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Breast Cancer, Genetic Testing And Attribution of Responsibility

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BREAST CANCER, GENETIC TESTING AND ATTRIBUTION OF RESPONSIBILITY

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I would like to thank Dr. Staples and Dr. Berg for serving on my committee. I could not have asked for a more supportive team in this process. I particularly want to thank Dr. Legerski, my committee chair, without her as a mentor, cheerleader or her incredible patience I would not have been successful. I wish to thank my husband and children whose support and love helped me achieve this academic dream. I am very proud to be able to share this accomplishment with them.

I dedicate this thesis to Sarah A. Parsons

ABSTRACT

In this study I research how the refusal of genetic testing shapes people's perceptions of responsibility or attribution for a friend's breast cancer diagnosis, emotions, and willingness to help. Bernard Weiner's theory of attribution and emotion is useful for understanding how blame and causation shape one's willingness to help. Weiner's theory suggests that perceived attributions influence one's emotional state, which in turn shapes their willingness to help others. Most studies using Weiner's attribution theory examine highly stigmatized illnesses, such as HIV/AIDS, drug abuse and mental illness, but few analyses consider breast cancer and even fewer have assessed how the availability of genetic testing might shape attribution. How might the availability of genetic testing shape one's emotions toward breast cancer patients? Will willingness to help diminish if causation and blame for the cancer are perceived as controllable, such as when a patient refuses available testing?

The data analyzed in this research were collected using a group-administered survey at UND in 2008. A total of 170 surveys were analyzed using OLS regression techniques. The sample was randomly given one of two factious scenarios regarding a friend named Amber who has a family history of breast cancer and is diagnosed with breast cancer. In one scenario Amber does not receive a recommendation to genetic test from her doctor (so she doesn't seek testing) and in the second Amber rejects her doctor's recommendation and does not get genetic testing for breast cancer. The findings do not

show that refusal of genetic testing shapes a person's willingness to help. The findings do suggest that attribution of responsibility matters when shaping a willingness to help, particularly in the way that it shapes people's emotions toward others, providing support for Weiner's causal model. This research also shows that gender is a factor that shapes willingness to help.

Chapter I

Introduction

In this study I research how the refusal of genetic testing shapes people's perceptions of responsibility or attribution for a friend's breast cancer diagnosis, emotions, and willingness to help. According to the American Cancer Society, breast cancer is the second leading cause of cancer death in women, exceeded only by lung cancer. Although death rates due to breast cancer have been declining since 1990, reports show as many as 194,280 new cases in 2009 (American Cancer Institute 2010a). Research suggests that healthy behaviors like regular exercise, maintaining a healthy weight, and not smoking contribute to lower rates of cancer diagnoses. Similarly, negative health behaviors, such as smoking and obesity, may contribute to risk of cancer (American Cancer Institute 2010b). Because both positive and negative health behaviors shape one's risk of breast cancer, some people may feel that patients hold a large portion of the responsibility for their diagnosis.

Despite the importance of health behaviors in shaping risk of cancer, some types of cancer are the result of genetic risk factors which are unavoidable. Research shows that women with a history of breast cancer among close relatives (i.e., mother, father, grandparents, or aunts and uncles) are at greater risk of developing breast cancer themselves (American Cancer Institute 2010b). While documenting a family history of

cancer is valuable, doctors are now able to use genetic testing to look for the presence of altered cancer genes. Although beneficial, these new medical tests cannot determine definitively if a patient will actually develop cancer. One study shows that the presence of certain altered breast cancer genes only accounts for 1 in 10 breast cancer diagnoses (American Cancer Institute 2010b). In addition, negative genetic tests sometimes give patients a false sense of security that they will not develop cancer. So, despite the usefulness of genetic testing, it is important to remember that genes are only one factor in the causation of cancer.

No matter the cause of one's cancer (health behaviors or genetics), statistics show that early detection and aggressive treatment results in better outcomes for patients who have been diagnosed with breast cancer (Wang et al. 2009). Because of advances in medicine and technology there is now a growing population of cancer survivors. In fact, in 2009 there were over 2.5 million breast cancer survivors in the United States (American Cancer Institute 2010a). These survivors are part of a growing population who need social, emotional, and physical support. Such support primarily comes from family, such as spouses and children. Furthermore, social network groups, including teams of doctors, nurses, and counselors, as well as friends and co-workers, are also an important part of the care giving environment. These support systems play an active role in the recovery of breast cancer survivors (Northhouse, Templin, and Mood 2000).

Much of the existing social psychology literature on breast cancer focuses on the emotions or coping skills of the patient after diagnosis and how the relationship between the patient and their spouse or family changes after diagnosis. Cancer patients and

survivors may experience a wide range of emotions over the course of their journey. Patients and survivors often will look to their environment and/or their own behaviors in order to gain understanding of the cause of their cancer diagnosis (Taylor, Lichtman and Wood 1984; Gulyn and Youssef 2010). Care givers also deal with an array of emotions towards patients following cancer diagnosis. Weiner (1985) argues that help givers must navigate their emotions by categorizing first, their own attitudes toward the patient (pity, anger, or guilt), then second, their perceived perception of blame (or no blame) for the diagnosis, and then lastly their own willingness to offer help and support (or not). In some cases, "the potential help giver might view the needy other as able or unable, good or bad, responsible or not responsible for their present plight" (Rudolph et al. 2004:817). Receiving optimal care after diagnosis increases survival rates, but behaviors that are not aligned with recovery may be viewed as negative by help givers (Lobchuk et al. 2011). If a patient's support system is a key factor in the survivor's journey and recovery process, then studying the attitudes of people toward breast cancer patients is important because it may shape their willingness to help, the quality of care they give, and how successful a survivor's overall recovery environment is.

