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The Impact Of Positive Thinking And Empathy Induction On Social Perceptions Of Cancer

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THE IMPACT OF POSITIVE THINKING AND EMPATHY INDUCTION ON
SOCIAL PERCEPTIONS OF CANCER

by

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This dissertation, submitted by Kelly M. Jones in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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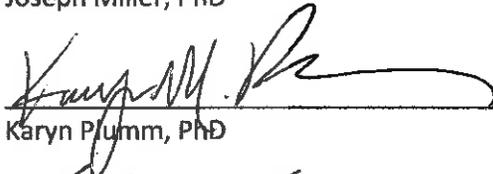
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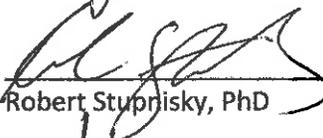
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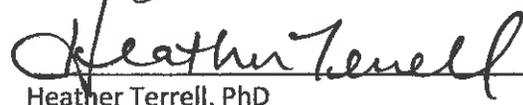
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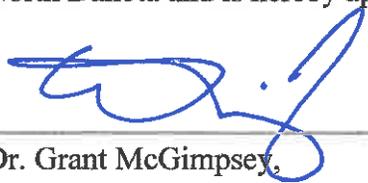
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I wish to express my sincere apperception to Dr. Joelle Ruthig, who has provided me with invaluable guidance and encouragement, and has been a great mentor throughout this process. I would also like to thank the members of my advisory Committee for their guidance and support.

To my Mom,
To my Dad,
To my brother,
To my sister,
To my family,
To my professors,
And to my friends.

Thank you for the support and encouragement. I could not have done this without you.
I love you all.

ABSTRACT

Social perceptions of cancer can influence patients' illness experiences by affecting the behavior of those around a cancer patient. These perceptions can be influenced by exposure to the social phenomenon of positive thinking (PT), leading to increased perceived responsibility of the patient for negative illness outcomes. Accordingly, it is important to identify mechanisms that can diminish the effect of PT exposure on social perceptions of cancer. A pilot study was first conducted to test the effectiveness of an empathy induction intervention in reducing these negative social perceptions in the context of the study scenario, and to assess the newly developed measures of willingness to help. Within the main study, an attribution-based theoretical framework was applied to examine social perceptions within the context of a hypothetical cancer patient's illness and experience with PT. The main study examined empathy induction as a potential moderator of the effect of exposure to PT on social perceptions of cancer. A community sample of 375 young women recruited through MTurk read a hypothetical blog of either a male or female cancer patient who described one of three scenarios – a PT exposure/try PT scenario (the blogger learned about PT and endorsed it wholeheartedly), a PT exposure/did not try PT scenario (the blogger decided not to endorse PT), or a no PT/control scenario (no mention of PT). Prior to reading the blog, half of participants were exposed to an empathy induction intervention. All participants then responded to measures assessing effort attributions, perceived control, responsibility, blame, and willingness to help the blogger. For the main study, a PT Exposure (no PT

exposure/control, PT exposure/did not try, PT exposure/tried) x Empathy Induction (empathy induction, no empathy induction) x Gender of Blogger (female, male), 3x2x2 factorial design was used. MANCOVA results with PT endorsement and trait empathy covariates showed that exposure to PT enhanced effort, control, and responsibility attributions for the blogger's unsuccessful cancer outcome. There were no differences in social perceptions of a male versus a female cancer patient. Empathy induction did not significantly diminish perceptions of culpability towards the cancer patient. This study replicated the previously demonstrated link between PT exposure and perceptions of culpability for unsuccessful cancer outcomes, developed further assessments of the impact of PT exposure on willingness to help, and showed that attempts to change state empathy may be less effective in increasing willingness to help than more stable trait empathy. Findings from the current study have implications for understanding social perceptions of illness and subsequently identifying more effective means of support for cancer patients.

CHAPTER I

INTRODUCTION

Over the last decade, positive thinking (PT) has become a socially expected characteristic of cancer patients (McGrath, Jordens, Montgomery, & Kerridge, 2006). In fact, many cancer patients report being told to "think positive," sometimes immediately after diagnosis (Wilkes, O'Baugh, Luke, & George, 2003). While this admonition to think positive is often meant as a comfort, there is an underlying assumption that by thinking positive the cancer patient can, through sheer force of will, recover, forestall relapse, or halt progression of the disease (Wilkes et al., 2003). In short, PT is equated with perceived control and direct influence over one's cancer trajectory. For some cancer patients, this perceived control can be a helpful coping mechanism, but for others it becomes an additional burden to constantly remain positive at a time when they are already under immense strain (Cassileth, 1989; Tod, Warnock & Allmark, 2011).

Prior research employing an attribution theory framework (Weiner, 1985, 1986) showed that exposure to PT as a coping strategy in a cancer context leads to social perceptions of greater perceived culpability over the cancer outcome (Jones & Ruthig, 2014; Ruthig & Holfeld, 2016; Ruthig, Holfeld, & Hanson, 2012). This is problematic because PT implies that if cancer patients do not embrace PT and do not recover, they are somewhat responsible for their negative cancer outcome. Accordingly, it is important to identify mechanisms that can diminish the effect of PT exposure on social perceptions of cancer. The current study examined empathy induction as a

potential moderator of PT's effect on social perceptions of cancer, as detailed after a review of the relevant research and theories that were employed in this study.

Positive Thinking

The social phenomenon of positive thinking (PT) is a prevalent and popular mind-set (Aspinwall & Tedeschi, 2010). PT is based on the belief that the mind can exert a powerful influence over the body. As such it can be especially appealing in situations where one might not have control, such as a health crisis. PT fits with several commonly-held cultural mores in the United States including an emphasis on personal responsibility, belief in the power of the individual, and the need to understand and control outcomes in our lives.

"Positive thinking [is] the conscious and deliberate effort to manage one's own thoughts, emotions, speech, non-verbal behavior, and beliefs in such a way that one entertains only the possibility of good outcomes and not the possibility of bad outcomes, for any difficult or challenging set of circumstances," (McGrath, Jordens et al., 2006, pp. 666). There are four main components of PT. The first component is having a positive attitude, which means maintaining an optimistic state of mind (Gray & Doan, 1990). The second component is focusing on positive thoughts, by using active cognitive strategies to maintain only positive thoughts (O'Baugh, Wilkes, Luke, & George, 2003). The third component is visualizing that one's body is responding to and fighting off the illness (De Raeve, 1997). The final component is actively seeking to suppress negative thoughts and emotions (O'Baugh et al., 2003).

The so-called "war on cancer", in which patients are encouraged to take an active, optimistic, and combative approach to their own recovery by marshalling all their

resources, including their own thoughts and emotions, fits well with the PT mindset (Cassileth, 1989). PT has become a socially expected characteristic of cancer patients in recent years, even being perceived as a moral imperative for cancer patients to follow (McGrath, Jordens et al., 2006; Wilkinson & Kitzinger, 2000). In fact, Doan and Gray (1992) coined the term "heroic cancer patient" to describe this social expectation that by actively maintaining a positive outlook, cancer patients can control whether or not they recover. This makes two main assumptions about cancer: that cancer is at least partially influenced by negative psychological or personal factors and that cancer can be cured by embracing positive thinking, which mitigates these negative factors (Doan & Gray, 1992).

Potential Benefits and Costs of Positive Thinking. PT is strongly endorsed among cancer patients. For example, about 60% of breast cancer survivors believe that their continued remission is due to their positive attitude preventing their cancer from recurring (Stewart et al., 2001). There is some evidence that PT is associated with several health benefits, including the use of more effective coping strategies (Gillham, Shatte, Reivich, & Seligman, 2002). In particular, patients' positive beliefs about their futures have been found to be associated with a greater likelihood of following treatment regimens and engaging in preventative health behaviors (Aspinwall & Tedeschi, 2010). Furthermore, having a positive attitude makes one more pleasant to be around. For cancer patients this may bring the benefit of receiving more attention and support from family, friends, and health care professionals. Health care professionals are more likely to spend time with patients they perceive as "positive" or "fighters", and such patients may even

inspire their caregivers to pursue a greater range of treatment options (Doan & Gray, 1992).

There are many anecdotal examples of patients who "miraculously" recover, which is often attributed to PT by the patient, their family, or their health care provider (DeRaeve, 1997). On the other hand, evidence that PT has any direct influence on physical recovery from cancer is questionable (Petticrew, Bell, & Hunter, 2002). Regardless of its potential coping benefits or effects on physical health, PT can also be potentially harmful (Aspinwall & Tedeschi, 2010; McGrath, Jordens et al., 2006). By constantly pressuring patients to maintain positivity, PT can contribute to an apprehension of experiencing any negative emotions, which are natural responses for cancer patients (Collins, Taylor, & Skokan, 1990). Especially damaging are expressions of disappointment from family or friends if the patient expresses any negative emotions, which can strain relationships between the patient and their loved ones (McGrath, Jordens et al., 2006).

Well-intentioned efforts by family, friends, and even physicians, encouraging patients to constantly maintain positivity, especially to the point of intolerance of expressions of doubt or fear, can place additional burden on patients and leave them feeling alienated and repressed. Patients are often angered or hurt by the constant barrage of "think positive" messages from others (Wilkes et al., 2003), particularly when the pressure to remain positive becomes so great that patients feel they must 'protect' others around them by not expressing negative emotions, such as their fears (De Raeve, 1997). As PT emphasizes suppressing all negative emotions and thoughts, it precludes patients from discussing or even thinking about the potential of a worst case scenario - an

untreatable, terminal cancer trajectory. By focusing only on thinking positive, patients and their loved ones ignore the often real possibility that the patient will die (McGrath, Montgomery, White, & Kerridge, 2006). Avoiding this discussion prevents patients and their families from making necessary decisions about finances, funeral arrangements, and finding closure (McGrath, Jordens et al., 2006).

PT and the heroic cancer patient model are based on the belief that cancer patients can control their illness trajectory by thinking positively (Doan & Gray, 1992). Because individuals have a basic need to perceive themselves as having control, they may exaggerate their sense of control over an outcome (Shepperd, Carroll, Grace, & Terry, 2002), and believe that they can influence the outcome in a favorable manner (Carroll, Sweeny, & Shepperd, 2006). PT fosters this perception of control over one's illness trajectory, which puts the responsibility for achieving the desired outcome on the patient. The implication is that if a cancer patient does not wholly embrace PT, or does but does not recover, that patient did not try hard enough to "beat" the cancer (McGrath, Montgomery et al., 2006). By stressing the responsibility the patient has for his or her own recovery, not recovering is implied to be a personal weakness (Aspinwall & Tedeschi, 2010; Doan & Gray, 1992).

In sum, the expectations of PT place an additional burden on cancer patients. Not only emotionally, but by emphasizing control over and even responsibility for the cancer outcome this creates an atmosphere whereby a cancer patient could be perceived as culpable for not recovering. These social perceptions of a cancer patient's control and responsibility over his or her illness trajectory were explored within the framework of attribution theory (Weiner, 1985).

Attribution Theory

A theory relevant to examining social perceptions resulting from PT is attribution theory (Weiner, 1985). According to attribution theory (Weiner, 1985), controllability is a critical causal dimension that determines the attributions individuals ascribe to outcomes. Causal factors are controllable if they are perceived to be alterable by the individual (e.g., diet, physical activity level); these factors are considered uncontrollable if they are perceived as unalterable by the individual (e.g., genetic predisposition; Weiner, 1985). Related to the controllability dimension are the emotional experiences of anger or pity. In other words, negative events that are construed as controllable tend to evoke an emotional experience of anger towards the individual, while negative events that are construed as uncontrollable tend to evoke pity towards the individual (Weiner, 1985). Causal attributions of effort (or lack of effort) are associated with perceptions of an individual's level of control over the outcome, responsibility for the outcome, and blame for the outcome, as well as the emotional experiences of anger or pity.

