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The Blame Game: Cervical Cancer, Knowledge of Its Link to Human Pappilomavirus and Stigma

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THE FLORIDA STATE UNIVERSITY
COLLEGE OF ARTS AND SCIENCES

THE BLAME GAME: CERVICAL CANCER, KNOWLEDGE OF ITS LINK TO HUMAN
PAPPILOMAVIRUS AND STIGMA

By

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ABSTRACT

This research examined stigma toward women with cervical cancer. Cervical cancer is caused by human papillomavirus, a sexually transmitted infection. For Study 1, participants ($N = 352$) were randomly assigned to one of four conditions in which they read a brief description of a patient with (1) cervical cancer/cause unspecified; (2) cervical cancer/cause (HPV) specified; (3) ovarian cancer/cause unspecified; or (4) ovarian cancer/cause (family history) specified. A significant cancer type-by-cause interaction was observed, such that participants in the cervical cancer/cause specified condition displayed the most stigma toward the patient. Participants in the cervical cancer/cause specified condition were more likely to rate the patient as dirty, dishonest, and unwise and reported feeling more moral disgust and “grossed out,” and less sympathy than participants in the cervical cancer/cause unspecified condition. For study 2, participants ($N = 126$) were randomly assigned to read a vignette about a patient with cervical cancer in which the cause of cancer was either specified or unspecified. Consistent with Study 1, participants in the cause specified condition rated the patient as more unwise and reported feeling more moral disgust and “grossed out” than participants in the unspecified condition. In addition, the relationship between experimental condition and expressions of stigma was mediated by blame attributions. These findings add to the literature on health-related stigma and provide preliminary evidence for the use of more subtle indicators of stigma and the importance of the role of blame in this process.

CHAPTER ONE

INTRODUCTION

Imagine that you meet a woman who is ill. Would knowing the cause of her illness affect your evaluations of her or your emotional reactions toward her? What if her behavior was in some way responsible for her illness? Moreover, what if that behavior was one about which people hold strong moral judgments? This research sought to examine whether people react negatively toward people whose behavior is related to their illness. More specifically, the purpose of this research was to examine stigma toward women with cervical cancer, a disease that is intricately connected to sexual behavior.

1.1 Cervical Cancer and HPV

Human papillomavirus (HPV), a sexually transmitted infection (STI), is necessary for development of squamous cervical neoplasia that untreated can lead to cervical cancer (American College of Obstetricians and Gynecologists, 2009; Baseman & Koutsky, 2005). About 150 types of HPV exist, about 40 of which are sexually transmitted (National Cancer Institute [NCI], 2011). Certain strains of sexually transmitted HPV can cause cervical cancer. Recent research suggests that HPV also causes some of the cases of anal, vulvar, vaginal, penile, and oropharyngeal cancers (NCI, 2011). The World Health Organization (2012) reports that, in 2008, 250,000 women worldwide died from cervical cancer. In 2011, 12,170 new cases of cervical cancer were diagnosed and 4,290 women died as a result of the disease in the United States (NCI, 2012).

The discovery that HPV causes cervical cancer is relatively new and for many years public knowledge of the cause was low (Waller, McCaffery, Forrest, & Wardle, 2004). Indeed, in 1999, the Centers for Disease Control and Prevention (CDC) identified assessing public knowledge of HPV as a research priority. Since the CDC's call for research, public knowledge of the link between HPV and cervical cancer has increased but is not pervasive (Gerend & Magloire, 2008; Gerend & Shepherd, 2011). Increased public knowledge of the link may stem, in part, from publicity for Gardasil and Cervarix, recently released vaccines that prevent HPV infection (Dyer, 2010).

1.2 Stigma

Stigma is an adverse social judgment about a person or group and is characterized by exclusion, rejection, blame, or devaluation (Weiss, Ramakrishna, & Somma, 2006). Stigma implies a mark of disapproval (Scrambler, 2009). Goffman (1963) theorized that three conditions evoke stigma: physical deformities, blemishes of individual character, and membership in a despised social group. Furthermore, Goffman (1963) theorized that there are two forms of stigma. *Enacted stigma* is experiencing stigma or discrimination from others whereas, *felt stigma* is experiencing stigma from the self.

The current research focuses on health-related stigma, defined as social disqualification of individuals and groups who have particular health problems (Weiss et al., 2006). Many stigmatized illnesses (e.g., HIV/AIDS [human immunodeficiency virus/acquired immune deficiency syndrome], lung cancer) fit Goffman's conditions that evoke stigma. Illnesses are often accompanied by physical deformities; for example, individuals with cancer may experience hair loss because of chemotherapy treatment (Lebel & Devins, 2008). People may infer that an individual's character is blemished based on undesirable personal characteristics (e.g., mental disorders, unemployment, homosexuality) (Goffman, 1963). Moreover, behaviors that place individuals at risk for life-threatening health problems such as cancer (e.g., smoking, drinking, sexual behavior) are often deemed socially undesirable (Lebel & Devins, 2008).

1.2.1 Felt Stigma

A consequence of health-related stigma is felt stigma (Van Brakel, 2006). People with a stigmatized illness may experience depression, low self-confidence, stress, fear, shame, and guilt (Kaur & Van Brakel, 2002; Stutterheim et al., 2012; Van Brakel, 2006). Moreover, health-related stigma may cause people with certain health conditions to withdraw from interpersonal relationships and social events (Balfe & Brugha, 2010; Lee & Craft, 2002; Stutterheim et al., 2012; Van Brakel, 2006; Vlassoff & Ali, 2011). For example, people with lung cancer stated that they were embarrassed to disclose their condition to family and friends and for this reason were unlikely to assess financial benefits, such as tax relief (Chapple, Zieland, & McPherson, 2004). People who have been diagnosed with STIs often conceal their STI diagnosis for fear of being stigmatized (i.e., they keep their diagnosis secret and withdraw from relationships or situations where talk of STIs might arise) (Balfe & Brugha, 2010; Lee & Craft, 2002). Health-

related stigma may also negatively affect health outcomes. Findings suggest that people with a stigmatized illness may be likely to continue to engage in risky behavior, ignore preventative behaviors, or default from treatment; the stigmatized nature of the illnesses may be a contributing factor (Duncan, Hart, Scoular, & Bigrigg, 2001; Fortenberry, 2004; Stutterheim et al., 2012; Van Brakel, 2006; Vlassoff & Ali, 2011; Wolfe et al., 2006).

STI diagnoses are particularly likely to carry stigma (Donovan, 2004), and research suggests that people who have an STI are aware of this stigma. For example, people who have been diagnosed with an STI report stigma associated with STI testing (Mulholland & Van Wersch, 2007); people may even avoid STI testing because of stigma (Barth, Cook, Downs, Switzer, & Fischhoff, 2002). People with an STI may be treated differently after their diagnosis. Indeed, people diagnosed with herpes report strained relationships with family, friends, and healthcare providers (Lee & Craft, 2002).

Research suggests that women diagnosed with HPV or women who have had an abnormal Pap test result are afraid that others will stigmatize them (Perrin et al., 2006). Moreover, many women with HPV believe that stigma exists because the infection is sexually transmitted. Specifically, women with HPV thought others would label them promiscuous or dirty. Women also reported limited disclosure of their diagnosis because of fear of being stigmatized. Some women even told family members or friends that they had testing done that suggested that they might develop cancer but did not share that the test revealed that they had HPV. Women who tested positive for HPV (via a blood test) reported feelings of stigma and shame if they knew that HPV is sexually transmitted (McCaffery, Waller, Nazroo, Wardle, 2006). Women with HPV have also reported that they were embarrassed of the link between HPV and sexually transmission (McCaffery & Irwig, 2005).

1.2.2 Enacted Stigma

Other consequences of health-related stigma include: discriminatory or stigmatizing public health programs and discriminatory behavior toward people with a stigmatized illness (Van Brakel, 2006). Public health programs may inadvertently discriminate against or stigmatize people with certain illnesses (e.g., provide less governmental funding for some stigmatized illnesses, such as cervical cancer) (Dyer, 2010; Herek, 1999). Delays in prognosis or treatment for medical conditions such as HIV/AIDS and lung cancer have also been observed (Michielutte, Dignan, Sharp, Boxley, & Wells, 1996; Tod, Craven, & Allmark, 2008; Van Brakel, 2006).

Healthcare providers may overtly (e.g., make derogatory comments) or subtly discriminate (e.g., provide little emotional support) against their patients with a stigmatized illness (Schuster et al., 2005). People with a stigmatized illness also report experiencing discriminatory and disrespectful behavior. For example, after being diagnosed with a stigmatized illness some people reported that friends and family stopped having contact with them (Chapple et al., 2004; Stutterheim et al., 2012; Jacoby, Gorry, Gamble, & Baker, 2004; Van Brakel, 2006; Vlassoff & Ali, 2011).

People often have negative opinions of people with an STI. People believe that people with an STI should feel shame associated with their diagnosis (Foster & Byers, 2008). People may assume that a person with an STI has participated in immoral or unacceptable sexual behavior, such as unprotected sex or sex with multiple partners (Fortenberry, 2004; Young, Nussbaum, & Monin, 2007). Furthermore, people believe that an individual with an STI is more likely to engage in other immoral behaviors such as lying or shoplifting than an individual without an STI (Young et al., 2007).

The bulk of theoretical research on the relationship between STIs and stigma has focused on HIV/AIDS. Indeed, people with HIV/AIDS are stigmatized (Fife & Wright, 2000; Herek, 1999; Scrambler, 2009). Research suggests that HIV/AIDS is highly stigmatized because its cause may be perceived to be the sufferer's responsibility; it is a condition perceived to be contagious or to place others in harm's way, and the disease is seen as degenerative (Herek, 1999). These characteristics may also be relevant to stigma regarding cervical cancer. First, HPV infection could be perceived to be a result of the woman's actions (sexual activity). Second, HPV can be spread through sexual contact. Third, cervical cancer is an illness may be perceived as degenerative, as an untreated HPV infection may progress into cervical cancer after a number of years. Thus, people may stigmatize women with cervical cancer for some of the same reasons that people stigmatize those with AIDS.

