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**THE ROLE OF POSITIVE CHARACTER APPRAISAL IN NARRATIVE MESSAGES
DESIGNED TO REDUCE SOCIAL DISTANCE: AN EXPERIMENT IN GENETIC
STIGMATIZATION REDUCTION**

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ABSTRACT

Many narrative stigmatization reduction campaigns are serial dramas that include several character types: positive characters who model emotions, attitudes, and behaviors accepting toward stigmatized persons, transitional characters who change from stigmatizing to non-stigmatizing, and negative characters who stigmatize others (Rogers et al., 1999). Yet many stigmatization reduction messages are brief, and therefore cannot include numerous characters. For this reason, such messages often include only the individual with the stigmatized condition as the primary character. However, non-stigmatized individuals who choose to associate with stigmatized others (empathic individuals, referred to as “the wise” by Goffman, 1963), may be powerful role models in brief narratives designed to reduce stigmatization. Therefore, it is crucial, both theoretically and practically, to understand how such characters may function as role models. To this end, this experimental research (N = 170) explores the effect of positive, transitional, and negative protagonists in brief narrative messages designed to reduce stigmatization of persons diagnosed with Alpha-1 Antitrypsin Deficiency (AATD), a rare genetic condition that leads to pulmonary and liver disease. Results indicated that positive and transitional protagonists are more effective in reducing stigmatization than negative protagonists. Exploration of the psychological processes mediating this reduced stigmatization, operationalized as reduced social distance, revealed that positive character appraisal of the protagonist, not character identification with the protagonist, was the primary mechanism that led to reduced stigmatization. Further, different processes mediated stigmatization reduction for positive/transitional and negative protagonists. Neither empathy with the protagonist nor empathy with the character diagnosed with AATD led to significant stigmatization reduction. These findings have theoretical and practical implications.

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“To give someone a blessing is the most significant affirmation we can offer. It is more than a word of praise or appreciation; it is more than pointing out someone’s talents or good deeds; it is more than putting someone in the light. To give a blessing is to affirm, to say ‘yes’ to a person’s Belovedness...A blessing touches the original goodness of the other.” – Henri J.M. Nouwen

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Dedication

This dissertation is dedicated to

Sharon Joan Dangiuro,

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Thank you for making the world more wonderful here

Chapter 1

Introduction

Within the past several decades, there has been a resurgence of interest in reducing stigmatization associated with health conditions. Stigma has been identified as a leading barrier to health treatment seeking, prolonged disease transmission, and lack of health treatment adherence (Smith, 2011). In regard to healthcare, stigma has been associated with impediments to research and public health efforts to observe and prevent disease transmission (Herek & Glunt, 1988) and governments' slow responses to confront epidemics (e.g. AIDS, Herek & Glunt, 1988). Stigma is associated with social ostracism and personal rejection (Williams, 1997, 2007); laws that deprive basic human rights (Herek, 1991; Herek, 1999; Herek, Capitanio, & Widaman, 2003; Herek & Glunt, 1988); the inability for stigmatized individuals to gain or maintain employment and education (Brown, Macintyre, & Trujillo, 2003; Link, Cullen, Struening, ShROUT, & Dohrenwend, 1989; Scambler & Hopkins, 1986, 1990); and physical assault and murder (Herek, 1991, 2009).

Because of the far-reaching, negative consequences of stigma associated with many illnesses – including mental illness (Link et al., 1989), infectious diseases such as HIV/AIDS (Brown, Macintyre, & Trujillo, 2003) and genetic illness (Jenerette & Brewer, 2010) – scholars have sought the most effective means to reduce its impact on health and wellbeing. Recent stigma reduction efforts have taken myriad forms, but the majority fall within the context of three primary strategies through which researchers have attempted to reduce stigma: *protest*, which attempts to suppress stigmatizing attitudes and behaviors; *education*, which attempts to replace erroneous or mythic ideas regarding a stigmatized condition with accurate information; and *contact*, which challenges stereotypes of stigmatized others through contact with such

persons, either through naturalistic (i.e. face-to-face) contact or indirect/mediated contact (e.g. video or film) (Chan, Mak, & Law, 2009; Corrigan and Penn, 1999).

Of these three strategies, protest has demonstrated the least effective results, possibly due to a rebound effect from attitude suppression (Corrigan et al., 2001). Education has generally demonstrated short-term effects, such as improvements in attitudes toward mental illness but may be limited due to the resilient or rigid nature of stereotypes (Ashmore & DelBoca, 1981; Corrigan & Penn, 1999). Contact, however, has demonstrated greater stigma reduction than education (Corrigan et al., 2001) and has been shown to have longer lasting effects (e.g. Yau et al., 2011).

The contact strategy for reducing stigma associated with illness mirrors what Goffman (1963) called “mixed contact”: social interactions in which non-stigmatized persons come in contact with stigmatized persons (p. 12). Goffman (1963), who wrote the classic work, *Stigma: Notes on the Management of Spoiled Identity*, divided individuals not categorized as members of a stigmatized group into either the “wise” or “normals” (p. 28). According to Goffman (1963), normals are people who stigmatize others while the wise are people who interact sympathetically with stigmatized others. Goffman called such sympathetic interactions “normalization”—the wise treating stigmatized persons as if they had no stigma (1963, p. 30). Because wise persons have chosen to align themselves with stigmatized individuals, they often share in the individuals’ social discredit through what Goffman calls a “courtesy stigma,” in which the community extends stigmatization to these sympathizers (1963, pp. 28-31).

Unlike normals, who attempt to arrange their lives in order to avoid stigmatized persons due to the stress and discomfort of such interactions (i.e., mixed contact), the wise freely choose to interact with stigmatized individuals, who often find a sense of acceptance and security in the presence of the wise (Goffman, 1963).

In light of such theorized social interactions among normals, the wise, and stigmatized individuals, researchers attempting to reduce stigma associated with illness may consider looking to the wise to serve as role models for normalization, rather than, or in addition to, stigmatized persons within the context of contact campaigns. This approach, promoting either indirect or direct contact with the wise, may be effective in not only reducing stigmatizing attitudes and behavior, but may also serve to transform normal (i.e. stigmatizing) members of society into wise persons (i.e. non-stigmatizing society members). Such an approach could also empower members of society who may be non-stigmatizing but silent due to fear of courtesy stigma to take a more public stand against stigmatization.

