Asian American Cancer Disparities: The Potential Effects of Model Minority Health Stereotypes

Alicia Yee Ibaraki and Gordon C. Nagayama Hall
University of Oregon

Janice A. Sabin
University of Washington

Racial/ethnic disparities exist in health care that are not fully explained by differences in access to care, clinical appropriateness, or patient preferences (Smedley, Stith, & Nelson, 2002). An important health disparity that exists within the Asian American population is in preventive cancer screenings. The rates of physicians recommending cancer screening among Asian Americans are disproportionately lower than justified by the relatively small ethnic group differences in cancer and mortality rates (U.S. Cancer Statistics Working Group, 2012). Despite cancer being the leading cause of death for Asian Americans, screening rates for cervical and breast cancer in Asian American women, and colorectal cancer in Asian American women and men are well below those of any other ethnic group (King, 2012; U.S. Cancer Statistics Working Group, 2012). In this article, we present a conceptual model that seeks to explain a factor in these lower screening rates. We review and incorporate in our model established mechanisms in the literature including physician-patient communication, patient variables, and physician variables. We also propose a new mechanism that may be specific to the Asian American population—the impact of the model minority myth and how that may translate into positive health stereotypes. These positive implicit or explicit health stereotypes can interact with time pressure and limited information to influence physician decision making and cancer screening recommendations. Suggestions are offered for testing this model including using the Implicit Association Test and the Error Choice technique.

Keywords: cancer, Asian Americans, health disparities, model minority stereotype
2006). This suggests that either cancer treatment or cancer prevention measures are not as effective within this population. Screening rates for cervical and breast cancer in Asian American women, and colorectal cancer in Asian American women and men (see Table 1) are well below those of any other ethnic group (Ho et al., 2011; Jun & Oh, 2013; Lee et al., 2010; U.S. Cancer Statistics Working Group, 2012; Wu et al., 2005), and this healthcare disparity persists after adjusting for access to care (King, 2012).

Colorectal Cancer Screening

Although acknowledging that there are important ethnic differences in cancer incidence and mortality rates (for a review see Miller, Chu, Hankey, & Reis, 2008) we highlight colorectal cancer because overall, among Asian Americans, colorectal cancer is the second most commonly diagnosed cancer and the third highest cause of cancer-related mortality (Wong, Gildengorin, Nguyen, & Mock, 2005). Additionally, unlike breast and cervical cancer screening guidelines which have undergone recent changes making it less clear how often and at what age screenings are recommended, the clinical guidelines for colorectal cancer are very clear. Screenings are recommended for all individuals, regardless of race, starting at age 50, and there is a high certainty that screenings substantially reduce colorectal cancer mortality (U.S. Preventive Services Task Force, 2011). Despite these guidelines, data from the 2001, 2003 and 2005 California Health Interview Survey (CHIS) found that as an aggregated group, Asian Americans’ colorectal screening (46.8%) was lower than that of non-Hispanic Whites (57.7%; Lee, Lundquist, Ju, Luo, & Townsend, 2011). In addition to lower screening rates, CHIS (2005) data also demonstrated that rates of physician-recommended cancer screening among Asian Americans are disproportionately lower than justified by the relatively small ethnic group differences in cancer and mortality rates (U.S. Cancer Statistics Working Group, 2012). Colon testing of any type was recommended during the past 5 years by physicians for 48% of non-Hispanic White patients but for only 27% of Asian American patients, controlling for age (CHIS, 2005).

In a national sample of Japanese Americans, only 23% of those who had received any type of colorectal screening in the last 5 years did so at the recommendation of a physician (Honda, 2004).