Bernard Weiner's (1985) theory of attribution and emotion is useful for understanding how blame and causation shape one's willingness to help. Weiner's theory suggests that perceived attributions (i.e., "I feel the patient is at fault" or "I feel the patient is not at fault") influence one's emotional state, which in turn shapes their willingness to help others. For example, Weiner argues that, "feelings of pity arise if an observer attributes an illness to uncontrollable factors (e.g., genetics) and pity then leads to an increase in one's willingness to help" (Mosher and Danoff-Burg 2008:1). In

contrast, if the illness is perceived as controllable, then feelings of anger will be expressed and one's willingness to help will decline.

Most studies using Weiner's attribution theory examine highly stigmatized illnesses, such as HIV/AIDS, drug abuse and mental illness but, few analyses consider breast cancer and even fewer have assessed how the availability of genetic testing might shape attribution. Emphasis on maintaining a "healthy" lifestyle is an important part of today's American culture, but we are also witnessing a "geneticization" of society (Lemke 2004). Despite the fact that many components of cancer remain unknown, cancer patients may now carry a stigma if one's health behaviors fall short of perceived appropriate standards (i.e., Do you smoke? Do you eat right and exercise? Do you do regular self-examinations? Have you done genetic testing?). Given current attitudes, how might widespread knowledge that tests are now available to identify the presence of cancer risk genes contribute to perceptions that a patient did not do enough to keep themselves healthy or to detect their cancer early? How might the availability of genetic testing shape one's emotions toward breast cancer patients? Will willingness to help diminish if causation and blame for the cancer are perceived as controllable, such as when a patient refuses available testing? Current research concerning attitudes toward breast cancer patients has not adequately addressed these questions.

In Chapter Two I will provide a synopsis of the literature concerning this area of study, including research on the role of health behaviors and genetic factors in shaping risk of breast cancer, as well as an in depth description of attribution theory. In Chapter Three I will detail the methodological steps used to answer the questions above. In

Chapter Four I will present the results of the analysis. Finally, in Chapter Five I will conclude by discussing the implications of my study, the limitations of my analysis, and the need for more research in this area.

Chapter II

Literature Review

The purpose of this research is to analyze how the refusal of genetic testing shapes whether or not people's perceptions of a breast cancer patient's diagnosis are attributable to the patient's own fault or external circumstances, and how these perceptions influence their emotions and willingness to help. In this chapter I will discuss Weiner's attribution theory, the theoretical framework of this thesis, and describe previous research that has been done utilizing this theory. I will also describe the major concepts I am interested in exploring and provide hypotheses related to my research questions.

The number of breast cancer diagnoses is on the rise. According to the American Cancer Society's projections, there were 1,479,350 new cases of cancer in 2009. Of these cases, 194,280 were newly diagnosed female breast cancer (American Cancer Institute 2010a). Fortunately, with the help of medical accomplishments, the death rate from breast cancer has been declining since about 1990, leaving a large population of about 2.5 million survivors in the United States (American Cancer Institute 2010b). An abundance of literature shows that the amount of care and support a breast cancer patient receives is vital to their experience and outcomes (Mosher and Danoff-Burg 2008).

Spouses and family members are often the main source of help giving, but friends are also an important component of the support structure too (American Cancer Institute

2010b). Most medical facilities now staff a cancer center or clinic to facilitate the diagnosis, treatment and recovery process. Outpatient treatment has gained popularity within the medical community, meaning women are home while they cope with their diagnosis and treatment. Consequently, outpatient agencies and home health care providers also serve as important sources of support. Following cancer diagnosis, communication patterns may be different, and levels of need (emotionally and physically) may shift, thrusting relationships into adjustment. Researchers find that while professional caregivers are given ample training in care giving for cancer patients, a majority of the time family and friends go home with little or no guidance in how to handle their loved one's diagnosis and the extensive treatment/recovery period ahead of them (Northhouse, Templin and Mood 2001). Therefore, examining the perceptions of others toward breast cancer patients may be helpful for understanding the recovery environment of patients.

Theoretical Perspective

Many scholars have found Bernard Weiner's (1993) attribution theory helpful for understanding social psychological phenomena like labeling, stigma and impression management. Research primarily focuses on "how perceivers explain human behaviors by inferring the causes of those behaviors" (Badahdah 2007: 205). Because the theory has been applied to a wide range of contexts, Badahdah (2007) argues that there is not one singular theory of attribution but more a conglomerate of perspectives explaining behavior in terms of emotion, blame and causation.

Overall, attribution theory emphasizes subjective causality, a human need to ascribe events to underlying causes, especially if they are negative, unwished for and unanticipated (Faller, Schilling and Lang 1995; Stewart et al. 2001). According to attribution theory, "causal explanations [for illnesses] fall into two categories, those being internal (traits or behaviors) and external factors" (Gulyn and Youssef 2010). Many factors shape how people perceive causality. For example, Kawate et al. (2005) found that white women were more likely to attribute their breast cancer to external factors in contrast to Black women who were more likely to attribute their cancer to personal behavior. While some research looks at people's attributions for their own illnesses, other research examines people's perceptions toward others' illnesses.

Responsibility

According to attribution theory, there are three components or stages of attribution of responsibility and stigma. In stage one, a person decides whether or not the behavior is deliberate. According to the theory, someone who knowingly engages in negative behavior may carry a stigma. In stage one a person concludes if the behavior is attributed to internal or external causes (Weiner 1993; Weiner, Perry and Magnusson 1988). If one feels the stigmatized behavior is the fault of the patient (i.e., if the actor willingly uses illegal drugs), instead of the result of some external factor, then they are left at their own accord and potential help givers will not feel inclined to help them (Weiner and Kukla 1970; Lobchuk et al. 2011). A potential help giver weighs the patient's perceived responsibility taking in consideration what controllability the patient had in their diagnosis. Once the potential help giver concludes the controllability they

begin to process their emotions. Research consistently shows that a person's perceptions about the cause of an illness shape their emotions towards patients (Weiner, Graham and Chandler 1982).

