HEALTH CARE DISPARITIES:
THE IMPACT OF BENEVOLENT SEXISM

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DEDICATION

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ABSTRACT

The present research investigated potential disparities in recommendations for coronary artery disease (CAD) as a function of physician benevolent sexism, patient sex, and surgical risk. In particular, the present study examined (a) whether physicians holding beliefs consistent with benevolent sexism would be more reluctant to recommend invasive treatment options to women, (b) whether physicians would be more hesitant to recommend invasive treatment options to patients of high surgical risk, and (c) the three-way interaction of physician benevolent sexism, patient sex, and surgical risk. Using analog methodology, 108 internal medicine residents and 33 cardiovascular disease fellows recruited from 339 teaching hospitals across the United States made assessments and recommendations regarding care for a hypothetical female or male patient of either low or high surgical risk. Physicians indicated the likelihood they would recommend the following interventions: watchful waiting, lifestyle changes, an intensified medication regimen, percutaneous coronary intervention **(**PCI), PCI in the presence of comorbid conditions, PCI opposed to an intensified medication regimen, coronary artery bypass graft (CABG) surgery, CABG surgery in the presence of comorbid conditions, and CABG surgery opposed to PCI. Although there were no significant main effects for benevolent sexism, it played a role in some interesting interactions. For example, physicians holding both high scores in benevolent sexism and greater years of experience were less likely to recommend PCI opposed to an intensified medication regimen to the female patient. Furthermore, when surgical risk was low, male physicians scoring high in benevolent sexism were less likely to recommend PCI in the presence of one or more comorbid conditions to the female patient. Findings from this study suggest valuable avenues for future research and have important implications for reducing disparities in care. These implications are thoroughly discussed.

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CHAPTER I

INTRODUCTION

"Of all forms of discrimination and inequalities,

injustice in health is the most shocking and inhumane."

Dr. Martin Luther King, Jr. (quoted in *Chicago-Sun Times* 1966, p. 12).

Significant sex and race disparities are found in rates of numerous medical procedures, even at equivalent levels of access to care (National Academies Institute of Medicine, 2002; Travis, Meltzer, & Howerton, 2010; Vaccarino, et al., 2005). For example, heart disease remains the leading cause of death for both women and men in the United States, and the number of women and men hospitalized with cardiovascular disease is similar; however, rates of bypass surgery among women and minorities are far below bypass rates among White men (Travis, 2005). Disparities are also found in screening rates for colon cancer; that is, men are more likely than women to be screened (Donovan & Syngal, 1998), and when women are screened, their examinations are less complete (McMahon, et al., 1999; Rosen & Schneider, 2004). Disparities associated with race occur in many other areas as well. For example, White women receive mammograms and biopsies (81% and 75%, respectively) more frequently than Black women (56% and 42%, respectively), even when socioeconomic status and access to care are equal (Maloney, et al., 2006). Additionally, although Black women have a lower incidence of breast cancer than White women, they are more likely to die of the disease (Maloney, et al., 2006; O'Malley, et al., 2001). Unfortunately, these are just a few examples of a long list of health care disparities.

Over the past 70 years, a desire for equitable health has become a pressing matter in national health policy. During this time, hospitals have become desegregated and women and minorities have become among those included in federally funded medical research and trials. Although progress has been made, disparities are still found in health care, even when access to care is equal across groups of individuals. In order to investigate disparities in health care as they have existed, and as they continue to exist in the United States, this project investigated the extent to which practice patterns for CAD might be impacted by the psychological mechanism of benevolent sexism.

The next four chapters provide background information on disparities in health care and describe the rationale for the current project. First, I summarize the history of legislation that has been developed to protect women and minorities from disparities and cover more recent legislation to promote equity in the general population. Second, I discuss outcome disparities for women and minorities and review disparities in situations in which patients hold equal access to care. Third, I discuss the possible impact of benevolent sexism on health care disparities. Fourth, I provide an overview of the current project and propose three hypotheses. The current project is then examined in detail and the paper concludes with a recommendation for future research in which the psychological mechanism of aversive racism is suggested to be explored in terms of its potential impact on disparities in health care.

CHAPTER II

LEGISLATION TO COMBAT DISPARITIES IN HEALTH CARE

Beginning in the 1940s, legislation was implemented and national health policy was created to protect minorities and women from disparities in health care. The legislation desegregated hospitals and made health care more accessible for all individuals, whereas national health policy authorized various agencies to monitor health care use by women and minorities, review general disparities, and advise methods to reduce disparities in the future. This chapter reviews a basic history of legislation and national health policy as they pertain to women, minorities, and more recently the general public.

Legislation for Women

Unlike minorities who blatantly were denied health care through the mid-1900s on the basis of race and/or ethnicity (Cuthbert, 1936; Ikemoto, 2006; Reynolds, 1997; United States Commission on Civil Rights, 1965), women were, and possibly still are, likely to be denied care because they are perceived to be too weak and frail for many medical procedures (Grenier & Hanley, 2007; Sherwin, 1992). Women's medical concerns may not be considered important by medical professionals (Armitage, Schneiderman, & Bass, 1979), and the complaints of women are often perceived by physicians to be due to emotionality and not to be of real medical concern (Henderson, 1997). Because women's medical concerns are often attributed to emotional factors by physicians, their medical treatment is less likely to include patient autonomy and is more likely to be controlled by physicians (Ikemoto, 2006).

Women's health care historically focused on concerns of reproductive health and childbearing (van Wijk, van Vliet, & Kolk, 1996). Ailments that were not necessarily of reproductive concern were also thought to be due to, or cured through, the reproductive organs

(Morantz & Zschoche, 1980). In Plato's dialogue *Timaeus*, the womb was described as wandering through the bodies of women, strangling its victims as it reached the chest while causing a variety of diseases and disorders (Plato, trans. 1997, p. 357). The theory of the wandering uterus fostered the notion of hysteria[1] in women. In the second century, a prominent Roman physician and philosopher, Claudius Galenus (better known as Galen), proposed hysteria as a disease that was caused by sexual deprivation and suggested it led to a variety of illnesses. Proposed illnesses due to hysteria included "anxiety, sleeplessness, irritability, nervousness, erotic fantasy, sensations of heaviness in the abdomen, lower pelvic edema, and vaginal lubrication" (Maines, 1999). In 1880, George Beard, a physician and a member of the College of Physicians and Surgeons of New York, catalogued 75 pages of symptoms related to hysteria (Beard, 1880, pp. 11-85; Briggs, 2000). Dr. Beard believed his list to be incomplete; therefore, almost any medical concern presented by a woman could be related to hysteria (Briggs, 2000). The prescription for hysteria was almost as bizarre as the proposed illness. Specifically, in order to cure hysteria, physicians believed hysterical paroxysm (orgasm) needed to be induced. If the patient was married, physicians would recommend the induction of hysterical paroxysm through intercourse, and if the patient was single, hysterical paroxysm would be induced in the doctor's office through vaginal massage (otherwise known as pelvic massage) by either a physician or midwife (Maines, 1999). Because women are traditionally assumed to be prone to hysteria, frail, and suffering from nervousness, these beliefs further supported the patronizing patterns of physician-patient interactions and further perpetuated women's lack of autonomy in medical care (Travis, et al., 2010).

[1] The term hysteria was derived from the Greek word for uterus, hustera (ὑστέρα), and may be traced to ancient times, as it was first recorded in Egyptian papyri and was discussed by both Hippocrates and Plato (Maines, 1999).

In addition to ailments of women being attributed to the reproductive organs, or thought to be cured through the reproductive organs, women also did not have the ability to make reproductive choices. In 1916, Margaret Sanger opened the first birth control clinic in the United States. The clinic distributed a contraceptive pessary[2] and assisted 480 married women before Sanger was arrested and the clinic was shut down by police (Sanger, 1920; Schneir, 2002). In 1960, the United States Food and Drug Administration approved the contraceptive pill. *Griswold v. Connecticut* (1965) secured Constitutional access to contraceptives by married couples, and *Eisenstadt v. Baird* (1972) guaranteed unmarried individuals access to contraception as a matter of right. In 1973, women gained further autonomy and privacy with regard to reproductive rights, because *Roe v. Wade* afforded the opportunity to terminate unwanted pregnancies during the first trimester.

Issues of women's health were not of wide public concern through the 1970s; however, the women's health movement made every effort to challenge patriarchy in medicine (Geary, 1995; Marieskind, 1975), to provide medical information to women (Dreifus, 1977; Fee, 1982), to grant women reproductive rights (Ruzek, 1978), to increase patient involvement in the decision-making process (Howard, Davis, Pope, & Ruzek, 1977), and to include more women in the medical profession (Fee, 1982). In 1976, a group of women identified as The Boston Women's Health Book Collective published a book titled *Our Bodies, Ourselves* that aimed to create a "self-health women's movement" (Boston Women's Health Book Collective, 1976, 1998). The publication provided information to women about women's health, because this information was unfortunately not otherwise available. During this time period a few public figures, Shirley Temple Black, Betty Ford, and Happy Rockefeller, publically announced they

[2] A contraceptive pessary is a vaginal suppository or diaphragm intended to kill sperm and/or keep sperm from passing through the cervix.

had become afflicted with breast cancer (Ikemoto, 2006). These announcements increased public awareness about breast cancer and led to an increased number of women scheduling mammograms. Although the women's health movement of the 1960s and the 1970s strived to place women's health concerns on the federal health care agenda, their efforts were relatively unsuccessful at the time (Ikemoto, 2006).

In 1975, the National Women's Health Network formed and sought to provide a greater voice for women in the health care system. By 1983, the United States Public Health Service commissioned the Public Health Service Task Force on Women's Health, and women began to be included in medical trials and in research studies (Ikemoto, 2006; Office of Research on Women's Health, 2012). This task force sought to define women's health issues outside of reproduction and included biological differences between women and men. It also addressed illnesses and conditions that are more common to women, more unique to women, and have different treatments or outcomes in women. Through the 1980s and 1990s, the women's health movement focused more on promoting women's participation in research studies and managed to mandate the inclusion of women in federally funded medical research and trials with the National Institutes of Health (NIH) Revitalization Act in March of 1994 (Ikemoto, 2006; Office of Research on Women's Health, 2012).

In 1991, Bernadine Healy, the first woman director of the NIH, proposed the Women's Health Initiative (WHI). The WHI was developed to address the most common causes of death, disability, and impaired quality of life in postmenopausal women and was funded for roughly 15 years (National Institutes of Health, 2010). The WHI addressed cardiovascular disease, colorectal cancer, and osteoporosis through several arms of study and experimentation, including a randomized clinical trial, observational study, and community prevention study. The

randomized clinical trial examined promising but unproven approaches to disease prevention and included a hormone therapy trial for 27,347 women, a dietary modification trial for 48,835 women, and a calcium/vitamin D supplementation trial for 36,282 women. The observational study sought to identify predictors of disease and included 93,676 women. The community prevention study funded university-based prevention research centers and examined different community-based approaches to developing healthful behaviors. The series of WHI studies led scientists holding a greater understanding of women's mid-life health (National Institutes of Health, 2010).

Legislation for Minorities

Although disparities in care may have been the result of a system of patriarchy and protectionism toward women, they were often due to blatant and overt discrimination toward minorities. On November 7th, 1931, Juliette Derricotte, Dean of Women at Fisk University, died after being refused medical care following a car accident in Dalton, Georgia (Cuthbert, 1936). Derricotte received emergency medical treatment by a White physician at the scene of the accident, but as an African American, she was not eligible to be admitted to the local White hospital. Instead, Derricotte was transported to the home of a local Black woman who was known to house the sick, although she lacked medical training. Derricotte remained in the woman's home overnight and died the following morning after being transferred 50 miles to the Black ward of a hospital in Chattanooga, Tennessee. With the help of the National Association for the Advancement of Colored People (NAACP), Derricotte's unfortunate and untimely death helped to put a face on discrimination that was occurring in hospitals throughout the United States during this time (Gamble & Stone, 2006).

After much pressure from the NAACP and early civil rights activists, the Truman administration sought to end racial discrimination and segregation in the 1940s (Ikemoto, 2006). On August 13, 1946, the Hill-Burton Act (also known as the Hospital Survey and Construction Act) was introduced by Senator Harold Burton of Ohio and Senator Listor Hill of Alabama (United States Department of Health and Human Services, 2010). The Hill-Burton Act was to provide federal grants to improve the nation's hospital system, especially improving hospitals in the rural South. These grants were to provide funding to general hospitals, specialized hospitals, nursing homes, public health centers, and rehabilitation facilities. Through the lifetime of the Hill-Burton Act (1947-1971), the law provided $3.7 billion in federal funding and an additional $9.1 billion in matched funds from state and local governments (Reynolds, 1997).

Although the Hill-Burton Act sought to provide equal care to all individuals, it allowed hospitals to continue practicing segregation. Provisions in the Hill-Burton Act stated that facilities receiving funding could not discriminate against patients on the basis of race, color, nation of origin, or creed; however, the law included a "separate but equal" clause (United States Commission on Civil Rights, 1965). This clause, and Jim Crow laws in the South, provided a loophole to perpetuate segregation; that is, a hospital with two "equal" but separate facilities, or wards, was afforded the opportunity to segregate care (Ikemoto, 2006; Reynolds, 1997; United States Commission on Civil Rights, 1965). In addition to the loophole created by the "separate but equal" clause, states were also required to prove economic viability of the facilities requesting funds (United States Department of Health and Human Services, 2010). Hospitals in poorer areas were not able to prove economic viability, and the poorest facilities were denied funding. Denying funds to these facilities allowed for additional disparities on the basis of patients' socioeconomic status.

In 1958, the National Health Interview Survey collected the first data to explore the use of health care by Black individuals. These data ultimately provided information to the federal government about race and income disparities in access to health care (Smith, 2004). In the same time period, Hill-Burton's "separate but equal" clause was challenged by the *Simkins v. Moses H. Cones Memorial Hospital* case in the Supreme Court. In 1963, this landmark case denied hospitals receiving funds through the Hill-Burton Act the opportunity to ban Black physicians from working in these hospitals; this case also officially began the desegregation process among patients (Reynolds, 1997). Data collected from the National Health Interview Survey, in conjunction with the *Simkins v. Moses H. Cones Memorial Hospital* decision, and later Title VI of the Civil Rights Act of 1964, provided pressure for the passage of Medicare and Medicaid legislation in 1965 (Reynolds, 1997; Smith, 2004). On July 1, 1966, President Johnson signed the first Medicare legislation. When Medicare was enacted by Congress, 92% of the hospitals in the United States officially became desegregated in order to obtain funding from this federal program (Ikemoto, 2006).

In early 1984 and nearly 20 years after the passage of Medicare, Margaret Heckler, Ronald Reagan's Secretary of Health and Human Services, reported disparities in health care among minorities and created the Secretary's Task Force on Black and Minority Health in order to investigate the extent of the disparities (Centers for Disease Control and Prevention, 1986). In 1986, the task force estimated that 60,000 African Americans died annually due to disparities among the types of medical treatment provided to African American and White patients by their physicians (see Pittman, 2003 for a review). The Office of Minority Health (OMH) was created in 1986 as result of the task force's findings, and four years later, the National Institute of Health implemented the Office of Research on Minority Health. By 2004, thirty-five states had created a

commission, council, and/or advisory panel to manage the status and to increase the quality of health care for minorities (Gamble & Stone, 2006).

More Recent Legislation for General Population Health

More recent legislation does not focus specifically on disparities as they pertain to women and minorities, but rather focuses on the health of citizens of our nation as a whole. Legislation for general population health began in 1976 with the passage of Public Law 94-317 (The Disease Control Amendments Act), which led to the creation of the Office of Health Information and Health Promotion in the Centers for Disease Control and Prevention ("Disease Control Amendments Act," 1976). The main objectives of this legislation were to formulate national goals with respect to health information and health prevention, preventative health services, and promote education in the appropriate use of health care ("Disease Control Amendments Act," 1976). In keeping with the goals of the Disease Control Amendments Act, the United States Department of Health, Education, and Welfare published the first *Healthy People* initiative with the *Surgeon General's Report on Health Promotion and Disease Prevention* in November 1980 (United States Department of Health, Education, & Welfare, 1979). The initial publication, *Healthy People 1990*, reflected the general health of the nation and included a ten-year program to improve the health of all United States citizens by 1990 (Green & Allegrante, 2011). The Department of Health and Human Services released subsequent publications in 1990 (*Healthy People 2000*) and 2000 (*Healthy People 2010*), which also included ten-year programs to improve general population health. The fourth, and most recent, edition of *Healthy People* was published in 2010. The latest edition explores disparities in health care and makes recommendations for the elimination of disparities among individuals across

multiple categories (i.e., gender, race, ethnicity, disability, geographic location, and sexual orientation) that might otherwise leave them susceptible for inadequate medical care.

In addition to the Department of Health and Human Services' *Healthy People* publications, the Agency for Healthcare Research and Quality produces two annual publications, the *National Healthcare Quality Report* and the *National Healthcare Disparities Report* to address quality of health care and health care disparities, respectively (Agency for Healthcare Research and Quality, 2010). The reports have been produced for eight years and summarize trends in effectiveness in care, patient safety, timeliness of care, patient centeredness, and efficiency of care in terms of quality of and access to health care. Although the reports focus on the quality of health care and health care disparities, they rarely address differences in care in terms of patient gender.

In March 2010, President Obama signed the Patient Protection and Affordable Care Act. This new Act was intended to increase the availability of health care for United States citizens, and to decrease the uninsured by 32 million people ("The Patient Protection and Affordable Care Act," 2010). We have yet to understand how disparities will be affected by this most recent change in legislation. However, although provisions have been made in the past and precautions have been taken, disparities continue to pervade health care recommendations.

