

# Current Gaps in Breast Cancer Screening Among Asian and Asian American Women in the United States

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## Abstract

Over the past two decades, the US Asian population has increased 72%, representing the fastest growth rate of any major racial group. Currently, there are over 20 million Asian and Asian American women in the United States, who identify with at least 1 of 19 different origin groups. Although women of Asian ancestry have traditionally been considered low risk for experiencing adverse breast cancer-specific outcomes, aggregated data may mask health disparities seen among subgroups. In the United States, recent data demonstrate that the burden of breast cancer among Asian women has increased each year over the past decade. We aim to characterize challenges faced by Asian and Asian American women in the United States related to cultural stigma, socioeconomic status, and overall access to breast cancer care. An increased understanding of barriers to breast cancer prevention and treatment efforts is needed to develop more effective strategies aimed at reducing disparities in care among segments of this heterogeneous population.

**Key Words:** Asian American, breast cancer, breast cancer screening, health care disparities, mammography

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## INTRODUCTION

Breast cancer is the most common nonskin malignancy and second leading cause of cancer death in US women. An estimated 281,550 new cases of invasive breast cancer are expected to be diagnosed in 2021, and 43,600 women are expected to die from breast cancer over this same period [1,2]. Breast cancer incidence has been shown to vary by race or ethnicity with non-Hispanic White women demonstrating the highest incidence rate (125.8 per 100,000 women) among all major racial or ethnic groups. Although Asian women, as a single group, are considerably

less likely to develop breast cancer (97.7 per 100,000 women) than non-Hispanic White women, Asian women in the United States have experienced the largest increase in incidence rate each year over the past decade compared with all other major racial or ethnic groups, whose rates have largely stabilized over this same period [3].

Currently, there are over 20 million Asians living in the United States, who identify with at least 1 of 19 different origin groups [4]. Women from Chinese, Filipina, Korean, Japanese, Indian, and Vietnamese backgrounds account for nearly 90% of all Asians living in the United States, with the remaining subgroups accounting for 2% or less each of the total US Asian population (Figure 1). Each Asian subgroup demonstrates distinct characteristics related to language, culture, lifestyle, risk factors, and health care practices; however, it was not until the late 1990s that researchers began to disaggregate national breast cancer screening data to better understand cancer-specific outcomes among this population [5].

Although Asian women have traditionally been considered low risk for experiencing adverse breast cancer-specific events, aggregated data may mask important differences among subgroups that may impact care along the breast cancer continuum of care. Mammography screening, which is the only imaging modality proven to reduce breast cancer-specific mortality, is utilized by less than 65% of Asian

