

Primary Healthcare Considerations for Asian American/Pacific Islander Women: A Brief Review of Racial/Ethnic Differences and Disparities

Sophia Dang, B.A., Jonathan C. Li, B.S.

Sidney Kimmel Medical College, Thomas Jefferson University,
Philadelphia, PA 19107

Introduction

The Asian/Pacific Islander (API) population, both native and American-born, in the United States are an understudied and underreported population in medical literature. Asian Americans are defined, in the U.S. government, as “a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent.” Whereas Pacific Islanders are defined as “a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent.” Recognition of this disparity over the past 20 years has been growing and has prompted increased efforts to understand and appropriately report the medical challenges this population faces. Many inherent barriers exist such as cultural conflicts of traditional and contemporary medicine, immigration status, distrust of the healthcare system, language barriers, understanding of medical conditions, and broad diversity within the API population itself. These barriers tend to affect immigrant-status or native-born API more than American-born API. The disaggregation of data within the API population has significantly impacted our understanding of the broad heterogeneity between subgroups and unique differences in disease burden. Presented below is a brief review of the recent literature from the United States to illustrate the emerging differences that have been reported between API women and other races and within the API population itself.

Topics:

- **Preventive care:**
 - Cancer Screening
 - Pap Testing
 - HPV Vaccine
 - STI Screening/Prevention
 - Hepatitis B
- **Cardiovascular health:**
 - Cardiovascular Disease
- **Gynecologic health:**
 - Breast Cancer
 - Gynecologic Cancers
- **Obstetric health:**
 - Infertility
 - Gestational Diabetes
 - Postpartum Depression
 - Breastfeeding?
- **Geriatric health:**
 - Osteoporosis
 - Senior Care - Utilization of Healthcare Agencies vs. Family Care
 - Living will, advanced directive planning
- **Conclusion**
 - Summary of overall findings
 - Analysis of the importance of findings
 - Future directions

Preventive Care

Cancer Screening:

Cancer is the most common cause of death among API women in the United States and across all API subgroups with the exception of Asian Indians where it is the second leading cause of death. Compared to non-Hispanic White (NHW) women, API women have a higher incidence of cancers with infectious etiology such as hepatic, stomach, and cervical cancers.¹ Cancer screening rates among API women have been reported to be below national objectives.

Mammography screening rates among API women were reported in 2015 and found to have risen from 76.1% to 82.6% between 2001 and 2009, meeting the *Healthy People 2020* objective screening rates of 81.1%. However, South Asian women were the only subgroup to show a decline in screening rates. Both

Korean (64.7%) and South Asian (69.7%) subgroups did not meet the *Healthy People 2020* objective screening rates in 2009.² Breast cancer incidence among the API population will be addressed later.

Collectively there is a need to improve screening rates as there is a disproportionate incidence of infectious disease-related cancer in this population and screening rates are below national objective rates among specific subgroups. Providers for API women, particularly non-U.S. born, should have high awareness and suspicion for HBV, HCV, H. pylori, and HPV in this population.

Pap Testing:

Chawla et al. found that cervical cancer screening rates among API women remained relatively stable from 77.3% to 80.8% between 2001 and 2007. Screening rates were lowest among Chinese (77.5%) and Korean (78.0%) subgroups and women between ages 21 and 29 years.² Low rates have also been reported among Southeast Asian women. Robison et al. in 2014 reported that among Chinese and Southeast Asian women, 25% of women (n=96 & 132, respectively) had never had a pap test or did not know if they had a Pap test. Notably, a significant lack of knowledge among these populations regarding the relationship between HPV and cervical cancer was reported.¹⁰ Increasing knowledge about HPV as an infectious cause of cervical cancer may prove beneficial, however, this intervention has not been shown to be associated with increased Pap testing rates among 18 to 28 year old API women.¹¹ This may be related to a traditionally conservative culture surrounding sexual health among the API community and possible fear of stigmatization despite receiving counseling from a physician. Among older API women living in ethnic communities, it has also been found that false beliefs of “feeling healthy” and “never have engaged in vaginal intercourse” provides immunity towards developing cervical cancer.¹² It is unknown how pervasive these perceptions are among younger generations and the role older generations play in their promotion. Factors found to positively influence Pap testing include older age, being US-born, and having comfort with the test.¹¹ Thus, interventions to increase Pap testing should target younger, foreign-born API women, and focus on increasing knowledge and levels of comfort with the test.¹¹

HPV Vaccine:

Between 2008-2010, HPV vaccine uptake among API girls aged 9-17 in 2008-2010 was lowest among all races. They had the lowest rates of vaccine initiation (≥ 1 dose) at 12.4% compared to 27.2%, and of completion (3 doses) at 1.9% compared to 10.3% for all other races/ethnicities.¹³ Even among undergraduate API women (18-26 years), HPV vaccine completion has been found to range from 38.6%-65%, which is lower than NHW women (60.7%-77.8%), and with lower rates of vaccine literacy.^{14,15} Though less data is

available regarding specific barriers to equalizing HPV vaccination rates among API women to control population rates, it is likely that they are similar to those regarding Pap testing.

STI Screening/Prevention:

Cipres et al. reported in 2018 on racial and ethnic differences in STI prevention strategies among young women in the U.S. Compared to NHW women, API women were less likely to utilize prevention strategies prior to intercourse such as discussing STIs, STI testing, having “safe partners”, and limiting sexual partners and frequency (aOR 0.44; 95% CI 0.23-0.84). API women were also less likely to use using frequent STI testing as a protective strategy (aOR 0.53; 95% CI 0.30-0.92), less likely to report discussing condom use with their providers, and less likely to have asked partners about STIs when compared to NHW women. They also found that API women were most likely to have worried about STIs, at an incidence of 62%, but least likely to have an STI prevention plan (61%). Comparatively, use of STI prevention plans for other races were Hispanic (54%), NHW (50%), and NHB (48%).