Specifically, greater effort attributions are associated with stronger perceptions of control, which in turn are associated with greater responsibility assigned. Subsequently, greater perceived control and responsibility assigned for an outcome are associated with greater blame if the outcome is negative (Weiner, 1980). Finally, higher attributions of control, responsibility, and blame are associated with less willingness to help the individual, and the emotional reactions of greater anger and less pity towards the individual (Weiner, 1980). That is, the more observers perceive that an individual had control over an adverse outcome, the less willing they are to offer assistance to the individual. For example, upon viewing a person stumble and fall down in the street, an

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observer can have two reactions. If the observer believes that the fall was a result of being intoxicated, a controllable cause for which the faller is responsible, the observer will experience the emotional reaction of anger, assign more blame to the faller and will be less likely to offer help. On the other hand, if the observer believes that the person fell because the sidewalk was icy, an uncontrollable cause for which the faller is not responsible, the observer will experience pity, the person will be blamed less for the fall, and will be more likely to be offered help.

Attributions and Health Issues. According to Weiner's (1985, 1986) attribution theory, observing a negative event, such as witnessing another person's serious illness, tends to provoke a causal search process. The perceived causal attributes of the illness determine how observers will respond to the individual suffering from the illness (Weiner, Perry, & Magnusson, 1988). A central causal attribute in predicting an observer's behavior toward an individual with a serious illness, such as cancer, is perceived controllability over the disease trajectory. When the outcome is adverse (i.e. recovery is not possible), attribution theory predicts that if observers perceive the health problem as within the individual's control, they will ascribe more blame and be less willing to help the individual than if observers perceive that the health problem is beyond the individual's control (Weiner et al., 1988). For example, leukemia is generally perceived to be caused by factors beyond an individual's control, such as genetic predisposition, whereas lung cancer is generally perceived to be caused by lifestyle factors within an individual's control, such as smoking (Marlow, Waller, & Wardle, 2010). Accordingly, observers would likely perceive the patient with lung cancer as being

more culpable for having cancer than they would perceive the leukemia patient, and would be less likely to help the patient with lung cancer.

Relevant to perceived controllability of one's cancer trajectory is the social ideology of PT, which posits that one can explicitly control his or her cancer outcome through "thinking positively", placing responsibility for achieving the desired outcome on the patient (McGrath, Montgomery et al., 2006). Previous research has shown empirical support for portions of Weiner's (1985) model within the context of cancer perceptions (Jones & Ruthig, 2014; Ruthig & Holfeld, 2016; Ruthig et al., 2012). Ruthig and colleagues used a hypothetical scenario to assess the impact of PT exposure on social perceptions of a cancer patient's effort, control, and responsibility over his or her cancer trajectory. When participants were exposed to PT, which suggests that through deliberate effort one can recover from cancer, effort attributions became more salient. That is, an unfavorable cancer outcome was attributed to the patient's lack of effort and the patient was held as more responsible if he or she chose not to try PT more so than if he or she tried it or there was no mention of PT (Ruthig et al., 2012). Subsequent research has shown consistent results: exposure to PT resulted in more salient effort attributions, greater perceived control, and more responsibility assigned to cancer patients for adverse cancer outcomes (Jones & Ruthig, 2014; Ruthig & Holfeld, 2016).

Accordingly, this overemphasis on controllability for cancer outcomes, resulting from the social phenomenon of PT, makes it a particularly relevant context in which to extend the application of attribution theory (Weiner, 1986). Attribution theory posits that stronger perceptions of control are associated with greater responsibility assigned, which in turn, are associated with greater blame and less willingness to help the individual.

Importantly, research has also revealed gender differences in social attributions of control and responsibility for other people's outcomes. For example, MacGeorge (2003) found that men expressed more anger toward and attributed more responsibility to men (vs. women) who were objectively responsible for being in a difficult situation, especially if they were perceived as not having put forth effort to resolve the situation. Likewise, regarding social perceptions of cancer, men attributed more effort, control, and responsibility to male cancer patients than women attributed to female cancer patients (Jones & Ruthig, 2014; Ruthig et al., 2012). Subsequent research found that regardless of the gender of the observer, male cancer patients were perceived as more accountable for not recovering (Ruthig & Holfeld, 2016).

As it appears to be the target's gender (as opposed to the participants' gender) that drives these gender differences in social perceptions of cancer, the current study examined social perceptions of both male and female cancer patients, but with only female participants so as to avoid confounds of cross-gender effects. A detailed description of the current study is provided following a review of the literature on a potential mediator of social perceptions of cancer, namely empathy.

Empathy

A mechanism that may reduce perceived culpability for one's poor cancer prognosis is empathy, which entails adopting another person's perspective and a subsequent emotional experience of sympathy or pity (Batson, Chang, Orr, & Rowland, 2002). Empathy is generally conceived of as having two distinct but interacting cognitive and emotional components (Davis, 1983). The cognitive component is the perception of a situation as meriting concern. It serves as the antecedent to the emotional component that

may be experienced as a result of observing the situation, such as distress or sympathy. The experienced emotions then mediate both empathic perspective taking and assignment of causal attributions (Betancourt, 1990).

There are similarities between the cognitions that mediate both causal attributions and empathic perspective taking. Betancourt (1990) found that observers who took the perspective of an actor reacted with greater empathic emotion and gave lower control attributions than those who remained more objective. Within the context of social perceptions of cancer, Jones and Ruthig (2014) examined how trait empathy related to observers' ascriptions of effort, control, and responsibility to cancer patients for their unfavorable cancer outcomes. Findings indicated that observers with greater trait empathy ascribed the cancer outcome less to the patient's own efforts, and saw the patient as having less control over and responsibility for the outcome when compared to observers with lower empathy. These findings suggest that empathy may mitigate social judgments of cancer patients. Strategies aimed at intentionally fostering empathy among observers should then presumably also enhance supportive social perceptions of cancer patients.

One such strategy for intentionally fostering empathy is the empathy induction technique developed by Batson and colleagues (1997; 2002). Taking the perspective of another person when that person is in need greatly increases the likelihood that an observer will both recognize the need and act to reduce it (Batson, Eklund, Chermok, Hoyt, & Ortiz, 2007). The empathy induction technique utilizes this link between perspective taking, empathic emotions, social perceptions, and helping behaviors. By instructing observers to take the perspective of the target, empathic emotion is increased.

Additionally, greater empathic emotion is associated with greater likelihood of engaging in helping behavior (Batson, 2010). Empathy inductions have been used in a variety of contexts- from improving attitudes towards battered women defendants (Plumm & Terrance, 2009), to reducing cyberbullying (Barlinska, Szuster, & Winiewski, 2013), to increasing prosocial behaviors (Beadle, Sheehan, Dahlben, & Gutchess, 2013).

Specifically within a health context, Batson et al. (1997; 2002) has demonstrated the effectiveness of an empathy induction strategy by showing that observers who received empathy induction interventions had more favorable perceptions and were more willing to help individuals with health problems. Empathy induction strategies have been shown to be an effective technique for enhancing positive perceptions of individuals with various health problems (Batson et al., 1997; 2002). Research has shown that increased empathy for a person in need increased the readiness to help that person (Batson, 1991), as well as helping not only the individual but other members of the individual's group (Batson et al., 2002). Thus, empathy induction may not only diminish the effect of PT on observers' social perceptions of cancer patients with unsuccessful illness outcomes, but may increase their willingness to help these patients.

To that end, this study employed a similar empathy-induction technique to Batson et al. (2002) to test whether inducing empathy moderated the effect of PT exposure on social perceptions of cancer patients. That is, the current study determined whether empathy induction diminished the effects of PT exposure in terms of reducing social attributions of effort, control, responsibility and blame, and enhancing willingness to help cancer patients. The current study examined only female participants' perceptions of both male and female cancer patients, so as to avoid confounds of cross-gender effects; as

women tend to report higher levels of trait empathy (Davis, 1983; Jones & Ruthig, 2014), and higher levels of empathy are associated with less control and responsibility ascribed to a cancer patient (Jones & Ruthig, 2014). The current study extended prior research on empathy induction (Batson et al., 2002) in two critical ways. First, it applied an empathy induction technique within the context of social perceptions of cancer and second, it examined the effectiveness of the induction among a heterogeneous sample of young adults.

The Present Research

Perceptions of accountability for one's cancer outcome are particularly problematic for patients as social support is a critical asset to someone suffering from cancer (Applebaum et al., 2013; Smith et al., 2011). One way in which many real-life cancer patients seek social support is through the use of online forums and blogs (Chiu & Hsieh, 2013). The current research used a hypothetical personal blog, similar to many real-life blogs, of a peer with cancer who is exposed to PT in the context of his or her cancer experience, to examine the ways in which exposure to PT influences social perceptions of a cancer patient. Although prior studies have examined attribution theory within this context (Jones & Ruthig, 2014; Ruthig & Holfeld, 2016; Ruthig et al., 2012), there was no effect of exposure to PT for two key components of the theory - blame and willingness to help (Jones & Ruthig, 2014). As attribution theory (Weiner, 1985) predicts that greater attributed effort, control, and responsibility should lead to more blame and less willingness to help for negative outcomes, this finding is worth further study. The current research explored additional measures of willingness to help in an attempt to effectively assess this complex variable. The current study also included additional

testing of attribution theory (Weiner, 1985) by examining the emotional outcomes of pity and anger.

In addition, research on social perceptions of cancer has focused on convenience samples of primarily Caucasian college students from the upper Midwestern United States (Jones & Ruthig, 2014; Ruthig & Holfeld, 2016; Ruthig et al., 2012). In contrast, the current study recruited a racially-diverse sample of participants from various geographic regions within the United States with a range of education levels. The age of the sample for the current research was restricted to the same age range as a typical college student (18-25 years old), given that the risk of various types of cancer increase with age (American Cancer Society, 2013).

As in prior research (Ruthig & Holfeld, 2016), the hypothetical scenario used in the current research specified the type of cancer as osteosarcoma (bone cancer); which was chosen because it is most common in younger adults and is not gender specific (American Cancer Society, 2013). Moreover, specifying the type of cancer prevents participants from making assumptions about the type of cancer, which can vary widely based on gender (e.g. assuming breast cancer for a female blogger) or in terms of perceived preventability (e.g. lung vs. brain cancer). The current study systematically examined the impact of PT exposure on observers' attributions of effort, control, responsibility, blame and willingness to help a cancer patient, using an extended measure of willingness to help developed as part of this study. It also extended past research in terms of assessing an attributional framework (Weiner, 1985) by examining emotional responses of pity and anger in relation to social perceptions of a cancer patients.

Additionally, the current study explored empathy induction as a potential moderator of these social perceptions.

Within the present research, an empathy induction intervention was employed in an attempt to diminish the effects of PT exposure on social perceptions of effort, controllability, responsibility, blame, and willingness to help. This objective was addressed with an experimental design that manipulated exposure to PT within the context of a hypothetical scenario in which an online blogger describes a personal cancer experience as in prior research (Jones & Ruthig, 2014; Ruthig & Holfeld, 2016; Ruthig et al., 2012). Within one PT exposure condition, the blogger learned about "the power of PT" but decides not to use it. Within a second PT exposure condition, the blogger learned about "the power of PT" and decides to use it no matter how difficult it becomes. In a control condition scenario, there was no mention of PT. Each of the three scenario conditions ended with an adverse outcome (i.e., the blogger still has cancer and further treatment is unlikely to be effective).

Half of the participants were randomly assigned to receive an empathy induction intervention prior to reading the hypothetical cancer blog. Based on past research (Batson et al., 2002; Batson et al., 1997), empathy induction was expected to moderate the effect of PT exposure in terms of diminishing attributions of effort, control, responsibility, and blame, and enhancing willingness to help. All participants were female; half were assigned a same-gender scenario and half were assigned a cross-gender scenario to enable assessment of target gender differences in the impact of PT. As mentioned above, it appears to be the target's gender (as opposed to the participants' gender) that drives gender differences in social perceptions of cancer. Therefore, current research examined

social perceptions of both male and female cancer patients, but with only female

participants so as to avoid confounds of cross-gender effects.

CHAPTER II

PILOT STUDY

Prior to the main study, a pilot study was conducted to test the effectiveness of the empathy intervention in the context of the study scenario, and to assess the newly developed measures of willingness to help. The empathy induction intervention was tested using the control condition scenario, in which PT is not mentioned. This resulted in a simple Empathy Induction (empathy induction, no induction) x Gender of Blogger (female, male), 2x2 factorial design. This established if the empathy induction was effective using this particular hypothetical scenario, before introducing the notion of PT. Less effort, control, responsibility, and blame, but more willingness to help among the empathy induction group compared to the control/no empathy induction group would reflect the effectiveness of the empathy induction. Additionally, the newly developed willingness to help items were assessed for potential use in the main study.

