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Influences of Physical Attractiveness and Smoking History on Attributions of Blame,
Empathy, and Personality Assessments of Lung Cancer Patients

by

Zachary David Pruitt

Appalachian State University

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Doris Bazzini, Ph.D., Thesis Director

Becky Cooke, M.A., Second Reader

Ted Zerucha, Ph.D., Interim Director, The Honors College

Abstract

Physically attractive individuals are often seen as more positive, overall, than their unattractive counterparts in such realms as sociability, intelligence, blameworthiness and resilience. This general bias toward beauty was examined in a setting that has received relatively little attention with regard to appearance stigma – medical illness. Specifically, the beauty bias was assessed in regards to an illness (lung cancer) that encompasses lifestyle behaviors (smoking) thought to exacerbate the likelihood of its occurrence. That is, perceptions of those who smoke are often negative and consistent with victim blaming for negative health outcomes. The current study investigated the role of physical attractiveness and smoking status on attributions of blame, empathy, and personality in a hypothetical female lung cancer patient. One hundred and fifteen undergraduate students examined a photograph and patient history of a 30+ year-old woman who either smoked or did not prior to the diagnosis, and was either high or low in attractiveness. Results found that physically attractive targets were rated more positively on personality measures and were afforded more sympathy than unattractive targets. Smokers were rated as being less smart, more to blame, and marginally less likely to recover than non-smokers. No interaction was observed between physical attractiveness and smoking status. This result revealed that smoking held more weight than physical attractiveness in attributions of blame. Implications of findings are discussed.

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Influences of Physical Attractiveness and Smoking History on Attributions of Blame, Empathy, and Personality Assessments of Lung Cancer Patients

Physical attractiveness is a multi-faceted idea, comprising many defining features. Research has shown facial attractiveness may be the most salient feature in determining overall physical attractiveness (Pansu & Dubois, 2002). Facial symmetry, even coloring, smooth skin, clear eyes, and shiny hair are all features associated with physical health and attractiveness (Thornhill & Gangestad, 1999). Based on this information, it is likely that an observer can determine a person's attractiveness rapidly.

A study conducted in 1972, first described and defined the "What is Beautiful is Good" (WBG) stereotype, the perception that attractive people possess more positive personality traits, and lead happier, more satisfying lives than do unattractive individuals (Dion, Berscheid, & Walster, 1972). The WBG stereotype may be elucidated by a related phenomenon, the halo effect. The halo effect suggests that people have a tendency to allow a single attribution (e.g., beauty) about a person to inform other attributions about that individual (Nisbett & Wilson, 1977). As a result, WBG facilitates widespread systematic biases and the fundamental attribution error. Fundamental attribution error occurs when an observer places an overconfident emphasis on an agent's character when interpreting his/her behavior (Harman, 1999). In the case of attractiveness, beauty is related to positive personality traits, which can inform a person's expectation of subsequent behavior. These biases persist across cultures and are not exclusive to any one region (Shaffer, Crepaz, & Sun 2000).

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Unfortunately, such tendencies are also severely exacerbated by popular media. Perhaps one of the most popular and easily recognized film themes is the battle between good and evil, the hero versus the villain. In a dermatology study, Croley, Reese, and Wagner (2017) looked at the skin features of the top 10 villains ranked among the American Film Institute's 100 Greatest Heroes and Villains List. In order to rate the villains, the experimenters looked at the color version of the film in which they were depicted. If no color film was available, the color-printed poster was utilized. Characters were evaluated on the presence of significant dermatological characteristics (scars, abnormal hair loss, large moles, excessive tattoos, etc.), anatomical locations of the significant features, and persistence of those features. Six of 10 villains had significant dermatological features. In all six, these features were located on the face or scalp with persistence. The most common feature was abnormal hair loss, which occurred in 30% of villains. When compared to the top 10 heroes, villains displayed markedly different facial and complexion-related characteristics, reinforcing the notion that goodness co-occurs with health and beauty in popular media sources.

Research has consistently suggested that observers tend to view physically attractive people more positively than unattractive people. There are several specific areas that this phenomenon becomes most evident. Attractive people are believed to be more socially competent than unattractive people, thus enabling them to engage in interpersonal interactions more readily (Dion, 1981). More specifically, physically attractive individuals' enhanced social competence is strengthened by a tendency to have inflated social vitality and increased extraversion (Eagly, Ashmore, Makhijani, & Longo, 1991). Additionally, attractiveness appears to influence observer's expectations of positive morality (Putzer,

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2012). Interestingly, a study of the brain, illustrated this bias. Tsukiura and Cabeza (2010) discovered that the medial orbitofrontal and insular cortexes were stimulated by both judgments of attractiveness and morality, suggesting the judgments are made in overlapping areas of the brain.