CHAPTER III

DISPARITIES IN OUTCOME AND EQUAL ACCESS

Until recently, the majority of medical care and health research partly attributed disparities in disease to biological, genetic, cultural, and/or lifestyle choices across different racial groups (Williams, 1996). However, notions that disparities are based upon genetic differences related to race continue to persist in the literature (Godley, et al., 2003; Konety, Vaughan Sarrazin, & Rosenthal, 2005; Moul, Douglas, McCarthy, & McLeod, 1996; Pettaway, 1999). In fact, some researchers believe genes determining race are also responsible for determining the number and type of health problems to be expected by different individuals (Lin & Kelsey, 2000; Williams, Lavizzo-Mourey, & Warren, 1994). This concept was supported in 2002 when the National Academies Institute of Medicine issued a report that in part suggested disparities in health care could be due to genetic variability across cultures and among different groups of persons (National Academies Institute of Medicine, 2002). While some medical researchers report the continued investigation of genetic differences to be important when combating disparities (Burchard, et al., 2003), others believe differences in race should be recognized as a social construct rather than a biological fact (Freeman & Payne, 2000). Biased perceptions may exaggerate these differences and lead to disparities in the outcome of care among women and men and across racial groups.

Outcome Disparities for Women

Women were historically excluded from medical research and trials (Crossley, 2003). As a result, there is an absence of knowledge about medical treatment for women (Arslanian-Engoren, et al., 2006; Rothenburg, 1996; van Wijk, et al., 1996), and physicians may find it difficult to apply knowledge obtained from male research participants to female patients. For

example, physicians who apply the male model of ischemic heart disease to women would end up under-diagnosing this type of heart disease in women (Arslanian-Engoren, et al., 2006; van Wijk, et al., 1996). The gap in knowledge created by excluding women from medical research and clinical trials did not give doctors the tools necessary to recommend care for women. Thus, women were treated as if they were men or were treated differentially on false assumptions about sex differences in medicine.

When lacking specific medical information for women, physicians may rely on sex stereotypes to make medical decisions. For example, women are perceived by society to be frailer and weaker than men (Grenier & Hanley, 2007; Sherwin, 1992), and this belief may influence medical practitioners when they make recommendations. For example, nationwide data suggest that when compared to men, women are nearly as likely to undergo less invasive procedures of the heart, but remain less likely to undergo more invasive CABG surgery (Anand, et al., 2005; Bertoni, Bonds, Lovato, Goff, & Brancati, 2004). Additionally, women are less likely to undergo knee and hip replacement surgery, even though they are found to have greater arthritis, suffer greater disability, and hold equal recovery when compared to men (Hawker, et al., 2000). Thus, research indicates physicians' views are consistent with a male gender biased society, because physicians are less likely to provide women with more invasive, yet life altering or saving, medical procedures.

Outcome Disparities for Minorities

Until the 1960s, many White physicians believed it was permissible to provide inferior medical treatment to Black patients, because physicians held the belief that Blacks were in fact biologically inferior to Whites through Black inferiority theory (for a review see Pittman, 2003). Although physicians held these beliefs, Blacks were still recruited for medical experiments that

would ultimately be generalizable to the White population. For example, Blacks were placed in an unethical study (The Tuskegee Syphilis Study of 1932) to investigate the untreated effects of syphilis (Clark, 2009). In this study, Black men were recruited in Georgia and were told they would receive "special treatment" for their conditions; however, actual treatment was not provided. In 1969, the Center for Disease Control and Prevention reviewed the study and allowed it to continue (Centers for Disease Control and Prevention, 2009). The study finally ended in 1972 when it first appeared in the media. At this point, only 12 percent of the participants were still alive.

The misuse of medical research and trials in the Black community has been thought to have created a Legacy of Mistrust among Blacks as patients (Clark, 2009). After the Tuskegee Syphilis Study, many in the Black community had become leery of life saving sickle cell anemia screening and immunization programs of the 1970s (Clark, 2009). In 1990, the Southern Christian Leadership Conference conducted a survey and discovered that 35 percent of the 1,056 participants obtained from Black churches believed that AIDS was a form of genocide. Blacks are also more likely than Whites to believe physicians will expose them to unnecessary risks (45.5% to 34.8%, respectively; Corbie-Smith, Thomas, & St. George, 2002), they are more concerned about surgical risk (Oddone, et al., 1998), less confident in surgical outcomes (Groeneveld, et al., 2008), less trusting of their physicians (Doescher, Saver, Franks, & Fiscella, 2000), and are less likely to decide to undergo renal transplant surgery (Ayanian, Cleary, Weissman, & Epstein, 1999).

Clark (2009) argues that medical professionals should to be educated about the Legacy of Mistrust, and that they must be made aware of subtle forms of prejudice that might impact their decisions. Although physicians might believe they are unbiased in their diagnoses across various

patients, bias tends to exist because White men receive better care than Black women, White women, and Black men, even when access to care is equal across groups (Ayanian, et al., 1999; Canto, et al., 2000; Ford, Cooper, Castaner, Simmons, & Mar, 1989; Giles, Anda, Casper, Escobedo, & Taylor, 1995; Goldberg, Hartz, Jacobsen, Krakauer, & Rimm, 1992; Iribarren, et al., 2005; Vaccarino, et al., 2005). Clark (2009) proposes health care professionals should also be educated about the existence of disparities in health care while they are in medical school, and he suggests this education should be continued throughout physicians' careers.

Disparities in Equal Access Situations

Although it is unclear as to whether patients decline care, perhaps on the basis of the Legacy of Mistrust, or if medical professionals recommend less effective care to women and minorities, disparities are even found among individuals with equal access to care. When access to care is equal across groups of persons, disparities are found in terms of response time by emergency medical services (Concannon, et al., 2009), in care provided by the Department of Veterans Affairs Medical System (Whittle, Conigliaro, Good, & Lofgren, 1993), across individuals receiving government sponsored Medicare (Bach, Pham, Schrag, Tate, & Hargraves, 2004), and among individuals with single-payer health insurance (Carlisle, Leake, & Shapiro, 1997; Gaskin & Hoffman, 2000; Schneider, Zaslavsky, & Epstein, 2002).

Equal access disparities for women. When faced with a medical emergency, it is important to minimize the time of medical onset to the time of medical treatment. This time is often reduced with the use of emergency medical services. Unfortunately, disparities have been found with regard to response times associated with male and female patients (Concannon, et al., 2009). Concannon studied a sample of 5,887 patients in Dallas, Texas. All patients had utilized emergency medical services in the past year, were picked up by one of 98 emergency medical

service depots, and had been admitted to one of 29 hospitals. In this sample, when compared to men, women were found to have 50% greater odds of being delayed by remaining in the care of emergency medical services for at least 15 minutes longer than the median patient. The results remained consistent when adjusting for other characteristics, including neighborhood socioeconomic status and distance to the nearest service depot and hospital.

Equal access disparities for minorities. Differential care for minorities has been found in the Department of Veterans Affairs Medical System. In one instance, researchers examined medical records of 800,000 male veterans between the years of 1987 and 1991 to investigate frequencies of cardiac procedures (specifically, cardiac catheterization, angioplasty, and coronary bypass; Whittle, et al., 1993). In this sample, relative to Black veterans, White veterans were 1.38 times more likely to undergo cardiac catheterization, 1.50 times more likely to undergo angioplasty, and 2.00 times more likely to undergo artery bypass surgery**.** Results of this study demonstrate disparities exist in invasive cardiac procedures, even when access to care is equal.

Black Medicare patients also have been found to receive differential care. For example, in a sample of over 150,000 hospital visits by Black and White Medicare beneficiaries, researchers found Black and White patients receive primary care from different physicians. Segregation of care was not only found by patient race; physicians treating Black patients were also less likely to be board certified than physicians treating White patients. The physicians of Black Medicare patients were also more likely to report difficulty in obtaining high quality referrals, diagnostic imaging, and non-emergency hospital admission for their patients (Bach, et al., 2004). Additional research involving Medicare beneficiaries found disparities with regard to the allocation of many Medicare services (Gornick, et al., 1996). Utilizing 1990 census data,

researchers found more mortality and amputations, and fewer physician visits, mammograms, and immunizations among Black than White patients. Results of these studies suggest Medicare coverage alone is not sufficient to promote equal and effective practice patterns among all beneficiaries.

Multiple studies report racial disparities even when insurance status is held constant, and some cases demonstrate disparities when Black and White patients hold the same insurance (Carlisle, et al., 1997; Gaskin & Hoffman, 2000; Schneider, et al., 2002). In Southern California, researchers examined cases of individuals with similar health insurance to investigate disparities in cardiovascular procedures among Blacks, Latinos, and Asians when compared to White patients (Carlisle, et al., 1997). This study made use of hospital discharge records in Los Angeles County and found disparities in the use of cardiovascular procedures, after adjusting for multiple confounding variables. Blacks and Latino patients in this study held lower odds of receiving cardiovascular procedures than Asians, Pacific Islanders, and White patients.

Although many individuals in our society have health insurance, this does not guarantee the quality of medical care they will receive. Health care disparities are not uncommon for those with health insurance, and it is important to understand why these disparities exist. Although provisions are being made to provide basic medical care to all individuals, it is important to note that these provisions do not ensure the quality of care that is provided. That is, it does not protect certain groups of individuals, including women, from receiving subpar care through basic errors in judgment and decision making processes, intervention risk, and possibly through the psychological effects of sexism.

Implicit biases have been found to influence even the most well-meaning individuals (Greenwald, Poehlman, Uhlmann, & Banaji, 2009), including those in the medical profession

(Bogart, Catz, Kelly, & Benotsch, 2001; Green, et al., 2007; Schulman, et al., 1999; van Ryn, 2002). When utilizing decision pathways based on stereotypes, sex may "serve as little more than a 'jog' to the memory of busy clinicians" (Caldwell & Popenoe, 1995). The first step toward combatting disparities from a social psychological perspective is to understand basic theories and mechanisms that might be influencing recommendations for care. The following section reviews the possible role of benevolent sexism in health care disparities.

CHAPTER IV

HEALTH CARE DISPARITIES AND BENEVOLENT SEXISM

Although our society has made progress toward the reduction of old-fashioned, overt forms of sexism, more covert forms are of concern today (Glick & Fiske, 1996; Swim, Aikin, Hall, & Hunter, 1995). Because covert prejudice is harder to detect and combat, researchers argue it is more pernicious than old-fashioned, overt forms (Dovidio & Gaertner, 2000; Gaertner & Dovidio, 1986). Evidence for the existence of covert forms of sexism may be found in society. For example, women earn less (DesRoches, Zinner, Rao, Iezzoni, & Campbell, 2010; Travis, Gross, & Johnson, 2009) and are promoted less (Blau & Devaro, 2007) than men, even at equivalent levels of qualification. Women also receive less comprehensive medical care than White men, even at equivalent levels of access to care (Ayanian, et al., 1999; Canto, et al., 2000; Ford, et al., 1989; Giles, et al., 1995; Goldberg, et al., 1992; Iribarren, et al., 2005; Vaccarino, et al., 2005).

Research indicates practice patterns of medical care may include the use of stereotypes (Anand, et al., 2005; Bertoni, et al., 2004; Burgess, van Ryn, Dovidio, & Saha, 2007; Dovidio, Gaertner, Penner, Pearson, & Norton, 2009; Dovidio, et al., 2008; Hawker, et al., 2000). Thus, expectations physicians hold about patients' prognosis and recovery might play a major role in the course of treatment that is either recommended or prescribed (Burgess, et al., 2007). Researchers suggest physicians often use information they falsely believe to be associated with a given condition in their practice patterns (Burgess, et al., 2007; Caldwell & Popenoe, 1995). For example, when recommending care, physicians sometimes make unscientific associations between patient sex and disease that will eventually be used in the course of treatment and prognosis (Dovidio, et al., 2008).

All issues of inequality are extremely unjust. Those concerning a basic need and human right, such as health care, should be of the utmost concern to researchers. In examining disparities in care, it is important to consider psychological factors, such as sexism, that might contribute to differences in practice patterns. It would be important to understand whether care is being refused to certain patients, and to know whether sexism might have a part in creating and perpetuating health care disparities. The present chapter explores ambivalent sexism, discusses the possible impact of sexism on health care disparities, and concludes with an overview of benevolent sexism as it might be related to disparities in care.

Ambivalent Sexism

The intimacy shared by males and females has resulted in the idealization of women in traditional gender roles. Due to their importance to the family, many women and men believe that women who uphold traditional gender roles should be protected and cherished. These traditional relationships fulfill men's desires for social dominance as well as for intimacy and lead to positive feelings toward women who maintain traditional gender roles. Men often prefer long-term mates who uphold traditional gender roles, and for this reason many women strive to uphold these values (Eagly & Wood, 1999; Johannesen–Schmidt & Eagly, 2002). Many women and men also hold negative attitudes toward non-traditional women. To explain this phenomenon, Glick and Fiske (1996) coined the term "ambivalent sexism," which includes two very different forms of sexism, hostile and benevolent sexism. Hostile and benevolent sexism support traditional attitudes and social norms dictating how women and men should act and be regarded; both theories may be especially pernicious to women (Glick & Fiske, 1996, 2001), yet many women choose to act in manners that provide support for and perpetuate these theories.

Hostile sexism involves blatant discrimination against women on the basis of gender (Glick & Fiske, 1996, 2001). Patriarchy and the attendant separation of gender roles create and reinforce hostile sexism, because the dominant group seeks to justify privileges on the basis of presumed superiority. Those holding beliefs consistent with hostile sexism may also believe that women try to control men through their sexuality or ideology. Men's dependence on women often fosters benevolent sexism, which is characterized by the belief that women are pure, frail creatures who should be cherished and protected (Glick & Fiske, 1996, 2001). Both women and men believe this view of women is not negative; in fact, they feel it is quite the opposite. Because this view places women on a pedestal, it puts them at a disadvantage. Individuals in contemporary society typically do not see themselves as sexist. However, the same individuals may offer a variety of reasoned justifications as principled opposition to affirmative action involving gender. Whether the target is a woman or a person of color, one of the more pernicious and offensive rationales for withholding care takes the general form that "It's for their own good." Bias certainly exists for the exclusion of women from employment, awards, or promotions and possibly from access to health care as well (Ehrenreich & English, 1978; Ehrenreich & English, 1983).

Measurement of ambivalent sexism. Sexism may be evaluated with the use of both explicit and implicit measures. Explicit measures require participants to report an attitude and are best for predicting deliberate responses. However, given that individuals are generally motivated to maintain positive self-presentation (Leary, 1996), submit to social desirability concerns (Baron, Bryrne, & Branscombe, 2008; Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005), and adhere to social norms (Ajzen, 2005; Ajzen & Fishbein, 1980), those holding prejudiced attitudes may be less likely to report these attitudes when responding to explicit

measures. Thus, it is important to be cognizant of the fact that attitudes expressed through explicit measures contain these motivational components. Common explicit measures of sexism include: the Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996) and the Attitudes Toward Women Scale (ATW; Spence, Helmreich, & Stapp, 1973). In some respects, the femininity subscale of the Bem Sex Role Inventory also could be viewed as an indicator of benevolent views about women and their attributes (BSRI; Bem, 1974).

Impact of Benevolent Sexism on Health Care Disparities

Women receive less comprehensive medical care than White men, even at equivalent levels of access to care (Ayanian, et al., 1999; Canto, et al., 2000; Ford, et al., 1989; Giles, et al., 1995; Goldberg, et al., 1992; Iribarren, et al., 2005; Vaccarino, et al., 2005), and benevolent sexism may be one contributing factor to these disparities. Thus, it is important to understand whether medical professionals holding beliefs consistent with benevolent sexism allow these beliefs to influence recommendations of care for women.

Research indicates those endorsing benevolent sexist values believe women to be pure, frail creatures who should be cherished and protected (Glick & Fiske, 1996, 2001). With this in mind, women may be at a disadvantage when receiving medical care from both female and male providers who hold beliefs consistent with benevolent sexism. Specifically, medical professionals holding these beliefs may consider women less able to physically tolerate the same proactive and more aggressive procedures offered to men. Research supports this possibility, because women are less likely to undergo more invasive, yet life altering or saving, medical procedures. For example, practice patterns suggesting the involvement of benevolent sexism in medical treatment may be found with regard to hip and knee arthroplasty (Hawker, et al., 2000), treatment for various types of cancer (Donovan & Syngal, 1998; Maloney, et al., 2006;

McMahon, et al., 1999; Rosen & Schneider, 2004), among older women (Canetto, 2001; Gessert, Haller, Kane, & Degenholtz, 2006; Howerton & Travis, 2010), and in heart procedures (Anand, et al., 2005; Bertoni, et al., 2004; Kozak, DeFrances, Hall, & National Center for Health Statistics, 2006).

Disparities in knee arthroplasty that favor men over women seem especially jarring, because women have a greater prevalence of hip and knee arthritis, suffer greater arthritic disability, report worse pre-operative pain, and less physical functioning than men (Fitzgerald, et al., 2004; Hawker, et al., 2000). However, research indicates women are less likely than men to undergo hip and knee arthroplasty (Hawker, et al., 2000). These results should be of concern, because women and men who have undergone hip and knee arthroplasty have been found to gain equivalent post-operative functioning (Fitzgerald, et al., 2004).