CHAPTER III

METHOD

Participants (*n* = 50) were recruited through Amazon's Mechanical Turk

(MTurk), which linked to a Qualtrics webpage to complete the pilot study. Only women

between the ages of 18-25 residing within the United States, who had never personally

received a cancer diagnosis were eligible to participate. The majority (54%) of

participants were Caucasian, followed by African American (26%), Asian/Pacific

Islander (6%) and multi-ethnic (6%); the remaining 8% identified as Mexican-American,

Native American/Alaskan, or Caribbean Islander. Most participants (44%) had earned a

Bachelor Degree, 16% had completed an Associates' Degree, 38% had completed High

School, and 2% had a Master's Degree. Participants were automatically paid $0.25

through MTurk for their participation in the study either upon finishing the survey or

whenever they choose to terminate their participation.

Participants read a hypothetical blog describing the personal experience of a

cancer patient, in which there is no mention of PT and which ends with an unsuccessful

cancer outcome (the Control/No PT scenario; Ruthig & Holfeld, 2016). "*My name is*

Karen/Brian. About three months ago, I was diagnosed with bone cancer – stage 2

osteosarcoma. After my diagnosis, I underwent several weeks of chemotherapy treatment

in an attempt to cure my cancer. During this time, I followed all of the doctor's advice by

maintaining a healthy diet, getting plenty of rest, and attending all of my treatment

appointments. During this time, I experienced both positive and negative thoughts and emotions and openly discussed my fears about having cancer."

Prior to reading the hypothetical cancer scenario, half of the participants were given an empathy induction based on Batson et al.'s (2002) methodology. After reading the scenario, participants completed the manipulation checks assessing their emotional and empathic response to the blog (e.g., Batson et al, 2002), then responded to the questions assessing the dependent measures and covariates described below. The other half of the participants were randomly assigned to the control/no empathy induction condition, and followed the same procedure except they did not receive the empathy induction prior to reading the hypothetical cancer blog.

Empathy Induction

Prior to reading the hypothetical cancer scenario described above, half of the participants were randomly assigned to the control/no empathy induction condition. They were asked to read the hypothetical cancer blog and respond to the subsequent questions. The other half of the participants were given an empathy induction based on Batson et al.'s (2002) methodology. Participants were instructed, "*While you are reading through the blog, try to imagine how Karen/Brian feels about what has happened and how it has affected her/his life. Try to feel the full impact of what Karen/Brian has been through and how she/he feels as a result. Imagine being in Karen's/Brian's situation, put yourself in her/his shoes. After reading the blog, please answer the following questions.*" During the pilot study, these instructions were presented in written format only.

Manipulation Check- Emotional States. After reading the blog, all participants responded to 20 adjectives describing different emotional states. This assessed empathic

feelings for the blogger. Participants reported how much they experienced each emotion while reading the blog (1 = *not at all¸* 7 = *extremely*). There are six adjectives that assessed empathy: *moved, tender, warm, softhearted, compassionate, and sympathetic* (see Appendix C). These items are averaged to form a self-reported empathy score, which served as a check on the effectiveness of the empathy manipulation (Cronbach's α = .94, Batson et al., 2002; Batson et al., 2007). Additionally, the emotional outcomes of pity and anger were assessed as part of this manipulation. Participants reported how much they experienced both emotions while reading the blog (1 = *not at all¸* 7 = *extremely*).

Manipulation Check - General. Participants responded to two questions regarding the effectiveness of the empathy induction: "While reading, to what extent did you imagine how Karen/Brian felt?" and "While reading, to what extent did you remain objective about Karen's/Brian's situation?" (Response range: 1 = *not at all*; 7 = *very much*). This served as a further check on the effectiveness of the empathy manipulation (e.g., Batson et al., 2002; Batson et al., 2007).

Dependent Measures

Effort. Participants were asked three questions to assess the extent to which they attributed the unsuccessful cancer outcome to the blogger's own lack of effort (See Appendix A for all items pertaining to effort, control, responsibility, and blame). A sample item is, "Could Karen's/Brian's body have responded better if Karen/Brian had tried harder to fight the cancer?" with the response range of 1 (*definitely not)* to 7 (*definitely yes*). Responses to all three items were summed to create a total score in which higher scores indicated greater endorsement of the (lack of) effort attribution (α = .91; Ruthig & Holfeld, 2016).

Perceived Control. To assess perceptions of the level of control that the blogger had over the cancer outcome, participants were asked three questions. A sample item is "How much control did/does Karen/Brian have over still having cancer?" with the response range of 1(*no control)* to 7 (*total control*). Responses to all three items were summed, so that higher total scores indicated greater perceived control (α = .88; Ruthig & Holfeld, 2016).

Responsibility. To measure the extent to which they held the blogger responsible for his/her cancer outcome, participants were asked: "How responsible is Karen/Brian for still having cancer?" The response range was 1 (*not at all responsible*) to 7 (*totally responsible*; Ruthig, et al., 2012).

Blame. Three items were used assess the extent to which participants blamed the blogger for the unsuccessful outcome. A sample item is, "To what extent is it Karen's/Brian's fault for still having cancer?" with the response range of 1 (*not at all)* to 7 (*entirely*). Responses to the three items were summed to create a total blame score, so that higher total scores indicated greater blame (α = .92; Jones & Ruthig, 2014).

Willingness to Help (Appendix B). Two items previously developed (Jones & Ruthig, 2014) to assess participants' willingness to help the blogger were used: "If given the opportunity, how likely would you be to assist this person in some way?" (Response range: 1 = *not at all*; 7 = *very likely*) and "If given the opportunity, how likely would you be to help this person in some way?" with the same response options as the prior question. Responses to both items were summed to create a total willingness to help score (r = .84; Jones & Ruthig, 2014).

Several new willingness to help items were developed for the purpose of the current research. Two new items were developed to assess participants' willingness to help the blogger: "If given the opportunity, how likely would you be to help another person in a similar situation to Karen/Brian?" and "If given the opportunity, how likely would you be to help a group of cancer patients similar to Karen/Brian?" (Response range: 1 = *not at all*; 7 = *very likely*).

An opened ended question "What specifically would you be willing to do to help Karen/Brian?" was added to assess what participants were specifically envisioning when asked about their willingness to help the blogger.

Finally, a behavioral-based measure of helping was developed to provide participants with the opportunity to help cancer patients in a tangible way. Participants were given the option to anonymously donate their $ 0.25 payment from the current study to a fictional cancer support group. After responding to this question, participants were informed of the question's purpose as an assessment of willingness to help and that they would still receive their payment regardless of their response to the question.

Potential Covariates

Although individual differences in participants' experiences with cancer, perceived risk of developing cancer themselves, endorsement of PT, and levels of trait empathy could conceivably impact ratings of the dependent measures (Jones & Ruthig, 2014; Ruthig & Holfeld, 2016; Ruthig et al., 2012), complete random assignment to each PT condition and empathy induction versus control groups should have served to control for such differences and prevented these potential confounds. Nonetheless, each of these factors were measured and any factors that significantly correlated with any of the

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dependent measures were included as covariates in the main analyses in order to statistically account for within group variance that could confound the current results.

Participants were asked about their perceived risk of developing cancer themselves: "Using the following scale: (no chance) 0% -------------100% (100% chance) what do you think the likelihood is that you will develop cancer at some point in the future?" Participants were asked, "Does anyone you know currently have cancer?" (Yes/No), "Has anyone you have known previously had and recovered from cancer?" (Yes/No), and "Has anyone you know died from cancer?" (Yes/No)

As in prior research (Jones & Ruthig, 2014), participants rated their level of positive thinking endorsement. This measure consisted of the four-item PT Endorsement Scale (Bruckbauer & Ward, 1993), e.g. "Positive thinking/having a positive mental attitude can help a person *recover from* cancer," (Response range: 1 = *Strongly disagree*; 7 = *Strongly agree*); along with three additional items developed to assess overall endorsement of PT (Jones & Ruthig, 2014), e.g., "Would you encourage someone you cared about to use PT in a situation like Karen's/Brian's?" Participants' responses to these seven items were summed to create an overall level of positive thinking endorsement (inter-item reliability α = .81; Jones & Ruthig, 2014).

Trait empathy measure. To assess participants' levels of trait empathy, two subscales of the Interpersonal Reactivity Index (IRI, Davis, 1983) were administered. As in prior research (e.g., Jones & Ruthig, 2014) the 7-item Perspective Taking Scale and the 7-item Empathic Concern scale were used. The Perspective Taking Scale (PTS) measured the tendency of participants to take the point of view of someone else in everyday life. For example: "Before criticizing somebody, I try to imagine how I would feel if I were in

their place." The Empathic Concern Scale (ECS) measured the tendency of participants to experience warmth, compassion, and concern for others. For example: "When I see someone being taken advantage of, I feel kind of protective of them." The response range for all items is: 1 (*does not describe me well*) to 5 (*does describe me well*). Each subscale is summed separately, and higher scores indicated greater engagement of that component of empathy. The Cronbach's alphas range from .71 to .77 for the individual subscales (Davis, 1983a). For this study, the scores on the subscales were combined to create a single measure of empathy, with higher scores indicating higher empathy ($\alpha = .88$, Jones & Ruthig, 2014).

Attention Checks. To ensure that participants were attentive to the scenario and questions, four attention check questions were employed. The main attention check was the final question of the study, and required participants to respond true/false to a statement regarding the study scenario, "Karen's/Brian's cancer treatment was successful and she/he is now cancer free." The other three questions served as secondary attention checks, and were simple true/false statements (e.g. "The current year is 1895.") that were interspersed among the other study questions.

CHAPTER IV

RESULTS

New Helping Measures

To assess the measures of willingness to help, an exploratory factor analysis (EFA) was conducted on the first four items assessing willingness to help listed in Appendix B. Inspection of the descriptive statistics, skewness, and kurtosis for each observed item revealed only one potential issue with one item assessing general willingness to help ("How likely would you be to help another person in a similar situation to Karen/Brian?"; skew = -1.01, K = .37). Although this item was moderately negatively skewed, the kurtosis value was well within normal range, therefore it was not expected that this item would represent a significant departure from univariate normality. Therefore, an EFA using varimax rotation was conducted on all four items assessing willingness to help. Results indicated that a single distinct factor with an eigenvalue of greater than 1.0 emerged, as supported by the scree plot, which accounted for 86.54% of the variance. Additionally, internal reliability was found to be sufficient for the scale (α = .95), and potential removal of any item did not increase the Cronbach's alpha. As such, all four items were retained as a composite index of willingness to help for use in the main study.

The open-ended helping question, "What specifically would you be willing to do to help this person?" was assessed using content analysis, to identify any emergent themes or predominant helping behaviors. Nearly half of participants (48%) reported a

willingness to support Karen/Brian emotionally in some manner (e.g. "offer

encouragement" or "lend an ear"). The next most common form of proposed support was

to assist with errands (e.g. help around the house or driving to appointments), with 26%

of participants reporting willingness to assist in this way. The third most common was to

offer to support the person financially (16%). The remaining categories reported by less

than 6% of participants included: spiritual support (e.g. "pray with/for him/her"), gifts

(e.g. send cards/flowers), donating blood/money to charity (not directly to the person),

assisting with care of the person (e.g. "help with home care"), everything (a non-specific

answer to "assist in any way possible"). Two additional categories were created for

several participants who reported that they did not know how to assist the person and

several who reported an unwillingness to assist in any way (e.g. "I wouldn't do anything,

ever, to help anyone out, in any situation"). Some participants reported several means of

helping the person; in these cases each response was coded in the appropriate category.

Regarding the behavioral measure assessing willingness to help the blogger by

donating one's payment for participating in the study to a cancer support group, 19

participants (38%) responded that they would donate, whereas 31 participants (62%)

indicated that they would not donate their payment. Those who indicated that they would

donate their payment were significantly more willing to help the blogger ($M = 23.63$, SD

$= 5.49$) than were those who responded "no" ($M = 19.16$, $SD = 6.76$) to the measure; $F(1,$

$48) = 5.290$, $p = .019$.