They found that Asian women valued a method that prevents pregnancy, offers privacy, does not require a clinic appointment, is preferred by a partner, and is recommended by a friend. This study also found that they were least likely to have a household income of <\$60,000 and least likely to have public insurance (35%). This suggests that the API subjects in this study were of higher economic status than their comparison groups. It is unknown if a low public insurance rate reflects high rates of private insurance or a lack of insurance. Generally, API adolescents have been reported to have comparatively lower rates of STIs, however, they are particularly understudied and these rates may be underreported. In this study, despite overall higher socioeconomic status, there appears to be a disparity in the use and knowledge of healthcare resources regarding STI prevention and treatment suggesting that utilization is the issue and access is not.²² Low rates of discussion reported between partners about STIs, STI testing, and condom use, and value in contraception that offers privacy without requiring a clinic appointment likely reflects the conservative nature of API culture regarding sex and fear of stigmatization within the community.

Hepatitis B:

Hepatitis B virus (HBV) is the second most common cause of cancer worldwide. It is particularly endemic among Asian countries, and API are frequently undiagnosed chronic carriers or of non-immune status. As previously mentioned, API experience higher rates of cancer from infectious etiologies. Lin et al. in 2007 reported a chronic HBV infection rate of 8.9% among API adults with 65.4% unaware of their status. Chronic infection affected men at 12.1% and women at 6.4%. Among those who were not infected, 44.8% lacked antibodies to

confer immunity. Self-report of vaccination proved an unreliable method to assess protection against HBV; of the 12% who reported vaccination, 5.2% were chronically infected and 20.3% lacked protective antibodies. Those born outside the U.S. were 19.4 times more likely to be chronically infected.²³ Among API pregnant women, Chinese American mothers are 10 times more likely to experience HBV infection than Asian Indian and Japanese American mothers.²⁴ Although there are clear guidelines regarding screening for HCV infection, the practice of HBV screening among adults is less consistent unless the patient is symptomatic. All pregnant women are regularly screened for HBV in the U.S., however for older API women who are not U.S. born, if there is no definitive evidence of immunity despite a history of immunization, screening should be performed.

Cardiovascular health

Cardiovascular Disease (CVD):

Cancer is the most common cause of death among U.S. API women (28.6%) followed closely by heart disease (23.5%), and cerebrovascular disease (9.3%).¹ Collectively, it is reported that Filipino patients have the highest rate and risk for CVD while Chinese patients have the lowest rate and risk factors among API subgroups. Rates of hypertension and dyslipidemia are comparable among Cambodian, Vietnamese, and Filipino patients.³⁹ Consistent with these findings, South Asians are reported to be a high-risk API subgroup for CVD.⁴⁰ These subgroups are reported to remain high-risk in the absence of classic BMI risk factors, hence the concept of a “South Asian phenotype”.

Overall, the prevalence of hypertension among adult API is reported to be about 25%⁴¹, although rates have been reported to be higher among specific subgroups.⁴² Compared to NHW women, API women have greater proportionate mortality from hypertensive disease, higher mortality rate and proportion of mortality, but lower mortality rates from heart failure.⁴³ Due to the high mortality burden, focus among this population should be on disease education, medication adherence, and lifestyle interventions such as dietary salt minimization and aerobic exercise.

Gynecologic health

Breast Cancer:

In 2017, the American Cancer Society reported that among all racial groups API women experienced the greatest overall increase in breast cancer

incidence at 1.7% per year between 2005 to 2014. Responsible for this increase was hormone-receptor-positive breast cancers while hormone-receptor-negative breast cancers decreased within this time period. Despite these increased rates of diagnosis, overall breast cancer death rates have decreased in all racial groups.³

The stage of cancer at time of diagnosis, breast cancer type, and prognosis differs between API subgroups. In a 2015 study on U.S. API women with invasive breast cancer, Japanese women were most likely to be diagnosed with Stage I cancer (56.1%), followed by Chinese women (50.1%), other Asian women (45.2%), and South Asian women (40.4%). In comparison, Stage I incidence was 50.8% in NHW women, 40.1% in Hispanic White, and 37.0% in Black.⁴

Chinese and Japanese women have been reported to have a higher proportion of good-prognosis cancers than Filipinos and Koreans (66.7 and 80.0% vs. 48.5% and 47.1%, respectively). Filipino women were more likely to have Her-2/neu positive cancers than other API ethnic groups (45.6% vs 23.6%) and Korean women were more likely to have triple negative breast cancer than other API ethnic groups (23.5% vs 7.5%).⁵ Overall, breast cancer mortality rates are lowest among API women at 5.3%, compared to >6.0% for white and blacks.⁴

Increased rates of breast cancer diagnosis are likely due to increasing mammography screening rates among this population. These increased diagnosis rates do not equate to increased mortality rates. However, there are major differences in breast cancer type and incidence of good-prognosis cancer between API subgroups. These differences are likely multifactorial and include differences in genetics and lifestyle.

Gynecologic Cancers:

Rates of cervical cancer have been reported to be higher among API women than NHW women.¹ However, ovarian cancer incidence among API women are lower than NHW women⁶ and published data is limited on the incidence of endometrial cancer although U.S. born API women seem to be at higher risk.⁷

In 2017, Rauh-Hain et al. reported temporal trends in treatment and survival for gynecologic malignancies (endometrial, ovarian, cervical, and vulvar) across races and ethnicities from the National Cancer Database (2004-2014). It was found that for ovarian cancer, Asian women were most likely to undergo lymphadenectomy for stage I cancer (79.5%), and more likely to receive surgery and chemotherapy for stage II cancer (76.6%) than most other races. However, compared to NHW women, Asian women were 22% less likely to receive adjuvant chemotherapy for high-risk early stage ovarian cancer and were also 20% less likely to receive both surgery and chemotherapy for stage II-IV ovarian

cancer. Despite these difference in treatment rates, five-year disease-specific survival was highest among Asian women at 65.5%.⁸

For endometrial cancer, there were no significant differences in lymphadenectomy rates among Asian women, however, they were 4% less likely to receive radiotherapy than white and black women. Again, survival was highest among Asian women at 87.2%.