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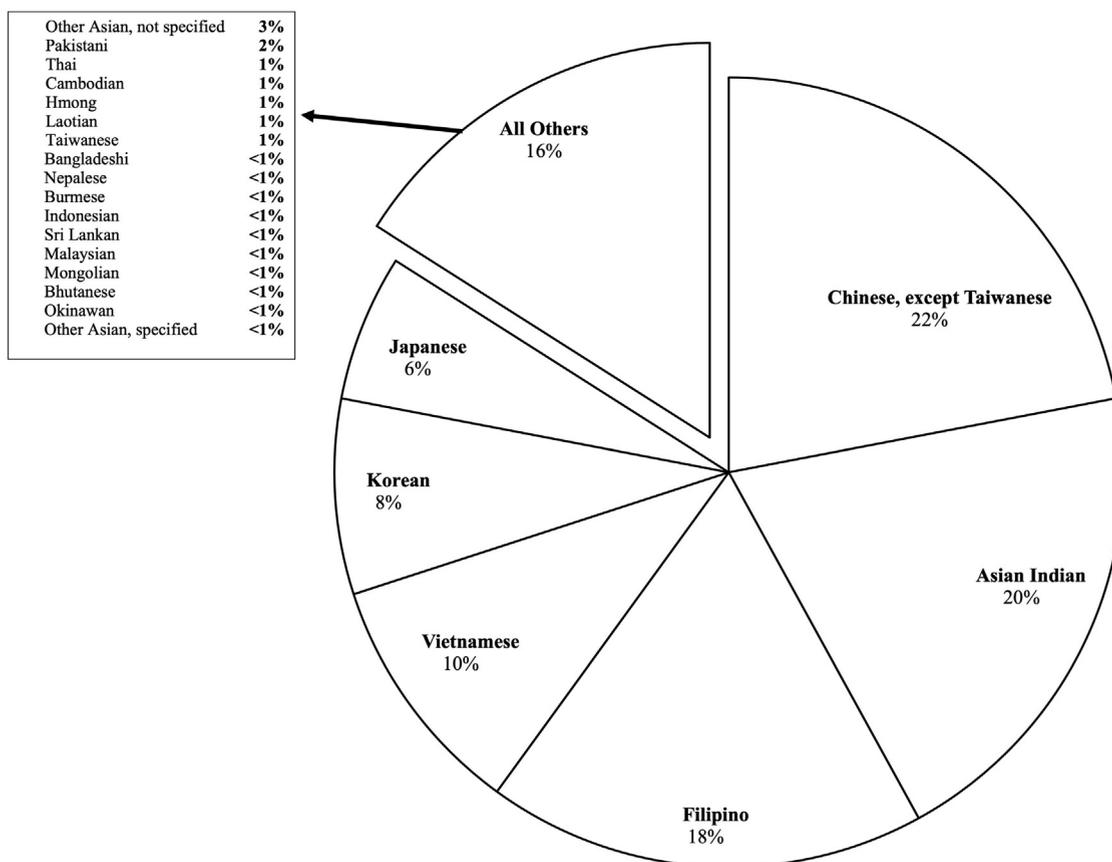


Fig. 1. Asian American population in the United States by ethnic subgroup. Ethnic breakdown of Asian Americans, alone or in any combination, in the United States based on data from 2019 American Community Survey [53]. Category “All Others” includes smaller estimated populations less than 5%. Category “Other Asian, not specified” includes self-identified Asians but ethnicity was not disclosed. Category “Other Asian, specified” includes self-identified Asians whose ethnicity was disclosed but aggregated because of small sample size.

women in the United States [6]. For women receiving screening mammography, Asian women experience longer wait times until their diagnostic examination after an abnormal screening mammogram compared with non-Hispanic White women [7]. Excluding Japanese women, Nguyen et al found that 12.8% to 18.1% of women from each Asian ethnic subgroup received no follow-up, 1 year after their abnormal screening examination [7]. In addition, there is evidence that cancer survival in Asian women may be inflated in national databases; cancer deaths are over six times more likely to not be captured in Asian women compared with both non-Hispanic White and Black patients because of nonrandom censoring [8].

The coronavirus disease 2019 (COVID-19) pandemic has further reduced timely cancer screening in these communities and further exacerbated pre-existing barriers to preventative care. The current knowledge base about breast cancer prevention effort remains sparse in Asian and Asian American women in the United States. An increased understanding of barriers to care in this population is critical for

developing targeted interventions that reduce health disparities experienced by segments of this heterogeneous group. Numerous barriers to care within this population have been identified, including cultural factors, language, insurance coverage, and patient-provider communication. Our purpose is to characterize the challenges faced by Asian and Asian American women in the United States in their experience with breast cancer screening and suggest breast cancer prevention efforts that may assist in overcoming these barriers.

### IMPORTANCE OF DISAGGREGATION

Asian American women, as a single group in the United States, have a breast cancer incidence rate of 97.7 per 100,000 women compared with 125.8 per 100,000 non-Hispanic White women and breast cancer mortality rate of 11.9 per 100,000 compared with 19.4 per 100,000 non-Hispanic White women [2]. Considerable heterogeneity in breast cancer incidence and mortality among Asian subgroups has been observed, however [9].