Research suggests that beauty influences social acceptance and social superiority and physical attractiveness impact the expectations others have of an individual in a variety of areas. Specifically, attractive individuals appear more likely to be hired for prestigious jobs (Dion et al., 1972). In assessments of actual employment decisions, attractive individuals have been shown to experience a 7% higher call back rate than their unattractive peers (Rooth, 2009). In those jobs, attractive employees are believed to be more responsible for positive outcomes, while unattractive employees are more likely to be blamed for negative outcomes (Seligman, Paschall, & Takata, 1974). Furthermore, in a sample of working adults, ages 24-75 years old in Boston showed that attractive employees experience greater income over their careers, than unattractive employees (Judge, Hurst, & Simon, 2009). Specifically, physical attractiveness had a significant positive correlation with core self-assessments of worth and income, while exhibiting a significant negative correlation with financial strain (Judge et al., 2009).

In their romantic life, attractive individuals were believed to marry earlier, be single for less time, and be more positive spouses (Dion et al., 1972). Attractiveness is not only limited to social competency. A study of children in early and middle childhood suggested that children with more attractive faces were believed to be “smarter” than children with unattractive faces (Adams, Hicken, & Salehi, 1988). In a meta-analysis of 76 studies, Eagly et al. (1991), expected that physical attractiveness would have a minimal effect on

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attributions of intellectual competence. Despite that, the summation of literature found that there was an intermediate correlation that was weaker than social competence attributions, but greater than integrity attributions.

Though physical attractiveness has been shown to be correlated with actual education (Judge et al., 2009), it may be that perceptions of *unattractiveness* may drive differences regarding expectations about intelligence and beauty. For example, Griffin and Langlois (2006) had participants rate 18 faces previously rated as low, medium, or high attractiveness on intelligence. They found that unattractive faces were rated as less intelligent than medium attractive faces, with no difference between medium and high attractiveness conditions. This result suggests that being unattractive has a much stronger effect on viewers' perception of intelligence than does reaching some moderate level of physical attractiveness (Griffin & Langlois, 2006).

The interactions between physical attractiveness and other positive attributions may be explained to some extent by the "just world" hypothesis. This hypothesis suggests that people are biased in their belief that the world has some form of order and that people experience reciprocity between their actions and their outcomes; people generally get the social and physical outcomes that they deserve (Lerner, 1980). Based on Lerner's explanation of a just world, believers tend to endorse a sense of fairness corresponding to moral behavior, one that predicts that good things happen to good people. By that logic, someone who is beautiful must be a good person to be graced with good fortune. Indeed, Dion and Dion (1987), had participants fill out a Just World Scale and rate the personalities of attractive and unattractive individuals. Although not as robust as originally anticipated, they found that "just world" believers tended to rate attractive men more socially desirable

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than non-believers did. This result illustrates a preference by “just world” believers for “winners,” who in this case are represented by physically attractive individuals.

While it is clear that attractiveness can lead to a more favorable bias towards judgments of others, not all attributions related to attractiveness are positive. Cash and Janda (1984) termed a counter stereotype called “what is beautiful is self-centered” (WSC). When asked to make judgments of personality, participants often reported attractive individuals were more vain and ego-centric than unattractive individuals. Furthermore, when Israeli students took a test of rare Hebrew words, which was said to be an accurate predictor of scholastic potential, they asked an attractive peer for help significantly less than an unattractive peer (Nadler, 1980). Nadler suggested that while attractive individuals are sometimes viewed more desirably, they might be deemed less approachable than unattractive alternatives. In a meta-analysis of the effects of physical attractiveness on personality, it was found that attractive men are associated with unfavorable qualities such as sternness (Eagly et al., 1991).

Additionally, it appears that while attractive individuals are seen as often possessing more positive personality attributes than their less attractive counterparts, those judgments come with heightened expectations. Based on evaluations of teachers and school children, attractive children were viewed as more desirable than less attractive peers, but the latter were given more leniencies when they misbehaved (Rich, 1975). Similarly, attractiveness is often associated with positive mental health outcomes, but due to inflated expectations and social pressure, attractive individuals are likely to internalize negative emotions (Umberson & Hughes, 1987).

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Attractiveness and Blame for Misfortune

If attractiveness is perceived to impact desirable social outcomes, it seems likely that it would also influence judgments of blame for outcomes that are undesirable. Victim blaming occurs when an individual receives non-supportive or outright negative responses from others regarding a negative situation he or she is experiencing (Pollard, 1992). This phenomenon occurs primarily because a victim is believed to have contributed in some way to a circumstance or event (Pollard, 1992). Victim-blaming results in what is known as secondary victimization, which facilitates greater humiliation and negative self-esteem outcomes for those victims (Ståhl, Eek, & Kazemi, 2010).

Victim attractiveness has been studied in the realm of criminal justice. For example, Thronton and Ryckman (1983) had participants observe victims of varying attractiveness and complete the Rape Empathy Scale (RES, 1982), which gauged the observers' view of the victim after the rape had occurred. The results showed that victim's attractiveness was significantly correlated with blame (Thronton & Ryckman, 1983). Victims who were less attractive were seen least favorably. Participants claimed they identified more with and felt more positively toward attractive victims as compared to unattractive victims (Thronton & Ryckman, 1983). Additionally, participants were more confident that the perpetrator who raped the attractive victim was more likely guilty than the perpetrator who raped the unattractive victim (Thronton & Ryckman, 1983).