Patterns consistent with benevolent sexism also appear to occur in the allocation of health resources for different types of cancer. Women are more likely than men to receive screenings for most types of cancer and to have higher survival rates; however, men receive more comprehensive screenings, aggressive treatments and combination therapies than women (Travis, et al., 2010). For example, colorectal cancer is the third most common form of cancer for both women and men with an estimated 102,900 (53,430 women and 49,470 men) new cases in 2010 (American Cancer Society, 2010). Men are more likely than women to be screened for colorectal cancer (Donovan & Syngal, 1998), and when women are screened, their examinations are less complete (McMahon, et al., 1999; Rosen & Schneider, 2004). Use of a colonoscopy is the superior screening method; however, women are more likely than men to receive a combination of fecal occult blood testing, barium enemas, and sigmiodoscopies than colonoscopies (Rosen & Schneider, 2004). Additional support for the possible role of benevolent

sexism is found among women of obese and normal body mass indices by rates of screening for colorectal cancer. Women who are classified as "morbidly obese" are less likely than women with a "normal" body mass index to be screened for colorectal cancer (37.1% and 42.7%, respectively); these differences are not observed among men (Rosen & Schneider, 2004). These statistics support benevolent sexism, because there is a clear bias and stigmatization against obese individuals in Western societies, and particularly against obese women. This bias has been demonstrated in research suggesting anti-fat attitudes toward women are positively correlated with adversarial sexual beliefs and negatively correlated with gender-role egalitarianism (Perez-Lopez, Lewis, & Cash, 2001).

Patterns consistent with benevolent sexism may also be found in the allocation of care for older women. Older women report more medical appointments than older men; however, the care they receive is often of lesser quality than that of men (Council on Ethical Judicial Affairs, et al., 1991). Older women are found to be less likely to receive invasive medical procedures and comprehensive screenings for cancer than men of similar age, and they are over-prescribed psychotropic medication (for a review see Travis, 1988; Travis & Meltzer, 2008).

Benevolent sexism may also have an impact on cardiovascular procedures, because these procedures are dramatically more common for men (23%) than for women (15%; Kozak, et al., 2006). When women undergo cardiovascular procedures, they are less likely to receive more invasive procedures. When compared to men, women have been found nearly as likely to undergo less invasive procedures of the heart, but they remain less likely to undergo more invasive, yet life saving, CABG surgery (Anand, et al., 2005; Bertoni, et al., 2004).

Because practice patterns suggesting the involvement of benevolent sexism have been found in various medical treatments and interventions, it is possible that women may be at a

disadvantage when receiving care from providers holding beliefs consistent with benevolent sexism. To begin research in this area, I believe it is critical to focus on disparities in practice patterns in CAD, because heart disease is and has been the leading cause of death in the United States for both women and men for over fifty years. It is specifically important to experimentally examine whether medical professionals holding beliefs consistent with benevolent sexism might utilize these ideals when recommending care for hypothetical patients. Additionally, intervention risk should be investigated, because increased risk could invoke overly conservative approaches to treatment. Thus, it is possible that medical professionals holding beliefs consistent with benevolent sexism might elicit more conservative recommendations for women when they perceive a greater level of intervention risk.

CHAPTER V

PROJECT OVERVIEW AND HYPOTHESES

Although patients have the ability to make choices pertaining to their own health care, these choices are typically made within a range of recommendations offered by medical professionals. These recommendations may be vulnerable to stereotypes and flawed judgments that may contribute to questionable care for women. Intuitions, prejudices, and stereotypes held by medical professionals may be most likely to have an unwarranted influence when cases are complex; that is, when there is relatively more uncertainty about diagnosis, ambiguity about treatment, and indefinite benefits and risks.

There is much excellent research documenting disparate health treatment as a function of socioeconomic class, race, or gender. However, the degree to which practice patterns are shaped by psychological mechanisms, to a large extent, remains uncertain. The present research experimentally investigated the potential role of attitudes and behaviors of medical professionals and is the first to experimentally examine health care disparities with respect to benevolent sexism. The following study explores practice patterns for CAD among patients who vary in sex and surgical risk and allows physicians to make recommendations for care ranging from non-invasive interventions to open-heart surgery. In the end, it is hoped research in this area will help to explain health care disparities in terms of benevolent sexism.

Hypothesis 1

Women and men holding beliefs consistent with benevolent sexism will also consider women to be frailer, weaker, and perhaps more vulnerable to the adverse effects of surgery. Thus, it was predicted that internal medical residents and cardiovascular disease fellows would be more reluctant to recommend invasive treatment options (i.e., PCI, PCI in the presence of

comorbids, PCI opposed to an intensified medication regimen, CABG surgery, CABG surgery in the presence of comorbids, and CABG surgery opposed to PCI) to the female, rather than male, patient.

Hypothesis 2

It was also predicted that internal medicine residents and cardiovascular disease fellows would be hesitant to recommend more invasive procedures to patients of high surgical risk.

Hypothesis 3

A three-way interaction of physician benevolent sexism, patient sex, and surgical risk was also predicted. Specifically, when surgical risk is elevated, internal medicine residents and cardiovascular disease fellows scoring high benevolent sexism would be able to reason they are not allocating invasive procedures to women due to the level of surgical risk and not due to the patient's sex.

CHAPTER VI

INVESTIGATION OF THE IMPACT OF BENEVOLENT SEXISM

Method

Recruitment strategy. All 561 teaching hospitals in the United States were assigned random numbers and 339 program directors at these teaching hospitals were contacted by email in numeric order, see Appendix A. Formal letters confirmed favorable contacts, and internal medicine residents and cardiovascular disease fellows were recruited with flyers distributed by resident and fellowship program directors for a study involving "medical recommendations," see Appendix B. The flyer alerted potential participants that the study would take approximately 20 minutes and also advertised that participants would have the opportunity to enter a raffle for a 1 in 20 chance of winning a $75 cash prize. Three business days after program directors agreed to distribute flyers to their residents or fellows, a follow-up email was sent to program directors with a final participation reminder invitation to be forwarded to potential participants, see Appendix C. Methods involved attitude questionnaires and analog descriptions of hypothetical CAD cases; participants were not asked to share or comment upon information pertaining to actual patients. In an additional effort to protect participants' confidentiality, all persons working on this project were required to sign a pledge of confidentiality (Appendix D).

Participants. An a-priori power analysis was conducted with G*Power software (Faul, Erdfelder, Buchner, & Lang, 2009), to determine the appropriate sample size for detecting the upper limit of a small effect size ($f^2 = .10$). Conventional effect sizes for Cohen's f^2, corresponding with a multivariate linear regression, are as follows: small (.02), medium (.15), and large (.35). With two categorical variables (patient race and surgical benefit) and one continuous variable (participant benevolent sexism) in the regression equation, 134 participants

were calculated as a sufficient number of participants with power equal to .80 to detect a small effect size, the conventional minimum for detecting significance (Cohen, 1977).

Participants included 108 internal medicine residents, 33 cardiovascular disease fellows, and three cardiac surgeons, who were randomly recruited from teaching hospitals, as defined by the American Association of Medical Colleges, across the United States. The cardiac surgeons were excluded from all analyses, because they held > 3.00 *SD*s of years of experience from the mean than the rest of the sample. Thus, the final analysis included 141 participants (50 women, 91 men; age $M = 30.52$, SD, 3.80; years of experience practicing medicine $M = 3.42$, $SD = 2.63$). The racial identification in this sample was primarily White (41.5%), but also included Asians (30.9%), Asian Indians (12.7%), Blacks (8.5%), and Hispanics/Latinos (6.3%). Medical specialization in this sample was primarily internal medicine (74.1%), but also included cardiology (22.4%), emergency medicine (1.4%), radiology (1.4%), and pediatrics (0.7%).

Procedure. Three secure and separate websites were used to conduct the present research. The recruitment flyer directed participants to an initial website where they completed the consent form (Appendix E). Participants were then routed to a second website where they completed the Benevolent Sexism Subscale of the ASI (Glick & Fiske, 1996) combined with filler items (Appendix F). They then read one of four randomly selected clinical case vignettes of a hypothetical patient (Appendix G), made recommendations for care with the Recommendations Questionnaire (Appendix H), and provided demographic information (Appendix I). Upon completion of the data collection process, participants read and acknowledged having read the debriefing statement (Appendix J). Participants were directed to a final website where they had the opportunity to submit their personal information for the raffle; submission of personal information was not required. After raffle prizes were distributed, participants' personal

information was deleted. This three-step process allowed for additional protection of participants' confidentiality and ensured that only those who completed consent forms were able to participate in the research.

Materials.

mrInterview. The present research was hosted with secure online survey software, mrInterview, which allows researchers to design and host surveys completely online. This software uses Security Sockets Layer protocol to securely collect and store data, allows for multiple question types (i.e., single and multiple response, response grids, numeric, and open-ended), and is compatible with SPSS statistical analysis software.

Measurement of benevolent sexism. Benevolent sexism was measured with the 11-item Likert-type Benevolent Sexism Subscale of the ASI (Appendix F; Glick & Fiske, 1996). Each item on the Benevolent Sexism Subscale was scored on a 6-point scale, with higher scores indicating more stereotypes about women. This subscale is considered to be a reliable measure ($\alpha = .91$; Glick & Fiske, 1996, 2001).

Filler items. Items of the Benevolent Sexism Subscale were combined with a set of 29 filler items to deflect participants' focus from the measurement of sexism (Appendix F). Filler items contained statements from the Modern Racism Scale (e.g., "Discrimination against Blacks is no longer a problem in the United States;" McConahay, 1986), Protestant Work Ethic Scale (e.g., "Distaste for hard work usually reflects a weakness of character;" Mirels & Garrett, 1971), and additional statements created with the help of a second-year medical student, Brandon Sammons. These additional statements comprise two basic categories of questions: statements regarding general medical practice (e.g., "Developing a patient care plan with other team members avoids errors in delivering care") and medical questions about "other" groups of people

(e.g., “The United States spends too much on health care for the elderly”). Filler items were combined with the Benevolent Sexism Subscale, were pretested among a group of 10 second- and third-year medical students, and were found to deflect focus from the measurement of benevolent sexism.

Clinical case vignettes. Drs. Stuart Bresee (Chief of Cardiology) and Jujhar Bains (Cardiology Fellow) at the University of Tennessee Graduate School of Medicine designed the body of the clinical case vignette for this research. The vignette presents a hypothetical patient with CAD and was pretested by cardiac surgeons to elicit 50/50 recommendations for PCI vs. CABG surgery. Four versions of the vignette were created to manipulate patient sex (male or female) and surgical risk (low or high), see Appendix G. Each vignette was preceded with a risk manipulation developed by the principle investigator. In the low-risk manipulation, participants were told the patient’s previous physician believed the patient had no absolute contraindications to CABG surgery and that a surgical intervention would pose little risk in the patient’s case. In the high-risk manipulation, participants were told the patient’s previous physician believed the patient had no absolute contraindications to CABG surgery; however, the previous physician cautioned the patient, because the previous physician believed a surgical intervention would pose an elevated level of risk in the patient’s case.

Recommendations questionnaire. After considering the clinical case vignette, participants made recommendations for care with the Recommendations Questionnaire (Appendix H). This questionnaire was designed by the primary investigator and reviewed by Drs. Bresee and Bains for accuracy. The Recommendations Questionnaire initially requested open-ended assessments in which participants were asked to report general recommendations for care and were given the opportunity to discuss decision making factors in detail. Participants

made assessments for five different interventions from the least to most invasive: watchful waiting (i.e., a medical approach in which time is allowed to pass before an intervention or therapy is implemented), lifestyle changes (i.e., a medical approach in which an intervention including a healthy diet and exercise would be prescribed to assist in the long-term management of a given pathology), an intensified medication regimen (i.e., increasing levels of prescribed medications above and beyond what the patient normally receives to control symptoms of CAD), PCI (i.e., a surgical procedure to clear or stent a narrowed coronary artery in efforts to increase blood flow to the heart and reduce or eliminate symptoms of CAD), and CABG surgery (i.e., an invasive surgical procedure in which the rib cage is opened, blood vessels are harvested from the patient's body, and harvested vessels are grafted from the coronary artery to the aorta to bypass a blocked section of the coronary artery and improve blood flow to the heart). Assessments were made with a series of four items pertaining to general recommendations (i.e., "What is the likelihood that you would recommend [insert intervention] as treatment for the patient?"), benefits (i.e., "How would you rate the patient's benefit from treatment with [insert intervention]?"), risks[3] (i.e., "How would you rate the patient's risk from treatment with [insert intervention]?"), and potential recovery (i.e., "With [insert intervention] as treatment, what degree of recovery would you expect?"). The four items were scored on a 5-point scale with higher scores indicating greater recommendations, benefits, risk, and potential recovery. Items were combined to form the following recommendation-based indices: watchful waiting, lifestyle changes, intensified medication regimen, PCI, and CABG surgery. Alphas for these indices ranged between .68-.77, see Table 1. Participants then made assessments for surgical appropriateness for PCI and CABG surgery when the patient was known to have various

[3] Recommendations pertaining to intervention risk reverse-scored.

comorbid conditions (i.e., obesity, diabetes, congestive heart failure, hyperlipidemia, hypertension, and previous stent placement). Assessments for surgical appropriateness were scored on a 5-point scale with higher scores indicating greater likelihood that an intervention would be recommended. The six items were combined to form recommendation-based indices for PCI in the presence of comorbids and CABG surgery in the presence of comorbids. Alphas for PCI in the presence of comorbids and CABG surgery in the presence of comorbids were .84 and .82, respectively; see Table 1. Finally, participants completed two separate single response items to make general recommendations for PCI versus an intensified medication regimen and CABG surgery versus PCI.

Demographic information questionnaire. Several questions were included to capture basic demographic information, including gender, age, ethnicity, number of years practicing medicine, and specialization in medicine (Appendix I).

Design and Variables

The present study investigated recommendations for treatment of CAD with the following independent and participant variables: benevolent sexism, patient sex, surgical risk, physician sex, and physician experience. Dependent variables for this study were as follows: recommendations for care in terms of watchful waiting, lifestyle changes, an intensified medication regimen, PCI, PCI in the presence of comorbids, general recommendations for PCI opposed to an intensified medication regimen, CABG surgery, CABG surgery in the presence of comorbids, and general recommendations for CABG surgery opposed to PCI. The current study had insufficient power to examine a five-way interaction; however, the statistical model does include a test of two four-way interactions: Physician Benevolent Sexism X Patient Sex X

Surgical Risk X Physician Sex and Physician Benevolent Sexism X Patient Sex X Surgical Risk X Physician Experience.

CHAPTER VII

RESULTS

I held three predictions for the present research. First, I hypothesized physicians holding beliefs consistent with benevolent sexism would be more reluctant to recommend invasive treatment options to women. Second, I predicted physicians would be more hesitant to recommend invasive treatment options to patients of high surgical risk. Third, and finally, I hypothesized a three-way interaction of physician benevolent sexism, patient sex, and surgical risk. In the third hypothesis, I believed physicians scoring high in benevolent sexism would be more reluctant to allocate invasive procedures to women when surgical risk was elevated. To test these hypotheses, a series of multivariate linear regressions were performed with each of the nine dependent variables. The first three regressions examined the least invasive, non-surgical interventions: watchful waiting, lifestyle changes, and an intensified medication regimen. Further regressions examined physician judgments with respect to other interventions: PCI alone, PCI in the presence of comorbids, PCI opposed to an intensified medication regimen, CABG surgery alone, CABG surgery in the presence of comorbids, and CABG surgery opposed to PCI. For descriptive statistics of primary study variables, correlations between study variables, and means of dependent variables see Tables 1-3, respectively (all Tables are located in Appendix K). Regression terms involving contrasts between benevolent sexism and years of physician experience are based on comparisons at +1 and -1 SD.

Watchful Waiting

For watchful waiting (i.e., a medical approach in which time is allowed to pass before an intervention or therapy is implemented), there was a significant main effect for physician sex, inasmuch as male physicians *(M* = 1.99, *SD* = .80) were more likely than female physicians (*M* =

1.60, *SD* = .48) to recommend watchful waiting as a treatment option. Means and regressions are presented in Tables 3 and 4, respectively. However, this effect and related two- and three-way interactions were qualified by a significant four-way interaction of Physician Benevolent Sexism X Patient Sex X Surgical Risk X Physician Experience, illustrated in Figure 1. Physician experience emerged to be influential in Model 4, and this model accounted for 28 percent of the variance in watchful waiting. Model 4 includes six significant effects all associated with physician experience, and the main effect for physician experience suggests those with greater experience were more likely than those with less experience to recommend watchful waiting. Results of the four-way interaction generally indicated differences in recommendations made for the female patient in terms of surgical risk, physician benevolent sexism, and years of physician experience. In decomposing the four-way interaction, the three-way Physician Benevolent Sexism X Surgical Risk X Physician Experience interaction was not significant when the patient was male (β = .004), $t(66) = .03$, $p = .98$, $SE = .12$. However, the same three-way interaction was significant when the patient was female (β = -.46), $t(60) = -3.42$, $p = .001$, $SE = .13$. In decomposing the significant three-way interaction for the female patient, the two-way Physician Benevolent Sexism X Physician Experience interactions were significant for both low and high levels of surgical risk (β = .19), $t(30) = 2.48$, $p = .02$, $SE = .08$ and (β = -.27), $t(30) = -2.38$, $p = .02$, $SE = .11$, respectively. In examining the significant two-way interaction for the female patient at low surgical risk, tests of simple slopes did not reveal differences in recommendations for watchful waiting in terms of physician experience when physicians had low scores in benevolent sexism (β = -.09), $t(30) = -1.05$, $p = .30$, $SE = .09$. However, when physicians scored high in benevolent sexism those with greater experience were more likely than those with less experience to recommend watchful waiting as a treatment option (β = .23), $t(30) = 2.48$, $p = .02$,

SE = .08. In examining the significant two-way interaction for the female patient at high surgical risk, tests of simple slopes revealed that when physicians scored low in benevolent sexism, those with greater experience were more likely than those with less experience to recommend watchful waiting (β = .22), $t(30) = 2.16$, p = .04, *SE* = .10; an inverse relationship was found among physicians scoring high in benevolent sexism, inasmuch as those with less experience were more likely than those with greater experience to recommend watchful waiting as a treatment option (β = -.24), $t(30) = -2.04$, p = .05 , *SE* = .11.