Assessment of Empathy Induction

Two preliminary manipulation checks were employed as an initial assessment of

the effectiveness of the empathy manipulation. The first manipulation check, assessing

emotional states after reading the scenario, was analyzed by averaging the responses to the six empathy adjectives to form an index of self-reported empathy. The mean scores for the empathy-induction versus the control/no-empathy induction groups were compared using a two-tailed t-test (e.g., Batson et al., 2002). There was no significant difference in the scores for the empathy-induction ($M = 4.69$, $SD = 1.36$) and the control/no-empathy induction ($M = 4.24$, $SD = 1.75$) groups; $t(48) = -1.01$, $p = .32$.

The second manipulation check, assessing the degree to which participants concentrated on taking the blogger's perspective, was analyzed by comparing the mean scores using a two-tailed t-test (e.g., Batson et al., 2002) for the empathy induction versus the control/no-empathy induction groups for the two perspective-taking and remaining objective questions. Significantly higher empathic emotions, significantly higher ratings on perspective taking along with significantly lower scores on remaining objective in the empathy induction group, compared to the control/no-empathy induction group, would have indicated that the manipulation was effective. There was a marginally significant difference in the scores for the perspective-taking question for the empathy ($M = 6.25$, $SD = 1.00$) and the control/no-empathy induction ($M = 5.43$, $SD = 1.92$) groups; $t(48) = -1.89$, $p = .065$. There was no significant difference in the scores for the remaining objective question between the empathy-induction group ($M = 2.71$, $SD = 2.01$) and the control/no-empathy induction group ($M = 3.35$, $SD = 2.71$); $t(48) = 1.03$, $p = .31$.

MANCOVA on Attributional Outcomes

The correlations between each dependent variable (effort attributions, control perceptions, responsibility, blame, and willingness to help) and potential covariates of participants' experiences with cancer, perceived personal risk of developing cancer,

endorsement of PT, and trait empathy were examined. Greater PT endorsement was associated with greater effort attributions ($r = .35$, $p = .01$), perceived control ($r = .33$, $p = .02$), and willingness to help ($r = .34$, $p = .02$). Higher trait empathy was associated with lower effort attributions ($r = -.28$, $p = .05$), less responsibility ascribed to the blogger ($r = -.30$, $p = .03$) less blame ($r = -.33$, $p = .02$), and greater willingness to help ($r = .47$, $p = .001$). The only cancer experience variable associated with any of the dependent variables was currently knowing someone with cancer, which was associated with less willingness to help ($r = -.34$, $p = .02$). Neither the perceived risk of developing cancer nor any of the other experience with cancer measures were correlated with any of the dependent measures. As a result, PT Endorsement and Trait Empathy were the only covariates in the following analyses.

A 2 (gender of blogger, male vs. female) x 2 (empathy induction, induction vs. control/no-induction) MANCOVA on effort attributions, control perceptions, responsibility, blame, and willingness to help was computed to further test the effectiveness of the empathy intervention, with PT Endorsement and Trait Empathy as covariates. Less control, responsibility, and blame ascribed to the cancer patient, and more willingness to help the patient among the empathy induction group compared to the control group would have indicated the effectiveness of the empathy induction. Significant main effects emerged in the overall MANCOVA for Trait Empathy covariate [Wilks's $\lambda = .72$, $F(5,40) = 3.15$, $p = .02$, $\eta_p^2 = .28$], for PT Endorsement covariate [Wilks's $\lambda = .67$, $F(5,40) = 3.90$, $p = .02$, $\eta_p^2 = .33$], and for the gender of the blogger [Wilks's $\lambda = .70$, $F(5, 40) = 3.46$, $p = .01$, $\eta_p^2 = .30$]. There were no other significant main or interaction effects.

In summary, there was not a significant difference for either the empathic emotions or remaining objective question, and the perspective taking question was only marginally significant. Furthermore, there was no main effect for the empathy induction independent variable, indicating that the manipulation was not effective. Consequently, the empathy induction manipulation was strengthened prior to the full study in an attempt to improve its effectiveness. This was accomplished by adding an audio recording of the empathy induction instructions to accompany the written instructions.

CHAPTER V

MAIN STUDY

For the main study, a PT Exposure (no PT exposure/control, PT exposure/did not

try, PT exposure/tried) x Empathy Induction (empathy induction, no empathy induction)

x Gender of Blogger (female, male), 3x2x2 factorial design was used. This experimental

design was used to examine the extent to which: 1) the blogger's cancer outcome was

attributed to his or her own lack of effort, 2) the blogger was perceived as having had

control over the cancer outcome, 3) the blogger was held responsible for the cancer

outcome, 4) the blogger was blamed for the cancer outcome, and 5) how willing

participants were to help the blogger; as well as the degree to which endorsement of these

attributions was moderated by the empathy induction.

The first objective of the main study was to examine the effects of Positive

Thinking (PT) on attributions of effort, control, responsibility, blame, and willingness to

help.

Hypothesis 1. Regardless of PT exposure and based on attribution theory (Weiner

1985), stronger effort ascriptions would be associated with higher control ascriptions,

which in turn would be associated with greater responsibility ascriptions, which would be

associated with more blame assigned, and less willingness to help. It was also expected

that increased pity would be associated with lower effort, control, responsibility, and

blame ascriptions, along with higher willingness to help. Conversely, increased anger

would be associated with higher effort, control, responsibility, and blame ascriptions, along with less willingness to help

Hypothesis 2. Past research suggests that men and women are perceived differently and ascribed different levels of effort, control and responsibility over their negative outcomes (Ruthig & Holfeld, 2016). As such, participants were expected to make stronger attributions of effort, assign more control, responsibility, and blame, and be less willing to help a male cancer patient compared to a female cancer patient.

Hypothesis 3. Given that the idea of PT enhances perceived controllability of cancer trajectories (Cassileth, 1989; Ruthig et al., 2012), participants in the PT exposure/did not try scenario should have perceived effort as more salient and viewed cancer patients as having more control over and responsibility for their disease trajectory than those in the PT exposure/tried or No PT exposure/control conditions. Further, in line with attribution theory (Weiner, 1985), those in the PT exposure/did not try scenario should have assigned greater blame and been less willing to help than those in the PT exposure/tried or No PT exposure/control conditions.

The second study objective was to test the moderating role of an empathy induction on the effects of PT on attributions of effort, control, responsibility, blame, and willingness to help.

Hypothesis 4. Empathy induction should have diminished the effect of PT exposure on observers' perceptions of effort, control, responsibility, blame, and willingness to help a cancer patient. Observers who received the empathy induction, should have assigned less effort, control, responsibility, and blame, and be more willing

to help the cancer patient compared to observers who did not received the empathy

induction within the same PT exposure or control conditions.

CHAPTER VI

METHOD

Participants and Procedure

The study focused on young adults to avoid the potential confound of age, given

that the risk of various types of cancer increase with age (American Cancer Society,

2013). In addition to being a young adult (18-25), and residing within the United States,

only women who had never personally received a cancer diagnosis, and who did not

participate in the pilot study were eligible to participate in the main study. Of an initial

sample of 545, 375 were deemed valid responses and retained. Power analysis using

G*Power 3.1indicated that the sample size was more than sufficient for detecting a

moderate effect size (Buchner, Erdfelder, Faul, & Lang, 2009; Cohen, 1988) when alpha

was set at .05 and power was set at .80.

Participants were recruited through Amazon's Mechanical Turk (MTurk) and paid

$0.25 for their participation. MTurk has become a well-established online tool for

collecting online data within the social sciences and enables more than 100,000 adult

users to complete available surveys for modest monetary compensation. Research has

demonstrated that recruiting through MTurk yields more diverse samples than typical

U.S. college samples or those obtained through other internet samples (Buhrmester,

Kwang, & Gosling, 2011). Prior research has demonstrated that using MTurk yields

diverse samples of adults in terms of education level, ethnicity, political orientation, and

represented all five geographical regions in the U.S. (Kehn & Ruthig, 2013). Moreover,

the quality of data collected via MTurk has been found to be at least as psychometrically sound as data collected via traditional means (Buhrmester et al., 2011). Thus, participant recruitment via MTurk provided a heterogeneous sample of young adults to replicate previous work within a more diverse sample. In addition, this sample assessed the generalizability of an empathy induction manipulation beyond the traditionally used college student sample (Batson et al., 2002; Batson et al., 1997).

When potential participants clicked on the link to the current study within MTurk, they were taken to a Qualtrics webpage to complete the study, beginning with the demographic questions to determine eligibility. All participant responses were collected and stored within Qualtrics. Once data collection was completed, data was downloaded into SPSS for statistical analysis. Participants were automatically paid $0.25 through MTurk for their participation in the study either upon finishing the survey or whenever they chose to terminate their participation.

Participants read a hypothetical blog describing the personal experience of a cancer patient (Ruthig & Holfeld, 2016). Prior to reading the hypothetical cancer scenario, half of the participants were given an empathy induction based on Batson et al.'s (2002) methodology. After reading the scenario, participants completed the manipulation check assessing their emotional and empathic response to the blog (e.g., Batson et al, 2002), then responded to the questions assessing the dependent measures and covariates described below. The other half of the participants were randomly assigned to the control/no empathy induction condition, and followed the same procedure except they did not receive the empathy induction prior to reading the hypothetical cancer blog.

Independent Variables

PT Exposure Manipulation. As in prior research (Ruthig & Holfeld, 2016), participants read 1 of 3 randomly assigned hypothetical blogs. All three scenarios began with the same statement: "*My name is Karen/Brian. About three months ago, I was diagnosed with bone cancer – stage 2 osteosarcoma. After my diagnosis, I underwent several weeks of chemotherapy treatment in an attempt to cure my cancer. During this time, I followed all of the doctor's advice by maintaining a healthy diet, getting plenty of rest, and attending all of my treatment appointments*."
The scenarios then differed based on PT Exposure condition:

Control/No PT Scenario: *"...During this time, I experienced both positive and negative thoughts and emotions and openly discussed my fears about having cancer."*

PT Exposure/Did Not Try Scenario: *"...I also checked out a website called "The Power of Positive Thinking". The website included people's personal stories about experiencing positive events (some people called them miracles) because they had attracted those events to themselves. Here are a few stories that really caught my attention:*

- After being fired from her job, Wilma claims she landed her dream job.

- Sally said that she is now healthy after suffering from "incurable" cancer.

- Bill talked about marrying the love of his life after several failed relationships.

- Peter told of how he had fully recovered from a life-threatening illness.

The website was full of other personal stories of similar miracles. It struck me that each person talked about the importance of:

- forbidding negative thoughts from entering your mind or conversation with other people

- imagining your body healing itself and actually visualizing it healing

- maintaining a positive, fighting "never give up" attitude

Besides following my doctor's advice for diet, rest, and medical appointments, I thought about the website's message but rather than trying to maintain a positive attitude, I decided to let myself experience both positive and negative thoughts and emotions and to openly discuss my fears about having cancer."

PT Exposure/Tried Scenario: identical to the preceding PT Exposure scenario but with a different final paragraph: *"...I thought about the website's message. I really tried visualizing my body healing itself. I also tried keeping an "I'll beat this" attitude, fighting any negative thoughts and fears, and focusing only on positive thinking. Even when it got very difficult, I fought any negative thoughts or fears that came about and only let myself think positively."*

The concluding paragraph of all three scenarios included a description of an adverse outcome: *"About a month after finishing my chemotherapy treatment, I visited the doctor for a follow-up appointment. During the visit, the doctor told me that the treatment was unsuccessful - I still have cancer and further medical treatment is unlikely to result in me being cured of the cancer,"* (Ruthig & Holfeld, 2016).