To this end, this research seeks to broaden the scope of previous stigma reduction contact campaigns to include the wise as role models for normalization in an effort to reduce stigma associated with a genetic illness, alpha-1 antitrypsin deficiency (AATD). Narrative health messages, because they include characters, have inherent in their structure role models upon which readers or viewers can model their own health-related attitudes and behavior (Green, 2006; Kreuter, 2007). These characters may each serve as role models for stigma reduction, defined briefly here as 1) a reduction in social distance toward persons diagnosed with AATD, 2) an increase in positive attitude toward persons diagnosed with AATD, and 3) an increase in positive affect toward persons diagnosed with AATD.

Specifically, this research explores the use of narratives to compare the stigma-reduction effectiveness of three types of characters: *positive*, who choose not to stigmatize and instead role model consistently empathic attitudes and behaviors; *transitional*, who choose not to stigmatize after role modeling a transition from negative attitudes and behaviors to positive ones, and *negative*, who choose to stigmatize and role model the negative consequences of stigmatization

(based on character types in Rogers et al., 1999). In relation to Goffman's (1963) taxonomy of normals, wise, and stigmatized, positive characters model attitudes and behaviors of the wise (i.e., non-stigmatizing or normalizing), transitional characters model the change from normal (i.e., stigmatizing) to the wise, and negative characters model the maintenance of normal or stigmatizing attitudes and behaviors, and the negative outcomes that ensue from such choices.

Recent stigma reduction campaigns have relied on short narratives featuring only one main character rather than long-term, serial dramatizations in which these three types of characters are shown together. For example, in 2009, the U.S. military created a series of brief video profiles as part of their effort to reduce stigma associated with mental health treatment seeking among military personnel for post-traumatic stress disorder (PTSD). These videos feature one member of the military describing his or her experience with PTSD and the positive personal and professional outcomes of seeking mental health counseling (see www.realwarriors.net/multimedia/profiles.php).

Similarly, though not specified as a stigma reduction effort, both the Alpha-1 Foundation and Alphanet—organizations dedicated to educating and supporting individuals diagnosed with AATD and their families—developed a video presence on YouTube in which persons diagnosed with AATD (known within the AATD community as alphas) describe their experiences with AATD. These videos, which feature one person speaking directly to viewers, generally focus on the individual's diagnostic and treatment experiences (see [www.youtube.com/user/alphaonefoundation? feature=watch](http://www.youtube.com/user/alphaonefoundation?feature=watch)).

Few studies have investigated in detail the processes by which viewers engage with media figures (Tian & Hoffner, 2010). Because of this emphasis on a single individual or character in these brief reduction efforts, it is vital that message designers know which type(s) of

characters most effectively reduce stigma. Likewise, understanding the potentially divergent psychological processes or mechanisms associated with different character types would benefit the design stigma reduction efforts that utilize characters within the context of narrative messages. More broadly, understanding the processes that motivate viewers to engage with different character types will increase researchers' theoretical understanding of character identification within narrative messages. Therefore, this research has both practical and theoretical implications.

To investigate these areas of research, this study draws on theories of stigma communication (model of stigma communication; Smith, 2007, 2011) and behavior change (social cognitive theory, Bandura, 1977, 1986), as well as message development (drama theory, Kincaid 2002), attitude formation (cognitive balance theory, Heider, 1958) and emotion (affective disposition theory, Zillmann & Cantor, 1972).

The literature review will begin by defining stigma, stigma reduction, and the model of stigma communication (Smith, 2007, 2011); after this, stigma will be discussed in the context of genetic illness, with a specific focus on alpha-1. Next, the review will focus on previous stigma reduction campaigns and narrative message design. Theoretical frameworks applicable to narrative message design (social cognitive theory and drama theory) attitude formation (cognitive balance theory) and emotion (affective disposition theory) will then be discussed, followed by a discussion of the relevant concepts under investigation. Hypotheses and research questions will be presented throughout this discussion, and a proposed path model of stigma reduction will be presented at the end of the review.

Chapter 2

Literature Review

Understanding Stigma

According to Goffman (1963), a stigma is “an attribute that is deeply discrediting” that reduces an individual from a “whole and usual person to a tainted, discounted one” (p. 3). Stigma makes a person “not quite human” (Goffman, 1963, p. 5) and ultimately reduces the life chances of a stigmatized person. Stigmas are simplified and standardized in that they are rooted in stereotypes (Goffman, 1963), which are generalized conceptions of specific groups and their members (Ashmore & DelBoca, 1981; Corrigan & Kleinlein, 2005; Smith, 2011) that are widely shared, largely false, and frequently negative (Jones et al., 1984).

The disgrace at the heart of stigma is associated with a taboo, or “prohibition imposed by social custom or as a protective measure” (Smith, 2011; *Webster’s 9th New Collegiate Dictionary*, 1983). According to Colding and Folke (2001), taboos are informal institutions enforced by the community that function socially to distinguish between the profane and sacred, mark power and status, and establish behavioral norms. Thus, stigmas and taboos can be seen as facilitating group functioning, protection, and survival (Smith, 2007, 2011). From this socio-functional perspective, individuals stigmatize others who violate social norms and whose characteristics or actions threaten effective group functioning (Neuberg, Smith, & Asher, 2000; Phelan, Link, & Dovidio, 2008; Smith, 2007; Stangor & Crandall, 2000). For example, Kurzban and Leary (2001) posit that stigma functions specifically in three cognitive adaptations: 1) the avoidance of poor social exchange partners (e.g., cheaters, the resource-deficient), 2) the desire to join cooperative groups, and 3) the avoidance of individuals who may have communicable disease.

Stigma, Prejudice, and Discrimination. Stigma shares many similarities to prejudice and discrimination (Phelan, Link, & Dovidio, 2008; Smith 2007). Allport (1954) conceptualized prejudice as a general, unfavorable attitude toward a group and its members, and discrimination has generally been considered to be the behavioral result of prejudice (Corrigan & Kleinlein, 2005; Crocker, Major, & Steele, 1998). Stigma, prejudice, and discrimination have been used interchangeably in research (e.g. Heatherton, Kleck, Hebl, & Hull, 2000; Herek, 1999), and this overlap prompted Phelan and colleagues (2008) to systematically compare 18 models of prejudice and stigma to discern if meaningful differences exist (the first conceptual comparison of its kind, according to the researchers).

Their resulting socio-functional typology led them to conclude that the functional processes underlying both stigma and prejudice (exploitation/domination or *keeping people down*, norm enforcement or *keeping people in*, and disease avoidance or *keeping people out*) are more similar than different (Phelan, Link, & Dovidio, 2008). As a result, they suggest using the term stigma to refer to the broader processes included in many of the models analyzed (e.g. structural discrimination, mixed interactions), and using the term prejudice to refer to the attitudinal components of the process (Phelan, Link, & Dovidio, 2008).