For cervical cancer, Asian women were most likely to receive chemoradiotherapy at rates 17% higher than NHW women. Five-year cancer-specific survival was second highest at 74.4% with the highest survival rates among Hispanic women at 75.7%.^{8,9} They did not have any data to report on Asian women regarding vulvar cancer.⁸ Overall, despite some differences in diagnostic procedure use and treatment, gynecologic cancers among API women have high survival. Further research and analysis of disaggregated data are necessary to better understand if there are disparities between API subgroups and why survival is high in this population of patients.

Obstetric health

Infertility:

Despite similar characteristics, API women have consistently been found to have a lower response to assisted reproductive therapy (ART) than NHW women (OR 0.71; 95% CI 0.64-0.80) and a decreased life-birth rate (OR 0.69; 95% CI 0.61-0.77).^{16, 17} As reported in 2017, among all races, utilization of ART was highest among Asian women (26.4%) with decreased ovarian reserve as the most common cause of infertility reported among Asian women. A possible explanation for this is that API women have the highest number of “*high FMRI* mutations (CGG n>34)” which is associated with low functional ovarian reserve, even when age is accounted for.¹⁶

Apart from a higher incidence of decreased ovarian reserve, there are significantly higher rates of PCOS, cardiometabolic disease, and endometrial pathology among reproductive-aged API infertility patients compared to NHW infertility patients.^{17,18} Suspicion needs to be high among these patients as they tend to be younger, and non-obese with similar BMI to comparison populations, and are at a six-fold greater odds of having PCOS.¹⁷ Additionally, API patients with PCOS tend towards a milder hyperandrogenic phenotype and more commonly present with acanthosis nigricans, although not part of PCOS diagnostic criteria.¹⁸

API women tend to wait significantly longer before seeking fertility evaluation.²⁰ This is likely because avoiding the stigmatization of infertility was reported to be the greatest concern to Asian-American women seeking infertility treatment.²¹ Being aware of these trends of infertility among the API population are important and supports the notion that providers should initiate conversation earlier about the possibility of infertility with API patients. Screening for PCOS and metabolic syndrome in the absence of classic signs and symptoms may be necessary. The stigmatization of infertility additionally warrants early conversation and normalization with patients.

Gestational Diabetes:

API women of reproductive age (24-32 years) are reported to be least likely among varying races to have diabetes (4.5%), least likely to be undiagnosed (11.4%), and third most likely to have prediabetes (25.1%).²⁵ Since API patients tend to have structurally smaller phenotypes, Araneta et al. reported that lowering the BMI threshold to screen for type 2 diabetes (T2DM) decreases rates of missing the diagnosis. They found that limiting screening to a BMI ≥ 25 cutoff would miss 36% of API with T2DM and lowering the BMI cutoff to ≥ 23 would improve sensitivity and lower miss rates to $\sim 15\%$.²⁶

Despite low reported rates of T2DM among API women, statistics for API women are commonly underreported and gestational diabetes disproportionately affects API women, particularly among specific API subgroups.²⁶ Incidence of gestational diabetes (GDM), as reported by Pu et al. in 2015, are most prevalent among Indian, Filipino, Vietnamese, and Chinese women with age-adjusted rates of 19.3%, 19.0%, 18.8%, 15.3%, respectively, when compared to NHW, non-Hispanic black, and Hispanic women (7.0%, 4.9%, 13.3%, respectively). Japanese and Korean rates of GDM were found to be 9.7% and 12.9% respectively, higher than NHW and non-Hispanic black but lower than Hispanic.²⁷ Hunsberger et al. report GDM prevalence among API women at 13.4% with low BMI (≤ 26) and 30.3% with high BMI (>26).²⁸

BMI is a well-reported risk factor for the development of GDM among all racial/ethnic groups. However, API women tend to develop GDM at a lower BMI. Although weight loss and BMI management are usually rather effective for GDM, Hedderson et al. found that weight reduction to a BMI <25 kg/m² would reduce the risk for developing GDM by 65% in black women but this reduction was only 23% in API women. This suggests that API women require and may benefit from prevention strategies apart from weight management.²⁹ Further work also needs to be done to understand why this population of women, with very low rates of diabetes, have such high rates of GDM.

Postpartum Depression (PPD):

The incidence of PPD among API women has been reported as both high (10.7%)³⁰ and low (4.6%)³¹ depending on U.S. region. API women are 3.2 times more likely to receive a diagnosis of PPD compared to NHW, even after accounting for sociodemographic and maternal stressors. However, despite being more likely to receive a diagnosis of PPD, API women were reported to be least likely to have had a conversation with their provider about PPD (<40%) compared to women of each other race individually (>50%).³⁰

It is likely that PPD is commonly missed and underdiagnosed. API women tend to manifest depression somatically. In one study, it was found that despite not perceiving high levels of stress, 23.7% of new Chinese mothers scored high for depressive symptoms. About half of the mothers experienced interrupted sleep, a decrease in memory, and a lack of sexual desire.³² Prenatal diagnosis of depression³³ and high physical stress³⁴ increased the likelihood of diagnosing PPD which was highest for API women. The evidence is conflicting regarding whether giving birth to a female infant is associated with PPD diagnosis as traditional API culture is paternalistic and promotes preference for male children.^{33,35} API women are a high-risk population for PPD and should be screened regularly with a focus on somatic symptoms as the more common presentation.