Empathy Induction

Prior to reading the hypothetical cancer scenario described above, half of the participants were randomly assigned to the control/no empathy induction condition. They were asked to read the hypothetical cancer blog and respond to the subsequent questions. The other half of the participants were given an empathy induction based on Batson et al.'s (2002) methodology. Participants were instructed, "*While you are reading through*

the blog, try to imagine how Karen/Brian feels about what has happened and how it has affected her/his life. Try to feel the full impact of what Karen/Brian has been through and how she/he feels as a result. Imagine being in Karen's/Brian's situation, put yourself in her/his shoes. After reading the blog, please answer the following questions." During the pilot study, these instructions were presented in written format only. As a result of the non-significant difference between the empathy-induction and no empathy-induction/control group during the pilot, the manipulation was strengthened for the main study by the addition of an audio recording of the instructions that accompanied the written instructions.

All subsequent measures were identical to those used in the pilot study (see Pilot Study Measures) and included: the emotional states manipulation check, the general manipulation check, the dependent measures assessing effort, perceived control, responsibility, blame, and willingness to help the cancer patient, as well as the covariate measures of PT endorsement and trait empathy, and the attention check measures. In addition, two of the emotions assessed as part of the emotional states manipulation check (anger and pity) were included in the main analyses assessing attribution theory.

CHAPTER VII

RESULTS

Preliminary Analyses

A total of 545 individuals participated in the study. Data from any participants who failed the main attention check question (e.g. "Brian/Karen's treatment was successful and he/she is now cancer free") or all three of the secondary attention check questions (e.g. "The current year is 1895") were excluded from all subsequent analyses, leaving a total of 375 (68.81% of initial sample) participants on which all subsequent analyses were based. Participants averaged 22.6 years of age ($sd = 1.92$). The majority (71.2%) were Caucasian, followed by African American (7.2%) and Asian/Pacific Islander (7.2%). The remaining 14.4% identified as Mexican American, other Latin American, Native American/Alaskan, Caribbean Islander, or Multi-ethnic. Most participants (45.1%) had a Bachelor Degree, 15.2% had an Associates' Degree, 34.4% had completed High School, and 5.1% had a Master's Degree. Participants resided in 45 different states across the United States. See Table 1 for a summary of descriptive statistics for all study variables.

Table 1

Descriptive Statistics

Variable	M (n)	SD (%)	Range	α
Age	22.60	1.92	18-25	---
Effort	8.19	4.26	3-21	.85
Perceived Control	6.94	4.26	3-21	.89
Responsibility	1.93	1.51	1-7	---
Blame	5.31	3.95	3-21	.94
Helping	19.71	6.03	4-28	.95
Helping – Donate: Yes No	 (141) (234)	 (38%) (62%)	 --- 	 ---
Trait Empathy	50.54	9.83	14-70	.88
PT Endorsement	29.30	7.83	7-49	.81
Empathic Emotions Manipulation Check	4.40	1.36	1-7	.87
Anger	3.04	1.85	1-7	---
Pity	4.47	1.82	1-7	---
Perspective Taking Manipulation Check	5.53	1.42	1-7	---
Remaining Objective Manipulation Check	3.50	1.87	1-7	---

Bivariate correlations among effort attributions, control perceptions, judgments of responsibility, blame, willingness to help, pity, and anger, were computed to test Hypothesis 1, that regardless of PT Exposure, stronger effort ascriptions would be associated with higher control ascriptions, which in turn would be associated with greater responsibility ascriptions, which would be associated with higher blame ascriptions, and less willingness to help, as well as less pity and greater anger.

As expected, higher effort ascriptions were associated with significantly stronger control perceptions ($r = .73$, $p = .001$), more responsibility ($r = .66$, $p = .001$), and more blame ($r = .62$, $p = .001$). Higher control perceptions were associated with more responsibility assigned ($r = .81$, $p = .001$); more blame ($r = .76$, $p = .001$); and less help ($r = -.11$, $p = .033$). Greater responsibility was significantly correlated with more blame ($r = .85$, $p = .001$), which was associated with less willingness to help ($r = -.16$, $p = .002$). Thus, Hypothesis 1 was fully supported in that the more participants attributed the blogger's unsuccessful cancer outcome to his/her own lack of effort, the more control, responsibility, and blame they placed on the blogger for his/her cancer outcome. In turn, greater responsibility and blame were associated with less willingness to help the blogger. Further, as suggested by attribution theory (Weiner, 1985) greater pity was associated with less control ($r = -.20$, $p = .001$); less responsibility ($r = -.15$, $p = .004$); less blame ($r = -.17$, $p = .001$); and more willingness to help ($r = .20$, $p = .001$). Greater anger was associated with greater effort ($r = .16$, $p = .001$); greater control ($r = .14$, $p = .04$); greater responsibility ($r = .11$, $p = .04$); and greater willingness to help ($r = .13$, $p = .014$).

The correlations between each dependent variable (effort attributions, control perceptions, responsibility, blame, and willingness to help) and potential covariates of risk of level of PT endorsement and trait empathy were examined. Greater PT endorsement was associated with greater effort ($r = .37$, $p = .001$); control ($r = .38$, $p = .001$); responsibility ($r = .30$, $p = .001$); blame ($r = .21$, $p = .001$); and willingness to help ($r = .33$, $p = .001$). Greater trait empathy was associated with lower effort ($r = -.30$, $p = 001$); control ($r = -.36$, $p = .001$); responsibility ($r = -.38$, $p = .001$); and blame ($r = -.39$, $p = .001$); and greater willingness to help ($r = .40$, $p = .001$). As a result, and consistent with the pilot study analyses, PT endorsement and trait empathy were included as covariates in the main analyses. See Table 2 for all bivariate correlations.

Empathy induction manipulation check. To assess the effectiveness of the empathy manipulation, there were two manipulation checks. The first check, assessing emotional states after reading the scenario, was analyzed by averaging the responses to the six empathy adjectives to form an index of self-reported empathy. The mean scores for the empathy-induction versus the control/no-empathy induction groups were compared using a two-tailed t-test (e.g., Batson et al., 2002). There was no significant difference in the scores for the empathy-induction ($M = 4.48$, $SD = 1.38$) and the control/no-empathy induction ($M = 4.31$, $SD = 1.34$) groups; $t(373) = -1.16$, $p = .25$. Significantly higher empathic emotions in the empathy induction group, compared to the control/no-empathy induction group, would have indicated that the manipulation was effective.

The second manipulation check, assessing the degree to which participants concentrated on taking the blogger's perspective, was analyzed by comparing the mean

Table 2

Bivariate Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	---	-.01	-.04	.01	-.03	-.05	.01	.07	.05	-.03	.06	.01	-.04
2. Effort		---	.73**	.66**	.62**	-.03	.37**	-.30**	.01	.28**	.05	-.07	.16**
3. Control			---	.81**	.76**	-.11**	.38**	-.36**	-.04	.24**	-.02	-.20**	.14**
4. Responsibility				---	.85**	-.10	.30**	-.38**	-.06	.30**	-.08	-.15**	.11*
5. Blame					---	-.16**	.21**	-.39**	-.14**	.30**	-.15**	-.17**	.10
6. Help						---	.33**	.40**	.40**	-.02	.43**	.20**	.13*
7. PT Endorsement							---	.18**	.33**	.07	.30**	-.01	.21**
8. Trait Empathy								---	.34**	-.25**	.36**	.24**	.09
9. Perspective Taking									---	-.11*	.53**	.28**	.25**
10. Remaining Objective										---	-.09	-.02	.08
11. Empathic Emotions											---	.48**	.31**
12. Pity												---	.25**
13.Anger													---

* p < .05. **p < .01

scores using a two-tailed *t*-test (e.g., Batson et al., 2002) for the empathy induction versus the control/no-empathy induction groups for the two perspective-taking and remaining objective questions. There was a no significant difference in the scores for the perspective-taking question for the empathy (*M* = 5.60 , *SD* = 1.40) and the control/no-empathy induction (*M* = 5.46, *SD* = 1.44) groups; *t*(373) = -1.00, *p* = .32. There was no significant difference in the scores for the remaining objective question between the empathy-induction (*M* = 3.62 , *SD* = 1.85) and the control/no-empathy induction (*M* = 3.37, *SD* = 1.88) groups; *t*(373) = 1.29, *p* = .20. Significantly higher ratings on perspective taking along with significantly lower scores on remaining objective in the empathy induction group compared to the control/no-empathy induction group, would have indicated that the manipulation was effective.

Main Analyses

A 3 (PT Exposure) x 2 (Gender) x 2 (Empathy Intervention) MANCOVA with PT endorsement and trait empathy covariates on effort attributions, control perceptions, responsibility, blame, and willingness to help was computed to test Hypotheses 2-4. Significant main effects emerged in the overall MANCOVA for PT Exposure [Wilks's λ = .941, $F(10, 714) = 2.21$, $p = .016$, $\eta_p^2 = .030$], and for both of the covariates, PT endorsement covariate [Wilks's $\lambda = .660$, $F(5,357) = 36.76$, $p < .001$, $\eta_p^2 = .340$], and trait empathy [Wilks's $\lambda = .683$, $F(5,357) = 33.15$, $p < .001$, $\eta_p^2 = .317$]. There were no other significant main or interaction effects. Follow-up univariate analyses of covariance (ANCOVAs) were used to probe main effects for each dependent measure. Significant effects were probed by select simple contrast post-hoc tests.

Effort attributions. Significant main effects for PT Exposure [$F(2, 370) = 5.52$, $p = .004$], and for both of the covariates: PT endorsement [$F(1, 370) = 99.07$, $p < .001$], and trait empathy [$F(1, 370) = 67.03$, $p < .001$] emerged in the ANCOVA for effort attributions. As predicted, post-hoc comparisons indicated that attributions of lack of effort were more salient in the PT exposure/did not try condition ($M = 9.00$) than in the control/no PT exposure condition ($M = 7.57$), $t(250) = -3.28$, $p = .003$. There was no significant difference in effort attributions ascribed to the control/no PT exposure vs. PT exposure/tried conditions or the PT exposure/tried vs. PT exposure/did not try conditions. See Figure 1. There were no other main or interaction effects found on effort attributions.
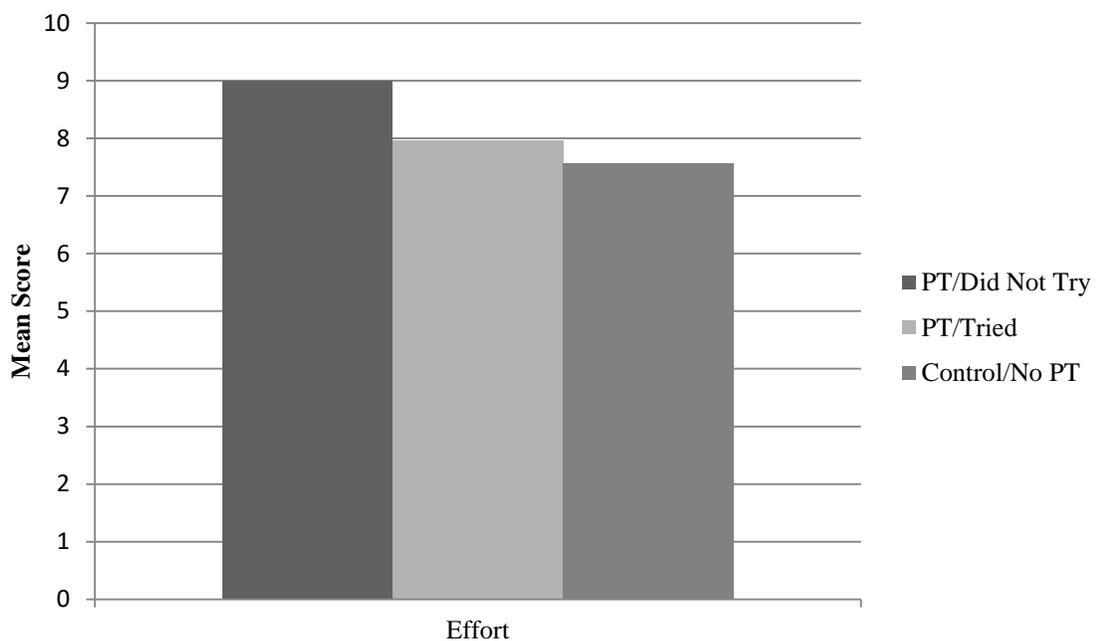
Figure 1. Differences in mean effort attributions among PT exposure conditions.