Emotion

The second stage involves a potential care giver's emotions. According to Weiner's theory, when it is perceived that the patient has put themselves in a negative situation, negative emotions are expressed by those around them (i.e., "I am mad at Bob for using drugs.") and no help giving may be extended to the patient. In contrast, if the patient engages in stigmatized behavior that is seen as out of their control, for example, getting addicted to pain pills after a surgery, then the stigmatized behavior is beyond the control of the patient and more positive emotions may be expressed (i.e., "I feel pity for Bob and his unfortunate situation."). Depending on their connotation, emotions will dictate a willingness to help (Schmidt and Weiner 1988).

Willingness to Help

In the third stage, the potential help giver decides on whether they are willing to help the patient in their diagnosis. Traditionally, if positive emotions are expressed the potential help giver is willing to help with care giving. If the potential help giver expresses negative emotions the willingness to help is depleted or no help is extended at all. This is a traditional model of attribution theory and the correlation between causality/emotion and help giving tend to follow this pattern. Because "attribution-linked

affects are influenced by the casual attributions individuals make," people may be more willing to help if the patient is not to blame (Badahdah 2005:538).

Previous Research Utilizing Attribution Theory

Perceptions of other's health behaviors have been found to be important in shaping their attribution of responsibility and emotional response (Weiner 1985). Weiner (1980) argues that one of the key components shaping emotional response is whether the causes of the situation are perceived to be internal or external. Internal causes are believed to be within a person's control, whereas external causes are believed to be beyond a person's control. For example, Mosher and Dannoff-Burg (2008) found that when actors engage in stigmatized behavior, like smoking, participants were more likely to perceive their disease as controllable and express negative emotions towards the target. In another study of stigma and breast cancer, patients that reported to engage in health behaviors like taking birth control felt it might have increased their chances of breast cancer and worried that those behaviors might cause others to judge them unkindly (Timko and Janoff-Bulman 1985). Indeed, numerous empirical studies have shown that the perception of responsibility for an event has implications for the perceiver's emotions and behavior toward others (Steins and Weiner 1999). Weiner argues that because emotions drive observers to act (or not), emotions act as a bridge between perceptions of cause and willingness to help.

Willingness to help is often measured as willingness to aid a patient in chores, taking them to appointments, offering emotional support, or assisting with any other need

that the patient might have. Research shows that perceptions of external responsibility and positive emotional responses such as sympathy increase a person's willingness to help (Weiner 1980). Even when reporting negative emotions and the belief that a patient is fully responsible for their diagnosis, Mosher and Danoff-Burg (2008) still found that the women in their study expressed a willingness to help, but they were *more* likely to help if they felt the target did not have control over their diagnosis of cancer. Other research confirms that women over men were more likely to aid in helping behaviors like driving the patient to appointments, shopping for groceries and doing household chores that the patient is too ill to perform (Schulte 2002).

Research has also indicated that factors such as gender and proximity play a role in one's emotional response and willingness to help. Research shows that the gender of the patient matters. For example, Cobb and De Chabert (2002) found that care providers reported more anger towards male patients than female counterparts, and more willingness to help female patients diagnosed with HIV/AIDS than male counterparts. Research also shows that the gender of the respondent matters. For example, Mosher and Danoff-Burg (2008) found that while women's anger did not vary based on the gender of a patient, male respondents expressed greater anger towards male friends who were perceived at fault than female friends in the same scenario. Similarly, Steins and Wiener (1999) also found that friendship patterns were related to emotions and willingness to help; while "the responsibility for negative behaviors by like peers was often minimized; in contrast disliked peers were viewed as being more responsible for their negative behavior" (p. 492). These studies illustrate the wide range of factors that shape people's

attribution of responsibility for a diagnosis, emotional response, and willingness to help.

In the past, most of this research has been done on mental illnesses like Alzheimer's or highly stigmatized diseases like HIV and AIDS. HIV and AIDS are viewed publically as highly preventable and the result of a person's unhealthy life choices for example; drug abuse or unprotected sex. Illnesses like breast cancer typically do not come under such harsh scrutiny. However, as our country is experiencing heightened health consciousness and greater access to genetic information, a person's health behaviors may be more likely to come under suspicion when diagnosed with any illness – even breast cancer. Does the patient have a history of the disease in their family? Have they taken advantage of available testing? All of these health behaviors may conjure judgments from family, friends and caretakers.

According to attribution theory, if the patient's diagnosis is viewed as external, meaning it was not her fault, then positive emotions will be expressed and a willingness to help will be extended to the patient. If the diagnosis is perceived as having an internal cause, meaning she had control over her diagnosis, then negative emotions will be expressed and less help giving will be extended. While the research above shows that individual traits shape this process, cultural factors, such as the media, also shape the frames people use when attributing responsibility for health conditions, which also shapes their emotional response (Major 2011).

Genetic Testing and Attribution Theory

O'Neil et al. (2010) argue that, "the completion of the Human Genome Project and the consequent acceleration of genomic discovery have generated a tsunami of

genetic data linking gene variants to a number of common health conditions" (p.127). It is well known that a family history of cancer increases a person's likelihood of developing cancer themselves, and some scholars argue that the use of genetic testing may help destigmatize illnesses like mental health conditions by explaining the biological origins and diminishing the notion that it is a result of some sort character flaw or an individual's behavior (Phelan 2002; Meiser et al. 2005). But others, like Lykins et al. (2008), worry that if genetic testing becomes the number one method of diagnosis for conditions like cancer, that it could lead individuals to ignore other factors like health behaviors and environment, and "incline individuals to endorse pharmacological resources over behavioral modification options for risk reduction" (O'Neil et al. 2010: 128).

How might the "geneticization" of society (Lemke 2004) and availability of tests to identify cancer risk also influence how we attribute responsibility for illnesses such as breast cancer? While some scholars have begun examining patient's perceptions of using genetic testing to determine their own predisposition for illness like cardio vascular disease (Claassen et al. 2012) or mental health disorders like depression and schizophrenia (Phelan 2005; Wilde et al. 2009); few studies have examined how use of (or refusal to use) genetic testing might shape others' attributions of responsibility for a person's cancer diagnosis.