This trend is not only present when considering the victim of violent crimes. Perpetrators, who go to court, have been shown to experience similar bias and attribution error. Alicke and Zell (2009) surveyed students on their beliefs of blameworthiness,

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likeability, causal impact of a fight, and victim injuries, in regards to a scenario describing a man who accidentally injured a woman while trying to break up a fight between her and another man. The scenario was modified by altering the perpetrator's attractiveness and learning about his fiancé breaking off their engagement before or after reading the scenario. Regarding injury responsibility, an attractive perpetrator was viewed significantly more positively than an unattractive perpetrator. Participants felt that the attractive perpetrator was more likeable, less to blame, and less causally responsible for the incident than the unattractive perpetrator (Alicke & Zell, 2009).

Furthermore, attractiveness can also influence the outcome of trials. Trial research suggests that attractive defendants often receive a lesser sentence than unattractive counterparts (Stewart, 1980). For example, Stewart had observers rate 74 defendants' physical attractiveness. Subsequently, the defendants were stratified by attractiveness and severity of offense. The outcome of the trial was observed and verdicts were analyzed in relation to common sentences for the crimes committed. In addition to attractive defendants receiving lesser sentences, attractiveness was also negatively correlated with ratings of severity of offense (Stewart, 1980). Despite this, they observed no significant effect of attractiveness on likelihood of conviction or acquittal.

Blame is also relevant to circumstances involving life events surrounding tragedies, after which victims and observers experience feelings of shock, disbelief, and rage (Meshot & Leitner, 1993). Interestingly, attractiveness of a victim plays a role in observers rating of fairness of tragedy and suffering. Callan, Powell, and Ellard (2007) surveyed participants on their beliefs in the fairness of the death of a woman. They found that when an attractive woman died, participants saw it as being more tragic and unfair when compared to the death

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of an unattractive woman. They also incorporated suffering into their study by asking participants to recall the attractiveness of a woman after learning she was severely burned in a house fire. When shown pictures of varying attractiveness, participants often remembered the woman being less attractive if they knew she suffered more. It appears that directionality of blame can both color judgments of anticipated behavior as well as recollections of a person after an event has occurred.

Disease and Blame

Blame associated with illness preventability is a lesser-explored area of study relative to physical attractiveness. Most disease blame is focused on at-risk behaviors. At-risk behaviors are viewed as flaws in lifestyle and thus, are easily fixed through education and will power (Crawford, 1977). This belief may be rooted in a phenomenon called defensive distancing, which suggests that individuals blame others for their short falls to avoid confronting their own vulnerabilities (Jaremka, Bunyan, Collins, & Sherman, 2011). In a study of illness and defensive distancing, participants were provided with personality profiles of patients with a life threatening illness (stomach cancer) or a minor injury (sprained ankle). When participants were given a personality survey after reading about the patients, they found that those who read about the patient with stomach cancer were more likely to distance themselves than individuals who read about the patient with a sprained ankle. This suggests that they felt the need to distance themselves from those experiencing a more threatening health event than a less severe one (Pyszczynski et al., 1995). It seems likely that at-risk behaviors result in increased victim blaming particularly because they play into the “just world” hypothesis. That is, just-world believers are more apt to consider those individuals

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who engage in at-risk behaviors as more likely to deserve their negative outcomes (e.g., getting sick). Such thinking helps to explain stigmas that have arisen for particular groups.

For example, in the early 1990's, AIDS was just becoming prevalent and the first documented victims were homosexual flight attendants, which led to the belief that the disease was reserved for the homosexual population. In a study of AIDS patients, a group of 79 undergraduate students blamed gay men significantly more for contracting AIDS than they did heterosexual men (Anderson, 1992). Additionally, Anderson (1992) felt that the findings illustrated that "just world" hypothesis was at play because people who were specifically less tolerant of homosexual relationships blamed homosexual men more. That is to say people perceived as engaging in a perceived risk factor were more viewed as more at fault when negative consequences befell them.

Given that both defensive distancing toward victims of serious illness and victim blaming occur for outcomes associated with at-risk behaviors, it may not be surprising that a disease like cancer can be perceived through the lens of just-world thinking. Indeed, cancer has been historically viewed as a disease that is largely based on the behaviors of the person who falls ill, and for which patients experience stigmatization (Butts, 1989). This is particularly the case for lung cancer due to its strong association with tobacco smoking and the abundance of educational campaigns against smoking (Chapple, Ziebland, & McPherson, 2004). Indeed, in a study about lung cancer stigma, 45 patients from the United Kingdom were recruited and interviewed about their experience with the disease and the reception they had received from others. Commonly, participants expressed feeling stigmatized by their peers (Chapple et al., 2004). Further, they felt their smoking status played no role in their

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experience, which led nonsmokers to feel they were unjustly treated. As a result, many reported suffering adverse mental effects (Chapple et al., 2004).