Participants ascribed the unsuccessful cancer outcome to the blogger's own (lack of) effort more so in the PT exposure/did not try condition than in the control/no PT exposure, but there was no difference between PT exposure/tried and PT exposure/did not try conditions.

Control perceptions. Significant main effects for the PT Exposure independent variable [$F(2, 370) = 7.05$, $p = .001$], and for the PT endorsement [$F(1, 370) = 122.36$, $p < .001$] and trait empathy [$F(1, 370) = 105.37$, $p < .001$] covariates emerged in the ANCOVA for control perceptions. As expected, control perceptions were significantly higher in the PT exposure/did not try condition ($M = 7.87$) than in the PT exposure/tried condition ($M = 6.65$), $t(249) = -2.75$, $p = .02$. Control perceptions were also significantly higher in the PT exposure/did not try condition ($M = 7.87$) than in the control/no PT exposure condition ($M = 6.36$), $t(250) = -3.58$, $p = .001$. There was no significant difference in control perceptions between the PT exposure/tried vs. control/no PT exposure condition. See Figure 2. There were no other main or interaction effects on control perceptions.
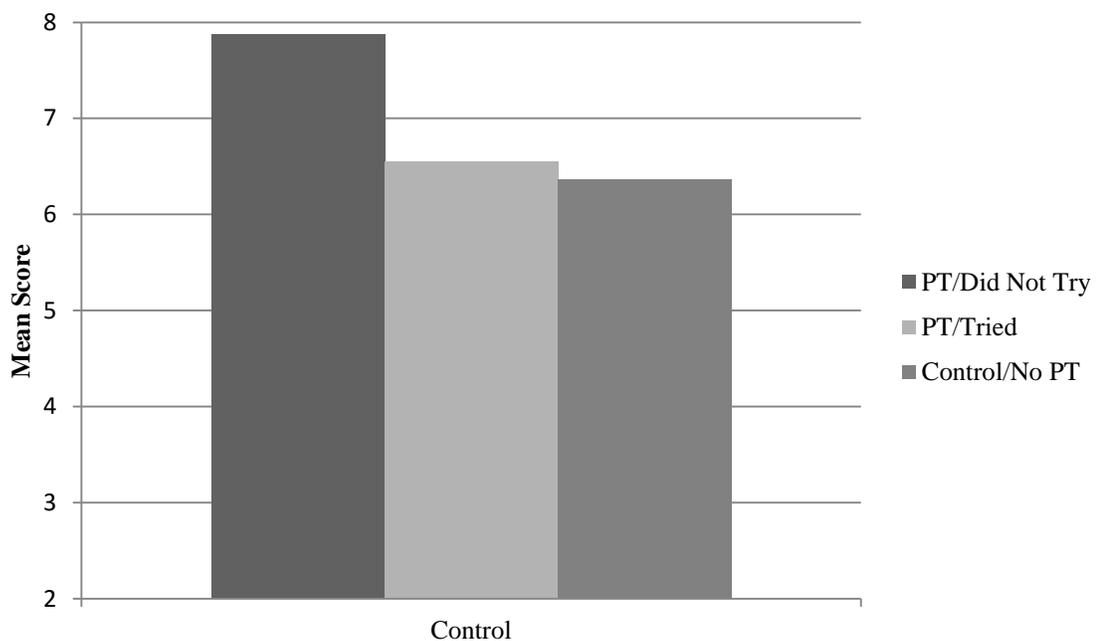
Figure 2. Differences in mean control attributions among PT exposure conditions.

Participants in the PT exposure/did not try condition assigned higher ascriptions of control compared to those in the control/no PT exposure condition and the PT exposure/tried condition, but the PT exposure/tried condition and the control/No PT exposure conditions did not significantly differ.

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Responsibility. Significant main effects for the PT endorsement [$F(1, 370) =$ 73.80, $p < .001$] and trait empathy [$F(1, 370) = 67.61, p < .001$] covariates emerged in the ANCOVA for responsibility. Although not statistically significant, the main effect for the PT Exposure independent variable was in the expected direction [$F(2, 370) = 2.87, p = .058$]. Attributions of responsibility were higher in the PT exposure/did not try condition ($M = 2.16$) than in the control/no PT exposure condition ($M = 1.81$), $t(250) = -2.17, p = .092$. See Figure 3. There were no other main or interaction effects.
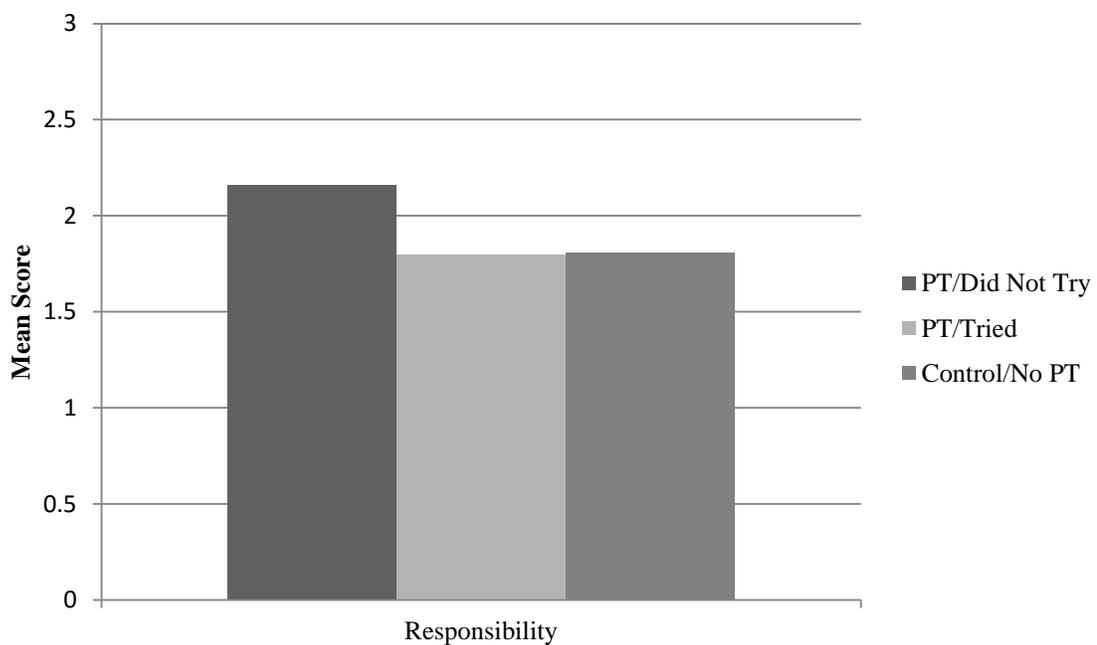
Figure 3. Differences in mean responsibility attributions among PT exposure conditions.

Participants ascribed the unsuccessful cancer outcome to the blogger's own responsibility more so in the PT exposure/did not try condition than in the control/no PT exposure, but there was no difference between PT exposure/tried and PT exposure/did not try conditions.

Blame. There were significant main effects for the PT endorsement [$F(1, 370) = 41.26, p < .001$] and Trait Empathy [$F(1, 370) = 91.57, p < .001$] covariates in the ANCOVA for blame. There were no other main or interaction effects on blame. See Figure 4.
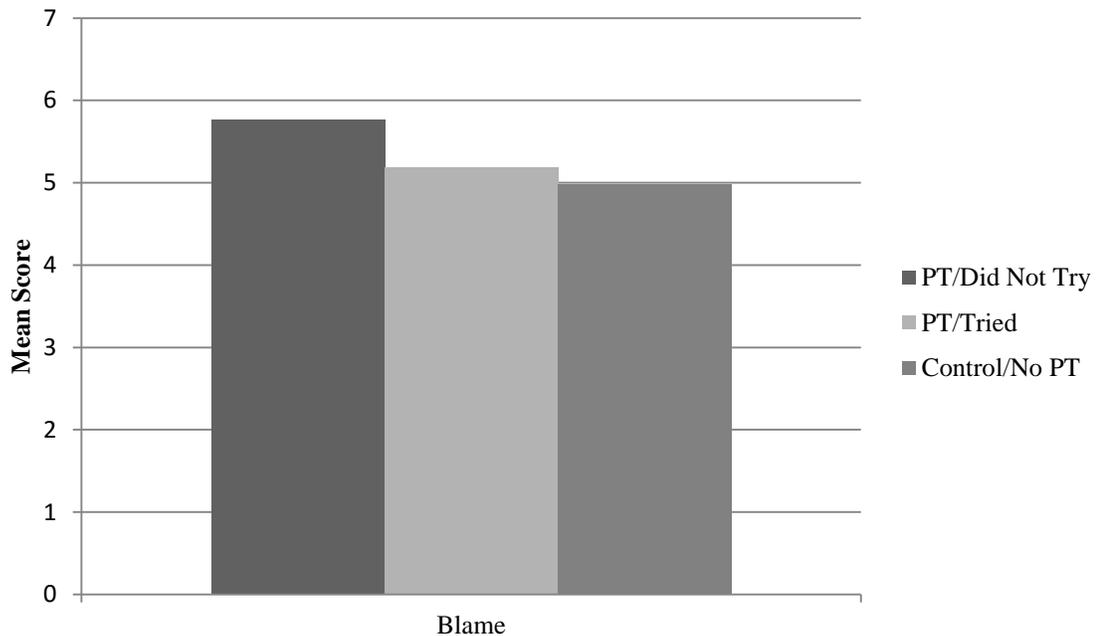
Figure 4. Differences in mean blame attributions among PT exposure conditions. There were no significant differences between the PT exposure conditions for blame.

Willingness to help. There were significant main effects for the PT endorsement [$F(1, 370) = 33.52, p < .001$] and Trait Empathy [$F(1, 370) = 59.05, p < .001$] covariates in the ANCOVA for willingness to help. There were no other main or interaction effects for willingness to help. See Figure 5.
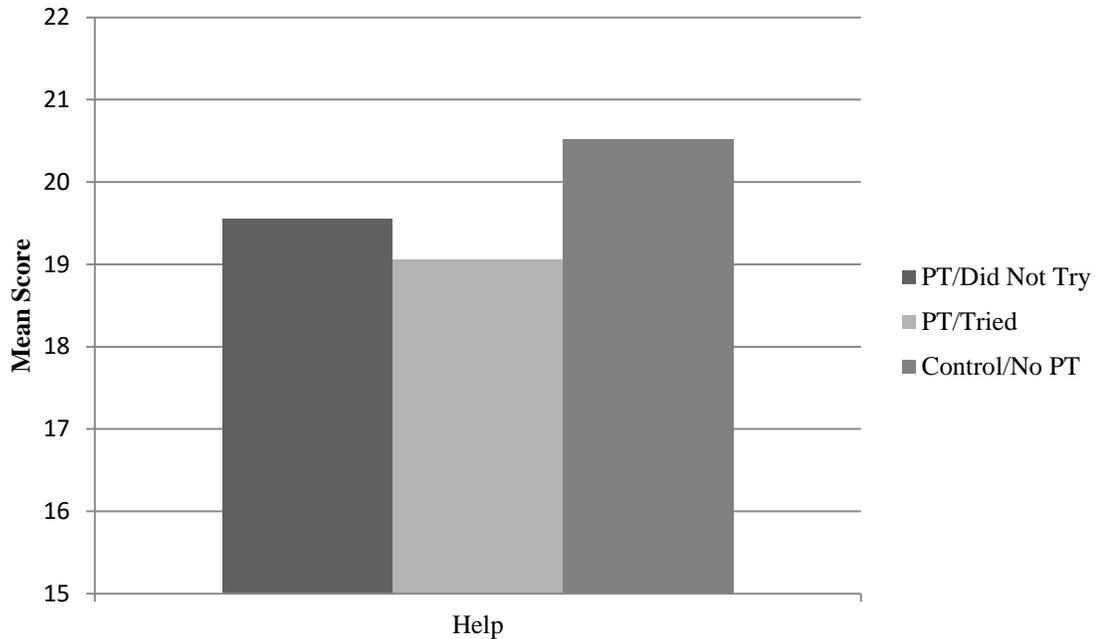
Figure 5. Differences in mean willingness to help among PT exposure conditions. There were no significant differences between the PT exposure conditions for willingness to help.