Nevertheless, research on genetic risk for mental health diseases may have implications for research on genetic risk and breast cancer. For example, there is a growing body of research that has looked at attitudes towards using genetic testing to

identify predisposition for mental health conditions like depression. This research shows that many people report they would use genetic testing to identify personal risk for mental health disorders if it were made available (Meiser et al. 2005). Research by Wilde et al. (2009) shows that people who receive genetic testing that indicates risk for depression report being more vigilant in looking for warning signs, seeking clinical help, making lifestyle changes and engaging in preventive behaviors to reduce their risk of depressive symptoms. They also found that people who tested positive using genetic testing did not necessarily feel it would definitely cause them to have the condition, but acknowledged that it predisposed them to greater risk. But this research is not specific to cancer.

There is a small but growing body of literature that is looking at genetic attribution for cancers like melanoma (see Kasparian et al. 2006; Breheny 2007; Hay 2009) and breast cancer (Cappelli et al. 2001, Shiloh 2009). Like the research on mental health predispositions, this research also shows that having a family history of cancer and those who have strong belief in the genetic model of melanoma causation have greater interest in genetic testing for such conditions. Similarly, research that looks specifically at breast cancer and factors that shape genetic testing shows that if asked, most women reported an interest in genetic testing for breast cancer, and high risk women were even more likely to express an interest in genetic testing (Cappelli et al. 2001).

Much of this research looks at factors that shape women's interest to test but very little research looks at the effects of genetic attribution on the perceptions of others on a cancer diagnosis. An exception to this is Breheny (2007); she examined genetic

attribution and stigma towards skin cancer patients. She finds that genetic attribution of skin cancer patient did not affect their reported social distance (i.e. willingness to be friends with, recommend for a job or date etc. etc. etc.), but this research was not specific to breast cancer and did not look at willingness to help or emotional responses. In a similar study assessing attitudes toward people with depression and schizophrenia, Phelan (2005) did examine how genetic attributions shape emotions and willingness to help others, but did not find any evidence that genetic attributions significantly affected positive and negative emotions toward patients or their willingness to help. Is it possible that people might respond similarly to breast cancer? How might genetic attribution for breast cancer shape a person's attribution of reasonability, emotional response and blame?

Based on a lack of research in this area, in this study I ask the following research questions and propose the following hypotheses:

Research Question One: Are a person's *emotions, perceptions of responsibility,* and *willingness to help* different if the patient refuses recommended genetic screening (viewed as internally controlled) compared to a scenario where genetic screening is not used because it is never recommended to the patient in the first place (viewed as externally controlled)?

Hypothesis One: When a patient refuses recommended genetic screening (internally controlled) and is later diagnosed with breast cancer, people will express more negative emotions towards the patient, perceive that the patient is more to blame for their

diagnosis, and will be less willing to help than when the patient does not use genetic screening because it is never recommended to them (externally controlled).

Research Question Two: How does use of genetic testing and perceptions of responsibility shape willingness to help breast cancer patients? How do positive and negative emotions shape a person's willingness to offer help to those diagnosed with breast cancer? What other factors are related to willingness to help?

Hypothesis Two: People who feel more strongly that a person was responsible for their diagnosis and express more negative emotions toward breast cancer patients will not express as much willingness to help the patient, while people who do not feel as strongly that a person was responsible for their diagnosis and express more positive emotions will express more willingness to help the patient.

Here in Chapter Two previous research was discussed on attribution theory and how perceived responsibility influences one's emotions and willingness to help. I also discussed the lack of literature addressing how availability of genetic testing might shape perceptions of responsibility for breast cancer patients. I have proposed two specific research questions and given my hypotheses. I hope to provide insight into how attribution theory might explain a person's willingness to help those diagnosed with breast cancer in situations where genetic testing is offered and refused and also where genetic testing is available but not offered leaving the patient unaware of its accessibility.

In Chapter Three I will outline the analytic approach for this thesis. I will detail the operationalization of the variables used, discuss the data collection process for this study, and describe the methods used to answer the proposed research questions.

Chapter III

Methodology

In this Chapter I will explain the methodology used to analyze the research questions proposed. The purpose of this study is to examine how a person's perceptions of responsibility shape their emotions and willingness to help breast cancer patients who refuse genetic screening. I will explain how the data was collected. I will detail how I conceptualized my variables. I then will describe the operationalization of my variables. Lastly, I will explain the analytic strategy I used to answer my research questions.

Sample and Data Collection

During the spring semester of 2008 at the University of North Dakota (UND), a group-administered survey was distributed in an Introduction to Sociology lecture class. The campus has an enrollment of approximately twelve thousand students, 79% of which were residents of the state of North Dakota or Minnesota (University of North Dakota 2013). A total of 210 surveys were anonymously circulated and returned. The total number of completed surveys was 170, resulting in a response rate of 81 percent.

The surveys gathered basic demographic information such as respondent's grade level, age, gender and marital status. Borrowing from Dr. Robert B. Hash's "Patient Survey on Physician Characteristics," (Hash et al. 2003) and in collaboration with Dr.

Abdallah M. Badahdah, the survey instrument also included one of two vignettes about a fictitious friend named Amber (see Appendix A). The survey also contained three items that measured the respondent's perceived fault or blame of Amber, six items that measured emotions towards Amber, and three items that measured their willingness to help Amber. The survey also contained a 27 item scale measuring respondents' beliefs about control over their own health.