The previous studies indicate that “just world” beliefs and expectations of patients play a role in stigma and patient outcomes. Given the connection between “just world” and WBG illustrated by Dion and Dion (1987), it would seem logical that an interaction might occur between patient physical attractiveness and stigmatization regarding disease.

Hadjistavropoulos, Ross, & Von Baeyer (1990) studied physician ratings of pain based on patient attractiveness. Physicians were placed in one of four conditions. They were shown a picture of either an attractive or unattractive patient who was either in pain or experiencing no pain. The physician was then given a vignette to read about the person’s background, occupation, and pain condition. Following the information phase, the physicians rated their perceptions of the patient’s pain and affect.

Hadjistavropoulos et al. (1990) predicted that physically attractive patients experiencing pain would be viewed by physicians as experiencing more pain, distress and negative affect. Additionally, they believed attractive patients would be viewed as needing more help, providing a more realistic expression of their pain, being less responsible for their pain, and experiencing greater benefit from treatment. However, the contrary was found. Physicians believed that unattractive patients were in more pain and distress, and displayed more negative affect than attractive patients. As a result, and counter to expectation, physicians felt more sympathy for unattractive than attractive patients.

Hadjistavropoulos et al.’s findings present an interesting conundrum for attractiveness researchers. On the one hand, physically attractive people are generally viewed as socially

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competent and thus more desirable than physically unattractive people (Dion et al., 1972). It would be reasonable to assume that physicians might be more sympathetically inclined toward attractive patients. By contrast, Adams et al. (1988) found attractiveness was correlated with expectations of intelligence. It stands to reason that if unattractive people are perceived as less intelligent, then they may be perceived as more likely to engage in at risk behaviors than attractive people. Although generally, engagement in at risk behaviors plays a large role in victim blaming (Anderson, 1992), it may be that lowered initial expectations about a person renders a negative consequence as more anticipated and less surprising. Recall that Rich (1975) found that unattractive school children were given more leniency and less punitive punishments than attractive children when teachers were told they had misbehaved during class activities. Perhaps the higher expectations that accompany beliefs about attractiveness, including perceptions of intellect and mature/desirable behavior, make attractive people more accountable with regard to behaviors that surround health outcomes and stigmas about illness.

Present Study

In summary, there is ample evidence that physical attractiveness affords individuals a number of benefits throughout life due in large part to a stereotype associating beauty with other desirable characteristics (WBG, Dion et al., 1972). The positive effects however are not limited to social life, but include perceptions of personality appraisals, overall. This results in measurably better success (Rooth, 2009), greater expectation of intelligence (Adams et al., 1988), less blame in criminal scenarios (Alicke & Zell, 2009), and finally more perceived positive health outcomes (Hadjistavropoulos et al., 1990). However, a number of liabilities accompany perceptions of beauty that include increased attributions of vanity and ego-

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centrism (“what is beautiful is self-centered”; Cash & Janda, 1984), decreased perceptions of approachability (Nadler, 1980), and possibly the evocation of less sympathy in medical settings (Hadjistavropoulos et al., 1990) possibly due to a fulfillment of expectations regarding risk behaviors and intellect.

Although Hadjistavropoulos et al. focused on physician expectations of patient outcomes, few studies have examined how attractiveness relates to perceptions of particular illnesses that are associated with a well-known risk factor, likely to draw increased blame from observers. Chapple et al. (2004) laid the groundwork showing that there is stigma and blame associated with particular diseases. The purpose of the present study was to determine whether attractiveness would be associated with positive or negative bias among third party observers regarding attributions about a serious illness. Given the widespread belief that lung cancer patients are largely responsible for their diagnosis and its overall prevalence, this disease was selected for the study. Furthermore, smoking has been shown to be a predominant risk factor for lung cancer that carries considerable stigma with regard to public health perceptions (Chapple et al., 2004).

In the present study, participants were asked to view a photo of a female cancer patient previously rated as attractive or unattractive. After they viewed the picture, participants read a vignette describing the patient’s health history disease diagnosis. In one scenario, participants learned that the target was a smoker and in the other, that she was not a smoker.. Once participants finished the vignette they filled out a questionnaire that asked questions regarding just-world belief, the amount of blame that should be proscribed to the patient, whether the patient should be awarded sympathy, the likelihood of the patient to recover from the disease, and finally a personality inventory. The resulting research design

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was a 2 Physical Attractiveness (Unattractive vs. Attractive) x 2 Smoking History (Smoker vs. Nonsmoker) factorial study.

Hypothesis 1: Given the ubiquity of positive attributions prescribed to those who are physically attractive, a main effect was predicted for both the set of variables related to Janet's diagnosis and her interpersonal attributes. Specifically, the attractive target was expected to be perceived as (a) less to blame for her disease, (b) worthy of greater sympathy due to lung cancer being an "unjust diagnosis," (c) more resilient and thus more likely to recover from cancer as compared to the unattractive target. Furthermore on measures related to the target's disposition the attractive target was expected to be viewed as generally more positive and, overall, smarter than the unattractive target.