Less research has investigated enacted stigma toward women with HPV or cervical cancer. Sandfort and Pleasant (2009) assessed college student's attitudes toward people with HPV. Although their results suggested low levels of stigma toward individuals with HPV, their assessment may not have captured more nuanced stigma. Their scale was adapted from measures designed to assess stigma surrounding HIV/AIDS, which focused on extreme overt stigma (sample item: "People who have HPV should be isolated"). In general, stigma toward

people with HPV and women with cervical cancer may exist in a more subtle form than stigma toward people with HIV/AIDS and thus research may need to employ subtler measures of stigma. For this reason, the present studies measured perceptions of character, sympathy, and emotions toward a patient with cervical cancer.

Qualitative research conducted with cervical cancer survivors reveals their concerns about being stigmatized (Dyer, 2010). Many of the women interviewed recounted that they felt stigmatized during their illness. Participants also reported feeling like people blamed them for their illness. Some participants reported that people who knew of the link between HPV and cervical cancer asked them about having an STI. In extreme cases, women with cervical cancer were even harassed because of their disease. One participant relayed that a coworker harassed her on online forums, writing that she had an STI and was to blame for having cervical cancer.

1.3 Blame

Whether individuals are blamed for their medical condition is often linked to the perceived controllability of their illness. People tend to be sympathetic and willing to associate with people who have conditions perceived as uncontrollable (no known behavioral or lifestyle determinants, e.g., Alzheimer's) (Lebel & Devins, 2008). However, people tend to have negative reactions toward people who have onset-controllable conditions, conditions perceived to be controllable by the individual (i.e., caused by behavioral or lifestyle determinants, such as HIV/AIDS) (Lebel & Devins, 2008; Miller, Fellows, & Kizito, 2007). For example, people are less likely to want to help or donate money to research when presented with a scenario of a person with lung cancer who was a twenty-year smoker than when presented with a scenario of a person with lung cancer who worked in a dusty factor for the same length of time (Peters, den Boer, Kok, & Schaalma, 1994).

Several health conditions and diseases are associated with stigma and blame. One of the most commonly stigmatized diseases is lung cancer, due to its strong association with cigarette smoking (Lebel & Devins, 2008). Other than lung cancer, illnesses that are vulnerable to stigmatization based on blame include: head and neck cancer, skin cancer, and HIV/AIDS (Lebel & Devins, 2008). For example, health workers in Rwanda, a country with a high HIV prevalence, often state that people with HIV “got what they deserve” (Rahlenbeck, 2004). Lebel & Devins (2008) suggest that health campaigns that promote healthy lifestyles to reduce cancer risk could inadvertently promote blame towards cancer patients whose behavior may have

contributed to their illness. For instance, health-promotion commercials touting reduced risk of cancer as a benefit of smoking cessation may inadvertently promote blame towards people with lung cancer.

Like some of these other health problems, cervical cancer may be perceived as onset controllable and for this reason, be associated with blame. Indeed, women with HPV often perceive that others blame them for their condition. For example, women with a positive HPV DNA test anticipated being blamed for the test result (Perrin et al., 2006). In another study, adolescent girls who had an abnormal Pap test (indicating HPV infection) were afraid that people would blame them for their condition and would, in turn, exclude them (Kahn et al., 2007). Some research suggests that people may attribute blame to women with cervical cancer (Marlow, Waller, & Wardle, 2010). In a study examining blame attributions across a variety of cancer types, 37% of participants (all female) attributed blame to women with cervical cancer. Moreover, participants who knew that cervical cancer is caused by an STI were significantly more likely to make such blame attributions. In sum, this research suggests that people may blame women with cervical cancer because it is caused by an STI.

Certain individuals may be more likely to make fairness judgments toward people who are ill. For example, people who are high in belief in a just world (BJW) (i.e., think that people get what they deserve) are more likely to believe that it was fair for people to become ill than people who are low in BJW (Nudelman & Shiloh, 2001). In addition, people who are high in BJW are more likely to judge onset-controllable illnesses as fairer than people who are low in BJW. Researchers have speculated that people who believe that the world is fair may do so because it is self-protective; it protects them from feeling that the world is an unpredictable and uncontrollable place where bad things happen.

1.4 The Present Research

In sum, little research has focused on stigma concerning HPV diagnosis and even less is known about stigma and cervical cancer (Waller, Marlow, & Wardle, 2007). Although research suggests that people may stigmatize women with HPV, we do not know if this stigma will extend to diseases caused by HPV (e.g., cervical cancer). This research was designed to experimentally explore the possibility that knowledge of the cause of cervical cancer may affect people's evaluations of and emotional reactions to a woman with cervical cancer. Moreover, the present study sought to examine more subtle measures of stigma than those used in past health-stigma

research. In addition to assessing perceptions of the patient's character (e.g., whether she is more wise than unwise; honest vs. dishonest, etc.), we measured how much sympathy participants felt toward the patient (Lebel & Devins, 2008) and the extent to which participants experienced a variety of emotions when learning about the patient's medical condition, specifically those emotions related to moral evaluations (moral disgust and "grossed out"). Last, the present research sought to build on research on the relationship between blame and stigma by examining whether blame attributions were in part responsible for stigma.

CHAPTER TWO

STUDY 1 OVERVIEW

In sum, little research has focused on stigma concerning HPV diagnosis and even less is known about stigma and cervical cancer (Waller, Marlow, & Wardle, 2007). Although research suggests that people may stigmatize women with HPV, we do not know if this stigma will extend to diseases caused by HPV (e.g., cervical cancer). The current research was designed to experimentally explore the possibility that knowledge of the cause of cervical cancer may affect people's evaluations of and emotional reactions to a woman with cervical cancer. Moreover, the present study sought to examine more subtle measures of stigma than those used in past health-stigma research. In addition to assessing perceptions of the patient's character (e.g., whether she is more wise than unwise; honest vs. dishonest, etc.), we measured how much sympathy participants felt toward the patient (Lebel & Devins, 2008) and the extent to which participants experienced a variety of emotions when learning about the patient's medical condition, specifically those emotions related to moral evaluations (moral disgust and "grossed out"). Last, the present research sought to build on research on the relationship between blame and stigma by examining whether blame attributions were in part responsible for stigma.

CHAPTER THREE

STUDY 1 METHOD

3.1 Participants

I recruited 359 undergraduate students from the psychology department subject pool at a large southeastern university in the U.S. Participants had to be at least 18 years old to participate in the study. Participants were compensated with course credit. The mean age of participants was 19.22 years ($SD = 4.6$; range 18–38). The majority of participants were freshman (59%), followed by sophomores (22%), juniors (12%), and seniors (5%). More females (62%) participated than males. The majority of participants self-identified as Caucasian (80%). Seven percent of participants self-identified as Black/African-American. The remainder of the participants reported their race as other (4%), American Indian/Alaska Native (3%), Asian/Asian-American (2%), or Native Hawaiian/Pacific Islander (<1%). Race was unknown for 4% of the sample. Twenty-one percent of participants self-identified as Hispanic/Latino.

3.2 Procedure

The present study was approved by the University Human Subjects Committee. Participants were run in sessions of up to five participants. Before the study began, participants provided informed consent. As a cover story for the study, participants were told that they would be asked to read and evaluate patient scenarios that might be used in future classes in the College of Medicine (where the study took place). Participants were given a brief description about a patient and were asked to provide their perceptions about the case. Specifically, participants were told that, “we’re interested in how people form impressions, based on very little information.” Participants were randomly assigned to read one of four vignettes about a female medical patient named “Karla.” The study used a 2 (type of cancer: ovarian or cervical) \times 2 (cause of cancer stated: yes [ovarian cancer: family history; cervical cancer: HPV] or no) between-subjects design. After reading the assigned vignette, participants completed measures assessing their perceptions of Karla’s character, sympathy for Karla, and emotions. Then, participants answered questions about their personal health history, their family’s health history, and basic demographics. Last, participants completed manipulation-check questions and were debriefed.

After learning the true nature of the study, participants had the opportunity to withdraw their data from data analysis without penalty. Participants were dismissed and awarded course credit.

3.3 Materials

3.3.1 Vignettes

Participants read about a patient, Karla, who had either cervical or ovarian cancer. Depending on the assigned condition, the cause of the cancer (cervical: HPV infection; ovarian: family history) was either specified or unspecified. The vignettes also contained information about the patient's medical and social history, similar to that assessed in physician-patient interviews. Specifically, participants read about the patient's health history (current treatment for cancer diagnosis and previous illnesses), personal history (family situation and occupation), and family health history. The vignettes were identical across conditions except for content regarding the experimental manipulation. See Appendix B for the four vignettes.

3.3.2 Osgood's Perceptions of Character

Participants rated their perceptions of the patient's character using seven items adapted from Osgood's perceptions of character (Osgood, 1957). Perceptions (good/bad, clean/dirty, honest/dishonest, strong/weak, pleasant/unpleasant, successful/unsuccessful, and wise/unwise) were assessed on a 7-point Likert scale (e.g., 1 = *good*, 7 = *bad*). Higher scores represent more negative attitudes toward the patient. I created a composite of negative perceptions of character by summing the 7-items. These seven items have been used in prior research with good internal consistency reliability ($\alpha = .77-.94$) (McBride, 1998; Mosher & Danoff-Burg, 2007). In the present research, the items demonstrated good internal consistency reliability ($\alpha = .84$).

3.3.3 Sympathy Toward Patient

Participants completed five items (sympathy, compassion, tenderness, warmth, and softheartedness) to assess their feelings of sympathy toward the patient on a 5-point Likert scale (e.g., 1 = *sympathetic*, 5 = *unsympathetic*; DeWall & Baumeister, 2006). I averaged scores to create a single score reflecting participants' sympathy for the patient. Higher scores indicate less sympathy toward the patient. Previous research suggests that these items have good internal consistency ($\alpha = .92$). These items demonstrated good internal consistency reliability in the current study ($\alpha = .86$).