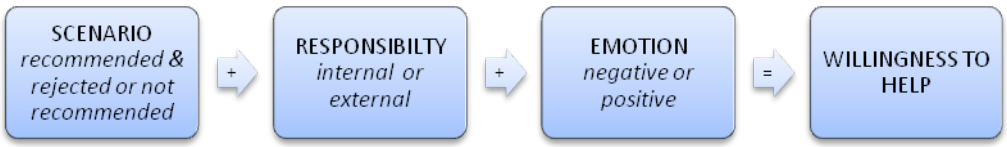
To protect student confidentiality, I did not ask for participant's names or any other identifying information. I coded each survey with a unique identification number starting with 001. The survey responses were then entered into SPSS. The survey instrument and administration technique were approved by the UND Institutional Review Board (IRB) prior to distribution of the survey (project number 200712-123).

Dependent Variable

Figure 1 shows the hypothesized relationship between the dependant varaible and the primary independent varaibles. *Willingness to help* was measured on an ordinal level in this study using three questions: "I would be willing to help Amber cope with her illness," "I would be willing to help Amber financially," and "I would be willing to help Amber find the best treatment." Respondents were asked to rate their reaction using a six-point Likert scale ranging from "strongly agree" to "strongly disagree." This rating scale is important to the research because, "the use of more than two response choices will increase precision" and "those who feel strongly can now be distinguished from those with moderate feelings" (Spector 1992: 5). I reverse coded these questions so that the higher the rating, the more a person was willing to help. Specifically, strongly agree = 6,

moderately agree = 5, agree = 4, disagree = 3, moderately disagree = 2, and strongly disagree = 1. I added respondents' answers to these items and divided by three to calculate an average score for *willingness to help*. Using the average score makes it easier to interpret the statistics. The alpha reliability coefficient for this construct is 0.788. A widely accepted rule of thumb is that alpha should be at least 0.70 for a scale to demonstrate internal consistency (Spector 1992).

Figure 1. Relationship Between Primary Variables



Independent Variables

Scenario

The survey instrument was designed with two vignette's describing a friend named Amber who is diagnosed with breast cancer. The benefit of using a two comparison group model is that it allows the researcher to establish association (Chambliss and Schutt 2010). Half of the surveys had scenarios which contained the following text:

> *Amber's doctor told her that she should take a genetic test to find if she is at risk of developing breast cancer of the inheritable type. Amber decided not to take the genetic test against the recommendation of her doctor. One year later she was diagnosed with breast cancer.*

Students who received this scenario were coded as 1. In this scenario Amber rejected the recommendation to genetic test. The other half of the surveys contained the following variation:

> *Amber's doctor did not ask her to take the genetic test to find out if she might develop a breast cancer of the inheritable type. Hence, Amber did not take the genetic testing because her doctor did not tell her to do so. One year later she was diagnosed with breast cancer.*

Students who received this scenario were coded as 0. In this scenario no recommendation to do genetic testing was given to Amber, so she does not take the test.

Attribution of Responsibility

Attribution of responsibility was measured on an ordinal level in this study using three questions: "I believe Amber was responsible for what happened to her," "I believe it was Amber's fault that she had breast cancer," and "Amber could have prevented having breast cancer." Respondents were asked to rate their reaction using a six-point Likert scale, where strongly agree = 1 and strongly disagree = 6, so the higher the rating, the more the person did not feel it was Amber's fault (in other words, the less responsibility they attributed to her). I added respondents' answers to these items and divided by three to calculate an average score for *attribution of responsibility*. The alpha reliability coefficient for this construct is 0.778.

Positive Emotions

Positive emotion was measured on an ordinal level in this study using three questions: “I have sympathy for Amber,” “I feel pity for Amber,” and “I am concerned for Amber.” Respondents were asked to rate their reaction using a six-point Likert scale where strongly agree = 1 and strongly disagree = 6. I had to reverse code the questions so that the higher the rating, the more positive emotions a person had. Specifically, I recoded the variable so that strongly agree = 6 and strongly disagree = 1, etc. I added respondents’ answers to these items and divided by three to calculate an average score for *positive emotions*. The alpha reliability coefficient for this construct is 0.779.

Negative Emotions

Negative emotion was measured on an ordinal level in this study using three questions: “I am angry at Amber,” “I am mad at Amber,” and “I am irritated with Amber.” Respondents were asked to rate their reaction using a six-point Likert scale, where strongly agree = 1 and strongly disagree = 6, so higher scores represent less negative emotions. I added respondents’ answers to these items and divided by three to calculate an average score for *negative emotions*. The alpha reliability coefficient for this construct is 0.904.

Control Variables

There were also a number of research control variables that were asked on the survey. *Gender* was measured at nominal level. Respondents were asked, “What is your gender?” Male and female were the options and respondents checked the appropriate

gender. The variable was recoded so that 0 = female and 1 = male. *Age* was measured at the ratio level of measurement. Respondents were asked, "How old are you?" Respondents wrote in their exact age. *Race* was measured at the nominal level of measurement. Respondents were asked, "How do you usually describe yourself? (Please circle one)." The options for reporting their race were offered as: White, Black not Hispanic, Hispanic or Latino, Asian or Pacific Islander, American Indian or Alaskan Native and Other. Because there were few minority respondents the data was recoded into a dichotomous variable where 0 = White and 1 = Other Races. Marital status was also asked on the survey but because almost all respondents reported they were single this variable was not used in this analysis.

Analysis

To answer my first research question, are a person's *emotions, perceptions of responsibility,* and *willingness to help* different if the patient refuses recommended genetic screening (viewed as internally controlled) compared to a scenario where genetic screening is not used because it is never recommended to the patient in the first place (viewed as externally controlled), I will do t-tests to see if there is a significant difference between the two groups' mean scores for *attribution of responsibility*, *positive* and *negative emotions*, and *willingness to help*.