Hypothesis 2: Given lung cancer's close ties to smoking and the resulting stigmatization described by Chapple et al. (2004), a main effect was predicted for the smoking condition on all outcome measures. Targets who were described as smokers would be viewed as (a) more to blame for their diagnosis, (b) less deserving of sympathy, and (c) less likely to recover from their disease compared to non-smokers. It was predicted that smoking status would not influence personality attributes regarding goodness, but would result in lower expectations of smartness due to target engagement in a known risk factor for lung cancer.

Hypothesis 3a and 3b: Previous research makes the case for both more and less favorable responses to physical attractiveness depending on context. Therefore, two competing hypotheses were formulated regarding attributions regarding the target individual for the attractiveness and smoking history interaction. In light of just-world beliefs and

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increased presumptions of favorability for beauty, Hypothesis 3a predicted the more attractive target would be judged in more favorable terms, as less to blame for the illness, as invoking more sympathy, and as more likely to recover than the unattractive target regardless of smoking history. So, no significant interaction was expected.

On the other hand, if in fact, individuals have higher expectations for attractive people to engage in healthful and non-risky behaviors, a significant interaction would occur between target attractiveness and smoking history. Hypothesis 3b predicted the attractive target who smoked would be judged more harshly (less favorably, more to blame, less likely to recover, and would evoke less sympathy) than the unattractive target. However, for the target who did not smoke, the effect would be reversed.

Method

Participants

A total of 127 psychology students were recruited to participate in the study via the SONA on-line recruitment system. Students who chose to participate were rewarded with class credit in the form of 1 Experiential Learning Credit. Twelve participants were excluded due to a survey error. The error resulted in them being recorded as having done the survey, but no survey answers were recorded. The final study sample comprised 115 participants (93 females, 22 males; mean age = 20.2 years, SD = 1.8 years). Additionally, 85.2% of the sample identified as White, 33.3% of participants referenced having a smoking history and 65.2% referenced having a family member afflicted by cancer.

Initial Selection of Model Photos

A pool of images of alleged female cancer patients was selected from public on-line sites selling head accessories. Photos with head accessories were chosen to avoid baldness

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being a characteristic that may influence ratings of model attractiveness. This precaution was justified by findings suggesting that female alopecia androgenetica resulted in 50% of afflicted women reporting negative social experience because of their condition (Van der Donk, Hunfield, Passchier, Knecht-Junk, & Neiboer, 1994). Sample photos depicted models that appeared to be approximately 35 years of age, but varying on physical attractiveness. In total, 24 photos of female cancer patients were rated on approximate age and physical attractiveness.

Rating of Model Photos

A team of eight raters (six research assistants, and two principal investigators) rated each photo on approximate age and physical attractiveness on a scale of 1-10. Additionally, photos were assessed on similarity of background and facial expression. This was done to avoid certain salient details being present when participants saw the photos. Ultimately the pool of 24 photos was narrowed down to two photos that would serve as the manipulated variable for physical attractiveness. The photo serving as the “low” attractiveness target stimulus was rated as less attractive ($M = 4.80$, $SD = 1.68$) than the photo serving as the “high” attractiveness target stimulus ($M = 8.25$, $SD = 1.28$), $t(7) = -4.95$; $p = .002$. Both models were judged by participants to be approximately 31 years of age $t(7) = -.38$; $p = ns$.

Materials

Demographic Questionnaire. Participants were given a demographic questionnaire, that asked them questions regarding their age, gender, race, smoking history (smoking status and smoking frequency), and family cancer history (relationship to family member and type of cancer).

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General Belief in a Just World Scale. The 6-item General Belief in a Just World Scale (Dalbert, Montada, & Schmitt, 1987) was used to assess participants' belief that people tend to get what they deserve (example items: "I think basically the world is a just place", "I believe that by and large, people get what they deserve", "I am confident that justice always prevails over injustice", "I am convinced that in the long run, people will be compensated for their injustices"). This final item was dropped from the survey do to an error in the electronic questionnaire administration. The resulting Cronbach's alpha for the five remaining items was .72. All items included in this scale were rated on a Likert scale from 1 to 6 (strongly disagree to strongly agree).

Target Evaluation Questionnaire. The subsequent questionnaire was a conglomeration of scales drawn from a number of studies. Two items (Clifford & Walster, 1973) addressed the patient's education level achieved and intelligence ("I would estimate Janet's IQ to be?"; "I would predict that Janet has finished school through:"), Janet's IQ could be rated from 96-137 and education from 2 years of high school to doctoral degree. These two items were averaged to create a general intellectual capacity assessment, $\alpha = .40$. Three items taken from Garstkiewicz (2014) measured the degree to which the target was blamed for her condition ("How likely is it that Janet could have avoided the development of cancer?", "How much is Janet to blame for her diagnosis?", and "What is the likelihood that Janet engaged in significant risk factors in the past that may have led to her diagnosis?"; $\alpha = .88$.) One item assessed target's likelihood of recovery ("How likely is it that Janet will recover from cancer?"). All items were rated on a Likert scale from 1 to 5 (Extremely Unlikely to Extremely Likely). Five items were averaged to create an index of target goodness ("Rate the goodness of Janet", "Rate how pleasant Janet would be to be around",

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“Rate the kindness of Janet”, “Rate the honesty of Janet”, and “Rate how nice Janet is”, $\alpha = .79$). All items were rated from 1 to 5 (Very un_____ to very _____). One item assessed participants’ sympathy for the target (“How sorry should people feel for Janet?”). Finally, a manipulation check for patient attractiveness was administered.