Stigma, Stigmata, and Stigmatization

However, stigma is not only coalesced with related concepts such as prejudice and discrimination, taboos and stereotypes, but it is also conflated with the concepts stigmata and stigmatization. Understanding these distinctions may have a very practical application to understanding the purpose and design of stigma reduction messages.

Stigmata. The Greek origin of the term stigma refers to signs cut or burnt into the body that visually depict “something unusual and bad about the moral status of the signifier”

(Goffman 1963, p. 1). Such literal signs would alert community members that their bearer was blemished, polluted, and to be avoided. Jones et al. (1984) define such marks as the catalysts for stigmatization: they are “perceived or inferred conditions of deviation from a prototype or norm that might initiate the stigmatization process” (p. 8).

Jones and colleagues (1984) state that these signals can vary in presentation, including visual, behavioral, auditory, affixed, verbal, or non-verbal; a mark itself is not necessarily physical, but can be “embedded in behavior, biography, ancestry, or group membership” (p. 6-7). For example, Corrigan and Kleinlein (2005) describe marks associated with mental illness as including “inappropriate affect, bizarre behavior, language irregularities, and talking to self aloud” (Corrigan & Kleinlein, 2005, p 13). Indeed, researchers refer to individuals as ‘marked’ or ‘unmarked’ to denote potentially stigmatizing conditions (e.g. Link & Cullen, 1986). According to Smith (2007, 2011), such marks are most effective when they are easily recognizable, promote categorization and stereotyping, and evoke emotions such as disgust, fear, or anger, which promote withdrawal from the stigmatized individual (e.g. disgust, fear) or removal of the individual from the group (e.g. anger).

Stigmata and Stigma. Today, the term stigma refers more to the “disgrace itself than to the bodily evidence of it” (Goffman 1963, p. 2). Dudley (1983) echoes this idea by stating that the term stigma applies more to negative social meanings assigned to the attribute or mark rather than the attribute itself. Because Goffman (1963) is often cited in stigma research as defining stigma as a discrediting attribute, stigma has often been conceptualized as a “static attitude” rather than a “constantly changing...social process” (Parker & Aggleton, 2003, p. 14). However, Goffman situates stigma in the context of relationships: “It should be seen that a language of

relationships, not attributes, is really needed” because an attribute is “neither creditable nor discreditable as a thing in itself” (1963, p. 3).

Thus, Parker and Aggleton (2003) argue that Goffman is concerned with “issues of social change and the social construction of individual realities”; accordingly, they assess Goffman’s work as suggesting that stigma “devalues relationships rather than being a fixed attribute” (p. 14). Herek and Glunt (1988) also define stigma as a mark of shame or discredit, but point out that “the focus of social psychological research on stigma is not on the mark itself, however, so much as on the social relationships in which a particular mark is defined as shameful or discrediting” (p. 886). Similarly, Dudley (1983) points to societal norms and values, as transmitted by “people, organizations, and institutions” (p. 48) as the origins of stigma.

From this, it is evident that stigmas are not simply marks (i.e., stigmata) but are social constructions based on such marks—stigmas are multifaceted, complex social phenomenon: a “socialized, simplified, standardized image of the disgrace of a particular social group” (Smith, 2011, p. 455) that is “held in common by a community at large” (Smith, 2007, p. 464). Stigmas represent “a dialectic between social reality and individual experience” mediated by language, expressed within community, and shaped and recorded as history (Berger & Luckmann, 1966; Sharf & Vanderford, 2003, p. 10). Stigmas must be communicated among members of society (Goffman, 1963; Smith, 2007) in order for community members to recognize stigmata and respond with the consequent devaluation and discrimination (Link et al., 1989; Smith, 2007, 2011).

Stigmatization. Goffman (1963) detailed the “socialization process” of a stigmatized person’s “moral career” (pp. 32-40) by saying that a “particular stigma” can have a “natural history” itself (p. 32), including the “origins, spread, and the decline of the capacity of an

attribute to serve as a stigma in a particular society” (p.32). Thus, within Goffman’s (1963) conception of stigma is its social construction over time. In this “socialization process” or “moral career” (p. 32), Goffman (1963) says a person 1) learns and integrates what society believes about having a particular stigma and then 2) upon learning s/he has a particular stigma, also learns the consequences of possessing such a stigma.

Similarly, Smith (2007) defines stigmatization as a process that involves “the (a) recognition of a person’s categorization into a group based on a distinguishing characteristic, or mark, and (b) the subsequent devaluation of the marked person” (p. 466). Put differently, the process of stigmatization is based on the categorization of ‘signals’ (Corrigan & Kleinlein, 2005) or ‘marks’ (Jones et al., 1984; Smith, 2007, 2011) that alert individuals that a deviation from a social norm has occurred. This categorization leads to prejudice, or an agreement with stereotypic beliefs about a group (accompanied by a negative emotional reaction, e.g. anger or fear), which leads to discrimination, the behavior response to prejudice Corrigan and Kleinlein (2005). Such categorization and stereotyping also lead to the perception of group entitativity (i.e. the notion that such a group, as a cohesive, unified whole, exists in society), and this perception has been shown to facilitate labeling, an integral part of the stigmatization process (Link et al., 1989; Smith, 2007, 2011).

Stigmata, Stigma, and Stigmatization Defined. Thus, for the purposes of this research, stigmata are conceptually defined as the marks that depict “something unusual and bad about the moral status of the signifier” (Goffman 1963, p. 1); stigmas encompass the social disgrace attributed to such marks that are communicated and held in common among members of society (Dudley, 1983; Goffman, 1963; Smith, 2007, 2011); and stigmatization is the process of categorization/stereotyping individuals and groups (Corrigan and Kleinlein, 2005), developing

negative attitudes and emotional responses such as fear, anger, and disgust (Haidt, McCauley, & Rozin, 1994), and enacting discriminatory behaviors as a result (Link et al., 1989).

Model of Stigma Communication

In light of these social processes inherent in stigma and stigmatization, Smith (2007, 2011) argues that stigma must not only be communicated among societal members, but in such communication, four content cues must be present in order for stigmatization to take place: *marks* (cues that induce recognition and suggest social response, e.g. social distancing), *labels* (categorize, bring attention to a group's stigma, and differentiate them from normal members of society), *responsibility* (perceptions of choice or control), and *peril* (the danger posed by the stigmatized group). Such messages shared among community members elicit emotional responses (e.g. fear, anger, disgust), motivate people to strengthen stigma attitudes, and encourage the removal of stigmatized threats (Smith, 2007, 2011).