To answer my second research question, how does use of genetic testing (*scenario*), *attribution of responsibility*, and *positive* and *negative emotions*, and other factors shape *willingness to help* breast cancer patients, I will conduct a multivariate analysis using ordinary least squares (OLS) regression to see what factors, including

which scenario people were given, shape a person's willingness to help. To answer this question I will perform two separate regression analyses. In the first model (a partial model), I will use all the independent variables described above, but I will *not* include the *positive* and *negative emotions* variables. In the second model (the full model) I will add the *positive* and *negative emotions* variables in order to see if this changes the relationship between *attribution of responsibility* and *willingness to help*.

In Chapter Four I will present descriptive statistics, including means and standard deviations for each variable. Then I will provide the results of the t-tests and the OLS regression models. In Chapter Five I will discuss the major findings of this thesis, the limitations of my research, and areas for future research.

Chapter IV

Results

In this chapter I will discuss the major findings of this research. First, I will provide descriptive statistics including means and standard deviations for each variable. Next, I will discuss the results of the t-tests comparing means. I will then describe results from the multivariate analysis that I conducted using OLS regression. Finally, I will discuss whether the results provide support for the hypotheses.

Descriptive Statistics

Descriptive statistics are presented in Table 1. Forty-eight percent (82) of the sample were male and 52 percent were female (88) for a total of 170 respondents. Ninety-five percent of the respondents reported their race as white (162). Respondent's ages ranged from 18 to 45. The average age of respondents was 19.6 years (SD = 2.76). Most of the respondents reported their marital status as single (98 %), so marital status was not included in the analysis.

On average, respondents reported a moderate willingness to help (M = 4.34, SD = 0.93). Respondents felt on average moderately strong it was not Amber's fault, meaning they attributed less responsibility to her (M = 4.40, SD = 1.08). Respondents reported on average moderately positive emotions towards Amber (M = 4.43, SD = 0.94) and less negative emotions towards Amber (M = 4.60, SD = 1.11).

TABLE 1. Descriptive Statistics & T-test Results Comparing Means

	Total Sample (N=170)			Scenario (0) – No Recommend-ation to Test Given (N=81)		Scenario (1) – Test Recommend-ed, Amber Rejected (N=89)		T-test Comparison of Means	
	Mean	Std Dev	Range	Mean	Std Dev	Mean	Std Dev	Mean Difference	Std Error
Willingness to Help	4.33	.934	1-6	4.39	.958	4.27	.914	0.12	0.14
Attribution of Responsibility	4.39	1.07	1-6	4.54	1.01	4.26	1.12	0.28†	0.16
Positive Emotions	4.43	.935	1-6	4.57	.951	4.30	.905	0.27†	0.14
Negative Emotions	4.60	1.10	1-6	4.74	1.12	4.47	1.07	0.28	0.17
Gender	.482	.501		.407	.494	.550	.500		
Age	19.57	2.76	18-45	19.82	3.60	19.33	1.63		
Race	.047	.212		.049	.218	.044	.208		

Note: † p <.10, * p < .05,** p < .01, *** p < .001

Comparison of Means

The sample was given two scenarios, one where Amber does not receive a recommendation to genetic test (so she doesn't seek testing) and another where Amber is recommended to test but rejects her doctor's recommendation and does not get genetic testing. Means and standard deviations were computed for both groups and t-tests were run to compare them. As shown in Table 1, the average age and race composition of the two groups was similar, but 55 percent of respondents who received scenario 1 (recommended, but rejected testing) were male compared to about 41 percent of

respondents in scenario 0 (no recommendation to test given). Although not shown, in a Chi-square test of this difference was close to significant at the $p < .10$ level.

Hypothesis one predicted that when a patient refuses recommended genetic screening (viewed as internally controlled) and is later diagnosed with breast cancer, people will express more negative emotions towards the patient, perceive that the patient is more to blame for their diagnosis, and will be less willing to help than when the patient does not use genetic screening because it is never recommended to them (viewed as externally controlled). The findings do not support this hypothesis. As shown in Table 1, respondents who received scenario 0 (no recommendation to test given) had slightly higher attribution of responsibility scores (M = 4.54), meaning they were *less* likely to blame Amber for her diagnosis, then people who receive scenario 1 (recommended, but rejected testing; M = 4.26), but this difference was only significant at the $p < .10$ level.

Respondents who received scenario 0 (no recommendation to test given) also reported slightly stronger positive emotions (M= 4.57) toward Amber, than those who received scenario 1 where Amber refused recommended testing (M = 4.30). Although not significant at the $p < .05$ level, this difference was significant at the $p < .10$ level. Despite this, contrary to my hypothesis the analysis did not provide evidence of significant differences between groups.[1]

[1] I also conducted a logistic regression analysis (not shown) using scenario as the dependent variable and *willingness to help*, *attribution of responsibility*, *emotions* and the control variables as the independent variables. This analysis did not show that any of the independent variables were statistically significant predictors of the dependent variable, *scenario*. This provides further support for the finding of no significant differences between groups in willingness to help, attribution of responsibility, or emotions.

Regression Analysis

To answer my second research question I performed two separate ordinary least squares (OLS) regression analyses. In the first model (the partial model), I used all the research independent variables (*scenario, attribution of responsibility, gender, age* and *race*) but I did not include *positive* and *negative emotions*. This was done to assess the effect of *attribution of responsibility* on *willingness to help* directly. In the second model (the full model) I added the *positive* and *negative emotion* variables in order to see if this changed the relationship between *attribution of responsibility* and *willingness to help*. The results of this analysis are reported in Table 2.

Hypothesis Two predicted that people who feel more strongly that a person was responsible for their diagnosis and express more negative emotions toward breast cancer patients will not express as much willingness to help, while people who do not feel as strongly that a person was responsible for their diagnosis and express more positive emotions will express more willingness to help. This was partially supported. As shown in Table 2, the partial model showed that *attribution of responsibility* ($\beta = 0.212$, $p < .001$) was positively related to *willingness to help*. Meaning, the less the respondent felt Amber was to blame, the more likely they were willing to help her. Males were also less likely to report a willingness to help ($\beta = -0.163$, $p < .05$). An Adjusted R^2 of 0.050 indicates only 5% of the variability in willingness to help is explained by the independent variables in the partial model.