Breastfeeding:

In 2010, *Healthy People* set a goal for 50% of newborn infants to be exclusively breastfed for the first 6 months of life. API women are consistently found to have a very high incidence of breastfeeding initiation, however, this practice does not persist throughout the first 6 months of life.⁴⁴⁻⁴⁶ Singh et al. previously reported that Asian women in the U.S. have the highest rates of breastfeeding initiation (89%) when compared to women of other races (51-77%), however, these rates decline rapidly at 3, 6, and 9 months (71%, 39%, 13%).⁴⁶ Another study from 2011 analyzing breastfeeding practices among WIC users across the U.S. also found that Asian women had the highest rates of breastfeeding initiation at 80.37%, with 6 month rates at 15.83%.⁴⁴ Even lower 6 month rates have been reported. In California in 2008, only 5.3% of all Asian mothers participating in the Women, Infants, Children (WIC) program were found to be exclusively breastfeeding at 6 months. Among Vietnamese women in this population, it was found that rates also dropped significantly at 6 months among mothers who previously practiced exclusive breastfeeding overseas. Reasons cited for decreased breastfeeding practice after immigrating to the U.S. include lack of social support to continue traditional postpartum rest and diet practices. As a result, mothers feared the milk they produced was inferior to formula.⁴⁵

This postpartum practice of rest and special diet is also seen among Chinese-American mothers. Even those who are U.S.-born are heavily influenced by cultural traditions practiced by older generation family members. Most well-described is *zuo yuezi* which is a practice where the mother stays at home for the

first month of the postpartum period, is cared for by family members, and eats a special traditional diet. This practice is meant to promote recovery after birth and to promote milk production for breastfeeding. However, studies have not found these *zuo yuezi* traditional diets to promote milk production, and actually risk decreasing milk production due to undernutrition. Additionally, the restrictive nature of staying at home is often psychologically stressing and further contributes to decreased milk production and lactation difficulties.⁵⁰

Within API subgroups, significant disparities exist in breastfeeding practices. A meta-analysis using six studies on breastfeeding practices from 1969-2013 for Native Hawaiians and Pacific Islanders found that breastfeeding initiation rates were 46.5%, 95% CI (26.9–66.1) and exclusive breastfeeding rates were 40.8%, 95% CI (17.8–63.7). There was significant variability in breastfeeding duration between studies and meta-analysis could not be performed. Overall, this study determined that breastfeeding practices within this population is heterogenous and disparities exist between subpopulations.⁴⁷ Another study examining breastfeeding in API mothers in Hawaii found that prevalence ratios for exclusive breastfeeding for each API ethnic group were less than that of NHW women. Adjusted prevalence ratios, in order of least to greatest, were: Samoan (aPR = 0.54; 95% CI 0.43-0.69), Filipino (aPR = 0.58; 95% CI 0.53-0.63), Japanese (aPR = 0.58; 95% CI 0.52-0.65), Chinese (aPR = 0.64; 95% CI 0.58-0.70), Native Hawaiian (aPR = 0.67; 95% CI 0.61-0.72), and Korean (aPR = 0.72; 95% CI 0.64-0.82) compared to white mothers.⁴⁸ In Massachusetts in 2003, it has been reported that Cambodian women have the lowest breastfeeding initiation rates of all races and ethnicities (50.3%).⁴⁹

It was found that breastfeeding education and continuous support from Vietnamese-speaking peer counselors may contribute to higher breastfeeding rates in this population.⁴⁵ Among Chinese mothers, utilization of language-appropriate fact sheets doubled breastfeeding rates at 6 weeks postpartum.⁴⁶ In the Massachusetts study on breastfeeding among Cambodian women, one major modifiable factor was found to be the lack of a culturally traditional diet in the hospital. Introduction of a culturally appropriate hospital menu and implementation of a teaching program about the benefits of breastfeeding brought breastfeeding initiation rates up to 66.7%, similar to non-Cambodian rates of 68.9%.⁴⁹ Overall, culturally appropriate education and recognition of sociological factors are key to promoting continuation of breastfeeding among API women.

Geriatric health

Osteoporosis:

It is suspected that API women have a higher risk of osteoporosis due to lower BMI and low dietary calcium. Based on WHO criteria, API are reported to have the second highest rates of osteoporosis (10%) (T-score \leq -2.50), and the

highest rate of osteopenia (50.1%). Compared to women from other races, Asian women were found to have the lowest mean T score.³⁶ However, by using Chinese American bone marrow density (BMD) reference data which utilizes higher T-scores by 0.4-0.5 units, the prevalence of osteoporosis was reduced from 29.6 to 12.6 %. This change was vastly more significant among the 50-64 year age group (22.4 to 8.1%) than the 65-79 year age group (43.2 to 21.0%).³⁷

However, despite differences in BMD, they do not reflect an increased fracture risk and reported fracture rates for API women are the lowest within each age group when compared to other races. Additionally, being >80 years of age had markedly higher fracture rates but this trend was less obvious among the oldest Asian women.³⁶ Despite high rates of osteoporosis and osteopenia, it does not seem API women suffer significantly from an increased fracture risk. These observations are likely due to an overdiagnosis from using WHO criteria. There is still benefit to improving bone density in this population. Patient education for API women has been shown to effectively increase both calcium and vitamin D intake.³⁸

Aging and Advance Care Planning:

A survey of elderly patients (65 and older) in California (n=12,508) found that White and U.S.-born Asian patients have better health than other races/ethnicities with foreign-born Asian patients having the poorest self-reported health. Major differences between U.S.-born and foreign-born Asians in this study were high school education (96.5% vs 72/5%), working status (20.5% vs 9.6%), and a higher rate of delayed prescriptions (4.1% vs 7.2%).⁵¹ Acculturation has been found to play a major role in self-reported health of foreign-born Asians.⁵² Among older Chinese immigrants, poor spoken English proficiency and low health literacy were associated with poor self-rated health, independent of other factors (unemployment, chronic health conditions, and having a primary doctor who was ethnic Chinese). Access to culturally appropriate health services was not found to overcome these barriers, emphasizing the importance for clinicians to specifically address these barriers when caring for older API.⁵³