It is this stigmatization process—associated with such conditions as mental, infectious, and genetic illness—that researchers have been attempting to diminish through various types of stigmatization reduction campaigns. Though stigmatization reduction strategies have grown up around mental illness and infectious diseases such as HIV/AIDS, leprosy, and TB, there exists significant stigma regarding genetic illness (Jenerette & Brewer, 2010). However, attempts to reduce stigmatization associated with genetic illness are limited. Therefore, this research seeks to explore stigma related to genetic illness in an attempt to reduce such stigmatization, particularly stigmatization that may be associated with alpha-1 antitrypsin deficiency (AATD), a genetic disorder affecting the lungs and/or liver.

Stigma and Genetic Illness

At the center of stigma associated with genetic illness is the concept of genetic essentialism, or the tendency to infer an individual's character traits or behavior from his or her genetic makeup (Dar-Nimrod & Heine, 2011). According to Haslam (2011), essentialist thinking promulgates "division, segregation, and separation" (p. 819), and is associated with an increase in stereotypic attitudes about social groups (Haslam et al., 2006).

Dar-Nimrod and Heine (2011) list four specific possible outcomes of genetic essentialism: 1) conditions may be seen as immutable and determined due to fixed genetic processes beyond people's control; 2) people may devalue environmental or experiential factors related to a particular condition; 3) people may view group members who share similar genetic foundations as being homogenous and discrete; and 4) people may view the outcomes of conditions as natural and derive ethical characteristics (i.e. good/bad, right/wrong) from such natural characteristics. Dar-Nimrod and Heine (2011) go on to say that such genetic essentialist biases can be "conducive to stereotyping and discrimination" (p. 803) and may shape individuals' views regarding such historically stigmatized conditions as mental illness, obesity, and sexual orientation. Indeed, such views can shape individuals' self-stigmatizing views as well, even in the application of stigmatizing labels (Link et al., 1989; Smith 2007); for example, MacBrayer (2007) titled her autoethnographic account of testing positive for the BRAC1 genetic mutation, "My Life as a Mutant: The BRAC1 Experience."

Research regarding stigma and the genetic etiology of illness has provided complex results. Haslam (2011) points to numerous studies that show a positive correlation between genetic explanations of psychiatric illness and increased social distance (e.g. Bag, Yilmaz, & Kirpinar, 2006; Dietrich et al., 2004), perceived dangerousness (e.g. Bennett, Thirlaway, &

Murry, 2008; Walker & Read, 2002), and pessimism (i.e. the condition is difficult to remedy or treat)(e.g. Lam & Salkovis, 2007). Dietrich, Matschinger, and Angermeyer (2006) also found that attributing the cause of schizophrenia to genetic foundations produced greater fear and desire for social distance. However, Breheny (2007) did not find a significant effect for the attribution of genetic etiology to illness on desired social distance; however, it was found that the type of illness influenced this desire, with respondents reporting greater desire for social distance from an individual diagnosed with mental illness (major depressive disorder and schizophrenia) than physical illness (skin cancer).

One of the few stigma domains not showing a consistent positive correlation between genetics and psychiatric illness is blame/responsibility. For example, Phelan, Cruz-Rojas, and Reiff (2002) found that people were less likely to blame individuals diagnosed with schizophrenia if the condition had a genetic etiology; nevertheless, people were also less likely to believe that the condition could be effectively improved. Similarly, Persky and Eccleston (2011) found that, for medical students, a genetic etiology of obesity showed a slight attenuation of weight stigma toward obese patients (i.e. stigma-related attitudes), but it also led to a reduction in health behavior screening recommendations for such patients. In another study of genetic causes of schizophrenia, Phelan (2005) found that some respondents reported both a decrease in blame and an increase in associative or courtesy stigma.

Additionally, families of persons with genetic illnesses may be particularly vulnerable to courtesy stigma (Goffman, 1963). For example, mothers of children with sickle cell disease in Kenya described feeling stigmatized as a result of having a child with the genetic condition and suffered from blame and discrimination (Marsh, Kamuya, & Molyneux, 2011). Likewise, Phelan, Cruz-Rojas, and Reiff (2002) found that people were more likely to believe family

members of persons diagnosed with schizophrenia would have a similar mental illness. Such findings of courtesy stigma have been consistent for many conditions with genetic explanations, including bipolar disorder (Meiser et al., 2007), schizophrenia (Bennett et al., 2008), Huntington's Disease (Wexler, 2010), and alpha-1 antitrypsin deficiency (Klitzman, 2010).

Characteristics of Alpha-1Antitrypsin Deficiency

Alpha-1 antitrypsin deficiency (AATD) is a genetic disorder characterized by an insufficient amount of serum AAT, a plasma protein that protects the lungs from damage, in the blood. First discovered in Sweden in 1963 among patients with emphysema (Laurell & Eriksson, 1963), AATD was also shown to have an association with liver disease by researchers in the U.S. (Sharp et al., 1969). By itself, AATD is not a disease; however, this condition—in conjunction with environmental factors, such as smoking (Tanash, Nilsson, Nilsson, & Piitulainen, 2010)—predisposes individuals to chronic obstructive airway diseases and chronic liver diseases (Anonymous, 2003).

The name AATD may be misleading, because it seems to indicate that a deficient amount of the AAT protein is created in the body; on the contrary, the liver of an individual with AATD makes large amounts of an abnormal form of AAT protein, 85% of which gets trapped in the liver instead of being released into the blood (alpha-1foundation.org). In individuals who do not have AATD, an adequate amount of a normal form of AAT is created in the liver and then released into the blood, which carries the AAT protein to other organs, particularly the lungs, and protects them from damage. Because the abnormal AAT protein is not being released into the blood of individuals with AATD, such individuals have a deficient amount of AAT protein in their blood, and therefore, their lungs are more susceptible to damage from cigarette smoke and

other air pollutants than those who do not have AATD. As a result of the build-up of AAT protein, the liver is also more susceptible to scarring and damage (alpha-1foundation.org).