Procedure

Participants entered the SONA online participant website. Participants saw the title of the project and read a brief description of it. The description detailed information about the rising rates of cancer diagnosis in the United States today and how it is important to study how the current generation views cancer and those who suffer from it. Once the project was selected, participants were relayed to an online survey. The first page included a consent form that again detailed the basis of the study and added a warning about possible emotional distress that may be experienced during participation. Participants were also informed that they could leave the study at any time, without penalty. Following the consent statement, participants were given a prompt to move forward. After they choose to move forward, they were informed this action was an indication of consent.

After consenting, participants were asked a few brief demographic questions about their age, gender, and race. They were then told that they would be reading a narrative and would need to pay close attention, as they would be asked questions about what they read. The participants were then randomly assigned to one of four conditions varying on physical attractiveness and patient smoking status. Random assignment was facilitated by Qualtrics, which ensured equal distribution between conditions. Physical attractiveness was varied by displaying a headshot of either a physically attractive or unattractive woman. The attractiveness manipulation played no role in the narrative. The smoking manipulation altered

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the narrative to indicate the depicted woman's smoking history. The scenarios read as follows:

Smoking Condition:

Janet is a 40-year-old mother of two children ages 7 and 11. She is a stay at home mom, who exercises daily. Throughout her life, she has managed her weight, eaten a fairly healthy diet, and stayed active. For a period of time, Janet smoked about a pack of cigarettes a week.

One evening, while eating dinner with her family, she began coughing. After a few days, she decided to go to the doctor. The doctor ran a number of tests and diagnosed her with bronchitis. Janet was prescribed cough suppressants and was told to sleep with a humidifier near her bed. The treatment seemed to work and her symptoms went away. Three weeks later, she noticed she would become rapidly fatigued during her normal workout and struggled to recover once she was done. She became alarmed when the next week her cough returned, only this time she started coughing up blood. When she returned to the doctor a chest X-ray was ordered. She was then referred to an Oncologist, who told her that she had lung cancer. She is currently in her third month of chemotherapy as doctors work to treat her cancer.

OR

Non-Smoking Condition:

Janet is a 40-year-old mother of two children ages 7 and 11. She is a stay at home mom, who exercises daily. Throughout her life, she has managed her weight, eaten a fairly healthy diet, and stayed active.

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One evening, while eating dinner with her family, she began coughing. After a few days, she decided to go to the doctor. The doctor ran a number of tests and diagnosed her with bronchitis. Janet was prescribed cough suppressants and was told to sleep with a humidifier near her bed. The treatment seemed to work and Janet's symptoms went away. Three weeks later, she noticed she would become rapidly fatigued during her normal workout and struggled to recover once she was done. She became alarmed when the next week her cough returned, only this time she started coughing up blood. Janet returned to the doctor with her family. This time, the doctor was more serious and referred her to the local hospital's oncology department. During her appointment at the hospital, Janet was diagnosed with lung cancer. She is currently in her third month of chemotherapy as doctors work to treat her cancer.

Following the reading of each scenario, participants were asked to fill out the survey described in the materials section. Once the participants had completed the survey, they were shown a debriefing statement. The statement described the study's desire to inquire about stereotypes held about certain diseases and how they may vary based on a patient's physical attractiveness. Participants were provided with The University Counseling Center contact information in case of any potential psychological distress caused by the experimental procedure. We also provided researcher contact information for any participants who might have questions about the study.

Results

Manipulation Check

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Participants ratings of the manipulation check for target's attractiveness were submitted to an independent samples t-test across the two conditions. Unfortunately, those exposed to the less attractive target female ($M = 6.51$, $SD = 1.17$) did not rate her as less attractive than those exposed to the more attractive female, ($M = 6.50$, $SD = 1.34$), $t(112) = 1.18$, *ns*. Given this failure of the experimental manipulation, it was decided that a median split of ratings of the target's attractiveness would be used in place of the manipulated variable. First the median of the data was calculated for the 10-pt scale rating ($Med = 6$). A median split was then performed such that those who rated the target 1 through 6 were labeled as "low attractive" and those who rated the target 7 through 10 were labeled as "high attractive." Potential confounding variables related to this re-coded variable will be addressed in the Discussion section of the paper.

Test of Hypotheses

Prior to conducting statistical tests of the main hypotheses, scores for the General Just World Belief scale were submitted to a 2 (target attractiveness: low vs. high) X 2 (smoking: smoker vs. non-smoker) ANOVA to ensure that between-group differences did not exist for this dispositional variable. No significant effects emerged for the analyses, all $F_s(1, 107) < 2.37$, *ns*.