Lifestyle Changes

Main effects for physician benevolent sexism, patient sex, surgical risk, physician sex, and physician experience did not emerge in recommendations of lifestyle changes (i.e., a medical approach in which an intervention including a healthy diet and exercise would be prescribed to assist in the long-term management of a given pathology). For means and regressions see Tables 3 and 5, respectively. However, Model 2 included two two-way interactions and accounted for 15 percent of the variance in recommended lifestyle changes. The first two-way interaction, Patient Sex X Surgical Risk, indicated that physicians were more likely to recommend lifestyle changes to a male, rather than female, but only when surgical risk was low (β = -.44), $t(73) = -2.06$, p = .04, *SE* = .22. When risk was high, there were no differences in recommendations for lifestyle changes as a function of sex (β = .20), $t(69) = .84$, p = .40, *SE* = .23. The second two-way interaction, Physician Sex X Surgical Risk, indicated that female physicians were more likely to recommend lifestyle changes to a female, rather than male, patient when surgical risk was low (β = -.53), $t(49) = -2.06$, p = .05, *SE* = .26. However, the difference associated with physician sex disappeared when surgical risk was high (β = .10), $t(92) = .51$, p = .61, *SE* = .20. Model 3 included a three-way interaction of Physician Benevolent Sexism X Surgical Risk X

Physician Experience, illustrated in Figure 2. This model accounted for 22% of the variance in recommendations for lifestyle changes. The significant three-way interaction generally indicated differences in recommendations made for high- but not low-risk patients as a function of both physician benevolent sexism and years of physician experience. In decomposing this interaction, the two-way Physician Benevolent Sexism X Physician Experience interaction was not significant when surgical risk was low (β = .009), $t(73) = .15$, $p = .88$, $SE = .06$. However, the same interaction was significant when surgical risk was high (β = -.25), $t(61) = -2.95$, $p = .004$, $SE = .09$. Under conditions of high surgical risk, physicians scoring low in benevolent sexism and having more years of experience were more likely to recommend lifestyle changes than were physicians high in benevolent sexism and having less experience (β = .24), $t(61) = 3.25$, $p = .002$, $SE = .08$. In contrast, under the same high-risk conditions, physicians scoring high in benevolent sexism and having less experience were the group most likely to recommend lifestyle changes (β = -.25), $t(61) = -2.95$, $p = .004$, $SE = .09$.

Intensified Medication Regimen

Intensified medication is a relatively conservative treatment approach and typically involves increasing the dosage of medications already prescribed or in some instances adding an additional medication, e.g., adding a Beta-blocker to a regimen that already includes an ACE inhibitor. A main effect for patient risk indicated that recommendations for increased medication were more likely for patients of high, rather than low, surgical risk. For means and regressions see Tables 3 and 6, respectively. Overall, recommendations for an intensified medication regimen were not well-defined by any of the independent variables; Model 1 was the only model that indicated a significant effect and this accounted for only nine percent of the variance.

PCI

A main effect for patient sex indicated that the male patient was more likely than the female patient to receive recommendations for PCI (i.e., the lesser invasive surgical procedure). For means and regressions see Tables 3 and 7, respectively. A Physician Benevolent Sexism X Physician Sex interaction was also revealed. In decomposing this interaction, female physicians with low scores in benevolent sexism were marginally more likely than female physicians with high scores to recommend PCI (β = -.24), $t(47)$ = -1.91, p = .06, SE = .12. Among male physicians, there were no differences in recommendations for PCI as a function of benevolent sexism (β = .04), $t(91)$ = .30, p = .77, SE = .12.

PCI in the Presence of Comorbids

Participants additionally were asked to make recommendations regarding PCI in the presence of one or more comorbid conditions (obesity, diabetes, congestive heart failure, hyperlipidemia, hypertension, and a previous stent placement). The factorial regression that included all main effects, all two-way, all three-way, and two four-way interactions accounted for 30% of the variance in recommendations for PCI. Main effects were observed for all independent variables, indicating greater likelihood of recommendations for PCI when: scores in benevolent sexism were high, the patient was female, surgical risk was high, physicians were female, and physicians held greater experience. For means and regressions see Tables 3 and 8, respectively. Various two- and three-way interactions were also observed. However, these interactions were qualified by a significant four-way Physician Benevolent Sexism X Patient Sex X Surgical Risk X Physician Sex interaction, illustrated in Figure 3. This interaction generally indicated differences in recommendations made for low-risk patients in terms of physician benevolent sexism, physician sex, and patient sex. For example, the three-way Physician

Benevolent Sexism X Patient Sex X Physician Sex interaction was not significant when surgical risk was high (β = .12), t(57) = .20, p = .84, SE = .60. However, the same three-way interaction was significant when surgical risk was low (β = 1.79), t(69) = 3.26, p = .002, SE = .55. In decomposing the significant three-way interaction for low surgical risk, the two-way Physician Benevolent Sexism X Patient Sex interactions were significant among both male and female physicians (β = -.89), t(48) = -2.54, p = .01, SE = .35 and (β = .90), t(21) = -3.13, p = .003, SE = .28, respectively. In examining the significant two-way interaction among male physicians when surgical risk was low, tests of simple slopes did not reveal differences in recommendations for PCI in the presence of comorbid conditions were present in terms of patient sex when physicians scored low in benevolent sexism (β = .76), t(48) = 1.56, p = .13, SE = .49. However, when male physicians held scored high in benevolent sexism, they were more likely to recommend PCI in the presence of comorbids to the male, rather than female, patient (β = -.76), t(48) = -2.17, p = .04, SE = .35. In examining the significant two-way interaction among female physicians at low surgical risk, tests of simple slopes did not reveal differences in recommendations for PCI in the presence of comorbid conditions when physicians scored high in benevolent sexism (β = .51), t(21) = .78, p = .45, SE = .66. However, when female physicians scored low benevolent sexism, they were more likely to recommend PCI in the presence of comorbids to the male, rather than female, patient (β = -1.04), t(21) = -2.14, p = .04, SE = .48.

PCI Opposed to an Intensified Medication Regimen

A single response item asked physicians to make judgments regarding PCI in comparison to an intensified medication regimen. There was a main effect for patient sex, inasmuch as physicians were more likely to recommend PCI over an intensified medication regimen to the male, rather than female, patient. For means and regressions see Tables 3 and 9, respectively.

This main effect was entirely moderated by risk, as indicated by the significant Patient Sex x Surgical Risk interaction. In decomposing this interaction, physicians were more likely to recommend PCI opposed to an intensified medication regimen to the female patient under conditions of low surgical risk (β = -.71), $t(69) = -2.14$, p = .04, SE = .33. However recommendations did not differ for the male patient (β = .12), $t(73) = .47$, p = .64, SE = .27. A three-way Physician Benevolent Sexism X Patient Sex X Physician Experience interaction also was recorded, illustrated in Figure 4. Results of this interaction generally indicated differences in recommendations made for the female patient in terms of physician benevolent sexism and years of physician experience. In decomposing the three-way interaction, the two-way Physician Benevolent Sexism X Physician Experience interaction was not significant when the patient was male (β = -.20), $t(70) = -.62$, p = .54, SE = .32. However, the same interaction was significant when the patient was female (β = .93), $t(64) = 2.28$, p = .03, SE = .41. Tests of simple slopes for the female patient indicated years of physician experience marginally impacted recommendations for PCI opposed to an intensified medication regimen among physicians who scored low (β = .22) $t(64) = 1.75$, p = .08, SE = .12 and high in benevolent sexism (β = -.21) $t(64) = -1.74$, p = .08, SE = .12. Specifically, physicians scoring low in benevolent sexism were more likely to recommend PCI as opposed to an intensified medication regimen when they held greater, rather than lesser, experience. However, physicians scoring high in benevolent sexism were more likely to recommend PCI opposed to an intensified medication regimen when they held lesser, rather than greater, experience.

CABG Surgery

Overall, recommendations for CABG surgery (i.e., the most invasive surgical procedure) were not well-defined by any of the independent variables; Model 2 was the only model to report

significant effects, and these effects accounted for only 13 percent of the variance. Main effects for physician benevolent sexism, patient sex, surgical risk, physician sex, and physician experience did not emerge in recommendations of CABG surgery. For means and regressions see Tables 3 and 10, respectively. A Patient Sex X Physician Sex interaction indicated the male patient was more likely to receive a recommendation for CABG surgery by female (M = 4.01, SD = .46), rather than male (M = 3.62, SD = .84), physicians (β = .39), $t(72) = 1.98$, p = .05, SE = 20. However, physician sex did not predict recommendations for the female patient (β = -.07), $t(66) = -.37$, p = .71, SE = .19. A Surgical Risk X Physician Sex interaction identified that female physicians (M = 3.93, SD = .54) were more likely than male physicians (M = 3.55, SD = .80) to recommend CABG surgery when surgical risk was high (β = .37), $t(63) = 2.02$, p = .05, SE = .19. However, physician sex did not predict recommendations when surgical risk was low (β = -.08), $t(75) = -.41$, p = .69, SE = .19.

CABG Surgery in the Presence of Comorbids

Overall, recommendations for CABG surgery in the presence of comorbid conditions were not well-defined by any of the independent variables; Model 2 was the only model to report significant effects, and these effects accounted for only 11 percent of the variance. Main effects for physician benevolent sexism, patient sex, surgical risk, physician sex, and physician experience did not emerge in recommendations of CABG surgery in the presence of one or more comorbid conditions (i.e. obesity, diabetes, congestive heart failure, hyperlipidemia, hypertension, and a previous stent placement). For means and regressions see Tables 3 and 11, respectively. However, a two-way Physician Benevolent Sexism X Physician Sex interaction was found. In decomposing this interaction, female physicians scoring higher in benevolent sexism were more likely than female physicians scoring lower in benevolent sexism to

recommend CABG surgery to patients in the presence of comorbid conditions (β = .38), $t(47)$ = 2.75, p = .008, SE = .14. However, benevolent sexism did not predict recommendations of CABG surgery in the presence of comorbid conditions among male physicians (β = -.005), $t(91)$ = -.04, p = .97, SE = .12.

CABG Surgery Opposed to PCI

When using a single-item to report recommendations for CABG surgery opposed to PCI, a main effect was found for physician experience, inasmuch as physicians with less experience were more likely than those with greater experience to recommend CABG surgery opposed to PCI. For means and regressions see Tables 3 and 12, respectively. A two-way Patient Sex X Physician Sex interaction was also found. In decomposing this interaction, female physicians (M = 4.40, SD = .88) were more likely than male physicians (M = 3.67, SD = 1.33) to recommend CABG surgery opposed to PCI when the patient was male (β = .73), $t(72)$ = 2.28, p = .03, SE = .32. However, both female (M = 3.76, SD = 1.46) and male physicians (M = 3.77, SD = 1.18) had similar recommendations for CABG surgery opposed to PCI when the patient was female (β = -.01), $t(66)$ = -.03, p = .97, SE = .32.

CHAPTER VIII

DISCUSSION

The present research represents an important step toward understanding how physician biases might impact the allocation of health care for women. The current project had three major goals. It first sought to investigate whether physicians holding beliefs consistent with benevolent sexism would be more reluctant to recommend invasive treatment options to women. Second, the project explored whether physicians would be more hesitant to recommend invasive treatment options to patients of high surgical risk. Third, and finally, the current project examined a three-way interaction of physician benevolent sexism, patient sex, and surgical risk. This third goal explored whether physicians scoring high in benevolent sexism would be more reluctant to allocate invasive procedures to women of high surgical risk. In line with the hypotheses, physicians holding both high scores in benevolent sexism and greater years of experience were less likely to recommend PCI opposed to an intensified medication regimen to the female patient. Furthermore, when surgical risk was low, male physicians scoring high in benevolent sexism were less likely to recommend PCI in the presence of one or more comorbid conditions to the female patient. In the discussion that follows, I will comment on key study findings in terms of the three main independent variables (physician benevolent sexism, patient sex, and surgical risk), discuss results in terms of an unexpected variable (physician experience), and review several study strengths and limitations.

Key Findings in Terms of Independent Variables

Benevolent Sexism. Across the board, there were no significant main effects for physician benevolent sexism; however, this variable did play a role in some interesting interactions. For example, an unexpected and consistent pattern emerged in recommendations for

watchful waiting, lifestyle changes, and PCI opposed to an intensified medication regimen, illustrated in Figures 1d, 2b, and 4b. The pattern suggests an inverse relationship in watchful waiting, when the patient was female and surgical risk was high; in lifestyle changes, when surgical risk was high; and in PCI opposed to an intensified medication regimen, when the patient was female. Specifically, physicians who scored high in benevolent sexism and held greater experience were more likely to recommend watchful waiting, lifestyle changes, and PCI opposed to an intensified medication regimen. However, the opposite was found among physicians who scored low in benevolent sexism and held less experience, inasmuch as they were found to recommend watchful waiting, lifestyle changes, and PCI opposed to an intensified medication regimen under these conditions. I find it interesting that this pattern was found in terms of both non-invasive and invasive procedures, and recommend future research investigate this relationship.

Patient Sex. Results demonstrated sex bias, in that physicians were more likely to recommend all forms of PCI (i.e., PCI, PCI in the presence of comorbid conditions, and PCI opposed to an intensified medication regimen) to a male, rather than female, patient. A similar pattern of sex bias was found in recommendations for both CABG surgery and CABG surgery opposed to PCI, inasmuch as female physicians were more likely than male physicians to recommend these invasive interventions to the male patient. However, differences in recommendations for these interventions were not found in terms of physician sex when the patient was female. These results are both interesting and important, because they suggest female physicians play a major role in sex disparities found in recommendations for the most invasive of CAD interventions.

Surgical Risk. For surgical risk, variations were found in terms of intervention invasiveness. In recommendations for non-invasive procedures (watchful waiting, lifestyle changes, and an intensified medication regimen), variations were found when surgical risk was high. For example, physicians were found to be more likely to recommend an intensified medication regimen to patients of high, rather than low, surgical risk. However, in recommendations for an invasive procedure (PCI in the presence of comorbid conditions), variations were found when surgical risk was low. I do not have an explanation for this pattern, and believe future research could benefit from examining this relationship.

Physician Experience

Results involving physician experience were completely unexpected. Physicians with greater years of experience were less likely to recommend CABG surgery opposed to PCI. Those with greater experience were also more conservative when making recommendations under higher surgical risk and to women – this may be seen in the consistent interaction patterns discussed before. Physician experience may to be related to accountability. Residents would not independently make decisions, and any risky recommendations ultimately would be accepted or rejected by a more senior attending physician. In contrast, cardiovascular fellows do make final decisions regarding patient care, i.e., their recommendations are enacted. Complications or untoward outcomes of these decisions ordinarily become part of a permanent record and are subject to review by other experts.

Study Strengths and Limitations

Several strengths in the present research enhance confidence in the reported results. First, because the study was conducted with physicians as participants and utilized clinical case vignettes normally encountered in practice, there is enhanced confidence the results are

externally valid. Additionally, the present research demonstrated effects utilizing extremely minimal manipulations (i.e., altering the patient's name to manipulate sex and manipulating surgical risk in a simple statement reportedly made by a previous physician) demonstrating how simply and subtly the effects could be produced (Prentice & Miller, 1992).

Nevertheless, the present research is not without limitations. Participants included medical residents and cardiovascular disease fellows with a range of one to fifteen years of experience, and many unexpected effects emerged as a factor of physician experience. As previously suggested, years of experience during this formative time in physicians' professional development may be directly related to accountability. Physicians with greater experience were found to be more conservative in their recommendations, and this could be due to the simple fact that their recommendations often come to fruition. Future research should take these unexpected results into consideration, and should only include participants who have the ability to independently make final decisions regarding patient care.

Finally, although medical students were distracted from the measurement of sexism when pilot testing the Benevolent Sexism Subscale of the ASI (Glick & Fiske, 1996) in combination with filler items, this same inventory distracted less (60.3%) of the medical professionals in the current sample. Instead of using the current explicit, self-report measure of sexism, future research should employ more implicit and indirect methods to assess sexism. For example, gender-career beliefs may be indirectly evaluated with use of an Implicit Association Test (IAT) that could assess the strength of the association between a social category (i.e., gender) and evaluative terms (i.e., career beliefs; Greenwald, McGhee, & Schwartz, 1998; Greenwald, et al., 2009). Although implicit measures are known for having a greater ability to access prejudiced attitudes, they are not without flaw. For example, the IAT has been criticized for being

contaminated by extrapersonal associations (i.e., associations that are created and perpetuated by the media and other social influences; Baumeister & Bushman, 2008; Olson & Fazio, 2004). In an effort to reduce these extrapersonal associations, researchers have suggested the use of a personalized version of the IAT in which measured associations are personalized for each participant (Olson & Fazio, 2004). A gender-career IAT would allow participants to categorize family and career-related words with male and female names. This IAT would allow researchers to derive an estimate of participants' beliefs in traditional gender roles, while simultaneously deflecting participants' focus from the measurement of sexism.