3.3.4 Emotions

Participants reported the degree to which they felt anger, contempt, moral disgust, sadness, fear/anxiety, and “grossed out” when thinking about the patient on a 7-point Likert scale (1 = *not at all*, 7 = *extremely*; Hutcherson & Gross, 2011). Higher scores represent stronger emotions.

3.3.5 Demographics and Health History

Participants reported their gender, race/ethnicity, age, and year in college. Participants were asked to report whether any female relatives had been tested for or diagnosed with cervical or ovarian cancer. Participants answered questions concerning their sexual history (whether or not they were sexually active and if so with how many partners) and sexual health (whether they had been diagnosed with HPV or another STI). Participants reported whether anyone close to them had been diagnosed with an STI. Female participants were asked to report whether they ever had a Pap test, an abnormal Pap test, and whether they had ever been diagnosed with cervical cancer.

3.3.6 Manipulation Checks

Using open-ended questions, participants were asked to report the type of cancer the patient was diagnosed with and the cause of cervical and ovarian cancer.

3.4 Hypotheses and Expected Results

I hypothesized an interaction between type of cancer and cause of cancer, that is, higher negative perceptions of the patient’s character (using the composite measure) in the cervical cancer/cause specified condition than in the cervical cancer/cause unspecified, ovarian cancer/cause specified, and ovarian cancer/cause unspecified conditions. More specifically, I predicted that simple effects would reveal that participants in the cervical cancer/cause specified condition would rate the patient more negatively than participants in the cervical cancer/cause unspecified condition. In addition, I predicted that there would be an interaction between type of cancer and cause of cancer for participants’ individual ratings of bad, dirty, dishonest, weak, unpleasant, unwise, and unsuccessful, such that there would be higher scores (indicating more stigma) in the cervical cancer/cause specified condition than in the cervical cancer/cause unspecified, ovarian cancer/cause specified, and ovarian cancer/cause unspecified conditions. I predicted that simple effects would reveal that participants in the cervical cancer/cause specified

condition would rate the patient as more bad, dirty, dishonest, weak, unpleasant, unwise, and unsuccessful than participants in the cervical cancer/cause unspecified condition.

I predicted that there would be an interaction between type of cancer and cause of cancer on sympathy, such that participants in the cervical cancer/cause specified condition would report feeling less sympathy toward the patient than participants in the cervical cancer/cause unspecified, ovarian cancer/cause specified, and ovarian cancer/cause unspecified conditions. I predicted that simple effects would reveal that participants in the cervical cancer/cause specified condition would report less sympathy than participants in the cervical cancer/cause unspecified condition.

I predicted that there would be an interaction between type of cancer and cause of cancer on participant's emotions related to moral evaluations, that is, participants in the cervical cancer/cause specified condition would report higher feelings of moral disgust and "grossed out" than participants in the cervical cancer/cause unspecified, ovarian cancer/cause specified, and ovarian cancer/cause unspecified conditions. Specifically, I predicted that simple effects would reveal that participants in the cervical cancer/cause specified condition would report feeling more moral disgust and "grossed out" than participants in the cervical cancer/cause unspecified condition. I predicted that there would be not be an interaction between type of cancer and cause of cancer on participants' feelings of anger, contempt, and sadness.

3.5 Statistical Analysis Plan

I used an ANOVA framework, 2 (type of cancer) \times 2 (cause of cancer stated), to test the hypotheses listed above.

CHAPTER FOUR

STUDY 1 RESULTS

4.1 Manipulation Checks

Across conditions, twelve percent of the sample did not correctly identify the type of cancer Karla had. Sixty-nine participants in the cervical cancer/cause unspecified condition correctly responded that Karla had cervical cancer and 20 participants did not. Eighty participants in the ovarian cancer/cause unspecified condition correctly responded that Karla had ovarian cancer and four participants did not. Seventy-three participants in the cervical cancer/cause specified condition correctly responded that Karla had cervical cancer and 15 did not. In the ovarian cancer/cause unspecified condition, 88 participants correctly responded that Karla had ovarian cancer and three did not. In terms of knowing what caused the cancer the patient had, 38% of participants in the ovarian cancer/cause specified condition correctly identified that ovarian cancer is linked to genetics while 63% of participants in the cervical cancer/cause specified condition correctly identified that cervical cancer is caused by HPV. I ran the analyses with and without participants who answered the manipulation checks incorrectly (i.e., could not identify the type of cancer and the cause) and the results did not differ. Therefore, I included all participants in the analyses reported below regardless of their answers on the manipulation check questions.

4.2 Personal and Family Health History

Four percent of participants had been diagnosed with an STI. Thirty-nine percent of female participants had had a Pap test, seventeen percent of whom had had an abnormal Pap test. Two percent of participants had been diagnosed with HPV. Seventy-eight percent of participants were sexually active. Number of lifetime sexual partners ranged from 0-50 ($M = 4.5$, $SD = 5.44$).

Twenty percent of participants reported that someone close to them had been diagnosed with an STI. Four percent of participants had a close female relative who had been diagnosed with cervical cancer. Fifteen percent of participants had a close female relative who had had an abnormal Pap test. Five percent of participants had a close female relative who had been

diagnosed with ovarian cancer. Twenty-one percent of participants had a close female relative who had been tested for ovarian cancer.

4.3 Main Analyses

The data from seven participants were excluded from the analyses ($N = 352$). Upon learning of the deception involved in the study, five participants requested that their responses not be included in the analyses. One participant had a personal history of cervical cancer and one participant accidentally answered the questions about himself rather than Karla.

4.3.1 Osgood's Perceptions of Character

There was a significant main effect of type of cancer for the perception of character composite measure, $F(1, 347) = 5.59, p = .019$, such that participants in the cervical cancer condition rated the patient more negatively relative to participants in the ovarian cancer condition. There was a significant main effect of cause of cancer specified for the perception of character composite measure, $F(1, 347) = 12.39, p < .001$, such that participants in the cause specified condition rated patient more negatively relative to participants in the cause unspecified condition. These main effects were qualified by a significant type of cancer-by-cause of cancer specified interaction, $F(1,347) = 7.36, p = .007$, such that participants in the cervical cancer/cause specified condition rated the patient the most negatively ($M = 18.61, SD = 6.34$). (See Table 1 for a complete list of means and standard deviations). Follow-up tests are reported below.

For the individual analyses, there was a significant main effect of type of cancer for clean/dirty, $F(1, 347) = 5.50, p = .020$, such that participants in the cervical cancer condition were more likely to rate the patient as dirty relative to participants in the ovarian cancer condition. There was a significant main effect of cause of cancer specified for clean/dirty, $F(1, 347) = 8.89, p = .003$, such that participants in the cause specified condition were more likely to rate the patient as dirty relative to participants in the cause unspecified condition. These main effects were qualified by a significant interaction, $F(1, 347) = .61, p = .002$, such that participants in the cervical cancer/cause specified condition rated the patient as dirtier than did participants in the other three conditions ($M = 2.70, SD = 1.36$).

There was a significant main effect of type of cancer for wise/unwise, $F(1, 347) = 6.25, p = .007$, such that participants in the cervical cancer condition were more likely to rate the patient as unwise relative to participants in the ovarian cancer condition. There was a significant main

effect of cause of cancer specified for wise/unwise, $F(1, 347) = 13.68, p < .001$, such that participants in the cause specified condition were more likely to rate the patient as unwise relative to participants in the cause unspecified condition. These main effects were qualified by a significant interaction, $F(1, 347) = 15.17, p < .001$, such that participants in the cervical cancer/cause specified condition rated the patient as more unwise than did participants in the other conditions ($M = 3.38, SD = 1.43$).

There was significant main effect of type of cancer for honest/dishonest, $F(1, 347) = 8.98, p = .003$, such that participants in the cervical cancer condition were more likely to rate the patient as dishonest relative to participants in the ovarian cancer condition. There was a significant main effect of cause of cancer specified for honest/dishonest, $F(1, 347) = 10.05, p = .002$, such that participants in the cause specified condition were more likely to rate the patient as dishonest relative to participants in the cause unspecified condition. There was also a marginally significant interaction for honesty, $F(1, 347) = 3.75, p = .054$, such that participants in the cervical cancer/cause specified condition rated the patient as more dishonest than did participants in the other conditions ($M = 2.65, SD = 1.46$).

There was a significant main effect of cause of cancer specified for pleasant/unpleasant, $F(1, 347) = 6.25, p = .013$, such that participants in the cause specified condition were more likely to rate the patient as unpleasant relative to participants in the cause unspecified condition. There was a significant main effect of cause of cancer specified for successful/unsuccessful, $F(1, 347) = 4.61, p = .033$, such that participants in the cause specified condition were more likely to rate the patient as unsuccessful relative to participants in the cause unspecified condition. Contrary to the a priori hypotheses, I did not observe an interaction between cancer type and whether cause was specified for the following variables: good/bad ($F(1, 347) = .85, p = .247, M = 2.05, SD = 1.04$), strong/weak ($F(1, 347) = 1.34, p = .356, M = 2.61, SD = 1.05$), pleasant/unpleasant, ($F(1, 347) = 1.33, p = .249, M = 2.13, SD = 2.08$), or successful/unsuccessful ($F(1, 347) = .98, p = .322, M = 2.25, SD = 1.09$).

Follow-up tests (contrast coefficients) were conducted to compare the cervical cancer/cause specified and cervical cancer/cause unspecified conditions. To control for Type I error over the 7 pairwise comparisons, the alpha level was set at .0071 (.05/7). Participants in the cervical cancer/cause specified condition were significantly more likely to rate the patient's character negatively on the composite measure, $F(1,346) = 18.61, p < .001$, compared to

participants in the cervical cancer/cause unspecified condition. Participants in the cervical cancer/cause specified condition were significantly more likely to perceive the patient as dirty, $F(1, 346) = 18.5, p < .001$, dishonest $F(1, 346) = 13.04, p < .001$, and unwise, $F(1, 346) = 28.87, p < .001$, compared to participants in the cervical cancer/cause unspecified condition.