In summary, Hypothesis 1 was supported: more effort ascribed was associated with more perceived control, which in turn was associated with more responsibility, which in turn was associated with greater blame and less willingness to help; while greater pity was associated with less control, responsibility, blame, and greater willingness to help, even as greater anger was associated with greater effort, control, responsibility, and willingness to help. Hypothesis 2 was not supported: there were no differences in social perceptions of a male versus female cancer patient. Hypothesis 3 was partially supported for effort and responsibility attributions: participants ascribed the unsuccessful cancer outcome to the blogger's own (lack of) effort and responsibility more so in the PT exposure/did not try condition than in the control/no PT exposure, but there were no differences between PT exposure/tried and PT exposure/did not try conditions.

This hypothesis was supported for control ascriptions: participants in the PT exposure/did not try condition assigned higher ascriptions of control compared to those in the control/no PT exposure condition and the PT exposure/tried condition, but the PT exposure/tried condition and the control/No PT exposure conditions did not significantly differ. There were no significant differences between the PT exposure conditions for blame or willingness to help. Hypothesis 4 was not supported: there were no differences in perceptions between those who did and did not receive the empathy induction.

Supplemental Analyses of Helping

The open-ended question, "What specifically would you be willing to do to help this person?" was assessed using content analysis to identify themes or predominant helping behaviors. Some participants reported several means of helping the cancer patient; in these cases each response was coded in the appropriate category. Nearly half of participants (45%) reported a willingness to support Karen/Brian emotionally in some manner (e.g. "offer encouragement" or "lend an ear"). The next most common method of support was to offer financial support (25%). The third most common form of support was to offer assistance with errands (e.g. help around the house or driving to appointments), with 20% of participants willing to assist in this way. The remaining categories were reported by less than 5% of participants. These included: spiritual support (e.g. "pray with/for him/her"), gifts (e.g. send cards/flowers), donating blood/money to charity (not directly to the person), assisting with care of the person (e.g. "help with home care"), everything (a non-specific answer to "assist in any way possible"), did not know how to assist the person, and several who reported an unwillingness to assist in any way (e.g. "nothing"). Additionally, almost 5% of

participants reported responses of "find a better doctor, one who won't give up" and a further 4% reported responses of "help him/her maintain a positive attitude", some even suggesting that Karen/Brian should "take positive thinking more seriously" and "not experience any negative thoughts ever".

Regarding the behavioral measure assessing willingness to help the blogger by donating one's payment for participating in the study to a cancer support group, 141 participants (38%) responded that they would donate, whereas 234 participants (62%) indicated that they would not donate their payment. Those who indicated that they would donate their payment were significantly more willing to help the blogger ($M = 21.97$, $SD = 4.98$) than were those who responded "no" ($M = 18.35$, $SD = 6.20$) to the measure; $F(1, 373) = 34.67$, $p < .001$.

A chi-square test of independence was performed to examine the relation between the empathy induction conditions and willingness to donate their payment. The relation between these variables was not significant, $X^2(2, N = 375) = 0.75$, $p = .40$. Those who received the empathy induction were no more likely to donate their payment than those who did not receive the empathy induction.

CHAPTER 8

DISCUSSION

Within the present research, an empathy induction intervention was employed in an attempt to diminish the effects of PT exposure on social perceptions of cancer within an attributional framework (Weiner, 1985). Specifically, young women indicated the degree to which they perceived a hypothetical cancer patient's own effort played a role in his/her unsuccessful cancer outcome, how much control and responsibility they perceived the patient as having over his/her cancer outcome, how much they blamed the cancer patient for the outcome, and how willing they were to help the cancer patient. The present research also tested the use of an empathy induction to reduce perceptions of culpability for the unsuccessful cancer outcome.

The main findings are as follows: (1) exposure to PT enhanced effort, control, and responsibility attributions for the unsuccessful cancer outcome, (2) there were no differences in perceptions regarding a male versus a female cancer patient, and (3) empathy induction was not successful in diminishing perceptions of culpability towards the cancer patient. Each of the main outcomes and their potential implications are subsequently discussed in detail.

Impact of PT Exposure on Attributions

Consistent with Weiner's (1985) attribution theory and Hypothesis 1, more effort assigned to the cancer patient was associated with more perceived control, greater responsibility and blame, less willingness to help, greater anger and less pity. Also, as

predicted by Hypothesis 3, participants in the PT exposure/did not try condition perceived the cancer patient as putting forth less effort and having greater control over and responsibility for the cancer outcome. However, and contrary to both Hypothesis 3 and attribution theory (Weiner, 1985), those in the PT exposure/did not try condition did not assign higher levels of blame to the patient, and were no more or less willing to help the patient than were participants in the other two PT exposure conditions.

The findings for effort, control, and responsibility attributions are consistent with prior research indicating that unsuccessful cancer outcomes tend to be perceived as due to lack of effort on the patient's part if he or she chose to not endorse PT (Jones & Ruthig, 2014; Ruthig et al., 2012). These findings, together with prior work, suggest that when cancer patients choose to not embrace PT, and instead allow themselves to experience both positive and negative thoughts and emotions, observers may perceive that as the patient not trying hard enough to "fight" the cancer. Further, exposing participants to the notion of PT through the cancer patient's blog contributed to the social perception that cancer patients have control over their cancer outcomes.

The bivariate correlations show support for both Weiner's (1985) attributional frame work and Hypothesis 1 (i.e. greater effort attributions were associated with greater perceived control, which was in turn related to greater attributions of responsibility, greater blame, and less willingness to help). Further, greater pity was associated with less control, responsibility, and blame attributions, and greater willingness to help. In contrast, greater anger was associated with ascriptions of lack of effort, and more control, responsibility, blame, and willingness to help. With the exception of greater anger being associated with increased willingness to help, these findings are also in line with

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attribution theory. Given that the question assessing anger was directed towards participants' overall emotional experience during the blog, and not specifically their emotional reactions to the patient, one possible explanation for this is that the anger participants experienced was towards the cancer outcome, rather than directed at the cancer patient. If this is the case, and participants were angry about the negative cancer outcome rather than angry towards the cancer patient, it makes sense that their anger might inspire greater willingness to help. On the other hand, if their anger was specifically direct towards the cancer patient for "not trying hard enough to beat cancer", then we would expect a decrease in willingness to help. Future research should focus on parsing apart these emotional reactions.

Contrary to attribution theory (Weiner, 1985), was the finding that the increase in attributions of effort, control, and responsibility for those in the PT exposure/did not try condition was not accompanied by an increase in blame attributed to the patient, nor with a decrease in willingness to help that patient. The lack of PT exposure effect on both blame and willingness to help is consistent with prior research (Jones & Ruthig, 2014). Jones and Ruthig (2014) suggested that one possible explanation for the lack of an effect for blame is the context of the study. That is, participants were asked to read the blog of a cancer patient who just received a terminal diagnosis, and may have been reluctant to outright "blame" the cancer patient. The term "blame" has a strong negative connotation that participants may not have been willing to overtly endorse. Additional support for this reasoning comes from a post-hoc comparison of the mean score of blame (5.31) to that of effort (8.19) and control (6.94) indicating that the rating of blame was significantly lower than either effort or control ($p < .001$).

The lack of effect for willingness to help is also consistent with prior research

(Jones & Ruthig, 2014). As Jones and Ruthig (2014) suggested, this lack of effect of PT

exposure on willingness to help may be the result of social desirability (Crowne &

Marlowe, 1960) and the social expectations of offering help to those who are ill or in

need (Berkowitz & Daniels, 1964; Penner, Dovidio, Piliavin, & Schroeder, 2005).

Indeed, the results of the current research lend support to these possibilities - the mean for

willingness to help was 19.71 (out of a possible 28 points), which indicates participants

were responding above the midpoint for each question assessing willingness to help.

However, the additional open-ended question assessing what participants would be

willing to do to help and the behavioral measure that provided participants with the

opportunity to actually help, offer additional insight. Specifically, while participants

indicated a very high level of willingness to help only 38% did so when given the chance

to donate their payment to a cancer support group, which lends support to the idea that

the willingness to help expressed by participants were based more upon social desirability

or social expectations, such as the social responsibility norm (Berkowitz, 1972; Schwartz,

1975).

Nearly half of participants in both studies responded when asked what specifically

they would do to help the cancer patient by offering to be an emotional support for

Karen/Brian. Typical responses were "lend an ear" or "be there for her/him emotionally".

Social support is important to someone suffering from cancer (Applebaum et al., 2013;

Smith et al., 2011), thus participants offering to serve as emotional support to the cancer

patient is a positive. However, the potential pitfall is that almost 10% responded to the

open ended question with either "find another doctor - one who won't give up" or

"encourage person to keep fighting/keep a positive attitude". While likely well-intentioned, this is exactly the drawback of PT that leads many cancer patients to feel alienated and alone - by precluding patients from discussing a worst case scenario, refusing to accept a worst case scenario when it happens (as it did in this research scenario), patients may be angered or hurt by the barrage of "think positive" messages others offer as 'social support' (Wilkes et al., 2003) and unsupportive behaviors from family and friends can lead to greater psychological distress (Norton et al., 2005).

In sum, together with past research (Jones & Ruthig, 2014; Ruthig & Hofeld, 2016; Ruthig et al., 2012), the current findings suggest that exposure to PT makes effort and control attributions more salient for unsuccessful cancer outcomes. In other words, PT contributes to the perception that cancer patients have at least some level of control over their cancer outcome by maintaining a positive attitude and suppressing any negative thoughts Although this did not lead to outright blame for negative cancer outcomes, participants did perceive the patient as having control over the outcome and as failing to put forth effort into changing the outcome, implying that they perceived the blogger as culpable for the negative outcome.

These perceptions of control over a cancer outcome have practical implications for how people respond to cancer patients in real life. Specifically, these perceptions may be detrimental to cancer patients by damaging their relationships with people in their support system (McGrath, Jordens et al., 2006), changing their interactions with health care providers (Doan & Gray, 1992) and resulting in a general social perception of culpability (for example, an individual's willingness to help cancer patients can be altered by their perceptions of the patient's responsibility for the illness). PT can be helpful as a

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coping strategy for some patients, for example by reducing the physiological arousal that can accompany stressful events (Fredrickson, Mancuso, Branigan, & Tugade, 2000), but individuals should be supportive of however the person chooses to cope. Some cancer patients desire members of their support system to provide them with reassurance or advice (i.e. "things will be ok"), whereas others may prefer to be able to discuss their cancer but not receive advice or reassurance, others who may prefer frank, open conversations about their fears and worst-case scenarios, whereas still others may prefer that their loved ones refrain from discussing their illness at all. A mismatch between the type of support desired by the patient and the type of support they receive is often associated with poor psychological adjustment for the patient (Reynolds & Perrin, 2004). Additionally, it is important for patients, their friends and familial support systems, health care providers, and others to recognize that coping strategies, such as PT, do not influence the patient's level of objective control over the physiological trajectory of the illness.

Gender Differences

Contrary to Hypothesis 2, there were no differences in perceptions of a male versus a female cancer patient. Hypothesis 2 was based on previous research showing that prevalent gender norms suggest that men should be strong, self-reliant (Bem, 1974; Eagly & Steffen, 1984), that men tend to be perceived as being more in control and responsible over situations (e.g. MacGeorge, 2003). Hypothesis 2 was also based on prior research on social perceptions of cancer in which both male and female participants judged male (vs. female) cancer patients as being more accountable for negative cancer outcomes (Ruthig & Holfeld, 2016). Yet in the current study, women perceived male and

female cancer patients as equally accountable for the negative cancer outcome and were equally willing to help the male and female patient.

These differences could be due to sample characteristics. All previous studies using this scenario used undergraduate student samples from a Midwestern University, whereas this study was based on a national, non-student sample. Perhaps the greater range of perspectives and life-experiences of this sample, that better represents young female American adults, resulted in a different outlook regarding the cancer patient, one that did not depend upon the patient's gender or endorsement of traditional gender norms. One positive note is that the male patient was not held as more culpable than the female patient (as was the case in past research; Ruthig & Holfeld, 2016), and that both the male and female patient were offered help equally. Regardless, these results suggest that further exploration of gender perceptions is necessary.