Immigrant status has been reported to be associated with poorer mental health status.⁵¹ In general, older Asian Americans were found to have the greatest risk of suicide and Asian American women had the highest suicide rate among older women of all ethnic groups from 2005 to 2009.⁵¹ Menkin et al. report that there is no relationship between age-expectations and depression for Chinese and Korean adults. They suggest this is due to having low expectations for age-related function. Both Chinese and Korean American adults expected more age-related functional decline (physical, mental, and cognitive) than African American and Latino study participants. Chinese Americans expected the most age-related functional decline.⁵⁴ The high incidence of suicide among older API may be related to more stress from acculturation but also a loss of social support away

from friends and family due to a shift in generational culture regarding elderly care.

In a survey collected the AARP, they report that it is common practice for older API adults to live in multigenerational households (17% overall) with variation between API subgroups ranging from 14% among Chinese to 23% among Filipino. Larger households, defined as 6 or more members over the age of 18, have a reported prevalence of 28% among Vietnamese families, 26% among Filipino families, and below 12% for Chinese, Japanese, and Korean families. Disability status among API aged over 50 years was 18%, below the general population prevalence of 26%. Caregiving for family members is highest among foreign-born API at 42% compared to the general population at 22%, with US-born rates near rates of the general population. It is possible that foreign-born API feel more strongly about the culture of filial piety, which exists beyond Chinese culture despite being a concept originating from the Confucianism period, and many children feel responsible to care for their elders and are reluctant to place family in long-term care facilities.⁵⁵

Many API cultures are reluctant to discuss end of life due to the belief that it will bring bad karma and draw the end of life nearer. Advance care planning is also significantly underutilized among the API population. Among South Asians aged 18-89, it was found that 74% had not completed forms related to advanced-care planning.⁵⁶

Radhakrishnan et al. report barriers regarding advance care planning among South Asian Indian-Americans. “Overall, participants acknowledged the importance of engaging in advance care planning but reported several barriers such as prior lack of awareness regarding advance care planning, good health status, lack of access to linguistically and health literacy–tailored materials, healthcare proxy hesitation to initiate discussions about advance care planning, trust in healthcare proxys’ or oldest sons’ decision making, busy family caregiver work routines, and cultural assumptions about filial piety and after-death rituals.”⁵⁷ Yonashiro-Cho et al. describe common misconceptions regarding advanced care planning among Chinese Americans. They found that there was a lack of understanding about the purpose of advance directives and how they are completed. There is a belief that advance directives are not needed if an individual is healthy and discussing advance care before near death is burdening to others.⁵⁸ Among Korean Americans, “...advance directives were seen as helpful for ensuring that preferences for unwanted end-of-life treatment are honored and for relieving the decision-making burden on family members. However, some viewed completing advance directives as contrary to focusing on living. Culturally competent education about advance directives for Korean American older adults is necessary to help them make informed decisions about

end-of-life care and informing family and health care providers of these preferences.”⁵⁹

Utilization of a conversation card game was successful in engaging participants to discuss end of life, leading to an 18% completion rate of advanced directives within 3 months.⁶⁰ Lee et al. report that utilization of nurse-led, culturally sensitive advance care planning seminar for Chinese American adults significantly increased advance directive completion and advance care planning discussions. Being female was also correlated with advance care planning discussions.⁶¹

LoPresti et al. report end of life care utilization among cancer patients and found that Asian Americans were most likely to be referred to hospice, least likely to use hospice care, and more likely to change their code status to DNR than non-minorities.⁶² All AAPI subgroups have been reported to have lower rates of hospice use than NHW patients with the same demographic and clinical characteristics: Chinese (adjusted hazard ratio (HR) = 0.62, 95% confidence interval (CI) = 0.55–0.69), Japanese (adjusted HR = 0.67, 95% CI = 0.60–0.73), Filipino (adjusted HR = 0.61, 95% CI = 0.54–0.70), Hawaiian/Pacific Islanders (adjusted HR = 0.78, 95% CI = 0.67–0.91), and other Asians (adjusted HR = 0.70), 95% CI = 0.55–0.90).⁶³

Conclusion

There exist significant differences between API women of different API subgroups and with women of other races that ultimately affect health and health outcomes. Major cultural barriers and lack of knowledge continue to affect sexual and reproductive health. Low rates of HPV vaccination, pap testing, and STI prevention are reflective of these issues. Phenotypic differences affect applicability of diagnostic guidelines for cardiometabolic diseases and osteoporosis, presentation of PPD, and response to infertility treatment. Though not covered extensively in this article, there are major disparities in the field of mental health for API, contributing to significant mortality among the aging. Hepatitis B continues to disproportionately affect the API population and contributes to cancer being a leading cause of death in these women. However, outcomes following cancer diagnosis are comparatively better than women of other races. Advance care planning and hospice care is also heavily underutilized among API with significant knowledge barriers, cultural barriers, and misconceptions to overcome on the clinician’s end. The disaggregation of data within the API population has been essential in elucidating the differences between API subgroups. Significant improvements have been made in study design for research about API populations over the past 20 years, but relative to other races, the API population still remains understudied. Further work needs to

be done in understanding the causes of these racial and ethnic differences and the clinical application of this knowledge has yet to be standardized for integration into widespread practice.

