that breast cancer screening rates predict stage of detection, and that in turn, influences the odds of survival. Thus promotion of adherence to screening guidelines remains an important cancer control strategy [31-33].

The participants in this study do not constitute a representative sample for each of the population subgroups being studied and thereby reduces the confidence that can be placed on any generalizations that are made from these data. However, with communities where the denominator and location of the constituent group is unknown, it is virtually impossible to recruit a sample that will be representative of the national cultural community. Thus while generalizations from this data must be drawn with caution, the data can still be used to illustrate the importance of gaining a better understanding of the make up of the specific community to be served. This data collection is an essential component of planning for program development and policy making. Indeed it is the experiences of the women who came forward to be served by this educational program that must be taken into account when planning future interventions, not the experiences of women at large. It is the personal experiences of the

participants that can be used to help to foreshadow and avert future health disparities among sub-cultural groups within a specific community. Thus the data collected in this study demonstrate the very significant differences that can exist among women who share many cultural attributes.

This study's hypothesis that there would be no statistically significant differences in attitudes, knowledge, and behaviors among the cultural subgroups taking part in the cancer education program was proven false. This suggests that breast cancer screening promotion efforts could have greater efficacy in reducing health disparities if they were focused on the specific attributes of the Asian subgroup to be served. Insight into baseline behaviors, knowledge, and attitudes enables health care providers, public health educators, and health policy makers to create programs that are format and content specific to the communities where health disparities are greatest. Awareness of baseline differences also help educators to focus their attention to the possible underlying causes of these observed disparities in knowledge, practices and attitudes and to explore whether these differences translate into worse breast cancer outcomes. In San Diego County, for example, a randomized trial is subsequently evaluating a new, more intensive breast cancer screening promotion program that is focused specifically on the four Asian communities shown to be the least adherent to the recommended breast cancer screening guidelines. In another subsequent study, health activists from San Diego's Pacific Islander Cancer Control Network suggested the creation of the telephone-based breast cancer screening promotion program that is currently underway among the region's Chamorro women after this study and subsequent focus groups confirmed that Chamorros only occasionally shop at Asian grocery stores.

Once the baseline, needs assessment data is available for a diverse cohort, focus groups can help to identify the optimal message content and program positioning within each Asian subgroup [34]. Subtle differences can increase the effectiveness of a particular strategy. For example, focus interviews suggested that among Southern California's Japanese and Asian Indian women, screening campaigns might be more effective if they positioned screening as the cultural norm to encourage women in those groups to get screened and help encourage others to do so. In contrast, intervention strategies developed from focus interviews for groups with low frequency screening rates might emphasize the higher screening rates of other Asian subgroups as a community-wide motivator. Focus groups and focus interviews will be essential to getting the call-to-action message precisely honed for each health promotion outcome goal.

Screening recommendations from health professionals have been demonstrated to facilitate screening uptake [35-45]. The two groups with the highest screening rates in this study were drawn from cultural groups with greater overall socioeconomic capacity and hence include women who were more likely to have greater access to health care. Clinic-based education programs, one-on-one screening encouragement, and help scheduling screening appointments, particularly where language is a barrier, can all facilitate screening. Every time health care providers talk with patients who are following positive health promoting behaviors, they have the opportunity to launch a mini "Tell a Friend" campaign by encouraging their patients to encourage others to follow their example. Better than anyone else, their patients will understand the nuances of how to reach out to the individual members within their social group.

While health care providers can play a key role in increasing women's adherence to screening guidelines, the literature suggests that Asian American women may not visit their health care providers as often as women from other ethnic groups [23,46]. Further, culture and lack of English language proficiency pose barriers to forms of Western health care [20,47-50]. For those women, other intervention strategies, such as the *Asian Grocery Store-Based Cancer Education Program*, will continue to be important since they can be honed to deliver culturally and linguistically competent messages to each specific audience at relatively low cost.

The women's high willingness to share breast cancer knowledge with family and friends and their overall perceived need for more breast cancer information suggest that the facilitation of community discussion could be an effective tool in a cancer control strategy. The more discussion about breast cancer screening, the more likely that the associated health promoting behaviors will become a social norm, thereby positively impacting not only women's actions, but also men's understanding of why these screening actions warrant their full endorsement [51]. Recruiting formal and informal community health educators and advocates who are: 1) knowledgeable about community members, norms, and cultural values; 2) early adopters of health promoting behaviors themselves; and 3) willing to initiate well informed discussions about health promoting behaviors in routine conversations, are also likely to help reduce health disparities [52].

The use of multiple intervention strategies simultaneously can increase the community's discussion of cancer screening and thereby elevate its visibility more rapidly. The *Asian Grocery Store-Based Cancer Education Program* and other highly visible outreach programs, media and "word-

of-mouth" campaigns, and recommendations from health care providers can work synergistically to encourage breast cancer screening via frequent, repeat cueing. The shibboleth of marketing is that it requires between seven and 21 messages to be delivered in relatively close succession and in multiple modalities before the health promotion message will achieve top-of-mind awareness. Repeat cueing is critical. Finally, as was discovered in this study, periodic evaluations of the sociodemographic characteristics of the population being served are warranted to assure that the intended socio-cultural audience is, in fact, being reached and that the messages continue to be appropriately honed for each cultural subgroup.

Conclusion

The Pan Asian community is often mistakenly viewed as a homogeneous group. This study's comparison of breast cancer knowledge, attitudes, and screening behaviors among the diverse sub-populations in one geographic region underscores the importance of recognizing both the similarities and differences that can exist within aggregated cultural groups. By recognizing these similarities and differences, health care providers, educators, and policy makers will be better able to understand the community they serve and identify the most efficient strategies toward achieving a reduction in health disparities.

Declaration of Competing Interests

Georgia Robins Sadler, Ph.D – Competing Interests: none declared

Lisa Ryujin – Competing Interests: none declared

Tammy Nguyen – Competing Interests: none declared

Gia Oh – Competing Interests: none declared

Grace Paik – Competing Interests: none declared

Brenda Kustin – Competing Interests: none declared

Authors Contributions

Georgia Robins Sadler, Ph.D. is the principal investigator, designed the study methodology, directed the data collection and data analysis, and led the manuscript preparation

Lisa Ryujin – Assisted with the literature search, the data collection, data analysis, and manuscript preparation

Tammy Nguyen – Assisted with the literature search, the data collection, data analysis, and manuscript preparation

Gia Oh – Assisted with the literature search, the data collection, data analysis, and manuscript preparation

Grace Paik – Assisted with the literature search, the data collection, data analysis, and manuscript preparation

Brenda Kustin – Assisted with the data analysis and manuscript preparation

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