Epidemiological studies indicate that an AAT serum level of 35% of the average normal level is the threshold above which the lungs are protected from damage. Isoelectric focusing, the technique used to diagnose AATD, can identify normal and deficient AAT alleles, of which more than 30 genetic variants can lead to deficient levels of AAT. These alleles are arranged in what has been designated as the protease inhibitor (PI) system and are assigned a letter code (A to Z). The AAT protein phenotype is described based on this letter code—referred to as the PI phenotype. The most common allele is M, and most people have the PI*MM phenotype, which indicates normal AAT levels (Anonymous, 2003). The most frequent deficient alleles are S and Z. The Z variant encodes AAT levels below the 35% protective threshold, and individuals with the PI*ZZ phenotype—the most severe form of AATD—have AAT levels at about 15% of the normal plasma concentration. These individuals are at the greatest risk for developing AATD-associated lung disease. Other frequent phenotypes are PI*SZ, PI*MS, and PI*MZ, all of which are at increased risk for developing AATD-associated diseases, but are less likely to manifest lung or liver symptoms than those with two Z alleles (alpha-1foundation.org; Anonymous, 2003).

AATD has been described as both an under-recognized (Stoller et al., 2005) yet common (Anonymous, 2003) genetic disorder, a discrepancy likely due to the problematic diagnostic process surrounding AATD (Sandhaus, 2010). Because the presentation of AATD-related symptoms mimics other lung and liver-related conditions, there often exist several years of delay between onset of symptoms and an AATD diagnosis (Stoller et al., 2005). Though AATD has been identified in nearly all populations and ethnic groups (alpha-1foundation.org), the

prevalence of AATD also varies widely depending on the population under study. Also, because AATD-related symptoms do not generally manifest until the third or fourth decade of life, or may never manifest, researchers estimate that thousands of individuals have AATD but have never been diagnosed. For example, in the U.S., researchers suggest that up to 95% of individuals who have AATD—an estimated 80,000 to 100,000 people—are undiagnosed and/or not manifesting symptoms (Anonymous, 2003). According to the Alpha-1 Foundation's website, about 1 in every 2,500 Americans has AATD, and an estimated 19 million have one normal and one deficient allele (e.g., PI*MZ), which could be passed on to children (alpha-1foundation.org). Based on these estimates, researchers consider AATD to be as common a genetic disorder as cystic fibrosis (Anonymous, 2003).

AATD-associated pulmonary diseases. AATD-related lung pulmonary diseases are more prevalent than liver diseases (Anonymous, 2003), and the most common signs and symptoms of AATD are shortness of breath, wheezing, chronic cough and phlegm production (i.e., chronic bronchitis), recurrent chest colds, bronchiectasis, non-responsive asthma, and year-round allergies. Individuals with AATD may also experience decreased exercise tolerance as a result of these symptoms (alpha-1foundation.org). For individuals with AATD, early detection allows for the avoidance of risk factors, such as cigarette smoking, second-hand smoke, and air pollutants, which can contribute to the development of pulmonary diseases such as chronic obstruction pulmonary disease (COPD) (alpha-1foundation.org).

For example, a study conducted by Tanash and colleagues (2010) revealed that PI*ZZ individuals who never smoked and had been identified by screening did not have a higher mortality rate than the general population of Sweden, where the study was conducted. Conversely, smokers with severe AATD, regardless of mode of AATD identification, had a

significantly higher mortality rate than Sweden's general population; these findings make early AATD detection vital to implementing protective measures, such as smoking cessation (Tanash et al., 2010).

AATD-associated liver diseases. AATD-associated liver diseases are less common than AATD-associated pulmonary diseases, and they present in two forms: neonatal and adult onset liver disease (Anonymous, 2003). AATD is the fourth leading cause of liver transplantation in children in the U.S. (Teckman, 2007). An estimated 1 in 20 infants born with ZZ or SZ alleles will develop liver disease in the first year of life; in severe cases, liver transplantation may be necessary, but in most cases, the liver disease improves by itself and the children remain healthy into their teens and adulthood (alpha-1foundation.org). Adults with AATD have an increased risk of developing cirrhosis and hepatocellular carcinoma, with the greatest risk being to males over age 50 (Anonymous, 2003). Adults diagnosed with AATD have a 30-40% chance of developing liver problems, including cirrhosis and liver cancer (alpha-1foundation.org).

Signs and symptoms of liver-related AATD include jaundice (i.e., whites of eyes and skin turning yellow), swelling of the abdomen or legs, vomiting blood, or unexplained liver problems or elevated liver enzymes (alpha-1foundation.org).

Diagnosis and treatment for AATD. Because AATD signs and symptoms mirror those of other disorders, AATD is often misdiagnosed and treated as asthma or COPD or other liver diseases. It is estimated that up to 3% of people diagnosed with COPD have undiagnosed AATD (alpha-1foundation.org). AATD cannot be diagnosed via medical examination; it must be diagnosed with a blood test. However the time period between symptom-onset and diagnosis has been shown to be as much as 5.6 to 8.5 years (Stoller et al., 2005), which diminishes the benefits of risk factor avoidance afforded by early detection. And some patients may not be diagnosed at

all. For example, national surveys conducted by the National Emphysema/COPD Association revealed that only 4% of patient respondents reported having been tested for AATD (Rozenbaum, 2008).

Treatment for AATD focuses on the prevention of health problems and diseases related to AATD. These include hepatitis A and B vaccinations; regular blood test and medical exams; avoidance of alcohol, tobacco, and air pollutants; and eating a balanced diet and maintaining a healthy weight. In more advanced cases of AATD, liver transplantation or resection may be necessary or, for lung-related AATD, augmentation therapy, which is the administration of AAT protein via needle into a vein (alpha-1foundation.org).

Alpha-1 Antitrypsin Deficiency and Stigma

According to the Alpha-1 Foundation, post-diagnosis stigma may be a significant societal issue that can impinge on the quality of life experienced by persons with AATD (alpha-1foundation.org). According to the model of stigma communication (Smith, 2007, 2011), this stigma could be related to the marks associated with AATD (e.g., wheezing, hacking cough, or jaundice), labels associated with AATD (e.g., persons diagnosed with AATD have labeled themselves as alphas, or they may be labeled by the general population as genetic mutants), responsibility assumed to be associated with the pulmonary or liver diseases that result from AATD (e.g., blame ascribed to smoking that causes emphysema or lung cancer, and alcoholism that causes cirrhosis or liver cancer), and perceived danger posed by an individual with AATD (e.g., either as a genetic carrier of an incurable disorder or as contagious, depending on a person's understanding of genetic illness).