References

1. Hastings KG, Jose PO, Kapphahn KI, et al. Leading Causes of Death among Asian American Subgroups (2003–2011). *Plos One*. 2015;10(4). doi:10.1371/journal.pone.0124341.
2. Chawla N, Breen N, Liu B, Lee R, Kagawa-Singer M. Asian American Women in California: A Pooled Analysis of Predictors for Breast and Cervical Cancer Screening. *American Journal of Public Health*. 2015;105(2). doi:10.2105/ajph.2014.302250.
3. Desantis CE, Ma J, Sauer AG, Newman LA, Jemal A. Breast cancer statistics, 2017, racial disparity in mortality by state. *CA: A Cancer Journal for Clinicians*. 2017;67(6):439-448. doi:10.3322/caac.21412.
4. Iqbal J, Ginsburg O, Rochon PA, Sun P, Narod SA. Differences in Breast Cancer Stage at Diagnosis and Cancer-Specific Survival by Race and Ethnicity in the United States. *Jama*. 2015;313(2):165. doi:10.1001/jama.2014.17322.
5. Chuang E, Christos P, Flam A, et al. Breast Cancer Subtypes in Asian-Americans Differ According to Asian Ethnic Group. *Journal of Immigrant and Minority Health*. 2012;14(5):754-758. doi:10.1007/s10903-012-9577-7.
6. Herrinton LJ, Stanford JL, Schwartz SM, Weiss NS. Ovarian Cancer Incidence Among Asian Migrants to the United States and Their Descendants. *JNCI Journal of the National Cancer Institute*. 1994;86(17):1336-1339. doi:10.1093/jnci/86.17.1336.
7. Simons E, Blansit K, Tsuei T, et al. Foreign- vs US-born Asians and the association of type I uterine cancer. *American Journal of Obstetrics and Gynecology*. 2015;212(1). doi:10.1016/j.ajog.2014.07.019.
8. Rauh-Hain JA, Melamed A, Schaps D, et al. Racial and ethnic disparities over time in the treatment and mortality of women with gynecological malignancies. *Gynecologic Oncology*. 2018;149(1):4-11. doi:10.1016/j.ygyno.2017.12.006.
9. Nghiem VT, Davies KR, Chan W, Mulla ZD, Cantor SB. Disparities in cervical cancer survival among Asian American women. *Annals of epidemiology*. 2016;26(1):28-35. doi:10.1016/j.annepidem.2015.10.004.
10. Robison K, Clark L, Eng W, et al. Cervical Cancer Prevention: Asian-American Womens Knowledge and Participation in Screening Practices. *Womens Health Issues*. 2014;24(2). doi:10.1016/j.whi.2013.12.005.
11. Yoo GJ, Le MN, Vong S, Lagman R, Lam AG. Cervical Cancer Screening: Attitudes and Behaviors of Young Asian American Women. *Journal of Cancer Education*. 2011;26(4):740-746. doi:10.1007/s13187-011-0230-2.
12. Lee J, Carvalho M. Socioecological Perspectives on Cervical Cancer and Cervical Cancer Screening Among Asian American Women. *Journal of Community Health*. 2014;39(5):863-871. doi:10.1007/s10900-014-9887-x.
13. Nomura K, Rahman M. HPV vaccine uptake among Asian American girls aged 9-17 years during 2008-2010. *International Journal of Gynecology & Obstetrics*. 2014;126(1):91-92. doi:10.1016/j.ijgo.2014.01.008.

14. Lee HY, Kwon M, Vang S, et al. Disparities in Human Papillomavirus Vaccine Literacy and Vaccine Completion Among Asian American Pacific Islander Undergraduates: Implications for Cancer Health Equity. *Journal of American College Health*. 2015;63(5): 316-323. doi:10.1080/07448481.2015.1031237.
15. Okafor C, Hu X, Cook RL. Racial/Ethnic Disparities in HPV Vaccine Uptake Among a Sample of College Women. *Journal of Racial and Ethnic Health Disparities*. 2014;2(3): 311-316. doi:10.1007/s40615-014-0074-7.
16. Purcell K, Schembri M, Frazier LM, et al. Asian ethnicity is associated with reduced pregnancy outcomes after assisted reproductive technology. *Fertility and Sterility*. 2007;87(2): 297-302. doi:10.1016/j.fertnstert.2006.06.031.
17. Shapiro AJ, Darmon SK, Barad DH, Albertini DF, Gleicher N, Kushnir VA. Effect of race and ethnicity on utilization and outcomes of assisted reproductive technology in the USA. *Reproductive Biology and Endocrinology*. 2017;15(1). doi:10.1186/s12958-017-0262-5.
18. Kudesia R, Illions EH, Lieman HJ. Elevated Prevalence of Polycystic Ovary Syndrome and Cardiometabolic Disease in South Asian Infertility Patients. *Journal of Immigrant and Minority Health*. 2016;19(6):1338-1342. doi:10.1007/s10903-016-0454-7.
19. Zhao Y, Qiao J. Ethnic differences in the phenotypic expression of polycystic ovary syndrome. *Steroids*. 2013;78(8):755-760. doi:10.1016/j.steroids.2013.04.006.
20. Dimitriadis I, Batsis M, Petrozza JC, Souter I. Racial Disparities in Fertility Care: an Analysis of 4537 Intrauterine Insemination Cycles. *Journal of Racial and Ethnic Health Disparities*. 2016;4(2):169-177. doi:10.1007/s40615-016-0215-2.
21. Missmer SA, Seifer DB, Jain T. Cultural factors contributing to health care disparities among patients with infertility in Midwestern United States. *Fertility and Sterility*. 2011;95(6):1943-1949. doi:10.1016/j.fertnstert.2011.02.039.
22. Cipres D, Rodriguez A, Alvarez J, Stern L, Steinauer J, Seidman D. Racial/Ethnic Differences in Young Womens Health-Promoting Strategies to Reduce Vulnerability to Sexually Transmitted Infections. *Journal of Adolescent Health*. 2017;60(5):556-562. doi: 10.1016/j.jadohealth.2016.11.024.
23. Lin SY, Chang ET, So SK. Why we should routinely screen Asian American adults for hepatitis B: A cross-sectional study of Asians in California. *Hepatology*. 2007;46(4): 1034-1040. doi:10.1002/hep.21784.
24. Noah AJ. Heterogeneity of Hepatitis B Infection Among Pregnant Asian American and Pacific Islander Women. *American Journal of Preventive Medicine*. 2018;55(2):213-221. doi: 10.1016/j.amepre.2018.03.021.
25. Staimez L, Weber M, Narayan K, Oza-Frank R. A Systematic Review of Overweight, Obesity, and Type 2 Diabetes Among Asian American Subgroups. *Current Diabetes Reviews*. 2013;9(4):312-331. doi:10.2174/15733998113099990061.
26. Araneta MRG, Kanaya AM, Hsu WC, et al. Optimum BMI Cut Points to Screen Asian Americans for Type 2 Diabetes. *Diabetes Care*. 2015;38(5):814-820. doi:10.2337/dc14-2071.
27. Pu J, Zhao B, Wang EJ, et al. Racial/Ethnic Differences in Gestational Diabetes Prevalence and Contribution of Common Risk Factors. *Paediatric and Perinatal Epidemiology*. 2015;29(5):436-443. doi:10.1111/ppe.12209.
28. Hunsberger M, Rosenberg KD, Donatelle RJ. Racial/Ethnic Disparities in Gestational Diabetes Mellitus: Findings from a Population-Based Survey. *Womens Health Issues*. 2010;20(5):323-328. doi:10.1016/j.whi.2010.06.003.