Table 1

<table>
<thead>
<tr>
<th>Race</th>
<th>Breast cancer</th>
<th>Cervical cancer</th>
<th>Colorectal cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>72.8%</td>
<td>83.4%</td>
<td>59.8%</td>
</tr>
<tr>
<td>Black/African American</td>
<td>73.2%</td>
<td>85.0%</td>
<td>55.0%</td>
</tr>
<tr>
<td>Asian</td>
<td>64.1%</td>
<td>75.4%</td>
<td>46.9%</td>
</tr>
<tr>
<td>Overall</td>
<td>72.4%</td>
<td>83.0%</td>
<td>58.6%</td>
</tr>
</tbody>
</table>

Note. Data is from the National Health Interview Survey, United States, 2010, as reported in King, 2012. 1 Mammography within 2 years among women aged 21–65 years with no hysterectomy. 2 Pap test within 3 years among women aged 21–65 years with no hysterectomy. 3 (a) Annual high-sensitivity fecal occult blood testing, (b) sigmoidoscopy every 5 years combined with high-sensitivity fecal occult blood testing every 3 years, or (c) screening colonoscopy at intervals of 10 years among persons aged 50–75 years.

Additionally, when a physician did recommend screening, 66% (fecal occult blood testing) and 71% (sigmoidoscopy/colonoscopy) of patients followed through with the screening versus 28% and 12%, respectively, when no recommendation was made (Honda, 2004). In a more recent sample of older Korean Americans, only 29% had ever received a screening recommendation from their doctor, although follow through rates (45%) were lower than in the Honda (2004) study (Jo, Maxwell, Wong, & Bastani, 2008). The reason for physicians’ low rate of recommendation for colorectal cancer screening of Asian American patients remains unclear.

Regardless of patient demographic factors, physicians should adhere to clinical guidelines for colorectal cancer screening. Even though physicians are not able to control whether their patients are actually following through with their medical advice, or cite concerns that Asian American patients do not understand the role of preventative medicine (Bodle et al., 2008), there is no clinical rationale for racial or ethnic differences in the rate that physicians are making the recommendation for colorectal cancer screening. The act of physician recommendation is important in and of itself. Patients who follow through with cancer screenings often cite physician recommendation as the most important factor in them getting the test (Honda, 2004; Jo et al., 2008; Ma et al., 2012). Because regular cancer screenings have been shown to effectively reduce cancer mortality rates (Nelson et al., 2009; Pignone, Rich, Teutsch, Berg, & Lohr, 2002), it is puzzling that a group in which cancer is the leading cause of death would also have the lowest physician recommended cancer screening rates.

In this article we seek to explain this cancer screening disparity in Asian American populations by formulating a working heuristic model integrating the model minority myth and social information processing. Specifically, we focus on the physician decision making process for cancer screening among Asian American men and women.

A Conceptual Model of Physician Cancer Screening

When an adult turns 50 years of age, clinical guidelines state that physicians should recommend screening for colorectal cancer regardless of gender or ethnicity (U.S. Preventive Services Task Force, 2011). Figure 1 represents our hypothesized model of the
effects of bias and stereotypes on physician decision making behavior to recommend screening when working with Asian American patients. Although in this article we focus mostly on physician and patient-level variables, we also acknowledge that physicians and patients operate within a health care system that can perpetuate disparities in the way that health care organizations are organized, financed, and to the extent that they are or are not equally accessible (Smedley et al., 2002). The role of organizations in perpetuating cancer screening disparities is beyond the scope of this article, but should be considered in future research.

**Patient Factors**

The path from patient factors to provider decision making reflects the hypothesis that patient factors can contribute to cancer screening disparities. Demographic factors such as younger age (Honda, 2004; Yoo, Le, Vong, Lagman, & Lam, 2011) or low levels of acculturation (Lee, Ju, Der Vang, & Lundquist, 2010; Wu, West, Chen, & Hergert, 2006; Yoo et al., 2011), and structural barriers such as not having insurance (Honda, 2004; Lee et al., 2010; Ma et al., 2012), or not having a usual source of care (Honda, 2004; Lee et al., 2010), have all been identified as patient-related factors that reduce the likelihood of Asian Americans having been screened. However, screening rates are disproportionately low after taking into account some of these structural barriers. A national study of Japanese Americans with elevated risk for colorectal cancer due to age or personal medical history found that although 84% reported having regular access to care, 63% were never advised by their physician to get colorectal cancer screening (Honda, 2004). In a subsample of Korean Americans, all who had a primary care physician and regular checkups, only 25% had received screening (Jo et al., 2008).