TABLE 2. OLS Regression Results Predicting Willingness to Help, N=169

	Partial Model			Full Model		
	B	Std Error	β	B	Std Error	B
Scenario	-0.028	0.143	-0.015	.078	.117	.042
Attribution of Responsibility	0.184	0.066	0.212**	-.068	.069	-.079
Positive Emotions	-	-	-	.651	.072	.651***
Negative Emotions	-	-	-	.015	.067	.018
Gender	-0.305	0.142	-0.163*	-.194	.116	-.104†
Age	-0.005	0.027	-0.016	.022	.022	.065
Race	0.240	0.352	0.054	-.111	.288	-.025
Constant	3.780***	0.648		1.312*	0.592	
Adjusted R^2	0.050			0.377		

Note: † p <.10, * p <.05,** p < .01, *** p < .001

In the full model I introduced the *positive emotion* and *negative emotion* independent variables. *Attribution of responsibility* no longer was statistically significant in the full model, but *positive emotions* ($\beta = .651$, $p < .001$) was significant at the $p < .001$ level. Surprisingly, *negative emotions* were not found significant, and *gender* ($\beta = -1.94$, $p < .10$) became slightly less significant at the $p < .10$ level.

Contrary to my hypotheses, but consistent with the comparison of means tests shown in Table 1, in both the partial and full models *scenario* was not significant. In

addition, *age* and *race* were also not significant in either model. In the full model the Adjusted R^2 of 0.377 indicates that 37.7% of the variability in *willingness to help* is explained by the independent variables. Adding the emotions variables helped to increase the amount of variation in *willingness to help* quite a bit.

Summary

In this chapter I discussed the major findings of this research. The analyses showed little support for my hypotheses. There was not a significant difference between groups in willingness to help, attribution of responsibility, and emotions. The OLS regression results showed that attribution of responsibility was a significant predictor of willingness to help (as shown in the partial model) but only operating through emotions (as shown in the full model). Gender also seemed to be a particularly important factor in predicting willingness to help before controlling for emotions.

In Chapter Five I provide a summary of the results and relate the findings to the literature on attribution theory. I explain how my research contributes to the current literature and discuss the implications of my research. I also discuss the limitations of my research and talk about areas I think future research should explore regarding attribution theory.

Chapter V

Discussion and Conclusions

This research examined attribution theory and a reported willingness to help when a friend is diagnosed with breast cancer. Hypothesis one predicted that if respondents viewed Amber as responsible for her diagnosis they would not express as much willingness to help. Contrary to hypothesis one, the t-tests did not show a significant difference in willingness to help by scenario and similarly, in the regression models, scenario did not significantly predict willingness to help. Even with a history of breast cancer and a doctor's recommendation to use genetic testing, when Amber did not take the test respondents did not feel less willing to help her. One explanation for this might be that breast cancer does not carry the same level of stigma as other diseases like AIDS or lung cancer. Another explanation might be that respondents in this age bracket have a novice, and more generous, perspective on willingness to help despite all the factors presented to them. More importantly, this may be because Amber is a friend in the both scenarios, so respondents may simply feel it is the right thing to do when someone is ill.

The hypothesis was also not supported when comparing the mean scores for attribution of responsibility and emotions for the two groups. Although people who received scenario 0 (where Amber's doctor did not recommend she take the genetic test) attributed less responsibility to Amber for her breast cancer diagnosis, this difference was not statistically significant. These respondents also reported more positive emotions

toward Amber, but these differences were only significant at the $p < .10$ level. This is important because these findings suggest that genetic testing does not shape people's perception of attribution of blame or their emotions. Some respondents may have felt that Amber having the test available to her but not taking it meant she did not do everything possible to stay healthy, but because genetic testing is a fairly new phenomenon, the lack of significant findings may mean that the general population does not know enough about the implications of genetic testing to form strong opinions either way.

Hypothesis two predicted that people who felt that Amber was more responsible for her illness would report more negative emotions toward her and this would also make them less likely to help. But if less blame and more positive emotions were reported, their willingness to help would increase. I found some support for this hypothesis. The OLS regression analysis illustrated in the partial model that attribution of responsibility positively predicted willingness to help. In the full model, where negative and positive emotions were introduced, attribution of responsibility was no longer significant but positive emotions were significant. This shows that attribution of responsibility does play a role in shaping a willingness to help but emotions may matter more. This suggests that respondents may have contemplated blame for Amber's diagnosis but, their emotions were the more important factor shaping their willingness to help. This provides support for Weiner's causal model where attribution shapes emotions which shape willingness to help.

Contrary to my hypothesis, the t-tests showed there were no significant differences in negative emotions between the two groups, and the regression analysis also

did not show that negative emotions significantly predict willingness to help. Again, this is surprising because in scenario 1 Amber refused the recommended test by her doctor, so I expected to see more negative emotions expressed by the respondents. As stated before, this suggests that breast cancer may not hold the same stigma as other illness that elicits more negative emotions from respondents. It may also be that describing Amber as a friend minimizes negative emotions towards her despite the scenario.

The partial regression model also showed that men were less likely to report a willingness to help, although gender became insignificant in the full model once the emotions variables were introduced. This shows that gender matters in that it may shape emotions, which in turn shapes a willingness to help. This finding is important because potential caregivers can be men or women. Although nursing and hospice care has typically been a predominately female profession, the health care field is seeing a shift to more male nurses and home hospice attendants, so understanding gender differences may be important as the population of breast cancer patients grows. If men and women attribute blame and express emotions differently than this will directly affect the patient's recovery environment.

Limitations

There are some limitations of this research that should be addressed. First, the sample size for this research was small (N=170) and homogenous in terms of demographic characteristics. Race and marital status were not diverse. Exploring a larger population would provide results that may be more generaliazable to the general population of U.S. adults. Examining a diverse population may also give greater insight into cultural differences in attribution of responsibility towards illnesses like breast cancer, emotional responses, and beliefs about willingness to help.