Miller et al showed a 3-fold difference in breast cancer incidence rates among Asian subgroups in the United States, ranging from 36.9 per 100,000 women in Laotian women to 126.5 per 100,000 Japanese women [10]. Among women who have recently immigrated, cancer incidence patterns seem to evolve over time, approaching rates seen in US women with increasing length of time in the United States. This trend has been linked to acculturation to the Western lifestyle, which is associated with nulliparity or low parity, late age at first full-term pregnancy, no or short duration breastfeeding, hormone therapy use, and Western diet [11]. Excluding Japanese women, Gomez et al found that breast cancer incidence rates of US-born Asian women are nearly 2-fold higher than foreign-born Asian women [11]. US-born Chinese, Japanese, and Filipina women in their study demonstrated rates approaching that of non-Hispanic White women, considerably higher than aggregated data. Their results indicate that breast cancer incidence data in Asian women may be sensitive to relative proportions of foreign-born women.

In addition, mortality rates among subgroups remain highly variable. Trinh et al demonstrated lower breast cancer mortality rates in Japanese women and women classified as “other Asians,” and other self-reported Asian groups demonstrated a survival rate comparable with non-Hispanic White women [12]. Of the six largest Asian subgroups in the United States, Filipina women continue to have the highest breast cancer mortality rate. Factors including younger age at diagnosis and development of more aggressive disease compared women from other Asian subgroups contribute significantly to increased mortality seen in this group [13,14].

## THE HEALTH BELIEF MODEL

The Health Belief Model is a tool that can be used to guide health promotion and disease prevention efforts. The Health Belief Model takes into account the association between a patient’s beliefs and perceived susceptibility of developing breast cancer and breast cancer screening utilization [15]. Asian women are more likely to engage in screening mammography (1) if they perceive they are susceptible to developing breast cancer (perceived susceptibility), (2) if they believe the consequences of not engaging in screening mammography can result in poor health outcomes (perceived seriousness), (3) if they believe screening mammography detects early breast cancer resulting in favorable treatment results (perceived benefits), and (4) if they believe they can reasonably obtain screening mammography services (perceived barriers) [16,17]. Both patient-level factors, including patient knowledge, culture, and socioeconomic status, and system-level factors, including health policy, hospital

characteristics, and resource availability, are important determinants of health care access, impacting numerous steps along the breast cancer continuum.

## CULTURAL FACTORS

According to Jun, cultural barriers to care are believed to play a more significant role in mammography screening utilization than other major racial or ethnic groups [18]. Cultural attitudes and beliefs influence how women perceive both the etiology and management of disease. Cross-cultural differences are often magnified in patient-provider communication and may represent a barrier to care if providers are unable to provide culturally competent, patient-centered care [19]. Cultural and linguistic sensitivity by providers has been shown to significantly influence health-seeking behaviors among Asian women, even when controlling for socioeconomic factors [20]. However, prior reports have shown that Asian Americans are more likely to have poor patient-provider interactions compared with other groups. Ngo-Metzer showed that Asians were more likely to report that their doctors did not understand their background and values, that their doctor did not spend sufficient time addressing their concerns during their clinic visit, and that they felt they were not treated with a great deal of respect compared with non-Hispanic White respondents [21]. Ineffective patient-provider communication exacerbates gaps in breast cancer awareness and knowledge, often experienced by women from low socioeconomic backgrounds or those who have recently immigrated to the United States. Misconceptions related to susceptibility of developing breast cancer, benefits of mammography screening, and cost of breast cancer care are prevalent among many women from these groups [22]. Among women who have recently immigrated, lack of access or negative connotation of mammography screening in their native countries may influence screening behavior in the United States [23]. Even among countries that recommend routine mammography screening including Japan and Korea, participation rates in these countries are only 19.0% and 39.0%, respectively [24].