Recall, Hypothesis 1 predicted that ratings related to Janet's diagnosis of cancer including blame, likelihood of recovery, and sympathy for her circumstances would be viewed more favorably for the attractive stimulus person as compared to the unattractive one. This is to say that the attractive target would be viewed as less to blame for her cancer

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diagnosis, more likely to be viewed as more resilient and able to recover from cancer, and would be afforded more sympathy for her diagnosis as compared to the unattractive target.

In order to test Hypothesis 1, ratings of blame, recovery likelihood, and sympathy and goodness were submitted to 2 (target attractiveness: low vs. high) X 2 (smoking: smoker vs. non-smoker) ANOVAs for each of the three constructs. For only one of the three diagnosis-related variables did physical attractiveness produce a main effect. Indeed, targets viewed as more attractive encumbered more judgments of sympathy ($M = 4.30$ $SD = .63$) than those viewed as less attractive ($M = 3.97$ $SD = .66$), $F(1,109) = 7.50$, $p = .007$, $\eta_p^2 = .07$. No other significant main effects emerged for blame or recovery likelihood, all $F_s(1, 109) < 2.14$, *ns*.

Interpersonal ratings of Janet's overall favorability/goodness and intelligence were also submitted to 2 (target attractiveness: low vs. high) X 2 (smoking: smoker vs. non-smoker) ANOVAs. For physical attractiveness, a main effect emerged for ratings of her overall favorability such that those who viewed her as more attractive found Janet to be higher on traits related to goodness (nice, honest, kind, $M = 3.95$, $SD = .46$) than those who viewed her as less attractive ($M = 3.64$ $SD = .42$), $F(1, 109) = 13.31$, $p = .0001$, $\eta_p^2 = .11$. There was no main effect observed when Janet's smartness was considered, $F(1,109) = 2.33$, $p = .130$, $\eta_p^2 = .02$.

In support of Hypothesis 2, one of the three variables related to the diagnosis of cancer showed a significant main effect for smoking status. For degree of blame for the diagnosis, targets who smoked were judged more harshly ($M = 3.75$ $SD = .71$) than the non-smoking targets ($M = 1.99$ $SD = .59$) were blamed significantly less than smoking targets, $F(1,109) = 197.05$, $p = .000$, $\eta_p^2 = .65$. A marginal main effect for estimates of recovery did

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demonstrate that smoking targets were judged as somewhat less likely to recover ($M = 3.38$ $SD = .69$) than the nonsmoking targets ($M = 3.60$ $SD = .62$), $F(1,109) = 3.01$, $p = .085$, $\eta_p^2 = .03$. No main effect occurred for sympathy towards the target as a function of smoking status, $F(1,109) = 2.11$, $p = .149$, $\eta_p^2 = .02$.

With regard to the interpersonal judgments of the target, smoking status yielded one significant main effect for estimates of Janet's intelligence. The non-smoking targets ($M = 3.71$, $SD = .73$) were viewed as more smart than the smoking targets ($M = 3.27$ $SD = .87$), $F(1,109) = 6.33$, $p = .013$, $\eta_p^2 = .019$. No significant main effect emerged for ratings of the targets' goodness, $F(1,109) = .55$, $p = .458$, $\eta_p^2 = .005$.

Contrary to expectations, neither Hypothesis 3a or 3b were supported, as no significant interactions emerged for any of the dependent measures, all $F_s(1, 109) < 2.20$, *ns*.

Discussion

Literature on physical attractiveness has shown that an extensive bias exists, which has afforded the physically attractive a number of positive attributions. When compared to unattractive peers, they are often seen as more socially adept and desirable, marginally more intelligent, less worthy of blame, and more resilient (Dion et al., 1972; Eagly et al., 1991; Rich 1975; Hadjistavropoulos et al., 1990). All of these advantages lead physically attractive individuals to have measurably better success in their life than physically unattractive individuals (Judge, 2009). The purpose of this study was to further investigate the relatively unstudied effect of physical attractiveness on expectations of illness initially explored by Hadjistavropoulos et al. (1990). This was done by weighing the positive attributions

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associated with physical attractiveness against the negative attributions afforded to smoking, given its association with lung cancer.

Consistent with previous literature, this study found that a female target who was thought to be physically attractive was believed to be more interpersonally favorable (nicer, more honest, kinder, more pleasant, and higher on goodness) than a person found to be less attractive. Specifically, Dion et al. (1972), found that physically attractive targets were seen as more socially competent, which was rooted in beliefs about them being more positive people overall.

Despite Hadjistavropoulos et al's. (1990) findings that physicians afforded physically unattractive patients more sympathy than attractive patients, the opposite was found for this study. Participants who found the target to be more attractive felt more sympathy for her plight than those who found her to be less attractive. This finding may be due to defensive distancing, which is to say that when people learn about the serious issues of others, they tend to blame those people to avoid confronting their own vulnerability (Jarema et al., 2011). This occurs more significantly when the issues facing another person are serious (Pyszczynski et al., 1995). Therefore, it is likely when participants read about Janet's lung cancer they tended to feel the diagnosis was due to something she did. Given the positive attributions of physical attractiveness, the unattractive target was afforded less sympathy. However, participants did not blame the unattractive target more for the illness itself. This is contrary to Dion et al. (1972), who found that unattractive children were blamed more for hurting another child on the playground. Perhaps assigning equal blame to targets for their diagnosis relates to the fact that many of the participants (65%) had been affected by such an illness within their own families. Therefore, participants were likely aware of the non-

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discriminating nature of cancer, thus providing the target with a degree of immunity against blame for her disease.