A particularly important limitation is that there was no variability in the proximity of the target (Amber was a friend in each of the scenarios), which might make a difference in how respondents react to Amber's behavior. Making Amber a close relative, co-worker, distant neighbor, or a stranger might produce different attribution outcomes, levels of negative or positive emotions, and change the decision to help. In addition, adding more comparison scenarios may also provide different results. In this research Amber does not take the test in either scenario. Including scenarios where Amber participates in genetic testing but engages in unhealthy lifestyle behaviors (i.e., smoking and being obese) might change a person's perceived attribution of responsibility and willingness to help.

Finally, adding more questions measuring positive and negative emotions may also be helpful. Emotions and their meaning may be subjective. For example, the way men and women interpret concepts like pity, concern, or anger may be very different.

Perhaps providing an operational definition for each emotion measured would provide more clarity for respondents, minimizing misunderstandings as a result of the language being used.

Future Research

This research suggests several implications and recommendations for future research. First, genetic testing is still a relatively new phenomenon. As genetic testing becomes more available to the masses and as the public gains more understanding of how one's genetic makeup affects illness, social research should pay attention to how this might affect people's perceptions of attribution of responsibility when it comes to the use of genetic testing and illness. As genetic testing becomes more commonplace and the general population learns more about its implications, it might play a larger role in how people attribute blame for certain illnesses like breast cancer.

In addition, future research should investigate how different cultures frame genetic testing and attribution of illnesses like breast cancer. Learning how other cultures attribute responsibility to illness will give insight into diverse attitudes and beliefs. As genetic testing becomes more widespread and as it becomes reported in the media more often, the discussion about taking the proper steps to avoid illnesses like cancer will also change. How information about genetic testing is presented and how this information is understood in a diverse society has important implications for attribution of responsibility and willingness to help. Medical professionals and other care providers should gain an understanding how other cultures perceive responsibility of a diagnosis in order to

promote positive recovery environments in a highly diverse society. Similarly, because gender seem to be a factor in how people attribute responsibility, express positive or negative emotions, and shape willingness to help, more research should be done focusing on how men and women attribute responsibility differently in regards to diagnosis for illnesses such as breast cancer.

Summary

The findings from this thesis do not show that refusal of genetic testing shapes a person's willingness to help, but the findings do suggest that attribution of responsibility matters when shaping a willingness to help, particularly in the way that it shapes people's emotions toward others. While people may know about the benefits of genetic testing, other factors seem to be more important in shaping a willingness to help. This research shows that gender is one such factor as men report less willingness to help than women. These findings suggest that as modern medicine advances in diagnosis and treatment of diseases such as breast cancer, and as genetic testing becomes more common and survivors continue to grow in number, it will be important to continue to research how caregivers' perceptions of causality and blame shape the recovery environment of patients.

APPENDICES

APPENDIX A

SURVEY INSTRUMENT

Scenario 1

Imagine that Amber is your friend. Her mother was diagnosed with breast cancer when she was 55 years old. Because her mother had a breast cancer, Amber might have the kind of cancer that runs in families. Sometimes genes do not function properly because there is a mistake in them. When a gene with a mistake is passed along in family members, it is called an inherited altered gene. A woman with an alteration is at higher risk for developing breast and other cancers than a woman without an alteration. Genetic testing looks for inherited genetic alterations which can be done using a blood sample. *Amber's doctor told her that she should take a genetic test to find out if she is at risk of developing a breast cancer of the inheritable type. Amber decided not to take the genetic test against the recommendation of her doctor. One year later she was diagnosed with breast cancer.*

Scenario 0

Imagine that Amber is your friend. Her mother was diagnosed with breast cancer when she was 55 years old. Because her mother had a breast cancer, Amber might have the kind of cancer that runs in families. Sometimes genes do not function properly because there is a mistake in them. When a gene with a mistake is passed along in family members, it is called an inherited altered gene. A woman with an alteration is at higher risk for developing breast and other cancers than a woman without an alteration. Genetic testing looks for inherited genetic alterations which can be done using a blood sample. *Amber's doctor did not ask her to take a genetic test to find out if she might develop a breast cancer of the inheritable type. Hence, Amber did not take the genetic testing because her doctor did not tell her to do so. One year later she was diagnosed with breast cancer.*

Please indicate the extent to which you agree or disagree with each of the following statements by circling the appropriate number using the following scale:

1. Strongly agree
2. Moderately agree
3. Agree
4. Disagree
5. Moderately disagree
6 Strongly disagree

	Strongly agree	Moderately agree	Agree	Disagree	Moderately disagree	Strongly disagree
1. I believe Amber was responsible for what happened to her.	1	2	3	4	5	6
2. I believe it was Amber's fault that she had breast cancer.	1	2	3	4	5	6
3. Amber could have prevented having breast cancer.	1	2	3	4	5	6
4. I have sympathy for Amber.	1	2	3	4	5	6
5. I feel pity for Amber.	1	2	3	4	5	6
6. I am concerned for Amber.	1	2	3	4	5	6
7. I am angry at Amber.	1	2	3	4	5	6
8. I am mad at Amber	1	2	3	4	5	6
9. I am irritated with Amber	1	2	3	4	5	6
10. I would be willing help Amber cope with her illness	1	2	3	4	5	6
11. I would be willing to help Amber financially	1	2	3	4	5	6
12. I would be willing to help Amber find the best treatment	1	2	3	4	5	6

What is your gender? ___ Female ____ Male

How old are you? _____

How do you usually describe yourself? (Please circle one)

a. White
b. Black-not Hispanic
c. Hispanic or Latino
d. Asian or Pacific Islander
e. American Indian or Alaskan Native
f. Other (please specify)_____

What is your marital status (circle one):

a. Single
b. Married
c. Other (please specify)_____

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