CHAPTER IX

FUTURE RESEARCH: THE IMPACT OF AVERSIVE RACISM

This project represents only the first step in a larger set of programmatic research examining disparities in health care. In initially continuing the investigation, it would be important to investigate the impact of aversive racism.

Aversive Racism

Aversive racism suggests individuals disguise racist attitudes from themselves as well as from public observers, believing themselves to be fair-minded and impartial with respect to subordinate out-groups (Gaertner & Dovidio, 1986). The unacknowledged negative affect and beliefs are thought to be a product of being raised in a historically racist culture that supports underlying cognitive and motivational biases promoting in-group favoritism (Devine, Plant, & Blair, 2002; Gaertner & Dovidio, 1986). Aversive racism characterizes those who hold openly non-prejudiced beliefs, yet whose unacknowledged negative affect and beliefs are expressed in subtle, covert, indirect, and often justifiable ways that occur out of conscious control (Dovidio & Gaertner, 2004; Gaertner & Dovidio, 1986; Nail, Harton, & Decker, 2003; Pearson, Dovidio, & Gaertner, 2009). Aversive racism is described as "a virus that has evolved into a new and difficult form – a form that is not only more difficult to recognize, but is also more difficult to combat" (Dovidio & Gaertner, 2000). Moreover, because the bias of those holding views consistent with aversive racism remains unacknowledged, it is considered to be more pernicious than blatant, old-fashioned forms racism (Gaertner & Dovidio, 1986).

An important distinction of aversive racism is that individuals holding these beliefs score low on explicit and high on implicit measures of prejudice (i.e., measures that allow for the access of more spontaneous and uncensored actions; Dovidio & Gaertner, 2004; Pearson, et al.,

2009; Son Hing, Chung-Yan, Grunfeld, Robichaud, & Zanna, 2005; Son Hing, Li, & Zanna, 2002). Thus, if a situation clearly calls for a non-prejudiced response, or if a prejudiced response cannot be justified, individuals holding beliefs consistent with aversive racism will respond in a non-prejudicial manner. However, these individuals will allow negative tendencies to be apparent in their responses when non-prejudicial norms are weak or ambiguous, or when justifications for racist behavior are available (Devine, et al., 2002; Pearson, et al., 2009). Therefore, aversive racism is characterized by alternating positive and negative behaviors toward out-group members (Devine, et al., 2002). These positive and negative behaviors depend on the normative structure of a given situation and the potential for the individual to generate a non-racial justification for a prejudiced response. Because those holding beliefs consistent with aversive racism truly believe they hold egalitarian values and express unbiased behavior, they often do not acknowledge their own biases, in order to maintain an egalitarian self-image (Devine, et al., 2002; Gaertner & Dovidio, 1986).

Impact of Aversive Racism on Health Care Disparities

Researchers originally investigated aversive racism and racial prejudice among a group of undergraduates by asking students to select an applicant for a peer counseling program (Dovidio & Gaertner, 2000). In the experiment, applicants were described as either Black or White, and as holding strong, ambiguous, or weak qualifications. Researchers found race was not a deciding factor when the applicant was either strongly or weakly qualified; however, when the applicant's qualifications were ambiguous, participants used the applicant's race to help make the decision. Thus, when guidelines for decision making were clear, those holding beliefs consistent with aversive racism used these guidelines in the decision making process; however, when guidelines were ambiguous, these individuals allowed race to influence their decisions.

This study demonstrates those holding values consistent with aversive racism will engage in prejudiced behavior when they are able to generate a non-racial justification for the behavior. Unfortunately, patterns consistent with aversive racism may be found in various types of medical treatment: CABG surgery (Travis, Howerton, & Meltzer, 2009), emergency surgery (Geiger, 2003), treatment of prostate cancer (Shavers, Brown, Klabunde, et al., 2004; Shavers, Brown, Potosky, et al., 2004), and recommendations of thrombolytic drugs (Green, et al., 2007).

Consistent with aversive racism research in other areas, which reveal discrimination when norms for appropriate actions are weak or ambiguous (Dovidio & Gaertner, 2000; Dovidio & Gaertner, 2004; Dovidio, et al., 2009), research utilizing data from the National Hospital Discharge Survey to investigate disparities in CABG surgery found similar patterns in the decision making process of medical professionals (Travis, Howerton, & Meltzer, 2009). Specifically, researchers found disparities in CABG surgery to be minimal when medical profiles indicated a clear need for treatment, or when surgery was contraindicated; however, disparities were rampant when medical profiles were less definitive. Unfortunately, this mid-range of mixed signals was found to encompass most cases.

Although not directly exploring aversive racism, researchers recently explored the impact of medical residents' explicit and implicit racial attitudes on the medical decision making process (Green, et al., 2007). Medical residents did not report racial biases on explicit measures; however, results from implicit measures suggest residents believed Black patients to be less cooperative than White patients. Additionally, residents who reported anti-Black bias on implicit measures were found to predict fewer recommendations of thrombolytic drugs for Black patients than White patients. Researchers also included a sample of medical residents who were aware of the study's intentions and found anti-Black bias in this case predicted greater recommendation of

the thrombolytic drugs. Thus, results suggest medical professionals hold egalitarian intentions for the distribution of treatment. However, if they are not cognizant of the impact of their biases in the treatment process, they may allow these biases to influence the allocation of care.

Because those who hold beliefs consistent with aversive racism do not acknowledge their negative attitudes (Dovidio & Gaertner, 2004; Gaertner & Dovidio, 1986; Nail, et al., 2003; Pearson, et al., 2009), racial and ethnic minorities may be at a disadvantage when receiving care from medical providers holding these ideals. This may be especially true if medical professionals are not cognizant of the impact of their biases in the treatment process (Green, et al., 2007). Thus, more research is needed to examine patterns of care recommended to minorities by medical professionals scoring high in aversive racism.

CHAPTER X

CONCLUSION

All issues of inequality as they pertain to women and minorities are terribly unjust. However, inequality that concerns a basic need and human right such as health care is, as Dr. Martin Luther King, Jr. suggests, “shocking and inhumane” (quoted in Chicago-Sun Times, 1966, p. 12) . In order to make disparities in health care a problem of injustice, it must be argued that medical care is a commodity that should be distributed according to medical need (Gamble & Stone, 2006). Therefore, everyone requiring specific medical care would receive it, and those who do not require specific care would not be subjected to unnecessary treatment.

Although sexism is less palatable to consider than alternative explanations, it must be investigated as it could be related to health care disparities. It is important to note that working toward the understanding of sex bias in health care does not discount the work and good intentions of medical professionals. In fact, research indicates biases often operate out of conscious awareness and unintentionally among even the most well-meaning individuals (Greenwald, et al., 2009), including those in the medical profession (Bogart, et al., 2001; Green, et al., 2007; Schulman, et al., 1999; van Ryn, 2002). Thus, it is important to understand psychological mechanisms that could influence recommendations for care. Regardless of sex, race, ethnicity, sexual orientation, physical ability, mental capacity, socioeconomic status, level of education, and age, disparities in health care are a significant problem for those living in the United States. In order to work toward equal treatment for women and other marginalized groups, disparities in health care should be of utmost concern to researchers.

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APPENDICES

APPENDIX A

RECRUITMENT EMAIL

DATE

ADDRESS

Re: Participant Recruitment for Dissertation Research

Dear Dr. _____,

My name is Dawn Howerton, and I am a doctoral candidate in the Experimental Psychology Program at the University of Tennessee. I am working in collaboration with Drs. Stuart Bresee (Chief of Cardiology) and Jujhar Bains (Cardiology Fellow) at the University of Tennessee Graduate School of Medicine to complete my dissertation research.

I am writing because I would like to recruit your internal medicine residents [cardiovascular disease fellows] as participants. I am investigating potential disparities in hypothetical recommendations for coronary artery disease. My dissertation is hosted online, takes 20 minutes to complete, has been approved by our Institutional Review Board (IRB No. 8372B), and offers participants a 1 in 15 chance of winning $75.

In total, 320 internal medicine residents and cardiovascular disease fellows will be recruited across the United States. I hope you will allow your residents [fellows] to take part in my research. Please feel free to contact me (or my graduate advisor, Dr. Cheryl Travis) for more information about the project. I have also included a link to my website, in case you might be interested in viewing my curriculum vitae and publications.

Cheryl Travis, Ph.D.
Associate Department Head and Professor, Psychology
Chair, Women's Studies
Austin Peay Building
University of Tennessee
Knoxville, TN 37996
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Thank you in advance for your time.
--
Dawn Howerton, M.A.
Doctoral Candidate, Experimental Psychology
University of Tennessee
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(865) 974-1525
http://utk.academia.edu/DawnHowerton/About

APPENDIX B

RECRUITMENT FLYER

RESIDENTS and FELLOWS
Participation Needed

Dawn Howerton,
a doctoral candidate at the University of Tennessee,
is recruiting participants for:

Research Involving
MEDICAL RECOMMENDATIONS

Participate in less than 20 minutes, and have the opportunity to win 1 of 15:

$75 raffle prizes!!

To take part in this study, go to:
http://survey.utk.edu/mrIWeb/mrIWeb.dll?I.Project=MEDICALRECOMMEND

To inquire about participation or to obtain more information about this study without following the above-referenced link, please feel free to contact Dawn Howerton at (865) 974-1525 or dhowert1@utk.edu

For research-related problems or questions about participants' rights, the University of Tennessee Institutional Review Board may be contacted through the Compliance Office at (865) 974-3466.

APPENDIX C

FOLLOW-UP EMAIL

My name is Dawn Howerton. I am a doctoral candidate at the University of Tennessee and am collecting data for my final project prior to earning my Ph.D. I would like to thank those who have participated in my research; I greatly appreciate your time.

If you have not already participated, I would like to extend the invitation one last time.
I understand your time constraints and would appreciate any help you might be able to provide.

Participation is completely voluntary and takes between 15-20 minutes. If you opt to participate, your data will remain confidential and you will be given the opportunity to enter a raffle for a 1 in 15 chance of winning $75.

If you would like to participate, please access the flyer attached to this email for more information.

Once again, thank you all for your time!
--
Dawn Howerton, M.A.
Doctoral Candidate, Experimental Psychology
University of Tennessee Knoxville
dhowert1@utk.edu
(865) 974-1525

APPENDIX D

RESEARCH TEAM MEMBER PLEDGE OF CONFIDENTIALITY

Health Care Disparities: The Impact of Benevolent Sexism

As a member of this project research team, I _____, hereby pledge and affirm to respect and maintain the confidentiality of any data to which I may purposely or inadvertently be exposed during the course of this project. I understand that I have a responsibility to honor this confidentiality agreement. I hereby agree not to share any information with regard to this research project with anyone except the primary researcher of this project, Dawn Howerton, or other members of the research team. Any violation of this agreement would constitute a serious breach of ethical standards, and I pledge not to do so.

Signature: _____ Date: _____

APPENDIX E

INFORMED CONSENT

The following is a general description of the study and a reminder of my rights as a potential participant. This research study is being conducted by Dawn Howerton, a graduate student of Experimental Psychology, and through the Psychology Department at the University of Tennessee. My participation in this study is completely voluntary, and I am free to discontinue participation at anytime. The study will take approximately 60 minutes to complete, all participation will be completed in one online session, and my data will be transmitted confidentially. Upon transmission of my data, I will be given the opportunity to complete a separate submission of my name and phone number into a raffle drawing for one of fifteen $75 cash prizes.

The purpose of this research is to examine medical recommendations for hypothetical patients. During the experiment, I will: review a clinical case vignette, complete several questionnaires, and view and respond to a variety of images and/or words presented on the computer screen. I will also complete other computerized tasks that will require the categorization of images and/or words that are presented.

All of my responses will remain completely confidential. Data from this research may eventually be published in a peer-reviewed journal and could also be presented at research conferences. However, all personal information will be kept completely confidential and data will only be reported in terms of aggregate numbers. No individual data will be presented. If I decide to withdraw from the study early, or to discontinue my participation, my data will be deleted by the principal investigator. If I decide to submit my name and phone number to the raffle, it will be deleted from the study records as soon as the raffle prizes have been distributed.

A major benefit of this study is that it will give researchers a greater understanding as to how medical professionals in training make decisions. However, the research procedures involve a minimal risk of psychological discomfort. For example, some of the questions may make you anxious, because they deal with health care decision-making among physicians in training. Although the researchers need to avoid a complete description of the procedures at this time, and of specific items that may cause discomfort, I understand that I am entitled to a full explanation of the study after my participation is complete. Following my participation, I will be fully debriefed with regard to the true nature of the study. If I decide to withdraw from the study early, or if I decide to discontinue my participation, I may contact the researcher to obtain more information with regard to the true nature of the study. If I have any questions or concerns prior to, during, or after my participation, I can or will contact the principal investigator, Dawn Howerton at (865) 974-1525, or dhowert1@utk.edu.

This protocol has been reviewed and approved by the Institutional Review Board – Human Subjects in Research. For research-related problems or questions about participants' rights, the Institutional Review Board may be contacted through the Compliance Office at (865) 974-3466.

I have read and understand the explanation provided to me. I voluntarily agree to participate in this study. I have printed a copy of this form for my records, and I understand that a copy of my consent form will be stored on a password-protected computer in the Psychology Department at the University of Tennessee (in Dr. Cheryl Travis' office, the PI's academic advisor) for a minimum of three years post-collection.

Printed Name (as signature) _____

Date _____

APPENDIX F

MEASUREMENT OF BENEVOLENT SEXISM

Below are a series of statements concerning men and women and their relationships in contemporary society. Please indicate the degree to which you agree or disagree with each statement using the scale below:

0	1	2	3	4	5
disagree strongly	disagree somewhat	disagree slightly	agree slightly	agree somewhat	agree strongly

---

1. Clinical decisions and hospital policy should be maintained by health professionals and not corporate heads.
2. The elderly have the right to the very best health care available.
3. Most people spend too much time in unprofitable amusements.
4. The biggest problem with our health care system is that we provide unlimited health care to the poor.
5. **Every man ought to have a woman whom he adores.**
6. Electronic medical records are superior to handwritten charts.
7. **Many women have a quality of purity that few men possess.**
8. Over the past few years, Blacks have gotten more economically than they deserve.
9. Anyone who is able and willing to work hard has a good chance of succeeding.
10. **A good woman should be set on a pedestal by her man.**
11. Hospitals should acknowledge same-sex partners equally to any other next of kin.
12. Discrimination against Blacks is no longer a problem in the U.S.
13. Developing an interdisciplinary patient care plan is excessively time consuming.
14. **Women, as compared to men, tend to have a more refined sense of culture and good taste.**
15. It bothers me to think that some people do not receive medical care due to financial issues.
16. Blacks are getting too demanding in their push for equal rights.
17. **Women, compared to men, tend to have a superior moral sensibility.**
18. Our current medical system effectively serves patient needs.
19. **In a disaster, women ought not necessarily to be rescued before men.**
20. Over the past few years, the government and news media have shown more respect to Blacks than they deserve.
21. I feel that it is a waste of time trying to persuade patients to give up smoking.
22. Developing a patient care plan with other team members avoids errors in delivering care.
23. It is easy to understand the anger of Black people in America.
24. **Men should be willing to sacrifice their own well being in order to provide financially for the women in their lives.**
25. It is wrong to refuse health care to illegal immigrants.
26. **Men are complete without women.**
27. The majority of patients who abuse controlled substances misuse health care services.
28. Blacks should not push themselves where they are not wanted.

29. The United States scores low in world rankings on health because insurance companies do not allow complete physician autonomy.
30. Women should be cherished and protected by men.
31. People who fail at a job have usually not tried hard enough.
32. Blacks have more influence on upon school desegregation than they ought to have.
33. Distaste for hard work usually reflects a weakness of character.
34. No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman.
35. I often feel sympathy and understanding toward patients who abuse controlled substances.
36. People are often truly happy in life without being romantically involved with a member of the other sex.
37. The United States spends too much on health care for the elderly.
38. If a patients refuse to help themselves, their physician should disregard them as 'a lost cause'.
39. There are few satisfactions equal to the realization that you have done your best job.
40. The federal government knows the best way to treat patients effectively.

Note. Questions from the Benevolent Sexism Subscale of the Ambivalent Sexism Inventory (Glick & Fiske, 1996) appear in bold-faced font.

APPENDIX G

CLINICAL CASE VIGNETTES

LOW RISK
[Mr. or Ms.] Harris seeks a second opinion. **[His or Her]** previous physician believed **[he or she]** had no absolute contraindications to CABG surgery, and that a surgical intervention would pose little risk in **[his or her]** case.

[Mr. or Ms.] Harris is a 52-year-old **[man or women]** who consults you for 3 months of class 3 angina that is now in a stable pattern but persists despite optimal medical therapy. **[His or Her]** pain is left-sided with radiation to **[his or her]** neck and left arm, exacerbated with minimal exertion and relieved with rest and NTG. **[Mr. or Ms.]** Harris' past medical history: Well controlled type II DM, controlled Stage 1 HTN, reformed smoker with 20 pack/year history, and positive Family history of premature MI in father. Physical examination: 5 feet 5 inches, BMI 35; otherwise unremarkable. Resting EKG is normal. Exercise stress test with 2 mm horizontal ST depression in leads V2 - V5 during 7th minute of Bruce protocol at HR 80% predicted. Test is terminated due to chest pain. Both chest pain and ST depressions resolve within 5 minutes. Cardiac catheterization is performed and demonstrates 70% discrete mid LAD stenosis, 60 - 70% discrete mid LCx stenosis, and 50% proximal RCA stenosis, with an EF of 55%. Based on this information, you will now recommend:

HIGH RISK
[Mr. or Ms.] Harris seeks a second opinion. **[His or Her]** previous physician believed **[he or she]** had no absolute contraindications to CABG surgery. However, the physician cautioned **[Mr. or Ms.]** Harris, because the physician believed a surgical intervention would pose an elevated level of risk in **[his or her]** case.