- 29.Hedderson M, Ehrlich S, Sridhar S, Darbinian J, Moore S, Ferrara A. Racial/Ethnic Disparities in the Prevalence of Gestational Diabetes Mellitus by BMI. *Diabetes Care*. 2012;35(7):1492-1498. doi:10.2337/dc11-2267.
- 30.Liu CH, Tronick E. Rates and Predictors of Postpartum Depression by Race and Ethnicity: Results from the 2004 to 2007 New York City PRAMS Survey (Pregnancy Risk Assessment Monitoring System). *Maternal and Child Health Journal*. 2012;17(9):1599-1610. doi:10.1007/s10995-012-1171-z.
- 31.Goyal D, Wang EJ, Shen J, Wong EC, Palaniappan LP. Clinically Identified Postpartum Depression in Asian American Mothers. *Journal of Obstetric, Gynecologic & Neonatal Nursing*. 2012;41(3):408-416. doi:10.1111/j.1552-6909.2012.01352.x.
- 32.Cheng C-Y, Pickler RH. Effects of stress and social support on postpartum health of Chinese mothers in the United States. *Research in Nursing & Health*. 2009;32(6):582-591. doi:10.1002/nur.20356.
- 33.Liu CH, Tronick E. Prevalence and predictors of maternal postpartum depressed mood and anhedonia by race and ethnicity. *Epidemiology and Psychiatric Sciences*. 2013;23(02):201-209. doi:10.1017/s2045796013000413.
- 34.Liu CH, Giallo R, Doan SN, Seidman LJ, Tronick E. Racial and Ethnic Differences in Prenatal Life Stress and Postpartum Depression Symptoms. *Archives of Psychiatric Nursing*. 2016;30(1):7-12. doi:10.1016/j.apnu.2015.11.002
- 35.Pham A, Hardie T. Does a First-Born Female Child Bring Mood Risks to New Asian American Mothers? *Journal of Obstetric, Gynecologic & Neonatal Nursing*. 2013;42(4):471-476. doi:10.1111/1552-6909.12226.
- 36.Barrett-Connor, E. , Siris, E. S., Wehren, L. E., Miller, P. D., Abbott, T. A., Berger, M. L., Santora, A. C. and Sherwood, L. M. (2005), Osteoporosis and Fracture Risk in Women of Different Ethnic Groups. *J Bone Miner Res*, 20: 185-194. doi:10.1359/JBMR.041007.
- 37.Lo JC, Kim S, Chandra M, Ettinger B. Applying ethnic-specific bone mineral density T-scores to Chinese women in the USA. *Osteoporosis International*. 2016;27(12):3477-3484. doi:10.1007/s00198-016-3673-9.
- 38.Lv N, Brown JL. Impact of a Nutrition Education Program to Increase Intake of Calcium-Rich Foods by Chinese-American Women. *Journal of the American Dietetic Association*. 2011;111(1):143-149. doi:10.1016/j.jada.2010.10.005.
- 39.Ancheta IB, Carlson JM, Battie CA, Borja-Hart N, Cobb S, Ancheta CV. One size does not fit all: cardiovascular health disparities as a function of ethnicity in Asian-American women. *Applied Nursing Research*. 2015;28(2):99-105. doi:10.1016/j.apnr.2014.06.001.
- 40.Patel SA, Shivashankar R, Ali MK, et al. Is the “South Asian Phenotype” Unique to South Asians? Comparing Cardiometabolic Risk Factors in the CARRS and NHANES studies. *Global heart*. 2016;11(1):89-96.e3. doi:10.1016/j.ghart.2015.12.010..
- 41.Aoki Y, Yoon SS, Chong Y, Carroll MD. Hypertension, Abnormal Cholesterol, and High Body Mass Index among Non-Hispanic Asian Adults: United States, 2011-2012. *NCHS data brief*. 2014;140:1-8.
- 42.Zhao B, Jose PO, Pu J, et al. Racial/Ethnic Differences in Hypertension Prevalence, Treatment, and Control for Outpatients in Northern California 2010-2012. *American Journal of Hypertension*. 2014;28(5):631-639. doi:10.1093/ajh/hpu189.