Because relatively few people in the general population have heard of AATD, there exists an important opportunity to influence whether or not a stigma emerges specifically regarding

AATD. However, stigma may already exist concerning COPD, a pulmonary disease related to AATD. According to a 2007 *New York Times* article, “[Experts] say that chronic lung disease is misdiagnosed, neglected, improperly treated, and stigmatized as self-induced, with patients made to feel they barely deserve help, because they smoked. The disease is mired in a bog of misconception and prejudice” (Grady, 2007). Nevertheless, because attribution of blame and responsibility is one of the few stigma domains decreased by the genetic etiology of an illness (Persky & Eccleston, 2011; Phelan, Cruz-Rojas, & Reiff, 2002), it is possible that the genetic etiology of AATD-related pulmonary diseases may decrease stigma already associated with such diseases as COPD.

To date, there have been no known efforts to explore or reduce post-diagnosis stigmatization associated with AATD. This research will be the first to explore and attempt to reduce stigmatization associated with AATD, specifically in regard to lung symptoms. Though individuals with AATD-associated lung diseases rarely present before the third decade of life (Anonymous, 2003), this research focuses on the experiences of young adults presenting with AATD-related lung symptoms. Adolescents and young adults, though rare, do present with significant liver and lung-related disease symptoms (e.g., Piitulainen & Sveger, 2012), and these can be fatal (e.g., Wagener, Sobonya, Taussig, & Lemen, 1983). Because AATD has characteristics of stigmatized conditions—genetic etiology (Haslam, 2011) and marks associated with COPD (Rozenbaum, 2008)—AATD presents important practical and theoretical bases for attempting to reduce AATD-associated stigma in a young adult population.

Characteristics of Stigmatization Reduction Efforts

Previous efforts to reduce stigmatization associated with illness have primarily focused on mental illness, particularly schizophrenia, (e.g., Alvidrez, Snowden, Rao, & Boccellari, 2009;

Chan, Mak, & Law, 2009, Kingdon, Vincent, Vincent, Kinoshita, & Turkington, 2008; Luty, Rao, Rajagopal-Arokiadass, Maducolil-Easow, & Sarkhel, 2008) and HIV/AIDS (for a review, see Brown, Macintyre, & Trujillo, 2003 and Sengupta, Banks, Jonas, Shandor-Miles, & Corbie-Smith, 2011); however, a growing body of research is expanding to include such conditions as obesity (Turner, Wildschut, & Sedikides, 2012), eating disorders (Crisafulli & Thompson-Brenner, 2010), epilepsy (Birbeck, 2006), and obsessive compulsive disorder (Gherman, Predescu, Iftene, & Achimaş-Cadariu, 2008).

These efforts to reduce stigmatization have taken myriad forms, including the creation of written educational materials (e.g., Alvidrez et al., 2009), longitudinal community participation interventions (e.g., Apinundecha, Laohasiriwong, Cameron, & Lim, 2007), group meetings (e.g., Macinnes & Lewis, 2008), training programs (Arkar & Eker, 1997), serial radio dramas (e.g., Rimal & Creel, 2008; Smith, Downs, & Witte, 2007), national mass media campaigns (e.g., Rosen, Walter, Casey, & Hocking, 2000), brief audio simulations (Brown, 2010a, 2010b), and school intervention programs (e.g., Conrad et al., 2009; Watson et al., 2004).

These approaches differ widely in terms of target audience, audience reach, duration, approach, and the construct or component of stigma being reduced. They also differ in the operationalizations of stigmatization being employed in the reduction efforts (for a review of measurement of mental illness stigma, see Link, Yang, Phelan, & Collins, 2004). Three operationalizations of stigmatization used with general populations that are relevant to this research are desire for social distance, emotional response, and attitude toward stigmatized individuals or groups.

Operationalizations of Stigmatization in Reduction Campaigns

Social Distance. An extensively used operationalization of stigmatization has been social distance: an individual's desired physical proximity to a stigmatized person (Yang, Link, & Phelan, 2008) or the willingness of individuals to relate, in varying degrees of intimacy, to others with a devalued social identity (Breheny, 2007). For example, people maintain greater physical distance from stigmatized persons than non-stigmatized persons (Smith, 2007); Rozin and colleagues (1994) found that individuals reported an unwillingness to wear the sweater, sleep in the bed, or drive the car of a person living with HIV; and Link et al. (1989) found that the more that persons diagnosed with mental illness feared stigmatization and social rejection, the more they endorsed keeping their condition a secret and withdrawing from social interactions, thereby compromising their social support.

Measuring social distance originated with the Chicago School of Sociology in early efforts to understand the ecology of urban environments where ethnic/racial groups vied for space; subsequently, Cumming and Cumming first used social distance to measure mental illness stigma in 1957, and variations of this measure have been used ever since (Yang, Link, & Phelan, 2008). According to Link and colleagues (2004), social desirability scales often show "excellent internal-consistency reliability, ranging from .75 to greater than .90" (p. 519), with items that ask respondents to assess their willingness to be near a stigmatized individual. A limitation of such scales, however, is social desirability bias, in which respondents might provide less distancing responses in an effort to not appear sadistic or heartless (Link et al., 2004; Yang, Link, & Phelan, 2008).

Emotional response. According to Yang, Link, and Phelan (2008), emotional response to a stigmatized individual or group is somewhat underrepresented in previous

operationalizations of stigmatization. These emotional responses often include anger, disgust, contempt, and fear (Smith 2007, 2011). Angermeyer and Matschinger (1996) developed a measure to assess the affective experiences of stigmatizing persons and found that responses tended to cluster in aggressive emotions (e.g., anger), prosocial reactions (e.g., sympathy), and anxiety (e.g., uneasiness). These responses are important, because such emotions can shape subsequent behavior toward a stigmatized person or group (Cottrell & Neuberg, 2005; Yang, Link, & Phelan, 2008). According to Smith (2007), disgust, fear, and anger motivate community members to remove a social threat, thereby making such emotional responses to stigmata directly related to an increased desire for social distance from stigmatized individuals or groups.

Attitude. Attitude has been defined as “a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object” (Fishbein & Ajzen, 1975, p. 6), a positive or negative evaluation of people, events, or ideas (Eagley & Chaiken, 1993). In regard to stigmatization, attitude is often aligned with the notion of prejudice, or the agreement with the negative beliefs/stereotypes about a group (Corrigan & Kleinlein, 2005). For example, it has been demonstrated that persons diagnosed with a mental illness are often evaluated as being more dangerous than those without mental illness (Link et al., 1989), and persons who are overweight are often perceived as socially inept, lazy, or stupid (Turner, Wildschut, & Sedikides, 2012).