Asian families largely adhere to a collectivistic approach, emphasizing the needs and goals of the group over the needs and desires of the individual [25]. As a result, competing interests including familial obligations may result in women prioritizing the needs of others over receiving preventative care services such as mammography screening. Spirituality has also been reported as an important factor in preventative health engagement among Asian American women; for example, Lee et al showed that a significant proportion of Korean women in their study placed more importance on spiritual beliefs over physician recommendations [26]. Asian women who practice traditional or complementary medicine based on cultural

and historical practices have also been shown to be less inclined to actively participate in preventative services and to not disclose these practices to their physicians [27]. For women who may have complementary or alternative perspectives to Western medicine, it is imperative that providers respect patients' values and beliefs in encouraging them to receive screening, which can be supported by engaging community and spiritual leaders in Asian communities on a population level.

Language represents one of the most formidable barriers to care for many Asian Americans, particularly women who have recently immigrated to the United States. Linguistic barriers can prevent women from navigating the health care system without assistance; these women often face significant barriers when making appointments, locating an appropriate facility for care, and communicating with health professionals. Women with limited health literacy and limited English proficiency are at the highest risk of poor patient outcomes, including receiving delayed care and late-stage breast cancer diagnosis [28,29]. Language barriers may also contribute to mistrust that is often seen between patients and providers from different cultural backgrounds; some women prefer to wait to be seen by health care providers in their native country, in which they can be provided culturally and linguistically compatible care. These perceptions are commonly seen reported among Chinese, Korean, and Indian women as screening completion was negatively associated with patient-physician language discordance for mammography [30]. It is also extremely important in overlooked Asian groups such as Hmong women who report some of the lowest rates of breast cancer screening and cite language as one of the biggest barriers to screening [31]. Lastly, high rates of fatalism have been reported among certain Asian subgroups. Associating breast cancer with "a death sentence" may obviate the need for these women to pursue routine screening [26,32,33]. For example, Kim and Menon reported that fatalistic beliefs in Korean women were shown to influence their readiness for mammograms [34]. Similarly, this has been seen among Chinese and other South Asian women, specifically those who were Muslim [32,35]. Overall, women who experience cultural and linguistic barriers to care are at increased risk of presenting to breast imaging only after they develop symptoms of breast cancer; clinical visits, even when not related to breast care, should be leveraged to emphasize the importance of cancer screening and prevention when possible.

## HEALTH SYSTEM-RELATED FACTORS

Health insurance coverage represents one of the strongest independent predictors of mammography screening utilization [36]. Before enactment of the Affordable Care Act

(ACA), Asian Americans were significantly more likely to be uninsured compared with non-Hispanic White patients. Since 2018, ethnic disparities in insurance coverage previously seen between these two groups have markedly reduced [37,38]. Despite Asian Americans, as an aggregated group, currently having the lowest rate of uninsured patients than any other major racial group in the United States, coverage rates are not uniform across subgroups. Korean and Vietnamese Americans demonstrate lower rates of insurance coverage compared with other Asian subgroups [39]. In addition, Native Hawaiians and Pacific Islanders, who are often grouped with Asians as a single group, also demonstrate significantly higher rates of uninsured women when compared with other Asian women.

Despite Asian women having higher insurance coverage rates compared with Black and Hispanic women, Asians are less likely to receive routine mammography screening than these groups [40]. Differences in screening utilization are largely seen among privately insured patients, indicating that health care knowledge and cultural factors may play a more significant role in mammography screening utilization than socioeconomic factors. Public health efforts focused on improving breast cancer screening rates that have been traditionally targeted toward the publicly insured and uninsured Asian Americans may need to be expanded to include women with private insurance.

Gaps in insurance coverage largely persist in nonelderly women compared with non-Hispanic Whites; this group includes noncitizens who may face eligibility restrictions under the ACA. Women who have recently immigrated to the United States must wait 5 years after obtaining lawful status before they can enroll in Medicaid coverage. Undocumented immigrants, who are often not included in study data, are not eligible for government-sponsored insurance and face significant barriers in receiving preventative care [20].

## SOCIAL AND ENVIRONMENTAL FACTORS

Income inequality, a measure of the economic gap between the rich and poor, is rising rapidly among Asians in the United States. Asians in the top 10% of income distribution make nearly 11 times as much as Asians in the bottom 10%, making this racial group the most economically divided in the United States [41]. In addition, Hmong, Bhutanese, Bangladeshi, and Burmese subgroups have significantly higher poverty rates compared with other Asian subgroups, which is higher than the US average [42]. Asian women from low socioeconomic backgrounds are proportionally more likely to be uninsured and to utilize fewer health care resources when matched to non-

Hispanic White women from similar socioeconomic backgrounds [43].