In addition to structural barriers, patient cultural barriers may also exist. For example ideas about fatalism and not fighting what is destined by nature, are rooted in Buddhist beliefs. Holding fatalistic attitudes, such as the belief that regardless of behavior and lifestyle choices, a person cannot alter their chances of developing cancer, have been linked to lower rates of colorectal screening in an Asian American sample (Jun & Oh, 2013). Fatalistic beliefs could deter medical help-seeking behaviors as the value of preventive medicine and screening measures seem diminished. However, CHIS (2005) data show that within the last 12 months, a larger percentage of Asian Americans (18.9%) had seen a doctor about their health than Whites (12.9%). This suggests that despite possible cultural beliefs, Asian Americans are not overly averse to medical help-seeking.

A patient’s ability to communicate with their physician is another important patient factor. The quality of physician–patient communication influences patient satisfaction (Cousin, Schmid Mast, Roter, & Hall, 2012) and adherence to physician recommendations (Zolnierek & DiMatteo, 2009). Communication is particularly important when physicians and patients start out with extremely disparate explanatory models of the illness, which may be more common when physicians and patients come from different cultural backgrounds (Ashton et al., 2003). Good communication allows physicians and patients to agree on a shared explanatory model for an illness which, in turn, influences patient adherence, satisfaction, and ultimately, health outcomes (Ashton et al., 2003). Verbal dominance on the part of the physician is associated with lower levels of patient disclosure, which can have negative effects on medical outcomes (Mast, Hall, & Roter, 2008).

In a review of real-world videotaped clinical interactions, Johnson, Roter, Powe, and Cooper (2004) found that physicians were significantly more verbally dominant and engaged in significantly less patient-centered communication with African American patients compared with White patients. They also displayed less positive affect in interactions with minority patients. Cooper et al. (2012) found that physician verbal dominance and positive affect in these same clinical encounters were correlated with pro-White implicit attitudes or bias. Implicit refers to attitudes and stereotypes that are outside of an individual’s awareness and are not available to report. (Greenwald & Banaji, 1995). Implicit attitudes and stereotypes can exist even among individuals who endorse egalitarian beliefs (Dovidio & Gaertner, 2000). In the Cooper et al. (2012) study, as implicit pro-White bias increased, physicians were more verbally dominant and displayed lower levels of positive affect. Physicians with higher pro-White implicit bias were also likely to use slower speech, and less patient-centered dialogue with ethnic minorities. Patients were more likely to rate these physicians as less likable, less likely to treat them with respect, and had lower levels of trust and confidence in their recommendations.

The quality of communication is particularly salient in Asian American populations, where a larger number of patients have limited English language abilities compared with White or African American patients. Over 1.5 million Asian American or Pacific Islander households live in linguistic isolation, meaning that there is no one above the age of 14 that speaks English “very well” (Smedley et al., 2002). This includes over half of the Hmong, Cambodian, and Laotian families in the United States (Smedley et al., 2002). In California, only 56% of Asian adults report that they speak English in the home (AHRQ, 2012). In a recent study, 19% of recent immigrants reported experiencing language discrimination in medical care settings during the previous 2 years (Yoo, Gee, & Takeuchi, 2009). Being treated differently based on how well you speak English, also known as language discrimination, by a doctor or other medical staff is a significant predictor of the number of chronic conditions a patient has (Yoo et al., 2009).

**Physician Factors**

Synthesizing social cognition and provider behavior research, van Ryn and Fu (2003) proposed a model that explains the role of well-meaning physicians in inadvertently contributing to health disparities. A key component in their model is the provider’s conscious (explicit) and unconscious (implicit) beliefs about the patient. Physician beliefs about the patients’ race and ethnicity can influence how the physician interprets the patient’s report of symptoms, their diagnostic decisions, and treatment recommendations like needing cancer screening. In a vignette study, Green, Carney, Pallin, Raymond, Iezzoni, and Banaji (2007) demonstrated that implicit stereotypes about a patient’s level of cooperativeness based on their race changed the likelihood of physicians offering treatment to a patient complaining of chest pain. The stronger the stereotype that black patients were uncooperative, the more physicians were likely to perform a procedure on White patients but not on Black patients.