4.3.2 Sympathy

There was a significant main effect of type of cancer for sympathy, $F(1, 347) = 5.30, p = .022$, such that participants in the cervical cancer condition felt more unsympathetic relative to participants in the ovarian cancer condition. There was also a marginally significant interaction for sympathy, $F(1, 347) = 2.90, p = .08$, such that participants in the cervical cancer/cause specified condition were less sympathetic toward the patient than were participants in the other conditions ($M = 2.50, SD = .87$).

Follow-up tests (contrast coefficients) were conducted to compare the cervical cancer/cause specified and cervical cancer/cause unspecified conditions. Contrary to predictions, participants in the cervical cancer/cause specified condition did not feel less sympathy, $F(1, 346) = 2.43, p = .12$, than participants in the cervical cancer/cause unspecified condition.

4.3.3 Emotions

There was a significant main effect of type of cancer for moral disgust, $F(1, 347) = 17.07, p < .001$, such that participants in the cervical cancer condition felt more morally disgusted relative to participants in the ovarian cancer condition. There was significant main effect of cause of cancer specified for moral disgust, $F(1, 347) = 10.83, p = .001$, such that participants in the cause specified condition felt more morally disgusted relative to participants in the cause unspecified condition. These main effects were qualified by a significant interaction, $F(1, 347) = 16.88, p < .001, (M = 1.76, SD = 1.17)$ (see Figure 1), such that participants in the cervical cancer/cause specified condition felt more moral disgust than did participants in the other conditions ($M = 1.76, SD = 1.17$).

There was a significant main effect of type of cancer for “grossed out,” $F(1,347) = 18.62, p < .001$, such that participants in the cervical cancer condition felt more “grossed out” relative to participants in the ovarian cancer condition. There was a significant main effect of cause of cancer specified for “grossed out,” $F(1, 347) = 8.49, p = .004$, such that participants in the cause specified condition felt more “grossed out” relative to participants in the cause unspecified condition. These main effects were qualified by a significant interaction, $F(1,347) = 15.60, p <$

.001, such that participants in the cervical cancer/cause specified condition felt more “grossed out” than did participants in the other conditions ($M = 1.89, SD = 1.40$).

A significant main effect of type of cancer was not found for the emotions of anger ($F(1, 347) = 1.18, p = .278$), contempt ($F(1, 347) = .07, p = .783$), sadness ($F(1, 347) = .26, p = .608$), or fear/anxiety ($F(1, 35) = .36, p = .547$). A significant main effect of cause of cancer specified was not found for the emotions of anger ($F(1, 347) = .44, p = .506$), contempt ($F(1, 347) = .31, p = .559$), sadness ($F(1, 347) = .02, p = .889$), or fear/anxiety ($F(1, 35) = .52, p = .471$). Consistent with the hypotheses, there were no significant interactions for the emotions of anger ($F(1, 347) = .77, p = .380, M = 1.35, SD = .89$), contempt ($F(1, 347) = .68, p = .410, M = 2.01, SD = 1.47$), sadness ($F(1, 347) = .01, p = .945, M = 4.47, SD = 1.43$), or fear/anxiety ($F(1, 35) = .48, p = .504, M = 2.74, SD = 1.7$).

Follow-up tests (contrast coefficients) were conducted to compare the cervical cancer/cause specified and cervical cancer/cause unspecified conditions. Participants in the cervical cancer/cause specified condition were significantly more likely to feel moral disgust, $F(1, 346) = 27.38, p < .001$, and “grossed out,” $F(1, 346) = 23.45, p < .001$, compared to participants in the cervical cancer/cause unspecified condition.

CHAPTER FIVE

STUDY 1 DISCUSSION

When the cause of cervical cancer was specified, participants evaluated aspects of a woman with cervical cancer's character negatively (using the composite measure). Specifically, they rated her as more dirty, more dishonest, and more unwise than participants who read about a woman with cervical cancer when the cause was not explicitly stated. Contrary to the hypotheses, no interaction between type of cancer and whether the cause of cancer was specified was observed for perceptions of a patient as bad, weak, unpleasant, or unsuccessful. These results suggest that the general negative perception of a woman with cervical cancer (as derived from the composite score) was driven by perceptions about certain aspects of her character. Specifically, participants might have only derogated aspects of the target's character that they deemed related to having an STI. The present research is consistent with previous research findings showing that people believe individuals with STIs are dirty (Moore & Rosenthal, 1996). Lebel & Devins (2008) found that people often blame people whose behavior contributed to their illness; this might explain the finding that people rated Karla as unwise when she had cervical cancer caused by HPV. Participants may have considered Karla's behavior as it related to her disease. Viewing her as unwise may reflect disapproval for contracting an STI or the perception that she made poor choices about her sexual partner(s). Indeed, previous research suggests that people believe that individuals with STIs engaged in irresponsible sexual behaviors such as having multiple sexual partners and having unprotected sex (Fortenberry, 2004). The findings from the present study suggest that people who knew the cause of cervical cancer also perceived women with the disease as dishonest. Young and colleagues (2007) found that people believe that someone with an STI is more likely to engage in immoral behavior; dishonesty was one of the five measures included in the composite of immoral behavior. The finding for dishonesty suggests potential general spillover, in that people perceived a woman with cervical cancer to have negative character qualities not normally associated with immoral sexual behavior. These results are inconclusive as we did not find this same effect for evaluations of bad, weak, unpleasant, or unsuccessful.

As expected, people in the cervical cancer/cause specified condition displayed the most moral disgust and “grossed out” feelings in response to the patient. In a similar pattern, people felt the least sympathetic toward a woman with cervical cancer when the cause of cervical cancer was specified. Previous research on stigma and emotion has focused on the emotions of stigmatized people (Hatzenbuehler, Nolen-Hoeksema, & Dovidio, 2009; Lapinski, Braz, & Maloney, 2010). The findings from the present study suggest that emotional reactions related to stigma are not limited to people who are stigmatized but that people who stigmatize also have emotional responses. Previous research investigating emotional reactions to stories of people living with AIDS found that people feel more negative emotions than positive emotions (Varas-Díaz & Marzán-Rodríguez, 2007). The present research suggests people do not simply experience a variety of negative emotions but that the emotional reactions they have tend to be those related to moral judgments (i.e., moral disgust, “grossed out” feelings, and lack of sympathy).

CHAPTER SIX

STUDY 2 OVERVIEW

The goal of the second study was to test the hypothesis that blame attributions mediate participants' perceptions of a patient with cervical cancer. More specifically, I predicted that participants who were made aware of the connection between HPV and cervical cancer (vs. not made aware of the connection) would be more likely to blame the patient for her medical condition, which in turn would result in more negative responses on the Osgood's perceptions of character items, less sympathy toward the patient, and feeling more morally disgusted and "grossed out." Second, the second study tested the hypothesis that BJW would moderate participants' responses on the Osgood's perceptions of character, emotions, and sympathy toward the patient, such that participants in the cause specified condition who are high in BJW would be more likely to evaluate the patient's character negatively, be less sympathetic toward a patient, and feel more morally disgusted and "grossed out" than participants in the cause specified condition who are low in BJW. That is, I predicted that the hypothesized pattern of results would be more exaggerated among participants who are high in BJW

CHAPTER SEVEN

STUDY 2 METHOD

7.1 Participants

I recruited 126 undergraduate students from the psychology department subject pool at a large southeastern university in the U.S. Participants had to be at least 18 years old to participate in the study. Participants were compensated with course credit. The mean age of participants was 19.4 years ($SD = 2.1$; range 18–30). Age was unknown for less than one percent of the sample. The majority of participants were freshman (53%), followed by juniors (25%), seniors (11%), and sophomores (10%). More females (82%) participated than males. Gender was unknown for less than one percent of the sample. The majority of participants self-identified as Caucasian (77%), followed by Black/African-American (13%), Asian/Asian-American (5%), and multi-racial (5%). Race was unknown for less than one percent of the sample. Seventeen percent of participants self-identified as Hispanic/Latino.

7.2 Procedure

The procedure for Study 2 was almost identical to that used in Study 1. Participants were randomly assigned to read one of two vignettes about a female medical patient named “Cindy.” Unlike Study 1, participants only read about a woman who has cervical cancer. The study used a two group between-subjects design in which the cause of the patient’s cancer was either specified or unspecified. After reading the assigned vignette, participants completed measures assessing their perceptions of Cindy’s character ($\alpha = .88$), sympathy for Cindy ($\alpha = .86$), and emotions. In addition to the measures used in Study 1, participants completed the Global Belief in a Just World Scale and questions about Cindy’s responsibility for her cancer (i.e., the extent to which they blamed Cindy for her medical condition). Then, participants answered questions about their personal health history, family’s health history, and basic demographics. Last, participants completed manipulation-check questions and were debriefed. After learning the true nature of the study, participants had the opportunity to withdraw their data from data analysis without penalty. Participants were dismissed and awarded course credit.

7.3 Materials

7.3.1 Vignettes

Participants read about a patient, Cindy, who had cervical cancer. There were two versions of the vignette; one version explicitly stated the cause of cervical cancer (i.e., “Cervical cancer is caused by human papillomavirus (HPV), a sexually transmitted infection.”) and the other did not. The vignettes also described the patient’s health history (current treatment for cancer diagnosis and previous illnesses), personal history (family situation and occupation), and family health history. The vignettes were identical across conditions except for content regarding the experimental manipulation. See Appendix D for the two vignettes.

7.3.2 Global Belief in a Just World Scale.

Participants completed the 7-item Global Belief in a Just World Scale (Lipkus, 1991). This scale assesses the degree to which participants believe that people get what they deserve (e.g., “I feel that people get what they are entitled to have.”) Participants indicated their agreement or disagreement with each statement using a 6-point Likert scale (1 = *strongly disagree*, 6 = *strongly agree*). Higher scores indicate more agreement that people get what they deserve. Research has shown this measure to have good internal consistency reliability ($\alpha = .79-.82$) (Furnham, 2003). This measure demonstrated good internal consistency reliability in the current study ($\alpha = .79$).