Such attitudes have been found to be based on the stereotypes surrounding the marks or stigmata of a particular condition (Corrigan & Kleinlein, 2005), on the labels applied to particular groups or conditions (Link et al., 1989), and on affect toward members of a stigmatized group (Zanna & Rempel, 1988). Indeed, Smith (2007) posits that emotional responses such as fear, anger, and disgust can motivate individuals to elaborate on messages that

highlight the danger or threat posed by a particular group, and this elaboration can “encourage formed or activated beliefs to become even more accessible attitudes” (p. 473). In turn, these cognitive and affective responses lead to discrimination—specific behavior reactions or action tendencies—including the desire for greater social distance (Corrigan & Kleinlein, 2005; Link et al., 1989; Smith, 2007).

Protest, Education, and Contact Campaigns

Irrespective of the variability among the approaches of stigma reduction campaigns and their operationalizations of stigmatization, the vast majority of stigma reduction campaigns fall into one of three overarching categories as described previously: protest (e.g., Corrigan et al., 2001; Wahl, 1995), education (e.g., Held, 1993; Uwakwe, 2000; Watson et al., 2004), and contact campaigns (for reviews, see Couture & Penn, 2003; Kolodziej & Johnson, 1996).

According to Couture and Penn (2003), contact campaigns, which attempt to dispel negative or erroneous beliefs about a stigmatized group by placing people in direct or indirect personal contact with members of the stigmatized group, appear to be “the most promising strategy” (p. 293). Direct contact campaigns place people in naturalistic, face-to-face connection with members of a stigmatized group. For example, Link and Cullen (1986) found that when people came in contact with persons diagnosed with mental illness, fear and perceptions of dangerousness diminished. In another example, Yau and colleagues’ (2011) examined a stigma reduction campaign called, “Put Up Your New Glasses,” which included a three-hour eco-tour led by recovering mental health patients. They found that the eco-tour significantly reduced negative attitudes and increased help-seeking behaviors at both post-test and a one-month follow-up.

Indirect contact campaigns use media, generally videotaped presentations, to show members of a stigmatized group sharing their experiences having the stigmatized condition (e.g., Reinke, Corrigan, Leonhard, Lundin, & Kubiak, 2004). These indirect campaigns have also utilized entertainment films that offer an empathic depiction of members of a stigmatized group. For example, in an attempt to reduce mental illness stigma, Ritterfeld and Jin (2006) showed experiment participants the film *Angel Baby*, which accurately and empathically depicts a woman diagnosed with schizophrenia; the film was followed by educational trailers that discussed schizophrenia from the perspective of either a person diagnosed with schizophrenia or a doctor. Similarly, Penn and colleagues (2003), in their examination of the effects of a documentary film about schizophrenia entitled, *I'm Still Here*, found that participants who viewed the film desired less social distance, had less negative emotions, and viewed mentally ill persons as less dangerous than other participants did.

Other stigma reduction efforts have combined direct and indirect contact. For example, two studies (Rusch, 2008; Wood & Wahl, 2006) examined the effect of the intervention *In Our Own Voice* (IOOV), a stigma reduction program of the National Alliance on Mental Illness. The program includes an 11-minute video and face-to-face presentation by two mental health consumers (total time approximately 50 minutes). Wood and Wahl (2006) found that knowledge acquisition increased after participants viewed *IOOV*, as well as positive attitudes toward mental illness and less desire for social distance. Rusch and colleagues (2008) sought to extend Wood and Wahl's (2006) study by investigating *IOOV*'s effect on specific mental illnesses (unipolar depression, bipolar disorder, schizophrenia, and mental illness in general). In their study, *IOOV* was found to be effective in reducing stigma, except for schizophrenia.

Vignette Studies

One of the most common methods of stigma research is the vignette study, in which participants are exposed to a brief vignette describing a stigmatized person and his/her condition. This approach was pioneered by Star (1955) in a nationwide survey of attitudes toward mental illness in the U.S., and in 1963, Phillips was the first to couple a manipulation of Star's vignettes with an experimental design (Yang, Link, & Phelan, 2008). Since then, researchers have modified other aspects of vignettes—symptoms, behaviors, labels, causal attributions—and combined them with the experimental method (Yang, Link, & Phelan, 2008).

According to Link and colleagues (2004), vignettes have maintained a prominent position in stigma research for several reasons: Vignettes are a more elaborate form of stimuli that respondents can react to; following vignettes, many kinds of measures can be applied; and vignettes allow for random assignment, which allows for the experimental method to be employed. Vignettes also afford researchers flexibility, because they can construct the stimuli to test specific attributes of stigma processes (Yang, Link, & Phelan, 2008).

A potential limitation, however, of vignettes is their length. Because vignettes tend to be an extremely brief form of stimulus, they do not allow for the persuasive impact that longer, more narrative-based stimuli afford. For example, the MacArthur Mental Health Module of the 1996 General Social Survey included four *DSM-IV* vignettes that depicted a man named John as having alcoholism, major depression, schizophrenia, or cocaine abuse, along with a fifth vignette that portrayed John as a troubled person without criteria for mental disorder to serve as a point of comparison (Link et al., 2004). These vignettes, whose full text is available in a study by Link, Phelan, Bresnahan, Stueve, and Pescosolido (1999), range in length from 99 to 149 words, with an average length of 120 words.

Similarly, Breheny (2007) conducted an experimental vignette study to test the influence that genetic etiology had on participants' willingness to interact with a person named Jamie who was depicted as being diagnosed with genetic or non-genetic schizophrenia, major depressive disorder, or skin cancer. The study utilized vignettes ranging in length from 153 to 179 words (see full text of vignettes in Breheny, 2007). Though these brief vignettes allow for an elaborate portrayal of a particular diagnosis, they do not provide sufficient space for the unfolding of narrative stages that could draw participants into the depiction and lead to more substantive affective, attitude, and behavior changes.

Narrative Structure and Drama Theory Defined

According to Schank and Berman (2002), a narrative is a “structured, coherent retelling of an experience or a fictional account of an experience” (p. 288). Hinyard and Kreuter (2007) define a narrative as a story with “an identifiable beginning, middle, and end that provides information about scene, characters, and conflict; raises unanswered questions or unresolved conflict; and provides resolution (p. 778). Similarly, Sandelowski (1991) points to the Western audience's structural preference for narratives to have a beginning, middle, and end that are associated in a meaningful way. This preference may be associated with the notion that stories are often used in regard to meaning making (i.e. making sense of life events) and goal achievement (Schank & Abelson, 1995). Indeed, Schank & Abelson (1995) posit that people are “hardwired” to attend to information presented in narrative formats, making them a potentially effective means of attempting to reduce stigma. Two of the most commonly applied theories in regard to narrative forms of stigma reduction are drama theory (Kincaid, 2002) and social cognitive theory (SCT) (Bandura, 1986).