The role of explicit and implicit stereotypes about Asian Americans in influencing decision making about recommending cancer
screening are represented by two distinct paths within the model. In a study of over 2,500 doctors, pro-White implicit and explicit biases were only modestly correlated, suggesting that they are distinct processes (Sabin, Nosek, Greenwald, & Rivara, 2009). It is possible that physicians may explicitly hold egalitarian beliefs, but implicitly ascribe to biases about ethnic minority patients that influence their decision making about recommending cancer screening.

The paths from physician characteristics to explicit and implicit stereotypes as well as directly to decision making represents the hypothesis that physician characteristics such as ethnicity or gender affects both implicit and explicit biases they held and the clinical encounter. Sabin, Nosek, Greenwald, and Rivara (2009) found evidence that preference for White Americans over Black Americans varied as a function of physician race/ethnicity. Preference for White Americans was strongest for White physicians, but present among physicians of all race/ethnic backgrounds, except for African American physicians, who, on average, did not show an implicit preference for either White Americans or Black Americans. Both implicit and explicit biases also varied by gender with male physicians showing stronger implicit and explicit preferences for White Americans than female physicians did (Sabin et al., 2009).

Physician characteristics also affect the clinical encounter and decision-making processes. Patients who had recently attended a medical appointment were asked to rate the extent to which their physician involved them in their appointment through consensus seeking, and other forms of communication known as “participatory decision making.” Participatory decision making is linked to higher levels of patient satisfaction. Although African Americans rated their visits as less participatory overall, both African American and White patients rated the visits as significantly more participatory when they saw race-concordant physicians (Cooper-Patrick et al., 1999). Female physicians were also rated as more participatory than male physicians across all races/ethnicities (Cooper-Patrick et al., 1999). There is also evidence that information about patient race may affect male and female patients differently. In a vignette study where patients suffered from identical pain symptoms, and varied only in race and gender, male physicians prescribed twice the dosage of pain medication for White patients compared with African American patients (Weisse, Sohrum, Sanders, & Syat, 2001). Female physicians did the opposite prescribing in higher dosages to African American patients.

Physicians may be particularly susceptible to cognitive short cuts. They are constantly faced with a complex array of patient information and limited time in which to process this information to make diagnostic decisions. Human information processing involves two modes, commonly referred to as “System 1” and “System 2.” System 1 is an intuitive mode in which decisions are made automatically and rapidly; System 2 is a controlled mode, which is deliberate and slower (Kahneman, 2003). Because of time constraints, physicians often employ System 1 in decision making (Croskerry, 2009; Ely, Graber, & Croskerry, 2011). System 1 is unable to process and interpret all the information available. In order to efficiently process information, humans use short cuts known as heuristics (Kahneman, Slovic, & Tversky, 1982). Two common heuristics that may facilitate the diagnostic process are representativeness and availability. Representativeness in a diagnostic context is used to judge how similar the patient is to the typical person with the disorder. Availability involves diagnostic information that is easily accessed or recalled. The use of heuristics based on biased information such as ethnic group stereotypes, however, can result in errors (Kahneman & Klein, 2009). Given prior research in this area, we expect that stereotypes about the Asian American population may contribute to disparities in cancer screening recommendations which likely leads to disparities in actual cancer screening.

The most well-known stereotypes about Asian Americans are those perpetuated by the model minority myth. This term was coined in the 1960s in the midst of the civil rights movement as a way to prove that all races could be successful if they just worked hard enough, and as an excuse to ignore institutionalize and systemic racism (Gupta, Szymanski, & Leong, 2011). Over 50 years later, it is still a commonly held belief in the United States (Chao, Chiu, Chan, Mendoza-Denton, & Kwok, 2012). Asian Americans are stereotyped as quiet, hardworking, intelligent, and disciplined. Model minority myth theory postulates that Asian Americans have been stereotyped as a group that is more successful than any other ethnic minority group, does not face societal barriers, and therefore does not need help (Yoo, Burrola, & Steger, 2010).