7.3.3 Blame Attributions

Participants completed three questions to assess blame attribution. Items assessed the extent to which participants felt Cindy “is to blame for her cancer,” Cindy “is responsible for her cancer,” and Cindy’s “behaviors contributed to her cancer.” These questions were loosely adapted from work by Kogut (2011) on victim blaming. Participants indicated their agreement or disagreement with the statements using a 6-point Likert scale (1 = *strongly disagree*, 6 = *strongly agree*). I added the scores to create a single composite reflecting the extent to which participants blamed the patient for her cancer. Higher scores indicate more blame. These items have good internal consistency reliability ($\alpha = .911$).

7.3.4 Manipulation Checks

Using open-ended questions, participants were asked to report the type of cancer the patient was diagnosed with and the cause of cervical cancer.

7.4 Hypotheses and Expected Results

I hypothesized that participants would evaluate a patient with cervical cancer more negatively when the cause of cervical cancer was specified vs. unspecified. As in Study 1, I predicted that compared to participants in the unspecified condition, participants in the cause specified condition would negatively evaluate the patient's character (using the composite measure), would negatively evaluate specific character qualities (rate her as more dirty, unpleasant, unwise), be less sympathetic, and feel more moral disgust, "grossed out" feelings. I predicted that participants' blame attributions would mediate responses on the Osgood's perceptions of character, sympathy toward the patient, and emotions. In addition, I predicted that BJW would moderate responses on the Osgood's perceptions of character, sympathy toward the patient, and emotions, such that in the cause specified condition participants who scored high in BJW would be more likely to rate the patient's character more negatively, be less sympathetic toward the patient, and experience stronger emotional reactions of moral disgust and being "grossed out" than participants who scored low in BJW.

7.5 Statistical Analysis Plan

I used a regression framework to examine the effect of cause of cancer specified (yes or no) on the Osgood's perceptions of character, sympathy toward the patient, and emotions. In addition, I conducted analyses to determine whether blame was a mediator. Specifically, I tested whether blame mediated the relationship between knowledge that HPV is the cause of cervical cancer and perceptions of a woman with cervical cancer's character, sympathy toward the cervical cancer patient, and emotions using the Baron and Kenny (1986) method followed by a Sobel (1982) test. Last, I conducted analyses to determine if BJW is a moderator. That is, I tested the interaction between BJW and experimental condition on participants' responses on the Osgood's perceptions of character, sympathy toward the patient, and emotions. Significant findings were then probed to assess effects at high (1 SD above the mean) and low (1 SD below the mean) BJW levels.

CHAPTER EIGHT

STUDY 2 RESULTS

8.1 Manipulation Checks

All participants knew that the patient had cervical cancer. Four participants in the cause stated condition were not able to correctly identify (in an open-ended question) that HPV causes cervical cancer. I analyzed the data excluding the participants who were not able to identify the cause of cervical cancer and the results did not change therefore, I included them in the following analyses.

8.2 Personal and Family Health History

Five percent of participants had been diagnosed with an STI. Thirty-eight percent of female participants had had a Pap test, 27 percent of whom had had an abnormal Pap test. Two percent of participants had been diagnosed with HPV. Seventy-two percent of participants were sexually active. The number of lifetime sexual partners ranged from 0-54 ($M = 4.77$, $SD = 7.15$).

Twenty-three percent of participants reported that someone close to them had been diagnosed with an STI. Nine percent of participants had a close female relative who had been diagnosed with cervical cancer. Fifteen percent of participants had a close female relative who had had an abnormal Pap test.

8.3 Main Analyses

8.3.1 Osgood's Perceptions of Character

Contrary to the hypothesis, there was not a main effect of condition for negative perceptions of a woman with cervical cancer using the composite measure of Osgood's perceptions of character ($b = 1.76$, $p = .114$, partial $r = .133$). (See Table 2 for a complete list of means and standard deviations). There was a main effect of condition for wise/unwise, such that people in the cause specified condition felt that a patient with cervical cancer was more unwise ($b = .60$, $p = .007$, partial $r = .24$) than did people in the cause unspecified condition. Contrary to the findings of Study 1, there was not a main effect of condition for clean/dirty ($b = .27$, $p = .287$, partial $r = .10$), or honest/dishonest ($b = .31$, $p = .230$, partial $r = .11$). Consistent with the hypotheses, there was not a significant main effect of condition for weak ($b = .22$, $p = .263$,

partial $r = .10$), bad ($b = .25, p = .267, \text{partial } r = .10$), unpleasant ($b = .19, p = .403, \text{partial } r = .08$), or unsuccessful ($b = .050, p = .793, \text{partial } r = .02$).

I tested whether blame mediated the main effect of stigma toward women with cervical when the cause of cervical cancer was specified vs. unspecified. As noted above, stating the cause of cervical cancer increased perceptions that a woman with cervical was unwise ($b = .60, p = .007, \text{partial } r = .24$), such that participants who were made aware of the link between cervical cancer and HPV were more likely to view her as unwise relative to participants who were not told of the link. When blame toward a patient with cervical cancer was entered into this model, I observed a significant relationship between blame and condition (specified or unspecified) ($b = 2.49, p < .001, \text{partial } r = .45$), such that participants in the cause specified condition were more likely to blame the patient for her medical condition than participants in the unspecified condition. Further, the previously significant effect of condition on ratings of wise/unwise dropped to nonsignificance when blame was entered into the model (unwise $b = .13, p = .560, \text{partial } r = .05$). A Sobel test confirmed that the mediation was significant (unwise $z = 3.22, p < .001$) (see Figure 2). Participant's perceptions of a woman with cervical cancer as unwise were partially mediated by blame.

8.3.2. Sympathy

Contrary to the findings in Study 1, there was not a significant main effect of condition for sympathy ($b = .20, p > .05, \text{partial } r = .13$).

8.3.3 Emotions

There was a main effect of condition, such that participants in the cause specified condition felt more moral disgust ($b = .37, p = .027, \text{partial } r = .20$) and more "grossed out" ($b = .66, p < .001, \text{partial } r = .32$) than did participants in the cause unspecified condition. Consistent with the hypotheses, no main effect of condition was observed for anger ($b = .18, p = .403, \text{partial } r = .08$), contempt ($b = -.13, p = .604, \text{partial } r = -.05$), sadness ($b = -.02, p = .918, \text{partial } r = -.01$), or fear/anxiety ($b = .37, p = .226, \text{partial } r = .11$).

I tested whether blame mediated the main effect of stigma (moral disgust and feeling "grossed out") towards women with cervical when the cause specified vs. unspecified. As noted above, stating the cause of cervical cancer increased emotions of moral disgust ($b = .37, p = .027, \text{partial } r = .20$), such that participants who were made aware of the link between cervical cancer and HPV were more likely to feel moral disgust relative to participants who were not told

of the link. When blame toward a patient with cervical cancer was entered into this model, I observed a significant relationship between blame and condition (specified or unspecified) ($b = 2.49, p < .001, \text{partial } r = .45$), such that participants in the cause specified condition were more likely to blame the patient than participants in the unspecified condition. Further, the previously significant effect of condition on ratings of moral disgust dropped to nonsignificance when blame was entered into the model ($b = 0.6, p = .720, \text{partial } r = .03$). A Sobel test confirmed that the mediation was significant ($z = 4.81, p < .001$) (see Figure 3).

The same pattern was observed for “grossed out.” As noted above, stating the cause of cervical cancer increased emotions of feeling “grossed out” ($b = .66, p < .001, \text{partial } r = .32$) such that participants who were made aware of the link between cervical cancer and HPV were more likely to feel “grossed out” relative to participants who were not told of the link. When blame toward a patient with cervical cancer was entered into this model, I observed a significant relationship between blame and condition (specified or unspecified) ($b = 2.49, p < .001, \text{partial } r = .45$), such that participants in the cause specified condition were more likely to blame the patient for her medical condition than participants in the unspecified condition. Further, the previously significant effect of condition on feelings of being “grossed out” was reduced in significance when blame was entered into the model ($b = .41, p = .031, \text{partial } r = .18$). A Sobel test confirmed that the mediation was significant ($z = 2.49, p = .01$) (see Figure 4). Participants’ feelings of moral disgust and “grossed out” were partially mediated by blame.

8.3.4 Moderating effects of BJW

I tested whether level of BJW moderated the effect of condition for moral disgust, “grossed out,” and unwise. There was a marginally significant interaction between condition (specified/unspecified) and level of BJW for moral disgust ($b = .05, p = .08, \text{partial } r = .16$). To interpret this interaction, I assessed the simple effect of condition among participants high (1 SD above the mean) and low (1 SD below the mean) in BJW ($M = 22.59, SD = 5.41$). Participants in the cause specified condition (compared with cause unspecified) who were high in BJW felt more moral disgust ($b = .60, p = .011, \text{partial } r = .23$). No such effect was found for individuals low in BJW ($b = .01, p = .969, \text{partial } r = .01$). See Figure 5. Contrary to the hypotheses, a significant interaction between condition and level of BJW was not observed for grossed out ($b = .03, p = .378, \text{partial } r = .08$) or unwise ($b = .00, p = .991, \text{partial } r = .00$).

CHAPTER NINE

STUDY 2 DISCUSSION

The findings of Study 2 are consistent with the hypothesis that people stigmatize women with cervical cancer when the cause of cervical cancer is specified. Contrary to the findings of Study 1, participants in the cause specified condition did not rate the general character of a woman with cervical cancer more negatively than participants in the cause unspecified condition. A significant effect was only found for the rating of wise/unwise such that participants in the cause specified condition rated a woman with cervical cancer as more unwise than participants in the cause unspecified condition. Contrary to the findings of study 1, participants in the cause specified condition were not more likely to perceive a woman with cervical cancer as more dirty or dishonest than participants in the cause unspecified condition. This finding was surprising because other research suggests that people perceive people with STIs as dirty (Moore & Rosenthal, 1996). As previously mentioned, the findings from Study 1 suggested that there may be general spillover of negative perceptions of a woman with cervical cancer when participants were aware of the cause of cervical cancer. The results of study 2, however, did not find support for general spillover. Participants in the cause specified condition were not more likely to rate a woman with cervical cancer as dishonest than participants in the cause unspecified condition. Future research is needed on people's perceptions of women with cervical cancer to determine whether there is general spillover of negative perceptions.