By contrast, participants were very likely to assume judgments of accountability for knowledge that the target had smoked in the past. Consistent with Chapple et al.'s (2004) findings, the female target who smoked was prescribed significantly more blame for her illness than one who did not smoke. Relatedly, there was a tendency to perceive greater long-term resilience among a non-smoking target such that she was believed to be somewhat more likely to recover from her cancer diagnosis as compared to a smoker.

One reason for the harsher judgments of the target who smoked may be that smoking was tied to a belief that Janet was less intelligent and less educated than when she did not. More broadly, there may be an underlying belief that people feel that less educated people are more likely to engage in risky and health compromising behaviors. This belief may be factually based. Specifically, it was found that adults of 25 years old or younger who had achieved a high school diploma or less comprised the highest proportion of smokers at 42% (CDC, 2009).

A major weakness of the current study was the failure to successfully create the physical attractiveness manipulation originally intended, despite having selected target photos that had engendered discriminating responses among pre-raters. This led to the necessity of allowing participants' own attractiveness biases to create the levels of attractiveness for the target. It is possible that other participant characteristics have confounded judgments of the targets. For example, those who rated the targets lower may have higher standards of beauty, and be potentially more critical of an individual across

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many interpersonal judgments than those who are more tolerant and accepting of others. It is possible that this affected illness ratings as well. Nevertheless, one subject characteristic that was eliminated as a potential confounding variable was belief in a just world. Across the dichotomized physical attractiveness variable, those who rated the targets higher on attractiveness were not more likely to endorse belief in a just world relative to those who rated her as less attractive.

In retrospect, the manipulation failure may have occurred for a few reasons. First, I noticed upon inspection of the raw data that many participants completed the survey in less than 5 minutes, when the survey was intended to take 15-30 minutes. This may suggest that many participants did not invest the attention necessary to provide accurate responses.

Second, smoking may have had a significant influence on participants' ratings of attractiveness. Physical attractiveness was assessed after the participants read the vignette and some may have felt that regardless of physical characteristics, the target's smoking made them unattractive. Polivy, Hackett, and Bycio (1979) found that when rating physical attractiveness, smokers preferred other smokers, and non-smokers preferred other non-smokers. However, photos of smokers were rated as less attractive overall.

Third, both pictures were of women in headscarves, with no hair showing in the picture. The intent was to show a photo of a woman who likely had cancer, without the explicit cue of depicting baldness. However, it is still likely that the scarf prompted participants to think about baldness. A woman's beauty is often associated with the appearance of her hair. In a survey of 130 men and 112 women, it was found that hair color and length played a significant role in the overall ratings of attractiveness of a target woman

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(Swami, Furnham, & Joshi, 2008). Van der Donk et al. (1994) asserted that 88% women with alopecia in their sample suffered negative social fallout regarding judgments of others, with 57% of women feeling they were seen as less attractive by peers.

Finally, the physical attractiveness assessment item was given at the end of the survey to avoid participants recognizing they were being placed into target attractiveness conditions. It is possible that because they only saw a picture of the target at the very beginning of the survey they may not have remembered aspects of her appearance accurately. Allowing the participants to back-track in the survey may have alleviated this is.

Future research should consider more carefully how cues regarding attractiveness can be successfully represented in research about cancer stigma. People may feel uncomfortable rating the attractiveness of a person who has been diagnosed with cancer. Thus, more sensitive questioning may be warranted to reduce problems with social desirability. It may also be helpful to assess the reasons for supporting victim-blaming based on risk-factors associated with illness. Similarly, comparisons across illnesses may help to establish whether certain behaviors, like smoking, are prioritized as having a greater impact on health than others (e.g., a high fat diet).

This research offers a hopeful perspective on society. A large body of research has shown an unwarranted bias in favor of the physically attractive that gives them an unfair advantage over their less attractive counterparts. This study suggests that these physical attractiveness stereotypes have not infiltrated the medical realm to the same degree they have other areas of life. Thus, people who are less physically attractive may not be blamed more for having a deadly disease. In the future, research may be done to further support these

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findings or to illuminate bias that exists in other areas of medicine. Furthermore, the findings that suggest blame is assigned more harshly to those who smoke, may act as a deterrent to this at-risk behavior in the future. Ultimately, if this influences people to quit smoking or avoid it all together, public health has the potential to be markedly improved. However, this is not to advocate for smokers who are diagnosed with cancer to be afforded less empathy and care by medical professionals. In the end, this research is a step in the right direction toward understanding how not just stigma, but bias as well works and will potentially allow medical professionals to be more aware of this when treating patients.

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