[Mr. or Ms.] Harris is a 52-year-old **[man or woman]** who consults you for 3 months of class 3 angina that is now in a stable pattern but persists despite optimal medical therapy. **[His or Her]** pain is left-sided with radiation to **[his or her]** neck and left arm, exacerbated with minimal exertion and relieved with rest and NTG. **[Mr. or Ms.]** Harris' past medical history: Well controlled type II DM, controlled Stage 1 HTN, reformed smoker with 20 pack/year history, and positive Family history of premature MI in father. Physical examination: 5 feet 5 inches, BMI 35; otherwise unremarkable. Resting EKG is normal. Exercise stress test with 2 mm horizontal ST depression in leads V2 - V5 during 7th minute of Bruce protocol at HR 80% predicted. Test is terminated due to chest pain. Both chest pain and ST depressions resolve within 5 minutes. Cardiac catheterization is performed and demonstrates 70% discrete mid LAD stenosis, 60 - 70% discrete mid LCx stenosis, and 50% proximal RCA stenosis, with an EF of 55%. Based on this information, you will now recommend:

APPENDIX H

RECOMMENDATIONS QUESTIONNAIRE

Instructions:
"While thinking back to the patient, please answer the following open-ended questions:"

1. What are your recommendations for the patient?
2. What factors led to the decision(s) that you made for the patient?

Instructions:
"While thinking back to the patient, please answer the following questions:"

Watchful Waiting

3. What is the likelihood that you would recommend watchful waiting as treatment for the patient?
   Not Very Likely 1 2 3 4 5 Very Likely
4. How would you rate the patient's benefit from treatment with watchful waiting?
   Not Very Beneficial 1 2 3 4 5 Very Beneficial
5. How would you rate the patient's risk from treatment with watchful waiting?
   Not Very Risky 1 2 3 4 5 Very Risky
6. Under watchful waiting, how likely would the patient be to comply with reporting changes in medical condition?
   Not Very Likely 1 2 3 4 5 Very Likely
7. With watchful waiting as treatment, what degree of recovery would you expect?
   Limited Recovery 1 2 3 4 5 Full Recovery

Lifestyle Changes

8. What is the likelihood that you would recommend lifestyle changes as treatment for the patient?
   Not Very Likely 1 2 3 4 5 Very Likely
9. How would you rate the patient's benefit from treatment with lifestyle changes?
   Not Very Beneficial 1 2 3 4 5 Very Beneficial
10. How would you rate the patient's risk from treatment with lifestyle changes?
    Not Very Risky 1 2 3 4 5 Very Risky
11. How likely would the patient be to comply with recommendations for lifestyle changes?
    Not Very Likely 1 2 3 4 5 Very Likely
12. With lifestyle changes as treatment, what degree of recovery would you expect?
    Limited Recovery 1 2 3 4 5 Full Recovery

Intensified Medication Regimen

13. What is the likelihood that you would recommend only an intensified medication regimen as treatment for the patient?
    Not Very Likely 1 2 3 4 5 Very Likely
14. How would you rate the patient's benefit from treatment with an intensified medication regimen?
    Not Very Beneficial 1 2 3 4 5 Very Beneficial

15. How would you rate the patient's risk from treatment with an intensified medication regimen?
    Not Very Risky 1 2 3 4 5 Very Risky
16. If an intensified medication regimen were prescribed to the patient, how likely would the patient be to comply with following directions for taking all prescribed medications?
    Not Very Likely 1 2 3 4 5 Very Likely
17. With an intensified medication regimen as treatment, what degree of recovery would you expect?
    Limited Recovery 1 2 3 4 5 Full Recovery

Percutaneous Coronary Intervention (PCI)

18. What is the likelihood that you would also recommend PCI as treatment for the patient?
    Not Very Likely 1 2 3 4 5 Very Likely
19. How would you rate the patient's benefit from treatment with PCI?
    Not Very Beneficial 1 2 3 4 5 Very Beneficial
20. How would you rate the patient's risk from treatment with PCI?
    Not Very Risky 1 2 3 4 5 Very Risky
21. If the patient underwent PCI, how likely would the patient be to comply with aggressive lifestyle changes and optimal medical therapy?
    Not Very Likely 1 2 3 4 5 Very Likely
22. With PCI as treatment, what degree of recovery would you expect?
    Limited Recovery 1 2 3 4 5 Full Recovery

Coronary Artery Bypass Graft (CABG) Surgery

23. What is the likelihood that you would recommend CABG surgery as treatment for the patient?
    Not Very Likely 1 2 3 4 5 Very Likely
24. How would you rate the patient's benefit from treatment with CABG surgery?
    Not Very Beneficial 1 2 3 4 5 Very Beneficial
25. How would you rate the patient's risk from treatment with CABG surgery?
    Not Very Risky 1 2 3 4 5 Very Risky
26. If the patient underwent CABG surgery, how likely would the patient be to comply with aggressive lifestyle changes and optimal medical therapy?
    Not Very Likely 1 2 3 4 5 Very Likely
27. With CABG surgery as treatment, what degree of recovery would you expect?
    Limited Recovery 1 2 3 4 5 Full Recovery

Instructions:

"Please answer the following questions with regard to the patient's appropriateness for PCI as opposed to an intensified medication regimen:"

28. How appropriate is PCI for this patient?
    Not Very Appropriate 1 2 3 4 5 Very Appropriate
29. How appropriate would PCI be if this patient was severely obese with a BMI greater than 40?
    Not Very Appropriate 1 2 3 4 5 Very Appropriate
30. How appropriate would PCI be if this patient was an uncontrolled diabetic with A_1c greater than 10?

Not Very Appropriate 1 2 3 4 5 Very Appropriate

31. How appropriate would PCI be if this patient has compensated chronic congestive heart failure with an EF less than 30%?

Not Very Appropriate 1 2 3 4 5 Very Appropriate

32. How appropriate would PCI be if this patient has hyperlipidemia?

Not Very Appropriate 1 2 3 4 5 Very Appropriate

33. How appropriate would PCI be if this patient has pulmonary hypertension?

Not Very Appropriate 1 2 3 4 5 Very Appropriate

34. How appropriate would PCI be if this patient has multiple previous episodes of chest pain requiring multiple stents?

Not Very Appropriate 1 2 3 4 5 Very Appropriate

Instructions:

"Please answer the following questions with regard to the patient's appropriateness for CABG surgery as opposed to PCI:"

35. How appropriate is CABG surgery for this patient?

Not Very Appropriate 1 2 3 4 5 Very Appropriate

36. How appropriate would CABG surgery be if this patient was severely obese with a BMI greater than 40?

Not Very Appropriate 1 2 3 4 5 Very Appropriate

37. How appropriate would CABG surgery be if this patient was an uncontrolled diabetic with A_1c greater than 10?

Not Very Appropriate 1 2 3 4 5 Very Appropriate

38. How appropriate would CABG surgery be if this patient has compensated chronic congestive heart failure with an EF less than 30%?

Not Very Appropriate 1 2 3 4 5 Very Appropriate

39. How appropriate would CABG surgery be if this patient has hyperlipidemia?

Not Very Appropriate 1 2 3 4 5 Very Appropriate

40. How appropriate would CABG surgery be if this patient has pulmonary hypertension?

Not Very Appropriate 1 2 3 4 5 Very Appropriate

41. How appropriate would CABG surgery be if this patient has had multiple previous episodes of chest pain requiring multiple stents?

Not Very Appropriate 1 2 3 4 5 Very Appropriate

Instructions:

"The last two questions pertain to your thoughts with regard to the study."

42. From your perspective, what is the main focus of this study?
43. Did the hypothetical patient's sex have any impact on your decision to, or not to, give care? Please write "yes" or "no" in the box below, and feel free to explain your answer. Explain your answer.

APPENDIX I

DEMOGRAPHIC QUESTIONS

1. What is your sex? _____
2. What is your ethnicity/race? _____
3. What is your age? _____
4. How many years have you been practicing medicine with an M.D.? _____
5. In what area of medicine do you specialize? _____

APPENDIX J

DEBRIEFING

Thank you for taking the time to participate in this research. Now that your participation is complete, I can tell you a bit more about what the study involves. The study examines the impact of beliefs about traditional gender roles and norms and the impact of these on recommendation for care. These beliefs may or may not emerge in decision making, depending on context, such as the degree of surgical risk from an intervention.

We apologize for our not having been completely open about the nature of the research earlier. Please be assured that we will not be able to tell if you in particular have a positive or negative view of the items presented today, and your data will only be analyzed at the group level. Remember that all responses will remain confidential and will be viewed by only researchers and research assistants who have signed a pledge of confidentially to ensure that your data will remain completely confidential. If you have any questions or concerns about the experiment, of if you should like your data expunged for any reason, please contact the primary investigator: Dawn Howerton, at (865) 974-1525 or dhowert1@utk.edu. For research-related problems or questions about participants' rights, the Institutional Review Board may be contacted through the Compliance Office at (865) 974-3466.

Although research in this area may involve minimal psychological discomfort and risk to participants, it may also be extremely beneficial. Even the most well-meaning individuals may hold beliefs in traditional gender roles and benevolent sexism, which may influence the decision-making process. This study will give researchers a greater understanding of how medical professionals make decisions, and will tell researchers if beliefs in traditional gender roles and benevolent sexism are impacting the medical decision-making process. If an impact is found, researchers may eventually collaborate with medical professionals to develop training programs that could combat the use of these beliefs in an effort to further reduce disparities in health care.

Please keep in mind that some of your colleagues will be participating in this study, and it is important that they aren't informed as to the purpose of the experiment before they participate, so please refrain from discussing the details of this experiment with your friends and colleagues. And finally, thank you for participating.

APPENDIX K

TABLES

Table 1

Descriptive Statistics for Primary Study Variables

				Range	
	M	*SD*	α	*Potential*	*Actual*
Participants' Benevolent Sexism[a]	3.32	.87	.80	1-6	1.0-5.6
Years of Experience[b]	3.86	4.28	--	--	1-15
Watchful Waiting[c]	1.82	.72	.73	1-5	1.0-4.5
Lifestyle Changes[c]	3.32	.97	.74	1-5	1.0-5.0
Intensified Medication[c]	2.95	.84	.70	1-5	1.0-4.8
PCI[c]	3.48	.87	.77	1-5	1.0-5.0
PCI Comorbids[c]	3.10	1.01	.84	1-5	1.0-5.0
PCI vs. Intensified Medication[cd]	3.60	1.31	--	1-5	1.0-5.0
CABG[c]	3.71	.76	.68	1-5	1.0-5.0
CABG Comorbids[c]	3.29	.91	.82	1-5	1.0-5.0
CABG vs. PCI[cd]	3.85	1.26	--	1-5	1.0-5.0

Note. [a] Higher scores indicate greater beliefs about stereotypes pertaining to women. [b] Years physician practiced medicine with an M.D. [c] Higher scores indicate a greater likelihood that an intervention would be recommended. [d] Single-item measure.

Table 2

Correlations Between Study Variables

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Benevolent Sexism[a]	--												
2	Patient Sex[b]	.04	--											
3	Surgical Risk[c]	-.06	.06	--										
4	Physician Sex[b]	-.26**	.18*	.05	--									
5	Physician Experience[d]	-.03	.02	.09	-.06	--								
6	Watchful Waiting[e]	.03	.06	.07	-.27**	.05	--							
7	Lifestyle Changes[e]	.01	-.08	-.08	-.08	.01	.37**	--						
8	Intensified Medication[e]	.13	.08	.11	-.16	-.13	.42**	.37**	--					
9	PCI[e]	-.06	-.25**	-.02	-.15	.01	-.06	.03	.14	--				
10	PCI Comorbids[e]	-.01	-.23**	.02	-.01	.07	-.05	-.04	.07	.57**	--			
11	PCI vs. Intensified Medication[e]	.01	-.21*	-.12	-.10	-.03	-.16	-.07	-.02	.69**	.64**	--		
12	CABG[e]	.01	-.03	-.02	.08	-.01	-.40**	-.12	-.22**	-.22*	-.05	-.10	--	
13	CABG Comorbids[e]	.13	-.06	-.10	.05	-.03	-.34**	-.20	-.21*	-.20*	.03	.05	.50**	--
14	CABG vs. PCI[e]	.05	-.02	.01	.16	-.04	-.33**	-.14	-.23**	-.46**	-.15	-.14	.78**	.55**

Note. [a] Higher scores indicate greater endorsement of stereotypes pertaining to women. [b] Male = 1, Female = 2. [c] Low = 1, High = 2. [d] Years physician practiced medicine with an M.D. [e] Higher scores indicate a greater likelihood that an intervention would be recommended.

Table 3

Mean Recommendations for Treatment Options

	Male Patient				Female Patient			
	Low Risk		High Risk		Low Risk		High Risk	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Watchful Waiting	1.78_a	.66	1.81_a	.64	1.82_b	.79	2.02_b	.82
Lifestyle Changes	3.58	.92	3.15	.94	3.12	1.12	3.39	.76
Intensified Medication	2.95_a	.72	3.18_b	.79	2.80_a	.86	3.07_b	.88
PCI	3.58_a	.72	3.85_a	.67	3.34_b	1.01	3.18_b	.89
PCI Comorbids	3.26_a	1.20	3.39_a	.63	2.89_b	.80	2.81_b	1.09
PCI vs. Intensified Medication	3.81_a	1.28	3.90_a	.91	3.65_b	1.39	3.03_b	1.42
CABG	3.81	.74	3.60	.81	3.57	.85	3.77	.66
CABG Comorbids	3.48	1.04	3.17	.65	3.24	.94	3.16	.95
CABG vs. PCI	4.02	1.26	3.65	1.25	3.65	1.45	3.88	1.12

Note. Higher scores indicate a greater likelihood that an intervention would be recommended. Different subscripts across rows indicate significant differences at $p < .05$.

Table 4

Regression: Watchful Waiting

	Model 1	Model 2	Model 3	Model 4
	B(SE)	*B*(SE)	*B*(SE)	*B*(SE)
Constant	1.86(.41)	.70(1.93)	4.78(6.30)	-12.88(10.24)
Benevolent Sexism (BS)	-.01(.07)	.28(.46)	-1.55(1.69)	3.48(2.88)
Patient Sex (SEX)	.18(.12)	-.74(.88)	-3.16(3.62)	10.79(7.03)
Surgical Risk (RISK)	.13(.12)	.97(.81)	-.08(3.15)	12.17(6.43)$^{+}$
Physician Sex (PHYSEX)	-.40(.13)**	.35(.79)	.13(2.99)	5.68(5.33)
Physician Experience (EXP)	.03(.02)	.15(.19)	-.11(.75)	3.09(2.88)*
BSxSEX	--	.12(.15)	1.10(.85)	-2.84(1.92)
BSxRISK	--	-.17(.16)	.49(.80)	-3.06(1.84)$^{+}$
SEXxRISK	--	.26(.25)	.86(1.66)	-8.59(4.44)$^{+}$
BSxPHYSEX	--	-.14(.16)	.43(.83)	-1.06(1.57)
BSxEXP	--	-.01(.04)	.20(.19)	-.73(.38)$^{+}$
SEXxPHYSEX	--	.08(.28)	1.00(1.50)	-3.90(3.51)
SEXxEXP	--	.01(.05)	-.33(.43)	-2.79(.95)**
RISKxPHYSEX	--	-.30(.28)	-1.82(1.37)	-5.58(3.45)
RISKxEXP	--	-.08(.05	.44(.39)	-2.24(1.04)*
PHYSEXxEXP	--	.01(.07)	-.26(.45)	-.09(.44)
BSxSEXxRISK	--	--	-.32(.34)	2.39(1.24)$^{+}$
BSxSEXxPHYSEX	--	--	-.50(.33)	.84(.99)
BSxSEXxEXP	--	--	.07(.09)	.78(.26)**
BSxRISKxPHYSEX	--	--	.20(.34)	1.25(1.04)
BSxRISKxEXP	--	--	-.21(.10)*	.59(.31)$^{+}$
BSxPHYSEXxEXP	--	--	-.04(.12)	-.12(.12)
SEXxRISKxPHYSEX	--	--	.34(.58)	3.50(2.27)
SEXxRISKxEXP	--	--	-.001(.10)	1.84(.66)**
SEXxPHYSEXxEXP	--	--	.11(.16)	.15(.16)
RISKxPHYSEXxEXP	--	--	.16(.15)	.19(.15)
BSxSEXxRISKxPHYSEX	--	--	--	-.89(.67)
BSxSEXxRISKxEXP	--	--	--	-.55(.20)**