Consistent with hypotheses, participants in the cause specified condition were significantly more likely to report feeling moral disgust and "grossed out" than participants in the cause unspecified condition. This finding replicates the finding in Study 1 that participants who were aware of the cause of cervical cancer felt more morally disgusted and "grossed out" than participants who were not. This finding suggests that enacted stigma may be associated with negative emotions related to moral judgments. Contrary to the hypothesis and the findings of Study 1, participants in the cause specified condition were not more like likely to report feeling less sympathy toward a woman with cervical cancer than participants in the cause unspecified condition.

As predicted, blame significantly mediated the effect of condition (cause unspecified or cause specified) on participants' scores on moral disgust, "grossed out," and unwise. This finding gives support for the notion that blame partially accounts for the relationship between knowledge that an illness is caused by an STI and stigma towards people with that illness (Lebel & Devins, 2008).

BJW affects the relationship between knowing the cause of cervical cancer and feeling moral disgust. As predicted, people high in BJW (i.e., people who believe that people get what they deserve) who were aware of the link between HPV and cervical cancer felt more moral disgust than people low in a BJW. Contrary to hypotheses, people who believe that people get what they deserve were not more likely to feel "grossed out" or perceive that a woman with cervical cancer was unwise. This finding suggests that individual differences may play a role in stigma. Certain situations may increase the likelihood of stigma and certain people may be more likely to stigmatize.

CHAPTER TEN

GENERAL DISCUSSION

The current research suggests that people may stigmatize a woman with cervical cancer if they are aware of the cause of cervical cancer. Findings from Study 1 suggest that people who read about a woman with cervical cancer where the cause was specified were more likely to feel moral disgust, “grossed out,” and less sympathy than participants who read about a woman with cervical cancer where the cause was not specified. The same pattern was found for ratings of dirty, dishonest, and unwise. Findings from study 2 suggest that people who were made aware of the cause of cervical cancer felt more moral disgust, felt more “grossed out,” and perceived that a woman with cervical cancer was more unwise than people who were not made aware of the cause of cervical cancer. Furthermore, results suggested that blame may be a driving factor behind these stigmatizing emotions and negative character evaluations. Notably, the emotional reactions expressed have moral overtones. Moreover, individual differences appear to play a role in stigma; people who were high in BJW who were aware of the cause of cervical cancer were more likely to feel morally disgusted than people who were low in BJW.

The present research has important implications for the health of women with cervical cancer. Our research suggests that people stigmatize women with cervical cancer. These findings are of concern as previous research has shown that persons who feel stigma tend to experience more chronic stress (Brondolo, Rieppi, Kelly, & Gerin, 2003), and chronic stress can lead to negative health outcomes (Yanessa, Reece, & Basta, 2008). In addition, patients who perceive stigma may be less likely to adhere to necessary follow-up procedures (Clark, Anderson, Clark, & Williams, 1999). Women with cervical cancer who are stigmatized may experience negative health outcomes due to stress and could possibly be less adherent to recommended treatment for fear of further stigmatization. These findings illustrate the need for interventions that reduce stigma toward women with cervical cancer. Weiss and colleagues (2006) suggest that interventions to reduce health-related stigma should emphasize that health status is only one part of someone’s identity; these types of interventions may help to increase empathy toward women with cervical cancer. The present research has important implications for future research on health-related stigma. In contrast to previous research (Herek, 1999;

Sandfort & Pleasant, 2009), the present studies used more subtle measures of stigma which may better capture more implicit stigma. People may not have previously considered their attitudes toward women with cervical cancer. For this reason, explicit measures of stigma may not be as appropriate. Furthermore, the present research suggests that emotions related to moral judgments may be fruitful measures for STI-related stigma research. Previous research on enacted stigma has focused on emotional reactions of those stigmatized. The present research examines emotional reactions of people who stigmatize. Indeed, the present research suggests people who consider a person with a stigmatized illness experience negative emotional reactions, particularly those emotions related to moral judgments.

Finally, the present research has important implications for health promotion. Health advertisements relay information about the importance of preventative health behaviors but may also relay information about people with onset-controllable illnesses (Lebel & Devins, 2008). Creators of health advertisements should take care as to not imply that people with onset-controllable illnesses are to blame for their illnesses as this may lead to stigma. In regards to cervical cancer, this warning may apply to creators of HPV vaccine advertisements.

The present studies have three notable limitations. First, the study used vignettes about women with cervical cancer to investigate stigma toward women with cervical cancer. Further research is needed to assess stigma toward women with cervical cancer with real interactions between patients with cervical cancer and participants. Second, we did not ask participants whether they knew the cause of cervical cancer *before* the manipulation. We, therefore, cannot be certain whether we were informing or reminding people of the link between HPV and cervical cancer. People who knew of the link and people who were learning of the link for the first time may have different views about women with cervical cancer. Only more research can determine whether people who are informed of or reminded of the link between cervical cancer and HPV display similar or different levels of stigma toward women with cervical cancer. Third, the studies presented only focus on enacted stigma. Future research should focus on felt stigma of women with cervical cancer. Exploration of these possibilities will require further research.

Despite these limitations, the present study expands research on health-related stigma to women with cervical cancer. The present studies suggest that it is the knowledge of the link between HPV and cervical cancer that caused people to rate a person with cervical cancer negatively and to experience negative emotions. Notably, the character evaluations and

emotions experienced by these participants are morally-tinged. These findings suggest that when people consider the cause of cervical cancer (i.e., an infection due to a behavior associated with morality) they make moral judgments about a woman with cervical cancer. Moreover, blame attributions appear to play an important role in stigma. The link between cervical cancer and HPV was only recently discovered, and the general public has just begun to hear about it. As knowledge of this link becomes more pervasive it is possible that stigma toward women with cervical cancer will increase as well.

Table 1. Study 1: Means and Standard Deviations for Osgood's perceptions of character, sympathy, and emotions for each of the four groups (1: cervical cancer/cause specified, 2: cervical cancer/cause unspecified, 3: ovarian cancer/cause specified, 4: ovarian cancer/cause unspecified)

	Cervical/specified	Cervical/unspecified	Ovarian/specified	Ovarian/unspecified
Osgood's composite	18.61 (6.34)	15.00 (4.90)	15.67 (6.01)	15.20 (4.07)
Osgood's				
Strong/weak	2.75 (1.04)	2.53 (1.01)	2.55 (1.05)	2.60 (1.12)
Good/bad	2.23 (1.119)	1.91 (.89)	2.08 (1.15)	1.96 (.88)
Clean/dirty	2.70 (1.37)	1.95 (1.04)	2.03 (1.26)	2.05 (.96)
Honest/dishonest	2.65 (1.46)	2.02 (.97)	2.04 (1.13)	1.98 (.93)
Pleasant/unpleasant	2.41 (1.16)	1.99 (.98)	2.14 (1.21)	1.99 (.92)
Successful/unsuccessful	2.50 (1.22)	2.14 (1.09)	2.25 (1.14)	2.12 (.83)
Wise/unwise	3.38 (1.43)	2.45 (1.03)	2.57 (1.01)	2.60 (1.01)
Sympathy	2.50 (1.88)	2.32 (.77)	2.17 (.73)	2.27 (.69)
Emotions				
Anger	1.48 (1.05)	1.33 (.88)	1.28 (.80)	1.30 (.83)
Contempt	2.15 (1.59)	1.93 (1.44)	1.97 (1.45)	2.01 (1.43)
Moral disgust	1.76 (1.17)	1.17 (.61)	1.10 (.43)	1.17 (.56)
Sadness	4.47 (1.48)	4.36 (1.45)	4.57 (1.48)	4.49 (1.33)
Fear/anxiety	2.75 (1.74)	2.73 (1.64)	2.87 (1.80)	2.73 (1.64)
"Grossed out"	1.89 (1.40)	1.22 (.73)	1.08 (.38)	1.18 (.80)

Table 2. Study 2: Means and Standard Deviations for Osgood's perceptions of character, sympathy, and emotions for cervical cancer/cause specified and cervical cancer/cause unspecified

	Cervical/specified	Cervical/unspecified
Osgood's composite	18.06 (6.93)	16.30 (6.29)
Osgood's		
Strong/weak	2.44 (1.07)	2.25 (1.13)
Good/bad	2.32 (1.21)	2.11 (1.28)
Clean/dirty	2.52 (1.42)	2.30 (1.41)
Honest/dishonest	2.63 (1.52)	2.32 (1.30)
Pleasant/unpleasant	2.41 (1.25)	2.25 (1.24)
Successful/unsuccessful	2.56 (1.10)	2.52 (1.04)
Wise/unwise	3.08 (1.29)	2.54 (1.12)
Sympathy	2.50 (.93)	2.30 (.68)
Emotions		
Anger	1.67 (1.29)	1.50 (1.08)
Contempt	1.84 (1.43)	1.89 (1.54)
Moral disgust	1.52 (1.12)	1.14 (.62)
Sadness	4.61 (1.53)	4.62 (1.47)
Fear/anxiety	2.97 (1.70)	2.65 (1.68)
"Grossed out"	1.68 (1.35)	1.03 (.25)
Blame	6.08 (3.10)	3.59 (1.65)

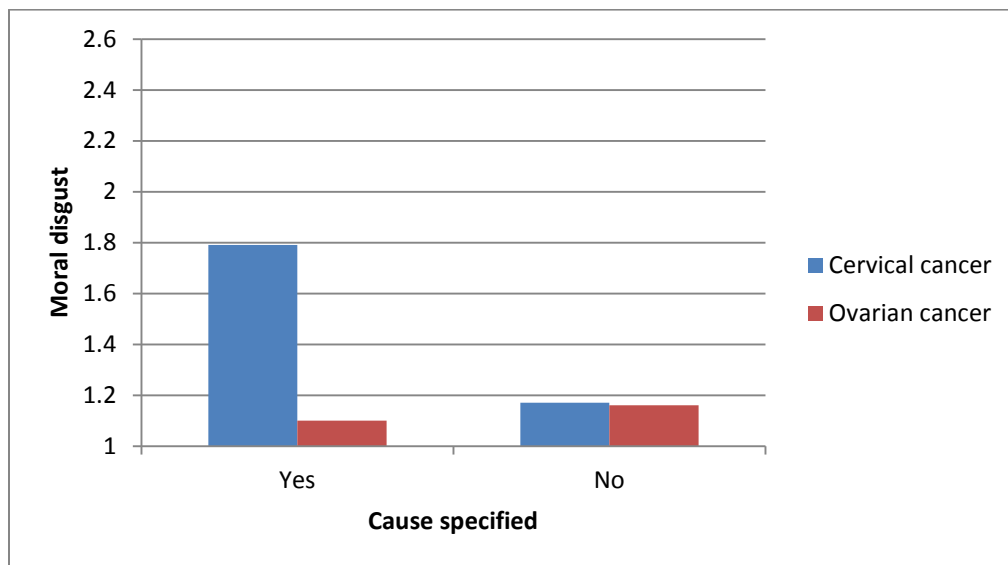


Figure 1. Effects of type of cancer and cause of cancer stated on feelings of moral disgust.