Newly immigrated Asians commonly face income challenges when moving to the United States. Over the past two decades, the US Asian population has increased 72%, largely driven by naturalized immigration. Among all Asians in the United States, nearly 6 in 10 were born outside of the United States in 2015 [44]. Women who have immigrated from Asian countries are less likely to receive a mammogram and to be diagnosed with early-stage breast cancer compared with US -born Asian women. For example, Boxwala et al state that Asian Indian women who have lived longer in the United States were more likely to screen for breast cancer [45]. Many women who have recently immigrated often move to ethnic enclaves—highly concentrated ethnic neighborhoods that maintain cultural norms and customs of that group, which is also distinct from the surrounding area. Mobley et al reported an association between living in highly segregated ethnic areas and increased odds of

being diagnosed with late-stage breast cancer, often because of barriers related to language and socioeconomic status [46]. Women living in these communities often underuse services that are culturally and linguistically incompatible.

## PATIENT- AND SYSTEM-ENABLING FACTORS

Community-based programs have been used to improve breast cancer awareness and knowledge about mammography screening among Asian subgroups with success, primarily targeting recent immigrants to the United States (Table 1). For example, the Korean Immigrants and Mammography-Culture-Specific Health Intervention is an educational program that targeted women 40 years of age and older who had not had a mammogram in the past year and their husbands [17]. To promote mammography screening adherence in participants, a Korean-language breast cancer educational video was distributed to participants with the goal of increasing breast cancer knowledge,

**Table 1.** Breast cancer interventions and barriers addressed

Breast Cancer Awareness and Knowledge	Barriers Addressed	
	Cultural Factors	Health Care Access
Community-based breast cancer educational programs to encourage women to engage in breast cancer screening and diagnostic imaging follow-up; for example, Witness Project & Help You Take Care of Yourself Program [50]	Distribution of breast cancer education materials, including health maintenance print outs (cards), in different languages to reach women with limited English proficiency	Patient navigation programs that educate and guide patients through the breast cancer care continuum [49]
Leveraging Asian news and media sources to distribute information about breast cancer imaging services to women who may be at increased risk of cultural barriers	Family-based education programs targeting women at screening age and their family members to improve breast imaging engagement, for example, KIM-CHI Program [17]	Increased allocation of funds in ethnic enclaves to enhance breast imaging services and CDC-funded programs targeting Asian and Asian American women to improve engagement
Improving patient correspondence materials, including “recall” lay letters, to sixth-grade reading level to meet AMA recommendation, addressing barriers related to health literacy [54]	Patient outreach utilizing ethnic networks such as churches, community centers, and grocery stores to reach specific ethnic communities	Increased flexibility of mammography appointment times to extend patient access and address competing interests including family obligations, job responsibilities, and other medical conditions
Breast cancer survivor-led education programs by women from the community to leverage shared cultural values in increasing breast cancer awareness	Training for health care professionals to better communicate and treat women from different communities; for example, Communicating Across Cultural Boundaries Program [50]	Mobile mammography screening services in underresourced communities, including ethnic enclaves, to improve access to screening mammography

CDC = Centers for Disease Control and Prevention; KIM-CHI = Korean Immigrants and Mammography-Culture-Specific Health Intervention.

while also promoting spousal support of mammography screening. The Korean Immigrants and Mammography-Culture-Specific Health Intervention group showed a statistically significant increase in mammography uptake at 6 months and 15 months postintervention. Culturally tailored initiatives that utilize existing social networks at ethnic churches or places of worship, community centers, and grocery stores represent potential avenues to identify women who may benefit from these programs.