Note. ***p <.001, **p <.01, *p <.05, ^{+}p <.10

R^2: Model 1 = .10, Model 2 = .14, Model 3 = .23, Model 4 = .28

Table 5

Regression: Lifestyle Changes

	Model 1	Model 2	Model 3	Model 4
	B(SE)	*B*(SE)	*B*(SE)	*B*(SE)
Constant	3.50(.56)	1.44(2.50)	7.63(8.28)	5.87(13.94)
Benevolent Sexism (BS)	.02(.10)	.51(.59)	-1.69(2.22)	-1.17(3.93)
Patient Sex (SEX)	-.13(.16)	-1.53(1.14)	-2.17(4.76)	-.98(9.58)
Surgical Risk (RISK)	-.07(.16)	.08(1.05)	-4.72(4.14)	-3.51(8.76)
Physician Sex (PHYSEX)	-.08(.18)	2.51(1.02)*	1.66(3.93)	3.01(7.26)
Physician Experience (EXP)	.05(.03)	.21(.25)	-.34(.99)	-.45(1.83)
BSxSEX	--	.16(.20)	.56(1.11)	-1.17(3.93)
BSxRISK	--	-.09(.21)	1.31(1.05)	.21(2.62)
SEXxRISK	--	.96(.33)**	1.85(2.18)	.95(2.51)
BSxPHYSEX	--	-.27(.21)	.60(1.09)	1.04(6.04)
BSxEXP	--	-.06(.05)	.19(.26)	.18(2.13)
SEXxPHYSEX	--	-.43(.37)	-.92(1.98)	.23(.52)
SEXxEXP	--	-.01(.06)	-.36(.56)	-1.82(4.78)
RISKxPHYSEX	--	-.87(.36)*	-.42(1.80)	-.30(1.29)
RISKxEXP	--	-.04(.06)	.99(.52)$^{+}$	-1.40(4.70)
PHYSEXxEXP	--	.10(.09)	-.39(.59)	1.12(1.42)
BSxSEXxRISK	--	--	-.24(.45)	-.39(.60)
BSxSEXxPHYSEX	--	--	-.22(.43)	.004(1.69)
BSxSEXxEXP	--	--	.08(.12)	.05(1.35)
BSxRISKxPHYSEX	--	--	-.29(.44)	.06(.36)
BSxRISKxEXP	--	--	-.26(.13)*	.02(1.41)
BSxPHYSEXxEXP	--	--	-.03(.16)	-.30(.42)
SEXxRISKxPHYSEX	--	--	.31(.76)	.95(3.10)
SEXxRISKxEXP	--	--	-.16(.13)	-.23(.89)
SEXxPHYSEXxEXP	--	--	.31(.21)	.31(.22)
RISKxPHYSEXxEXP	--	--	.07(.20)	.06(.20)
BSxSEXxRISKxPHYSEX	--	--	--	-.20(.91)
BSxSEXxRISKxEXP	--	--	--	.02(.27)

Note. ***p <.001, **p <.01, *p <.05, ^{+}p <.10

R^2: Model 1 = .03, Model 2 = .15, Model 3 = .22, Model 4 = .22

Table 6

Regression: Intensified Medication Regimen

	Model 1	Model 2	Model 3	Model 4
	B(SE)	*B*(SE)	*B*(SE)	*B*(SE)
Constant	2.38(.47)	2.06(2.18)	-3.70(7.17)	-8.59(12.05)
Benevolent Sexism (BS)	.13(.08)	.21(.52)	2.58(1.92)	3.97(3.39)
Patient Sex (SEX)	-.12(.14)	-.19(.99)	1.15(4.12)	4.99(8.28)
Surgical Risk (RISK)	.28(.13)*	.02(.91)	.07(3.58)	3.46(7.57)
Physician Sex (PHYSEX)	-.16(.15)	.47(.89)	4.22(3.40)	5.85(6.27)
Physician Experience (EXP)	.04(.03)	.01(.22)	.75(.86)	1.59(1.58)
BSxSEX	--	-.08(.17)	-.88(.96)	-1.96(2.26)
BSxRISK	--	.19(.18)	-.17(.91)	-1.16(2.17)
SEXxRISK	--	.07(.28)	1.30(1.88)	-1.30(5.22)
BSxPHYSEX	--	-.11(.18)	-1.94(.95)*	-2.39(1.84)
BSxEXP	--	-.02(.05)	-.25(.22)	-.50(.45)
SEXxPHYSEX	--	.08(.32)	.29(1.71)	-1.12(4.13)
SEXxEXP	--	.03(.06)	-.56(.49)	-1.20(1.11)
RISKxPHYSEX	--	-.34(.31)	-1.29(1.56)	-2.40(4.06)
RISKxEXP	--	.001(.05)	.35(.45)	-.34(1.22)
PHYSEXxEXP	--	.04(.08)	-.24(.51)	-.20(.52)
BSxSEXxRISK	--	--	-.14(.39)	.61(1.46)
BSxSEXxPHYSEX	--	--	.36(.37)	.74(1.16)
BSxSEXxEXP	--	--	.18(.10)+	.36(.31)
BSxRISKxPHYSEX	--	--	.67(.38)+	.99(1.22)
BSxRISKxEXP	--	--	-.14(.11)	.07(.36)
BSxPHYSEXxEXP	--	--	.15(.14)	.13(.14)
SEXxRISKxPHYSEX	--	--	-.79(.65)	.12(2.68)
SEXxRISKxEXP	--	--	.07(.11)	.55(.77)
SEXxPHYSEXxEXP	--	--	-.10(.18)	-.09(.19)
RISKxPHYSEXxEXP	--	--	-.01(.17)	.001(.17)
BSxSEXxRISKxPHYSEX	--	--	--	-.26(.78)
BSxSEXxRISKxEXP	--	--	--	-.14(.23)

Note. ***p <.001, **p <.01, *p <.05, +p <.10

R^2: Model 1 = .09, Model 2 = .12, Model 3 = .20, Model 4 = .21

Table 7

Regression: PCI

	Model 1	Model 2	Model 3	Model 4
	B(SE)	*B*(SE)	*B*(SE)	*B*(SE)
Constant	4.14(.49)	2.10(2.23)	-8.45(7.32)	-17.45(12.24)
Benevolent Sexism (BS)	-.05(.09)	.54(.53)	3.00(1.96)	5.56(3.45)
Patient Sex (SEX)	-.42(.14)**	.25(1.02)	5.33(4.21)	12.48(8.41)
Surgical Risk (RISK)	.07(.14)	-.11(.94)	5.68(3.66)	11.92(7.69)
Physician Sex (PHYSEX)	-.08(.16)	.27(.91)	6.28(3.48)+	8.93(6.37)
Physician Experience (EXP)	.04(.03)	.24(.22)	.22(.87)	1.95(1.60)
BSxSEX	--	-.14(.17)	-1.09(.99)	-3.11(2.30)
BSxRISK	--	.23(.19)	-.91(.93)	-2.72(2.20)
SEXxRISK	--	-.45(.29)	-4.23(1.92)*	-9.07(5.30)+
BSxPHYSEX	--	-.37(.19)*	-1.76(.97)+	-2.47(1.87)
BSxEXP	--	-.05(.05)	-.11(.23)	-.61(.46)
SEXxPHYSEX	--	.28(.33)	-1.94(1.75)	-4.34(4.19)
SEXxEXP	--	.02(.06)	.51(.50)	-.81(1.13)
RISKxPHYSEX	--	.22(.32)	-1.72(1.59)	-3.50(4.12)
RISKxEXP	--	-.06(.06)	.18(.46)	-1.28(1.24)
PHYSEXxEXP	--	.04(.08)	-.58(.52)	-.49(.53)
BSxSEXxRISK	--	--	.70(.39)+	2.09(1.49)
BSxSEXxPHYSEX	--	--	.30(.38)	.95(1.18)
BSxSEXxEXP	--	--	-.14(.10)	.25(.32)
BSxRISKxPHYSEX	--	--	.18(.39)	.67(1.24)
BSxRISKxEXP	--	--	-.06(.12)	.37(.37)
BSxPHYSEXxEXP	--	--	.26(.14)+	.22(.15)
SEXxRISKxPHYSEX	--	--	.99(.67)	2.53(2.72)
SEXxRISKxEXP	--	--	.02(.12)	1.02(.78)
SEXxPHYSEXxEXP	--	--	-.06(.19)	-.03(.19)
RISKxPHYSEXxEXP	--	--	-.07(.17)	-.05(.18)
BSxSEXxRISKxPHYSEX	--	--	--	-.43(.79)
BSxSEXxRISKxEXP	--	--	--	-.30(.23)

Note. ***p <.001, **p <.01, *p <.05, +p <.10

R^2: Model 1 = .09, Model 2 = .17, Model 3 = .26, Model 4 = .27

Table 8

Regression: PCI Comorbids

	Model 1	Model 2	Model 3	Model 4
	B(SE)	*B*(SE)	*B*(SE)	*B*(SE)
Constant	3.24(.58)	2.72(2.70)	-21.07(8.65)	-56.51(13.95)
Benevolent Sexism (BS)	.03(.10)	.28(.64)	6.07(2.32)**	16.29(3.93)***
Patient Sex (SEX)	-.50(.17)**	-.49(1.23)	12.44(4.97)**	38.94(9.59)***
Surgical Risk (RISK)	.03(.17)	-.50(1.13)	8.83(4.32)*	33.29(8.77)***
Physician Sex (PHYSEX)	.23(.19)	.17(1.10)	13.19(4.11)**	30.11(7.26)***
Physician Experience (EXP)	.04(.03)	.31(.27)	.90(1.03)	4.15(1.83)*
BSxSEX	--	.06(.21)	-2.59(1.16)*	-10.13(2.62)***
BSxRISK	--	.14(.23)	-1.68(1.10)	-8.88(2.51)***
SEXxRISK	--	-.23(.35)	-5.52(2.27)*	-23.51(6.05)***
BSxPHYSEX	--	-.26(.23)	-3.53(1.14)**	-8.47(2.14)***
BSxEXP	--	-.05(.06)	-.32(.27)	-1.22(.52)*
SEXxPHYSEX	--	.17(.40)	-5.96(2.06)**	-18.73(4.78)***
SEXxEXP	--	-.03(.07)	-.12(.59)	-2.81(1.29)*
RISKxPHYSEX	--	.43(.39)	-3.36(1.88)$^{+}$	-15.25(4.70)**
RISKxEXP	--	-.05(.07)	.23(.54)	-2.27(1.42)
PHYSEXxEXP	--	.01(.10)	-.37(.62)	-.17(.60)
BSxSEXxRISK	--	--	.77(.47)$^{+}$	5.98(1.70)***
BSxSEXxPHYSEX	--	--	1.14(.45)**	4.83(1.35)***
BSxSEXxEXP	--	--	-.01(.12)	.74(.36)*
BSxRISKxPHYSEX	--	--	.59(.46)	4.17(1.42)**
BSxRISKxEXP	--	--	-.05(.14)	.69(.42)$^{+}$
BSxPHYSEXxEXP	--	--	.29(.17)$^{+}$	.18(.17)
SEXxRISKxPHYSEX	--	--	1.67(.79)*	10.35(3.10)***
SEXxRISKxEXP	--	--	.12(.14)	1.98(.89)*
SEXxPHYSEXxEXP	--	--	-.07(.22)	.03(.22)
RISKxPHYSEXxEXP	--	--	-.27(.21)	-.25(.20)
BSxSEXxRISKxPHYSEX	--	--	--	-2.57(.91)**
BSxSEXxRISKxEXP	--	--	--	-.54(.27)$^{+}$

Note. $^{***}p$ <.001, $^{**}p$ <.01, $^{*}p$ <.05, ^{+}p <.10

R^2: Model 1 = .07, Model 2 = .11, Model 3 = .23, Model 4 = .30

Table 9

Regression: PCI vs. Intensified Medication Regimen

	Model 1	Model 2	Model 3	Model 4
	B(SE)	*B*(SE)	*B*(SE)	*B*(SE)
Constant	4.77(.76)	3.23(3.49)	-5.60(11.36)	-19.44(19.02)
Benevolent Sexism (BS)	-.02(.13)	.40(.83)	1.67(3.04)	5.62(5.35)
Patient Sex (SEX)	-.48(.22)*	.38(1.59)	6.27(6.53)	17.06(13.07)
Surgical Risk (RISK)	-.25(.22)	-1.01(1.47)	4.99(5.67)	14.58(11.95)
Physician Sex (PHYSEX)	-.05(.25)	.09(1.43)	4.96(5.39)	9.87(9.90)
Physician Experience (EXP)	.01(.04)	.35(.35)	.11(1.36)	2.32(2.49)
BSxSEX	--	-.05(.27)	-.88(1.53)	-3.93(3.57)
BSxRISK	--	.38(.29)	-.43(1.44)	-3.22(3.42)
SEXxRISK	--	-.85(.46)+	-6.27(2.98)*	-13.59(8.24)+
BSxPHYSEX	--	-.48(.29)+	-1.07(1.50)	-2.43(2.91)
BSxEXP	--	-.06(.07)	.09(.35)	-.55(.71)
SEXxPHYSEX	--	.42(.51)	-2.64(2.71)	-6.76(6.51)
SEXxEXP	--	.001(.09)	.95(.77)	-.75(1.76)
RISKxPHYSEX	--	.68(.50)	-.16(2.47)	-3.53(6.41)
RISKxEXP	--	-.04(.09)	-.17(.71)	-2.00(1.93)
PHYSEXxEXP	--	-.08(.13)	-.99(.81)	-.87(.82)
BSxSEXxRISK	--	--	-.98(.61)	3.08(2.31)
BSxSEXxPHYSEX	--	--	.33(.59)	1.48(1.84)
BSxSEXxEXP	--	--	-.33(.16)*	.16(.49)
BSxRISKxPHYSEX	--	--	-.43(.61)	.53(1.93)
BSxRISKxEXP	--	--	-.004(.18)	.54(.57)
BSxPHYSEXxEXP	--	--	.26(.22)	.20(.23)
SEXxRISKxPHYSEX	--	--	1.40(1.04)	4.10(4.22)
SEXxRISKxEXP	--	--	.07(.18)	1.34(1.22)
SEXxPHYSEXxEXP	--	--	.04(.29)	.07(.29)
RISKxPHYSEXxEXP	--	--	.04(.27)	.06(.27)
BSxSEXxRISKxPHYSEX	--	--	--	-.77(1.24)
BSxSEXxRISKxEXP	--	--	--	-.38(.36)

Note. ***p <.001, **p <.01, *p <.05, +p <.10

R^2: Model 1 = .05, Model 2 = .12, Model 3 = .22, Model 4 = .23

Table 10

Regression: CABG

	Model 1	Model 2	Model 3	Model 4
	B(SE)	*B*(SE)	*B*(SE)	*B*(SE)
Constant	3.64(.46)	3.48(2.04)	4.25(6.74)	7.80(11.26)
Benevolent Sexism (BS)	.03(.08)	.16(.48)	.34(1.81)	-.63(3.17)
Patient Sex (SEX)	-.08(.13)	1.67(.93)$^{+}$	1.58(3.88)	-1.71(7.74)
Surgical Risk (RISK)	-.01(.13)	-1.62(.86)$^{+}$	-1.04(3.37)	-3.53(7.07)
Physician Sex (PHYSEX)	.13(.15)	-.13(.83)	-.97(3.20)	-.21(5.86)
Physician Experience (EXP)	-.03(.03)	.02(.20)	-.85(.81)	-2.52(1.47)$^{+}$
BSxSEX	--	-.29(.16)$^{+}$	-.51(.91)	.40(2.11)
BSxRISK	--	.05(.17)	-.24(.86)	.45(2.02)
SEXxRISK	--	.25(.27)	-.30(1.77)	1.91(4.88)
BSxPHYSEX	--	.21(.17)	.11(.89)	-.22(1.72)
BSxEXP	--	-.02(.04)	.14(.21)	.64(.42)
SEXxPHYSEX	--	-.74(.30)*	-1.12(1.61)	-1.10(1.04)
SEXxEXP	--	-.05(.05)	.73(.46)	1.95(1.04)$^{+}$
RISKxPHYSEX	--	.57(.29)*	1.50(1.47)	.83(3.79)
RISKxEXP	--	.08(.05)	-.24(.42)	1.24(1.14)
PHYSEXxEXP	--	-.03(.08)	.45(.48)	.36(1.37)
BSxSEXxRISK	--	--	.22(.36)	-.39(1.37)
BSxSEXxPHYSEX	--	--	.33(.35)	.39(1.09)
BSxSEXxEXP	--	--	-.18(.09)$^{+}$	-.55(.29)$^{+}$
BSxRISKxPHYSEX	--	--	-.20(.36)	.07(1.14)
BSxRISKxEXP	--	--	.12(.11)	-.33(.34)
BSxPHYSEXxEXP	--	--	-.05(.13)	-.02(.13)
SEXxRISKxPHYSEX	--	--	-.13(.62)	-.01(2.50)
SEXxRISKxEXP	--	--	-.004(.11)	-.97(.72)
SEXxPHYSEXxEXP	--	--	-.16(.17)	-.16(.17)
RISKxPHYSEXxEXP	--	--	-.06(.16)	-.08(.16)
BSxSEXxRISKxPHYSEX	--	--	--	-.08(.73)
BSxSEXxRISKxEXP	--	--	--	.29(.22)