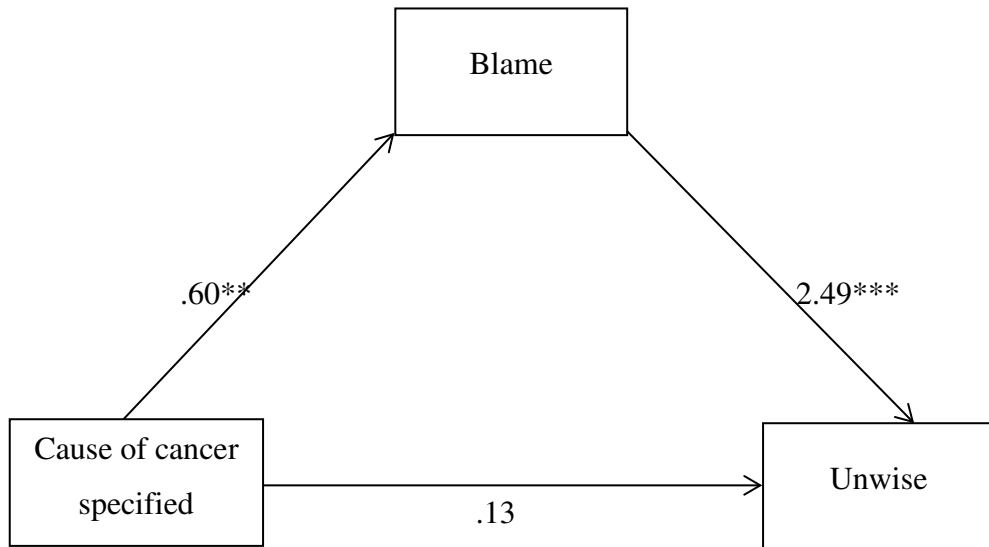


Figure 2. Perceptions of blame mediated the relationship between condition (cause of cervical cancer specified) and perceptions of unwise. Unstandardized betas are listed. ** $p < .01$. *** $p < .001$.

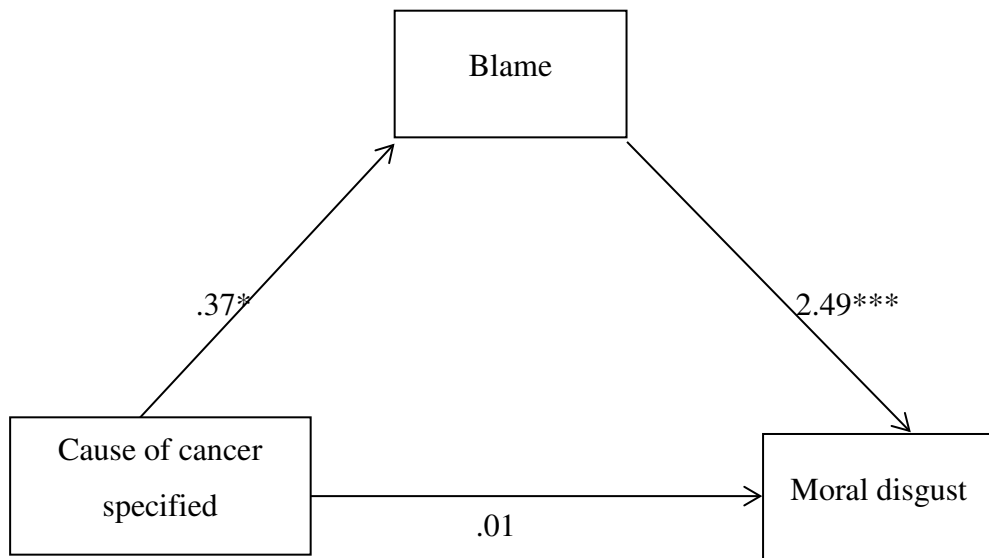


Figure 3. Perceptions of blame mediated the relationship between condition (cause of cervical cancer specified) and feelings of moral disgust. Unstandardized betas are listed. * $p < .05$. *** $p < .001$.

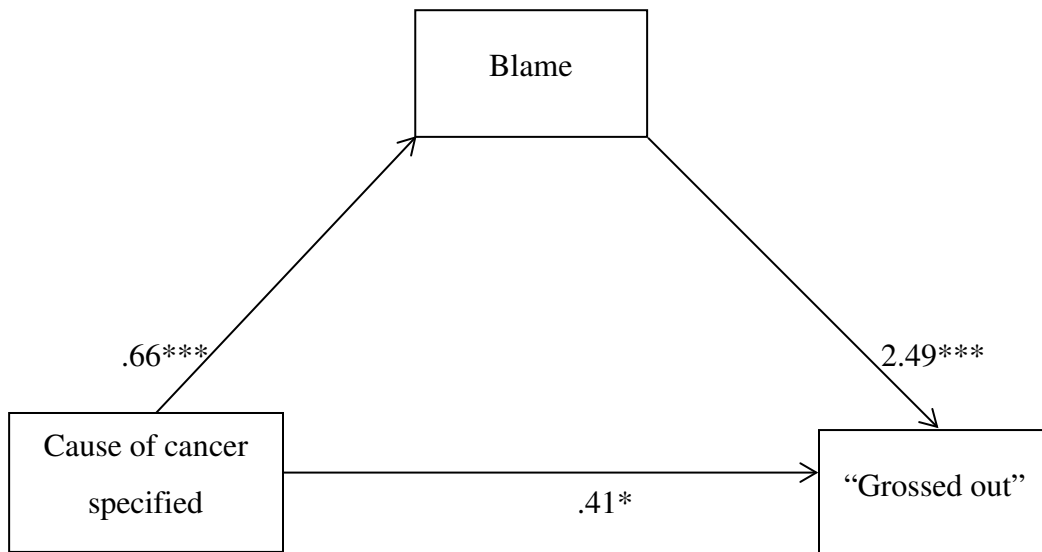


Figure 4. Perceptions of blame mediated the relationship between condition (cause of cervical cancer specified) and feelings of "grossed out." Unstandardized betas are listed. * $p < .05$. *** $p < .001$.

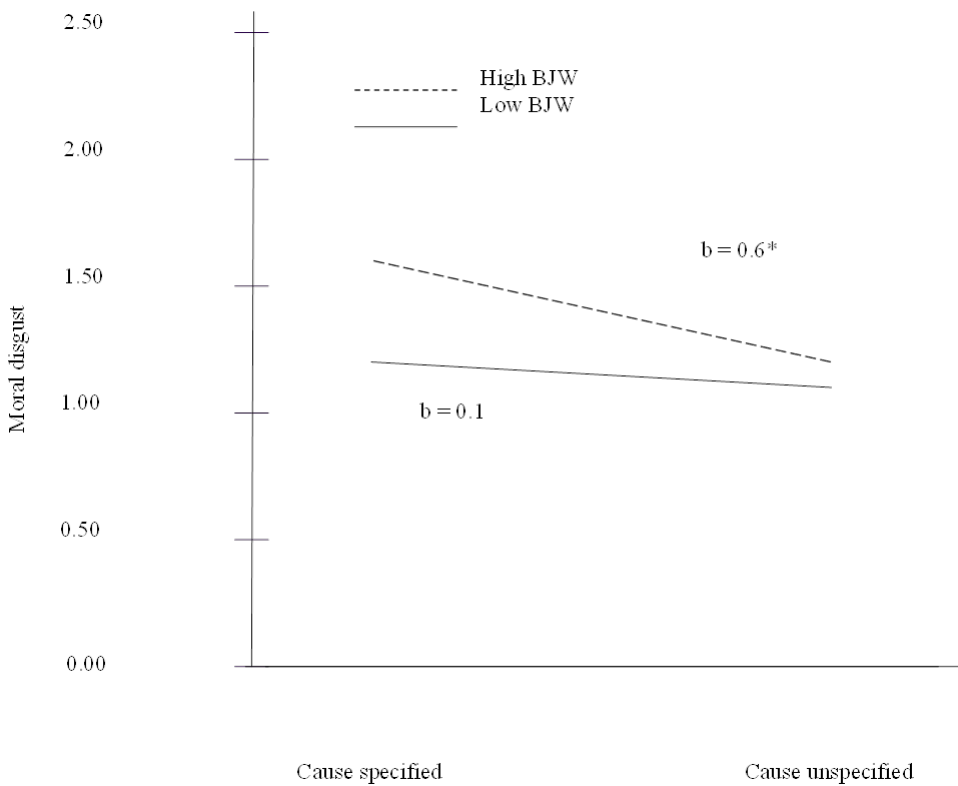


Figure 5. BJW moderated the effect of condition on participant's feelings of moral disgust. Participants in the cause specified condition (compared with cause unspecified) who were high in BJW felt more moral disgust. * $p < .05$.

APPENDIX A

STUDY 1 HUMAN SUBJECTS APPROVAL

Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673, FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 8/11/2011

To: Melissa Shepherd

Address: Department of Psychology 1107 W. Call Street Tallahassee, FL 32306
Dept.: PSYCHOLOGY DEPARTMENT

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
Attitudes and Opinions

The application that you submitted to this office in regard to the use of human subjects in the research proposal referenced above has been reviewed by the Human Subjects Committee at its meeting on 08/10/2011. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 8/8/2012 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition,

federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is FWA00000168/IRB number IRB00000446.