Patient navigator programs can help support and guide patients through the health care system. Numerous programs established through collaborative partnerships between hospitals and community organizations have demonstrated efficacy in improving early breast cancer detection and reducing delays in treatment initiation [47,48]. This was accomplished in Chicago's Chinatown through the Chinatown Patient Navigation Collaborative [49]. Through the program, patient navigators enrolled women in insurance plans, educated women about their insurance coverage, informed women about patient rights, helped women find in-network primary care physicians, and facilitated referrals for mammography screening. Navigators also developed bilingual health insurance booklets and conducted group workshops to aid women in navigating their health insurance plans. Such programs aid in removing both cultural and linguistic barriers to care that may prevent women from accessing the health care system.

Increased utilization of programs that teach health care professionals how to communicate more effectively with women from diverse cultures can aid in efforts to improve patient-provider interactions among Asian women. For example, programs such as the Communicating Across Cultural Boundaries curriculum transfers applicable knowledge to health care providers about the needs and barriers facing Asian American groups related to breast health [50]. These programs can be leveraged to support improved patient-provider communication and to engender trust by providing health care providers additional tools to be more sensitive to the needs of diverse groups. Focusing on patient provider interactions is key, because satisfactory patient-provider interactions have been directly associated with increased cancer screening rates among Asian women [46,51].

Mobile mammography and free transportation services can help address transportation barriers seen in certain communities including ethnic enclaves, in which cultural, linguistic, and logistical barriers to care are widely prevalent. In addition, increasing appointment times outside of normal business hours increases flexibility for women to schedule examinations, reducing barriers related to competing

interests stemming from family obligations, job responsibilities, and comorbid conditions. Programs similar to the Pink Card Program, which provide walk-in screening appointments for patients due for mammography screening, help to remove the need for prescheduled appointments, supporting added flexibility for women to schedule their examinations [52].

Lastly, there is a need for government and health care organizations to educate women about the ACA and associated protections including no cost sharing for screening mammography examinations; this is imperative in Asian women in the United States who have paradoxical low uninsured rates yet high rates of mammography screening nonengagement. Policy changes should be expanded to consider vulnerable women who may need additional diagnostic testing or procedures. Working with Asian community leaders and organizations to educate women, while translating educational materials in different Asian languages, can expand public health efforts to reach more women. Increasing allocation of funds in resource-poor areas including ethnic enclaves will help in these efforts.

In conclusion, Asian women in the United States represent a heterogeneous group with distinct sociocultural characteristics. The "model minority" myth, however, may result in segments of this heterogeneous population being overlooked, who may face cultural, socioeconomic, and linguistic barriers to care. It is critical that vulnerable groups within the Asian community including recent immigrants, those from low socioeconomic backgrounds, and those facing linguistic barriers to care are provided necessary resources to receive routine breast care.

The COVID-19 pandemic has led to increased urgency after nationwide cessation of mammography screening for the first part of 2020. Furthermore, recent attacks on members of the Asian American community, which have garnered widespread attention over the past few months, have highlighted the need for increased cultural sensitivity toward diverse groups in the United States both inside and outside of the health care setting; making strides toward supporting a more inclusive definition of American identity regardless of acculturation status will help in these efforts. Lastly, it is important to listen and elevate the voices of women from Asian communities to utilize their awareness, knowledge, and experiences to improve breast cancer care in vulnerable women from this population. Here, we have acknowledged that gaps exist; the next step is establishing collaborative partnerships, including radiologists, to address specific barriers to care in vulnerable groups within this population.

## TAKE-HOME POINTS

- Although women of Asian ancestry have traditionally been considered low risk for experiencing adverse breast cancer-specific outcomes, aggregated data may mask health disparities seen among subgroups.
- Asian American women face significant barriers to breast cancer screening, with notable differences by ethnicity and recent immigration status.
- Current gaps that pose challenges to mammography utilization among segments of this population include breast cancer awareness and knowledge, socioeconomic status, and cultural factors related to beliefs, stigma, and language.
- Tailored patient- and system-level interventions targeting Asian subgroups are needed to address disparities in care experienced by vulnerable groups.

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