Note. ***p <.001, **p <.01, *p <.05, ^{+}p <.10

R^2: Model 1 = .02, Model 2 = .13, Model 3 = .20, Model 4 = .22

Table 11

Regression: CABG Comorbids

	Model 1	Model 2	Model 3	Model 4
	B(SE)	*B*(SE)	*B*(SE)	*B*(SE)
Constant	3.22(.54)	5.29(2.49)	-4.42(8.33)	5.91(13.98)
Benevolent Sexism (BS)	-.18(.16)	-.46(.59)	1.58(2.23)	-1.41(3.93)
Patient Sex (SEX)	-.19(.16)	.57(1.14)	7.83(4.79)$^{+}$	.19(9.61)
Surgical Risk (RISK)	.11(.18)	-.53(1.05)	4.62(4.16)	-2.50(8.78)
Physician Sex (PHYSEX)	-.03(.03)	-1.40(1.02)	.44(3.96)	-4.82(7.28)
Physician Experience (EXP)	.16(.09)$^{+}$	-.10(1.02)	.45(.99)	-.32(1.83)
BSxSEX	--	-.12(.19)	-1.85(1.12)$^{+}$	.33(2.62)
BSxRISK	--	-.05(.21)	-.85(1.06)	1.25(2.51)
SEXxRISK	--	.09(.33)	-3.30(2.19)	1.89(6.06)
BSxPHYSEX	--	.52(.21)*	.47(1.10)	2.02(2.14)
BSxEXP	--	.04(.05)	-.08(.26)	.13(.52)
SEXxPHYSEX	--	-.18(.37)	-2.45(1.99)	1.44(4.79)
SEXxEXP	--	-.07(.06)	-.18(.57)	.48(1.29)
RISKxPHYSEX	--	.11(.36)	-.45(1.81)	3.26(4.71)
RISKxEXP	--	.05(.06)	-.67(.52)	-.11(1.42)
PHYSEXxEXP	--	-.03(.09)	.26(.59)	.21(.60)
BSxSEXxRISK	--	--	.64(.45)	-.87(1.70)
BSxSEXxPHYSEX	--	--	.49(.43)	-.64(1.35)
BSxSEXxEXP	--	--	.03(.12)	-.15(.36)
BSxRISKxPHYSEX	--	--	-.33(.45)	-1.46(1.42)
BSxRISKxEXP	--	--	.13(.13)	-.04(.42)
BSxPHYSEXxEXP	--	--	-.08(.16)	-.05(.17)
SEXxRISKxPHYSEX	--	--	.71(.76)	-1.95(3.10)
SEXxRISKxEXP	--	--	.10(.13)	-.34(.89)
SEXxPHYSEXxEXP	--	--	-.14(.21)	-.17(.22)
RISKxPHYSEXxEXP	--	--	.15(.20)	.14(.20)
BSxSEXxRISKxPHYSEX	--	--	--	.79(.91)
BSxSEXxRISKxEXP	--	--	--	.13(.27)

Note. ***p <.001, **p <.01, *p <.05, ^{+}p <.10

R^2: Model 1 = .05, Model 2 = .11, Model 3 = .17, Model 4 = .17

Table 12

Regression: CABG vs. PCI

	Model 1	Model 2	Model 3	Model 4
	B(SE)	*B*(SE)	*B*(SE)	*B*(SE)
Constant	3.77(.74)	3.51(3.32)	6.45(10.89)	12.91(18.10)
Benevolent Sexism (BS)	.11(.13)	.01(.79)	-.17(2.91)	-1.91(5.09)
Patient Sex (SEX)	-.15(.22)	3.15(1.52)*	2.80(6.26)	-3.30(12.44)
Surgical Risk (RISK)	-.09(.21)	-2.56(1.40)$^{+}$	-4.54(5.44)	-9.09(11.37)
Physician Sex (PHYSEX)	.28(.24)	.38(1.36)	-1.54(5.17)	.25(9.42)
Physician Experience (EXP)	-.10(.04)*	-.21(.33)	-1.06(1.30)	-4.33(2.37)$^{+}$
BSxSEX	--	-.49(.26)$^{+}$	-.92(1.47)	.76(3.40)
BSxRISK	--	.21(.28)	.65(1.38)	1.90(3.25)
SEXxRISK	--	.39(.43)	1.33(2.86)	5.42(7.84)
BSxPHYSEX	--	.36(.28)	-.01(1.44)	-.75(2.77)
BSxEXP	--	.01(.07)	.25(.34)	1.23(.67)$^{+}$
SEXxPHYSEX	--	-1.31(.49)**	-1.97(2.60)	-2.13(6.20)
SEXxEXP	--	-.13(.08)	.64(.74)	3.02(1.67)$^{+}$
RISKxPHYSEX	--	.47(.48)	2.87(2.37)	1.36(6.10)
RISKxEXP	--	.15(.08)$^{+}$	-.82(.68)	2.07(1.84)
PHYSEXxEXP	--	.03(.12)	.98(.78)	.82(.78)
BSxSEXxRISK	--	--	-.14(.59)	-1.28(2.20)
BSxSEXxPHYSEX	--	--	.89(.57)	1.06(1.75)
BSxSEXxEXP	--	--	-.21(.15)	-.93(.47)*
BSxRISKxPHYSEX	--	--	-.41(.58)	.19(1.84)
BSxRISKxEXP	--	--	.19(.17)	-.68(.54)
BSxPHYSEXxEXP	--	--	-.15(.21)	-.09(.22)
SEXxRISKxPHYSEX	--	--	-.85(.99)	-.46(4.02)
SEXxRISKxEXP	--	--	.19(.17)	-1.70(1.16)
SEXxPHYSEXxEXP	--	--	-.33(.28)	-.34(.28)
RISKxPHYSEXxEXP	--	--	.05(.26)	.004(.26)
BSxSEXxRISKxPHYSEX	--	--	--	-.20(1.18)
BSxSEXxRISKxEXP	--	--	--	.58(.35)$^{+}$

Note. ***p <.001, **p <.01, *p <.05, ^{+}p <.10

R^2: Model 1 = .07, Model 2 = .17, Model 3 = .25, Model 4 = .28

APPENDIX L

FIGURES

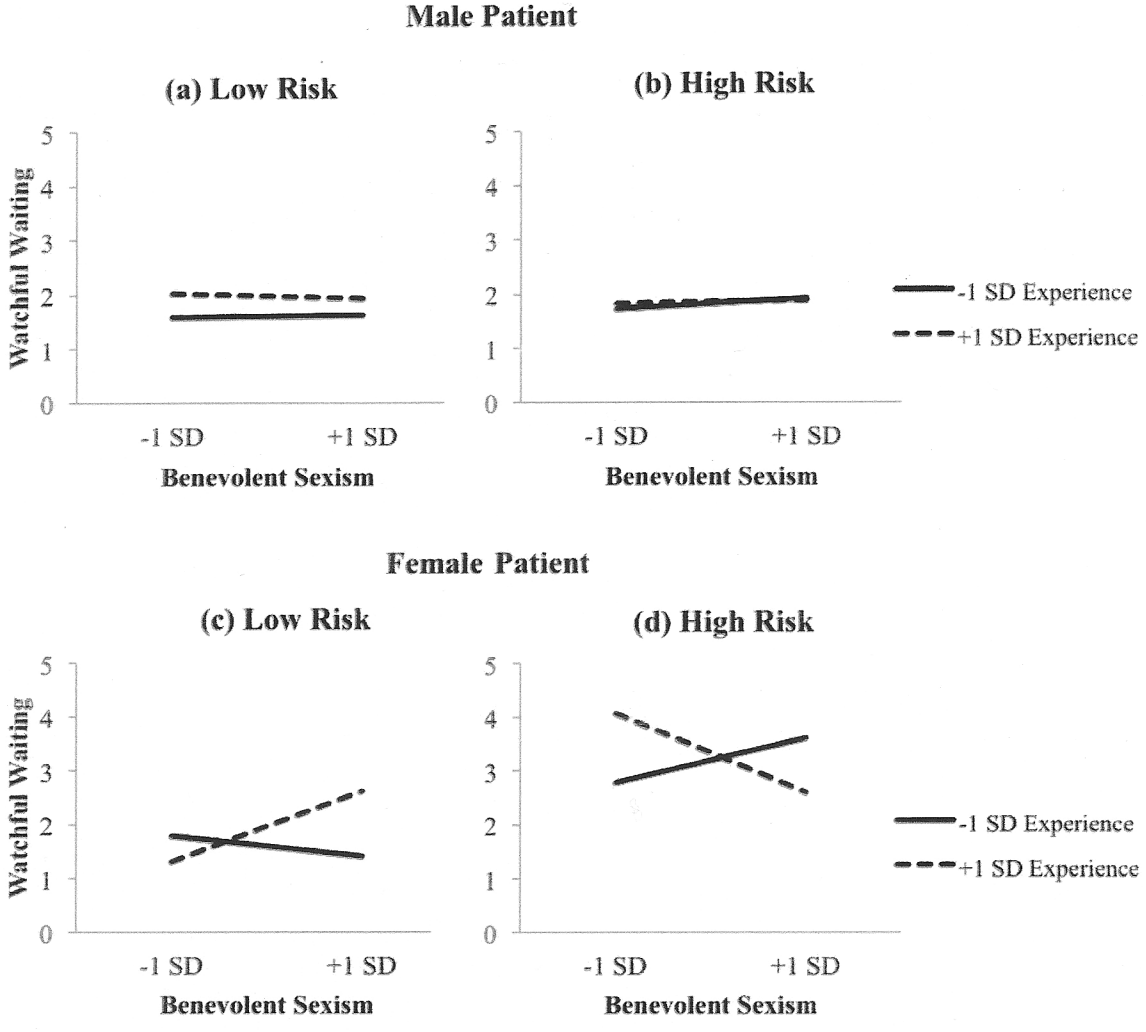


Figure 1. Recommendations for Watchful Waiting by Physician Benevolent Sexism, Patient Sex, Surgical Risk, and Physician Experience.

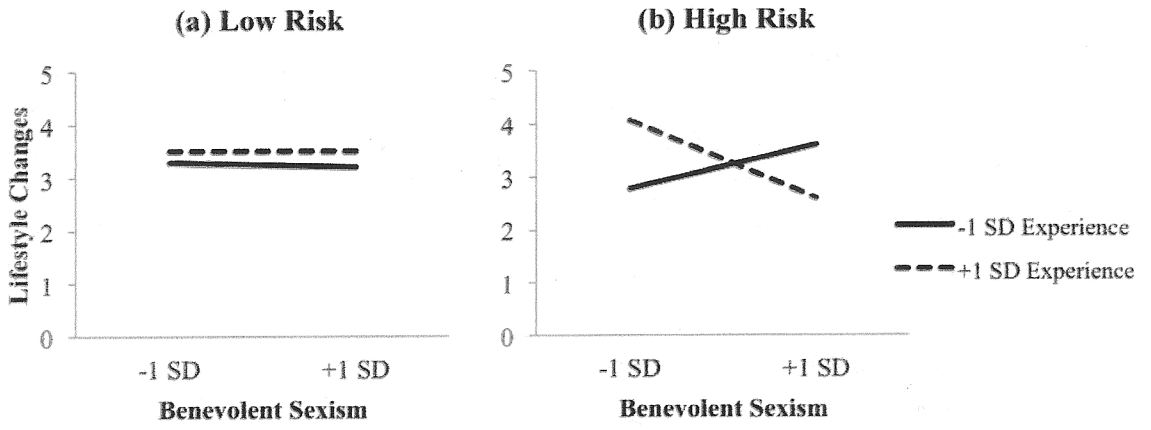


Figure 2. Recommendations for Lifestyle Changes by Physician Benevolent Sexism, Surgical Risk, and Physician Experience.

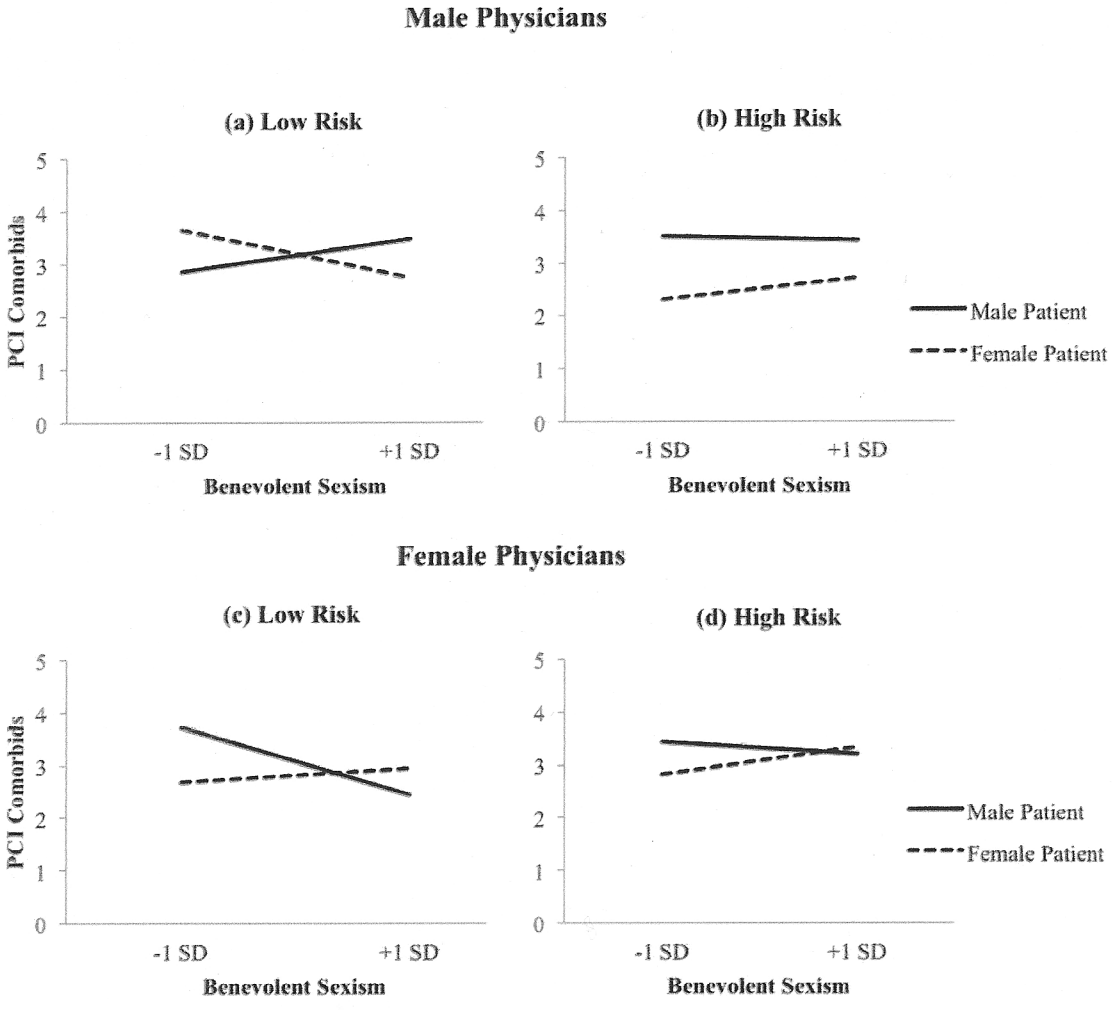


Figure 3. Recommendations for PCI with Comorbid Conditions by Physician Benevolent Sexism, Patient Sex, Surgical Risk, and Physician Sex.

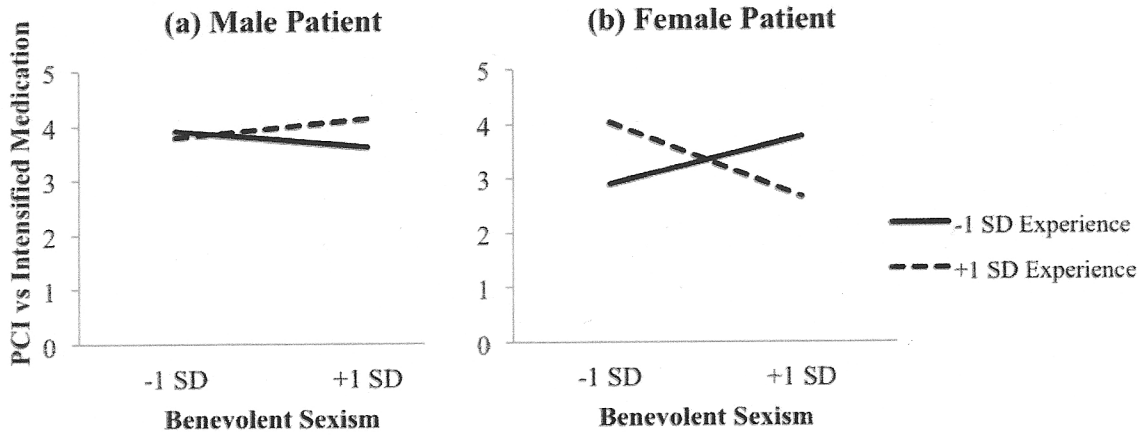


Figure 4. Recommendations for PCI vs. an Intensified Medication Regimen by Physician Benevolent Sexism, Patient Sex, and Physician Experience.

VITA

Dawn Howerton was born in Richmond, CA in 1980; anecdotally, she was born in the same hospital as her graduate advisor, Dr. Cheryl Travis. She moved to Vacaville, CA at the age of five and graduated from Will C. Wood High School in 1998. While working full-time, Dawn earned her B.A. and M.A. in Psychology from California State University, Sacramento in 2004 and 2007, respectively. While there, her primary mentor was Dr. Lisa Harrison. She was then accepted to the Ph.D. program in experimental psychology at the University of Tennessee, worked under both Drs. Cheryl Travis and Michael Olson, and will receive her doctorate in 2012. In addition to her work on campus, Dawn served as graduate student editor to the *Journal of Social Issues* and *Analyses of Social Issues and Public Policy*. Dawn recently accepted an offer for a tenure-track assistant professor position and will begin her career at Marshall University in Huntington, West Virginia in fall 2012.