The paradox in considering Asian American stereotypes and disparities is that many stereotypes about Asian Americans sound positive, and one would generally expect disparities rooted in bias or discrimination to stem from negative stereotypes. Indeed, in the stereotype literature, negative stereotypes that result in hostility or other negative outcomes have historically received the most attention. Yet seemingly innocuous, or even complementary, positive stereotypes can also have deleterious effects. In a recent study, Asian American participants who heard positive stereotypes about their group (e.g., Asians are good at math) experienced greater negative emotions than participants who did not hear a stereotype (Siy & Cheryan, 2013). Positive stereotypes are damaging because they base the admired quality solely on group membership instead of individual characteristics. They are restricting and can generalize identities and traits of groups to individuals where they do not apply (Czopp, 2008). Model minority stereotypes of Asian Americans may lead to the perception that they do not need or deserve help. Such stereotypes of Asian American self-sufficiency may also generalize to Asian American health.

The general public may perceive Asian Americans to be healthier than other ethnic groups. We asked 351 undergraduates which ethnic group (African Americans, Asian Americans, Hispanics, or Whites) is least likely to suffer from a number of health conditions, including stroke, diabetes, alcoholism, obesity, heart disease, and cancer. The sample was 66% female and had a mean age of 19.6 years. Participants were primarily White (74%), followed by Asian American (14%), more than one race (4%), and Latino/a (3%). Native populations and African Americans each constituted less than 2% of the sample. Respondents were significantly more likely to choose Asian Americans as the least likely to suffer from all diseases. These perceptions may be rooted in relatively low rates of obesity (Shariff-Marco, Klassen, & Bowie, 2010), drinking (Chartier & Caetano, 2010) and, among Asian American women, smoking (Chae, Gavin, & Takeuchi, 2006). Moreover, generally, the prevalence of cancer is somewhat lower among Asian Americans than among other groups (National Center for Health Statistics, 2011). Physicians may also endorse these common beliefs.
However, there is a danger in over-generalizing these characterizations. Perceptions of excellent health among Asian Americans do not justify lower rates of cancer screening recommendations, as failure to screen is associated with disproportionately high rates of cancer-related deaths among Asian Americans (National Center for Health Statistics, 2011).

Model minority stereotypes concerning East Asians may be more pervasive than for other Asian groups (e.g., Southeast Asians, Filipino/as) in part because East Asians are the largest group of Asian Americans. There is heterogeneity across Asian American ethnic groups, but at this stage our goal is to identify a general bias. Moreover, many physicians are not sufficiently familiar with Asian Americans to hold Asian American ethnic group-specific biases (e.g., Korean Americans) and they may not be able to distinguish one Asian American ethnic group from another based on appearance.

**Future Research Directions**

We contend that as research continues to look into the role bias and stereotypes play in perpetuating health disparities, the role of positive stereotypes should not be overlooked. Positive stereotypes may not seem to be as harmful as negative ones, but may help to account for a portion of health care disparities, such as differences in recommendations for cancer screening in certain populations. Additional research is needed to determine if the idea of the “healthy Asian American” is not only a lay belief, but is held by physicians as well. If the positive stereotype is present, the next step would be to understand how these stereotypes influence decision making, and then to develop interventions to reduce the impact of these biases. Because the link between implicit and explicit biases is modest, and because individuals are not always conscious of or willing to report their biases, future research on these stereotypes should target both explicit and implicit biases. Explicit bias can be assessed with the Internalization of the Model Minority Myth Measure (Yoo et al., 2010). The Unrestricted Mobility subscale of this measure, which assesses the belief that Asian Americans do not face societal barriers, is particularly relevant. It is possible that physicians who adhere to this belief may not believe that Asian Americans merit as much medical attention as other groups.