Cc: **Mary Gerend, Advisor**
HSC No. **2011.6615**

APPENDIX B

STUDY 1 INFORMED CONSENT

INFORMED CONSENT FORM

I freely and voluntarily and without element of force or coercion, consent to be a participant in the research project entitled “**Attitudes and Opinions.**” This research is being conducted by Melissa Shepherd, B.S. (graduate student, Psychology Department) and Mary Gerend, Ph.D. (Associate Professor, College of Medicine) at Florida State University (FSU).

I understand that the purpose of this research project is to better understand FSU students' attitudes and opinions about medical conditions. I understand that if I participate in this study, I will be asked some questions about my beliefs and behavior; some of these questions will be about my health history and sexual history. I will be asked to enter my responses into a computer. If for any reason I am uncomfortable responding to a question I may leave the answer blank.

I understand that I must be 18 years old or older in order to participate. The total time commitment will be about **25-30 minutes**. For my participation, I will be compensated ½ research credit. I understand that my participation is totally voluntary and I may stop participation at any time. If I decide to stop participation, I will still be entitled to my payment.

All of my survey responses will be confidential to the extent allowed by law. To ensure that my survey responses remain confidential, any data I provide will be associated with a subject number, rather than my name. Research results may be published, but my name will not be revealed. I understand that all data relevant to the study will be stored in a secure data base that is password protected. Any data collected with paper surveys (if the computers or online survey system are down) will be stored in a locked file cabinet in the researcher's lab. Data will be kept for 10 years.

I understand that there is a possibility of a minimal level of risk involved if I agree to participate in this study. I might experience some anxiety while reading the health information or thinking about my personal health habits. The research assistant, who has been specifically trained to discuss issues related to the study, will be available to talk with me about any discomfort I may experience while participating. I am also able to stop my participation at any time I wish.

I understand that there are benefits for participating in this research project. I will be providing researchers with valuable insight into people's feelings and opinions regarding other's health status. This knowledge can assist the medical community in providing better training services.

I understand that this consent may be withdrawn at any time without prejudice, penalty, or loss of benefits to which I am otherwise entitled. I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.

I understand that I may contact Melissa Shepherd, Psychology Department or Dr. Mary Gerend, Medical Humanities and Social Sciences, FSU College of Medicine, for answers to questions about this research or my rights. Group results will be sent to me upon my request. If I have questions about my rights as a participant in this research, or if I feel I have been placed at risk, I can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Office of the Vice President for Research, by telephone at (850) 644-8633 or by email: humansubjects@magnet.fsu.edu.

I have read and understand this consent form.

(Signature)

(Date)

Approved

FSU Human Subjects Committee Approved on 8/11/11. Void after 8/08/12. HSC# 2011.6615

APPENDIX C

STUDY 1 PATIENT CASE VIGNETTES

Condition A. Karla is a 47 year-old woman with cervical cancer. Karla was diagnosed 3 weeks ago and is currently undergoing treatment. Karla is married to her husband Steve and has two children. She works at a local bank and volunteers at the library. Karla has lived in Tallahassee for almost 30 years. She moved here from Orlando to go to college at FSU and ended up staying. Karla is allergic to penicillin. Karla's parents are both retired and live in Orlando. Her father had a minor stroke 4 years ago, but has made a full recovery. Her mother is in good health.

Condition B. Karla is a 47 year-old woman with ovarian cancer. Karla was diagnosed 3 weeks ago and is currently undergoing treatment. Karla is married to her husband Steve and has two children. She works at a local bank and volunteers at the library. Karla has lived in Tallahassee for almost 30 years. She moved here from Orlando to go to college at FSU and ended up staying. Karla is allergic to penicillin. Karla's parents are both retired and live in Orlando. Her father had a minor stroke 4 years ago, but has made a full recovery. Her mother is in good health.

Condition C. Karla is a 47 year-old woman with cervical cancer. Cervical cancer is caused by human papillomavirus (HPV), a sexually transmitted infection. Karla was diagnosed 3 weeks ago and is currently undergoing treatment. Karla is married to her husband Steve and has two children. She works at a local bank and volunteers at the library. Karla has lived in Tallahassee for almost 30 years. She moved here from Orlando to go to college at FSU and ended up staying. Karla is allergic to penicillin. Karla's parents are both retired and live in

Orlando. Her father had a minor stroke 4 years ago, but has made a full recovery. Her mother is in good health.

Condition D. Karla is a 47 year-old woman with ovarian cancer. Ovarian cancer is associated with having a family history of cancer. Karla was diagnosed 3 weeks ago and is currently undergoing treatment. Karla is married to her husband Steve and has two children. She works at a local bank and volunteers at the library. Karla has lived in Tallahassee for almost 30 years. She moved here from Orlando to go to college at FSU and ended up staying. Karla is allergic to penicillin. Karla's parents are both retired and live in Orlando. Her father had a minor stroke 4 years ago, but has made a full recovery. Her mother is in good health.

APPENDIX D

STUDY 2 HUMAN SUBJECTS APPROVAL

The Florida State University
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673, FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 8/15/2012

To: Melissa Shepherd

Address: Department of Psychology 1107 W. Call Street Tallahassee, FL 32306
Dept.: PSYCHOLOGY DEPARTMENT

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
Attitudes and Opinions III

The application that you submitted to this office in regard to the use of human subjects in the research proposal referenced above has been reviewed by the Human Subjects Committee at its meeting on 08/08/2012. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 8/7/2013 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition,

federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is FWA00000168/IRB number IRB00000446.

Cc: **Mary Gerend, Advisor**
HSC No. **2012.8650**

APPENDIX E

STUDY 2 INFORMED CONSENT

INFORMED CONSENT FORM

I freely and voluntarily and without element of force or coercion, consent to be a participant in the research project entitled “**Attitudes and Opinions III.**” This research is being conducted by Melissa Shepherd, B.S. (graduate student, Psychology Department) and Mary Gerend, Ph.D. (Associate Professor, College of Medicine) at Florida State University (FSU).

I understand that the purpose of this research project is to better understand FSU students’ attitudes and opinions about medical conditions. I understand that if I participate in this study, I will be asked some questions about my beliefs and behavior; some of these questions will be about my health history and sexual history. I will be asked to enter my responses into a computer. If for any reason I am uncomfortable responding to a question I may leave the answer blank.

I understand that I must be 18 years old or older in order to participate. The total time commitment will be about **25-30 minutes**. For my participation, I will be compensated ½ research credit. I understand that my participation is totally voluntary and I may stop participation at any time. If I decide to stop participation, I will still be entitled to my payment.

All of my survey responses will be confidential to the extent allowed by law. To ensure that my survey responses remain confidential, any data I provide will be associated with a subject number, rather than my name. Research results may be published, but my name will not be revealed. I understand that all data relevant to the study will be stored in a secure data base that is password protected. Any data collected with paper surveys (if the computers or online survey system are down) will be stored in a locked file cabinet in the researcher’s lab. Data will be kept for 10 years.

I understand that there is a possibility of a minimal level of risk involved if I agree to participate in this study. I might experience some anxiety while reading the health information or thinking about my personal health habits. The research assistant, who has been specifically trained to discuss issues related to the study, will be available to talk with me about any discomfort I may experience while participating. I am also able to stop my participation at any time I wish.

I understand that there are benefits for participating in this research project. I will be providing researchers with valuable insight into people’s feelings and opinions regarding other’s health status. This knowledge can assist the medical community in providing better training services.

I understand that this consent may be withdrawn at any time without prejudice, penalty, or loss of benefits to which I am otherwise entitled. I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.

I understand that I may contact Melissa Shepherd, Psychology Department or Dr. Mary Gerend, Medical Humanities and Social Sciences, FSU College of Medicine, for answers to questions about this research or my rights. Group results will be sent to me upon my request. If I have questions about my rights as a participant in this research, or if I feel I have been placed at risk, I can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Office of the Vice President for Research, by telephone at (850) 644-8633 or by email: humansubjects@magnet.fsu.edu.

I have read and understand this consent form.

(Signature)

(Date)

..... FSU Human Subjects Committee Approved on 8/15/2012. Void after 8/07/2013. HSC #
2012.8650

APPENDIX F

STUDY 2 PATIENT CASE VIGNETTES

Condition A. Cindy is a 49 year-old woman with cervical cancer. She was diagnosed 3 weeks ago and is currently undergoing treatment. Cindy is married to her husband Steve and has one grown child. They have lived in Tallahassee for almost 30 years. She has been working as a florist and volunteers at the library. Other than her recent diagnosis with cervical cancer, Cindy has had few health problems. She was diagnosed with high blood pressure two years ago, but has kept it well controlled with medication. Her father had a minor stroke 4 years ago, but has made a full recovery. Her mother is in good health. Cindy is coming into the office today to prepare for the next stage of her cancer treatment.

Condition B. Cindy is a 49 year-old woman with cervical cancer. Cervical cancer is caused by human papillomavirus (HPV), a sexually transmitted infection. She was diagnosed 3 weeks ago and is currently undergoing treatment. Cindy is married to her husband Steve and has one grown child. They have lived in Tallahassee for almost 30 years. She has been working as a florist and volunteers at the library. Other than her recent diagnosis with cervical cancer, Cindy has had few health problems. She was diagnosed with high blood pressure two years ago, but has kept it well controlled with medication. Her father had a minor stroke 4 years ago, but has made a full recovery. Her mother is in good health. Cindy is coming into the office today to prepare for the next stage of her cancer treatment.

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BIOGRAPHICAL SKETCH

Melissa is from Farmville, Virginia. She graduated Summa Cum Laude from The University of Mary Washington with a B.S. in Psychology in 2009. She is broadly interested in health psychology. Specifically, she is interested in creating interventions to increase preventative health behaviors, understanding barriers to health behavior, and exploring stigma related to health status. Her research incorporates social psychology principles into a health psychology framework.