43. Jose PO, Frank ATH, Kappahn KI, et al. Cardiovascular Disease Mortality in Asian Americans. *Journal of the American College of Cardiology*. 2014;64(23):2486-2494. doi: 10.1016/j.jacc.2014.08.048.
44. Sparks PJ. Racial/Ethnic Differences in Breastfeeding Duration among WIC-Eligible Families. *Womens Health Issues*. 2011;21(5):374-382. doi:10.1016/j.whi.2011.03.002.
45. Mistry Y, Freedman M, Sweeney K, Hollenbeck C. Infant-Feeding Practices of Low-Income Vietnamese American Women. *Journal of Human Lactation*. 2008;24(4):406-414. doi: 10.1177/0890334408318833.
46. Donaldson H, Kratzer J, Okutoro-Ketter S, Tung P. Breastfeeding Among Chinese Immigrants in the United States. *Journal of Midwifery & Womens Health*. 2010;55(3):277-281. doi:10.1016/j.jmwh.2010.02.010.
47. Adams IK, Okoli CT, Dulin Keita A, et al. Breastfeeding Practices among Native Hawaiians and Pacific Islanders. *J Obes*. 2016;2016:2489021.
48. Hayes DK, Mitchell KM, Donohoe-Mather C, Zaha RL, Melcher C, Fuddy LJ. Predictors of exclusive breastfeeding at least 8 weeks among Asian and Native Hawaiian or other Pacific Islander race subgroups in Hawaii, 2004-2008. *Matern Child Health J*. 2014;18(5):1215-23.
49. Galvin S, Grossman X, Feldman-Winter L, Chaudhuri J, Merewood A. A Practical Intervention to Increase Breastfeeding Initiation Among Cambodian Women in the US. *Maternal and Child Health Journal*. 2007;12(4):545-547. doi:10.1007/s10995-007-0263-7.
50. Lee A, Brann L. Influence of Cultural Beliefs on Infant Feeding, Postpartum and Childcare Practices among Chinese-American Mothers in New York City. *Journal of Community Health*. 2014;40(3):476-483. doi:10.1007/s10900-014-9959-y.
51. Du Y, Xu Q. Health Disparities and Delayed Health care among Older Adults in California: A Perspective from Race, Ethnicity, and Immigration. *Public Health Nursing*. 2016;33(5):383-394. doi:10.1111/phn.12260.
52. Min JW, Rhee S, Lee SE, Rhee J, Tran T. Comparative Analysis on Determinants of Self-Rated Health Among Non-Hispanic White, Hispanic, and Asian American Older Adults. *Journal of Immigrant and Minority Health*. 2013;16(3):365-372. doi:10.1007/s10903-013-9852-2.
53. Tsoh JY, Sentell T, Gildengorin G, et al. Healthcare Communication Barriers and Self-Rated Health in Older Chinese American Immigrants. *J Community Health*. 2016;41(4):741-52.
54. Menkin JA, Guan SA, Araiza D, et al. Racial/Ethnic Differences in Expectations Regarding Aging Among Older Adults. *Gerontologist*. 2017;57(suppl_2):S138-S148.
55. Montenegro, Xenia. Caregiving among Asian Americans and Pacific Islanders Age 50+. Washington, DC: AARP Research, December 2014. <https://doi.org/10.26419/res.00092.001>
56. Radhakrishnan K, Scoy LJV, Jillapalli R, Saxena S, Kim MT. Community-based game intervention to improve South Asian Indian Americans' engagement with advanced care planning. *Ethnicity & Health*. 2017:1-19. doi:10.1080/13557858.2017.1357068.
57. Radhakrishnan K, Saxena S, Jillapalli R, Jang Y, Kim M. Barriers to and Facilitators of South Asian Indian-Americans' Engagement in Advanced Care Planning Behaviors. *Journal of Nursing Scholarship*. 2017;49(3):294-302. doi:10.1111/jnu.12293.

58. Yonashiro-Cho J, Cote S, Enguidanos S. Knowledge About and Perceptions of Advance Care Planning and Communication of Chinese-American Older Adults. *Journal of the American Geriatrics Society*. 2016;64(9):1884-1889. doi:10.1111/jgs.14261.
59. Ko E, Berkman CS. Advance Directives Among Korean American Older Adults: Knowledge, Attitudes, and Behavior. *Journal of Gerontological Social Work*. 2012;55(6):484-502. doi:10.1080/01634372.2012.667523.
60. Radhakrishnan K, Scoy LJV, Jillapalli R, Saxena S, Kim MT. Community-based game intervention to improve South Asian Indian Americans' engagement with advanced care planning. *Ethnicity & Health*. 2017:1-19. doi:10.1080/13557858.2017.1357068.
61. Lee MC, Hinderer KA, Friedmann E. Engaging Chinese American Adults in Advance Care Planning: A Community-Based, Culturally Sensitive Seminar. *Journal of Gerontological Nursing*. 2015;41(8):17-21. doi:10.3928/00989134-20150406-01.
62. Lopresti MA, Dement F, Gold HT. End-of-Life Care for People With Cancer From Ethnic Minority Groups. *American Journal of Hospice and Palliative Medicine®*. 2014;33(3):291-305. doi:10.1177/1049909114565658.
63. Ngo-Metzger Q, Phillips RS, McCarthy EP. Ethnic disparities in hospice use among Asian-American and Pacific Islander patients dying with cancer. *J Am Geriatr Soc*. 2007;56(1):139-44.
64. Ponce N, Scheitler AJ, Shimkhada R. Understanding the Culture of Health for Asian American, Native Hawaiian and Pacific Islanders (AANHPIs): What Do Population-Based Health Surveys across the Nation Tell Us about the State of Data Disaggregation for AANHPIs?; 2016.
65. Kim W, Keefe RH. Barriers to Healthcare Among Asian Americans. *Social Work in Public Health*. 2010;25(3-4):286-295. doi:10.1080/19371910903240704.