Empathy Induction

Contrary to Hypothesis 4, empathy induction was not successful in diminishing perceptions of culpability towards the cancer patient nor did it increase willingness to help the cancer patient. Empathy induction used in the present study is based on Batson's empathy-altruism hypothesis that taking the perspective of a person in need increases the likelihood of the observer offering help (Batson et al., 1997; 2002). In prior research, empathy induction has been effective in producing more favorable perceptions towards and greater willingness to help individuals in a variety of contexts (e.g. Barlinska et al., 2013; Beadle et al., 2013), including the context of health issues such as AIDS (Batson et al., 1997).

One potential explanation for why the empathy induction did not work in the present study was the mode of presentation. In the majority of prior research employing empathy induction, the research was conducted in person (e.g. Barlinska et al., 2013; Batson et al., 2007). As indicated in the pilot study, the empathy induction was ineffective when it was presented online as written instructions. In an attempt to strengthen the manipulation, an audio recording of the instructions was added to the main study, so that participants were presented with the instructions in two modes, but this too was ineffective. Perhaps in the context of an online environment, state empathy is more difficult to manipulate or less influential in terms of altering social perceptions. Although research has suggested that online interventions can be successful in effecting behavior change, the types of interventions that are successful in online environments differ from the type that are successful in in-person contexts. For example, time is one critical factor in online interventions, with shorter interventions producing the largest impact and the level of impact decreasing as the intervention length increased (Cugelman, Thelwall, & Dawes, 2011). Additionally, this particular study focused on measuring the empathic emotions experienced by participants, such as pity or sympathy, in response to the scenario. Future studies should include a greater focus on assessing the more cognitive components of the empathy induction of perspective taking. Assuring that participants are truly thinking about putting themselves in the place of the cancer patient is the crucial first step in empathy induction, without which the intervention will fail.

Notably, trait empathy was a significant covariate in all analyses assessing attributional outcomes. This is consistent with prior research, where observers with greater trait empathy ascribed less effort, control, and responsibility to cancer patients

with unfavorable cancer outcomes (Jones & Ruthig, 2014). Perhaps empathy is mediating social judgments of cancer patients, but it is participants' preexisting, stable trait empathy that is making the difference, rather than their transient, malleable state empathy.

Limitations and Future Directions

The current findings suggest several directions for future research examining the impact of exposure to the notion of positive thinking and social perceptions of cancer. Future research should explore other factors that may influence social perceptions of cancer and other illnesses. For example, this study specified the type of cancer as osteosarcoma (bone cancer) so as to prevent participants from making assumptions about different types of cancer. Patients who have cancers that are associated with controllable causes, such as lung or skin cancer, may be perceived very differently from patients with other types of cancers (Chapple, Ziebland, & MacPherson, 2004). Further, patients suffering from other diseases may also be subject to similar social perceptions regarding their illness - particularly if the disease is chronic or life-threatening (e.g., diabetes or HIV/AIDS). It may be fruitful to extend this research to consider other diseases beyond cancer, in that a greater understanding of how PT impacts perceived culpability and willingness to help patients would be useful in helping to ensure adequate social support and developing interventions to reduce perceived culpability for the illness outcome and increase willingness to help these patients.

Subsequent research should also attempt to replicate the findings among broader samples. Exposure to the notion of PT resulting in enhanced social perceptions of cancer patients' culpability for their disease trajectory has been replicated in several studies (Ruthig et al., 2012; Ruthig & Holfeld, 2016; Jones & Ruthig, 2014), but this is the first

study to replicate those findings outside of an undergraduate student sample. A strength of the current study is that the use of MTurk to recruit participants yielded a much more representative sample than the prior research. However, the scope of the current sample was limited to young women ages 18-25 year olds. Other age groups may have different social perceptions of cancer and may react to PT exposure in diverse ways. For instance, older adults are likely to have had more direct experience with cancer, and may thus perceive cancer patients differently compared to younger adults. Older adults may be more invested in the social perceptions perpetuated by PT ideals (personal responsibility for the cancer outcome) as the result of personal experience of a friend or loved one who used PT while battling cancer. Conversely, older adults may be less influenced by PT exposure, perhaps as the result of having personally experienced or watched a friend/loved one experience the resulting social perceptions of culpability. Additionally, young men may have different social perceptions as well, as in previous research when young men held a male patient as more accountable for his negative outcome than young women did a female patient (Jones & Ruthig, 2014).

Subsequent research should also consider the impact of different relationships in social perceptions of cancer. Cancer patients rely on social support from a variety of sources: family, friends, health care professionals, even online strangers (Applebaum et al., 2013; Chiu & Hsieh, 2013; Smith et al., 2011). The relationship between the cancer patient and their support person may interact with social perceptions of cancer. The current study examined social perceptions and willingness to help a hypothetical online stranger. Conversely, if participants were instead asked to imagine that a close friend or family member had cancer, their perceptions of that loved one's culpability for the illness

outcome may be very different as would their willingness to help that person. Individuals are often more willing to help out those they consider to be a closer relation, for instance they are more likely to offer help to a family member than a stranger (Maner & Gailliot, 2007).

Finally, it would be valuable to examine the behavioral outcome of attribution theory, in greater detail. The behavioral outcome in the context of the current research is willingness to help. As demonstrated in this study, people express a great deal of willingness to help a hypothetical cancer patient. However, this does not always translate into action when presented with the opportunity. What accounts for the gap between expressing a willingness to help and actually engaging in helping behaviors? There is a large body of research investigating the relationship between attitudes and behaviors, indicating that while attitudes do influence behavior (and vice versa), it is not a simple or direct process (e.g. Ajzen & Fishbein, 1977; Armitage & Conner, 2001; Wicker, 1969). For example, the Theory of Planned Behavior, a model of the relationship between attitudes and subsequent behaviors, suggests that it is not just attitudes, but subjective norms and perceived control that also play a role in determining behavior (Ajzen, 1991; Armitage & Conner, 2001). Perhaps future research could assess the salience of subjective norms (i.e. the social responsibility norm) in influencing participants' willingness to help, or the helper's perceived control over initiating helping behaviors.

If the high willingness to help the hypothetical cancer patient was based on the genuine attitude that helping a cancer patient is good, perhaps one way to address this gap would be to show participants this discrepancy between their stated attitudes and their behavior, leading to cognitive dissonance, which in turn, may result in more actual

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helping in an attempt to reduce that dissonance. Research has shown that demonstrating the hypocrisy between a stated belief and a mismatched behavior, such as a belief that speeding while driving is dangerous and speeding behaviors, can be effective in bringing stated beliefs and actual behaviors more in-line. In fact, interventions that employ this technique of making individuals aware of their cognitive dissonance (sometimes referred to as hypocrisy or cognitive dissonance inductions) has been effective in promoting condom use (Aronson, Fried, & Stone, 1991), reducing speeding while driving (Fointiat, 2004), and decreasing cheating behaviors among college students (Spear & Miller, 2012).

Another potential way to address this gap between stated willingness to help and engaging in actual helping behaviors would be to structure the behavioral outcome measure in a way that engages social norms by creating a scenario in which participants are presented with a behavioral norm that is consistent with their stated attitudes that they can follow. Past research has suggested that one way to increase attitude-behavior correspondence is by exposing individuals to normative support for their stated attitudes from a relevant in-group (White, Hogg, & Terry, 2002). In particular, by framing the question as "Most participants chose to donate their payment from today's study to the cancer support group. Would you also choose to donate to this group?", the question shows participants the behavioral norm of the in-group (i.e., participants in the study) is to donate. This may increase consistency between participants' stated attitude (being willing to help) and their subsequent behavior (engaging in helping, i.e. donating).

Conclusion

Despite the aforementioned limitations and need for additional research, the current study made important contributions to the area of social perceptions of illness. In

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addition to replicating the previously demonstrated link between PT exposure and perceived controllability of cancer outcomes among a more representative sample of young American women, this study developed further assessments of the impact of PT exposure by investigating willingness to help cancer patients in new ways, including a behavioral-based measure. It also showed that attempts to change state empathy to increase willingness to help a cancer patient may be less effective than more stable levels of trait empathy. Finally, several new avenues were raised to further understanding of the impact of exposure to the notion of PT on social perceptions of cancer, and potentially developing more effective means of support for cancer patients.

APPENDICES

Appendix A
Attribution Dependent Measures

Effort: Responses to all 3 items are summed to create a total score in which higher scores indicate greater endorsement of the (lack of) effort attribution (α = .91; Ruthig & Holfeld, 2016).

1. Could Karen's/Brian's body have responded better if Karen/Brian had tried harder to fight the cancer? (1 = *definitely not*; 7 = *definitely yes*)
2. Did Brian/Karen's body respond so well because Brian/Karen tried hard to fight the cancer? (1 = *definitely not*; 7 = *definitely yes*)
3. Did Brian's/Karen's body respond so well because Brian/Karen worked hard to fight the cancer? (1 = *definitely not*; 7 = *definitely yes*)

Control: Responses to all three items are summed, so that higher total scores indicate greater perceived control (α = .88; Ruthig & Holfeld, 2016).

1. How much control did/does Karen/Brian have over still having cancer? (1 = *no control*; 7 = *total control*)
2. How much personal influence did/does Brian/Karen have over still having cancer? (1 = *no influence;* 7 = *total influence*)
3. To what extent did Brian/Karen personally determine his/her cancer outcome? (1 = *not at all*; 7 = *totally*)

Responsibility: (Ruthig, et al., 2012).

1. How responsible is Karen/Brian for still having cancer? (1 = *not at all responsible;* 7 = *totally responsible)*

Blame: Responses to the three items will be summed to create a total blame score (α = .92; Jones & Ruthig, 2014).

1. To what extent is it Karen's/Brian's fault for still having cancer? (1 = *not at all*; 7 = *entirely*).
2. How much blame should Karen/Brian have for developing cancer? (1 = *no blame*; 7 = *complete blame*)
3. How much blame should Karen/Brian have for still having cancer? (1 = *no blame*; 7 = *complete blame*)

Two items were previously used to assess participants' general willingness to help the blogger. Responses to both items are summed to create a total willingness to help score (Jones & Ruthig, 2014).

1. "If given the opportunity, how likely would you be to assist Karen/Brian in some way?" (Response range: 1 = *not at all*; 7 = *very likely*)
2. "If given the opportunity, how likely would you be to help Karen/Brian in some way?" with the same response options as the prior question. (Response range: 1 = *not at all*; 7 = *very likely*)

Two new items have been developed to further assess participants' general willingness to help the blogger.
3. "If given the opportunity, how likely would you be to help another person in a similar situation to Karen/Brian ?" (Response range: 1 = *not at all*; 7 = *very likely*)
4. "If given the opportunity, how likely would you be to help a group of cancer patients similar to Karen/Brian ?" (Response range: 1 = *not at all*; 7 = *very likely*)

To assess what participants are specifically envisioning when asked about their willingness to help, participants will be asked an open ended question.
5. "What specifically would you be willing to do to help Karen/Brian?"

An additional behavioral measure of helping has been developed to assess participants' willingness to help, by providing them with the opportunity to help cancer patients in a tangible way.

If you choose, you can donate your $ 0.25 from participating in today's study to the American Cancer Society's Support Group. This donation will be anonymous - the researchers will not know who does or does not donate.
Would you like to donate your 0.25 payment for this study to the American Cancer Society's Support Group?
1. Yes
2. No

After answering this question, participants will be told:
Thank you for participation….The final question was used to assess willingness to help and donations to the Cancer Society will not actually be made. Regardless of your response to the last question, you will still be paid the full $ 0.25 for participating.

Appendix C
Empathy Induction Manipulation Check: Emotional States
(Batson et al., 1991; Batson et al, 2002; Batson et al., 2007)

While reading the blog, to what extent did you experience the following emotions?

1	2	3	4	5	6	7
(*not at all*)						(*extremely*)

Empathic Emotions
1. moved
2. tender
3. warm
4. softhearted
5. compassionate
6. sympathetic

Distress Emotions
7. alarmed
8. grieved
9. upset
10. worried
11. disturbed
12. perturbed
13. distressed
14. troubled

Other Emotions
15. angry
16. pity
17. helpless
18. frustrated
19. sad
20. disappointed

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