Prior studies have demonstrated that implicit attitudes influence physicians’ clinical decisions such as pain medication prescribing behavior (Sabin & Greenwald, 2012) and treatment planning (Bogart, Catz, Kelly, & Benotsch, 2001; Green et al., 2007). Implicit pro-White bias was assessed with the Implicit Attitudes Test (IAT) in which test takers quickly categorize facial images and valueladen words. Pro-White bias is present when participants are quicker to associate White faces with “good” words (e.g., joy, love) relative to Black faces and slower to associate White faces with “bad” words (e.g., agony, terrible) relative to Black faces. As physicians’ implicit pro-White race bias decreased, prescribing a pain medication, which was the appropriate medical treatment for the scenario, significantly increased for African American patients (Sabin & Greenwald, 2012). In another vignette study, physicians were less likely to recommend more aggressive HIV treatment that has been shown to reduce mortality and morbidity for African American patients based on implicit assumptions about patient cooperation and adherence to treatment (Bogart et al., 2001).

The IAT could be adapted to assess physicians’ medical biases toward Asian American patients by examining an implicit stereotype of excellent Asian American health. It is possible that physicians’ underscreening is associated with beliefs of Asian American health as not simply good but excellent such that Asian Americans are viewed as in less need of cancer screening than other groups. Words such as robust, hearty, strong, vigorous, and excellent could be used to represent the concept of “excellent health.” For “good health,” words such as adequate, okay, good, satisfactory, acceptable could be used. Using facial images of Asian Americans and White Americans in the IAT methodology, a stronger association with Asian Americans and the concept of excellent health than with White Americans and the concept of excellent health would be evidence of pro-Asian health bias. Physicians having a pro-Asian health bias may be less likely to make necessary cancer screening recommendations for Asian Americans.

The error choice technique, an early indirect measure of attitudes, may also be a useful way of assessing physician biases about Asian American health (Hammond, 1948). In the error choice technique, individuals are forced to answer factual questions to which it is unlikely they know the answer (e.g., Per 100,000 individuals, what is the death rate from breast cancer in Asian American women? (a) 3.5, (b) 7.8, (c) 12.4, (d) 18.2). Of the answer choices provided, none is actually the correct answer (which here is 10.7), but instead either overestimate or underestimate the actual answer. Individuals have no choice but make an error which is informative in both magnitude and direction. Over a number of items, a guess pattern that is consistent with their attitude may emerge. For example, one participant may always slightly underestimate the prevalence, risk, or severity of cancer in Asian Americans, yet another participant may always grossly overestimate it.

**Conclusion**

Cancer is the leading cause of death for Asian Americans, yet the rate of cancer screening among Asian Americans is lower than in White Americans. One factor in this disparity is that physicians recommend screening at lower rates for Asian Americans compared with other populations. Although physicians cannot control if patients actually follow through on their recommendations, there is no reason that they should not be adhering to national guidelines and making screening recommendations. Given the role of stereotypes and heuristics in decision making processes, we suggest that stereotypes about Asian American health may be contributing to underscreening. Our conceptual model may guide future research to identify the mechanisms of screening bias.

The goal of the approach developed in this article is to reduce cancer screening disparities for Asian Americans. Physician education should devote attention to the fact that Asian Americans are the only U.S. ethnic group for whom cancer is the leading cause of death. Awareness of underscreening for cancer among Asian Americans should be another component of physician education. To the extent that model minority health stereotypes are demonstrated to influence underscreening, counterstereotypic information about Asian American health and cancer would also be important for physician education.
Despite the urgent need to address Asian American cancer disparities, there is a paucity of research on this topic. Unfortunately, the very model minority health stereotype that we describe in this article may result in the neglect of Asian American health needs, similar to the neglect of Asian American mental health needs (Hall & Yee, 2012). The reduction of Asian American cancer disparities will not occur unless it becomes a national priority for policy, funding, research, training, and interventions.

References


Received November 18, 2013
Revision received January 22, 2014
Accepted January 23, 2014