According to Kincaid (2002), the purpose of drama theory is to explain what makes drama effective and how an effective drama impacts audience behavior, as well as how emotion depicted within a narrative leads to character change and, ultimately, changes in the audience members. Structurally, a narrative text includes elements of drama, including characters, particularly a protagonist and antagonist, a conflict or crisis, and some kind of resolution, whether that resolution be a positive or negative outcome (Kincaid, 2002). As central elements of dramatic structure, Brockmeier and Harre (1997) specifically emphasize character and chronology—the change over time resulting from actions taken by the characters. For a story to be structurally “satisfying,” it will include “themes, goals, plans, expectations, expectation failures (or obstacles), and...explanations or solutions” (Schank & Berman, 2002, p. 288), including an overall point or reason for being told.

According to Kincaid (2002), dramatic force occurs when the protagonist and antagonist cross paths and confront one another. An effective drama builds toward this confrontation through exposition or scene setting (i.e., setting and characters, including their goals and motives, are introduced) and narrative build up, until the characters confront each other and overcome the threat they pose to each other (Kincaid, 2002). Dramatic tension rises during this climactic portion of the narrative, and then a resolution is achieved.

However, drama theory was developed to “explain real human behavior, not what occurs in a fictitious drama” (Kincaid, 2002, p. 139), including “international confrontation, the cooperative behavior of organizations, [and] marital relations” (p. 140). At the core of drama theory is the notion that emotion can change social relationships, and by observing such changes in a dramatic narrative, audience members may make similar changes, as well (Kincaid, 2002).

Schank and Berman (2002) list several factors that determine the extent to which a narrative will influence the mental representations, emotions, or beliefs of a reader/viewer (i.e. persuade). These include interest/caring (a motivation to attend to the narrative), frame of reference (similar experiences in background or memory to which to relate the narrative), and timing (the narrative is experienced at a critical moment in regard to the goals of the reader/viewer) (e.g. McFerran, Dahl, Gorn, & Honea, 2010).

According to Kincaid (2002), elements that make a drama effective (i.e., keep the audience emotionally involved and produce change in audience members) include uncertainty, defined as the balance between two equally plausible outcomes—a hoped for outcome and a feared outcome; anticipation, which creates suspense; the depiction of an intense desire in the protagonist to pursue and get what s/he wants; the revelation of complex inner emotions in the protagonist; and, ultimately, character change, which Kincaid calls “the essence of drama” (p. 138). All of these elements encourage active audience participation and character identification, making for an effective dramatic presentation that elicits story-relevant attitude and behavior change in the audience.

Social Cognitive Theory and Narratives

The use of narratives in stigma reduction campaigns—in particular entertainment-education (Singhal & Rogers, 1999), which embeds accurate health information within the context of entertaining storylines—has been predicated upon the utilization of role modeling as guided by Bandura’s social cognitive theory (SCT, 1977, 1986), which emphasizes the effect of vicarious experience on audience behavior as well as perceived self-efficacy (i.e., the perception that one can successfully execute a particular behavior).

According to SCT (Bandura, 1977), upon viewing role models, either in a naturalistic or mediated setting, successfully executing a behavior, individuals experience increased self-efficacy, which leads to the actual execution of the behavior. Thus, models convey “knowledge, values, cognitive skills, and new styles of behavior” to individuals (Bandura, 2004, p. 78), thereby increasing their belief that they can also follow the example set by the model.

However, not all observed behaviors are imitated. According to SCT (Bandura, 1986), four cognitive processes must be operating in order for imitation to occur: attention, retention, production, and motivation. As a motivation for behavior completion, the depiction of positive outcome expectancies is recommended—the belief that a given behavior will lead to a certain positive outcome. When the behavior is modeled and positive outcomes are depicted, individuals viewing the model will be more likely to believe they can successfully execute the behavior themselves and achieve similar outcomes (Bandura, 1977). However, if a model experiences negative consequences or punishment for a particular behavior, then motivation to enact the behavior will be reduced (Bandura, 2004).

In this regard, all three types of characters—positive, transitional, and negative—could lead to reduced stigmatization in the context of a narrative stigma reduction campaign. Because positive outcome expectancies are associated with positive and transitional characters, viewers may be motivated to enact non-stigmatizing behaviors; similarly, because negative outcome expectancies are associated with the negative character, viewers may experience reduced motivation to enact stigmatizing behaviors. According to Chory-Assad and Cicchirillo (2005), characters with whom viewers identify may serve as measures of viewers’ evaluations of themselves, which in turn influences their motivations to set and accomplish the modeled

behaviors; therefore, character identification (Cohen, 2001), is a key component associated with SCT.

Narrative stigma reduction campaigns draw heavily on SCT by using role models for enacting new behaviors and creating attitude accessibility (Hinyard & Kreuter 2007). For example, Rogers and colleagues (1999) investigated the effectiveness of a dramatic radio soap opera *Twende na Wakati (Let's Go with the Times)*, which was broadcast in Tanzania for the purpose of influencing family-planning decisions. After exposure to the radio drama, listeners could discern the differences among positive, transitional, and negative role models who were portrayed in the program (Hinyard & Kreuter, 2007; Rogers et al., 1999).

Listeners identified more with positive role models than transitional and negative models. This identification increased from year to year as the program was broadcast; many listeners indicated initial identification with the negative role model, but this decreased over time and disappeared by 1997 (Rogers et al., 1999).

As tangible evidence that *Twende na Wakati* produced vicarious behavior experiences through role modeling, increased self efficacy, and positive outcome expectancies, Rogers and colleagues (1999) note that more than 200 letters were sent to Radio Tanzania, and these letters indicated that listeners acquired new knowledge about family planning, experienced heightened self-efficacy, and adopted behaviors demonstrated in the soap opera. According to Rogers et al. (1999), these outcomes were directly related to the positive, transitional, and negative role models featured in the soap opera.

Cognitive Balance Theory, Narratives, and Attitudes

As seen in the above example (Rogers et al., 1999), narrative messages can change attitudes and motivate positive health behaviors, including treatment seeking and adherence

(Green, 2006), and they can reduce counterarguments to messages embedded within the text of the story—effects that have been shown to be persistent and even increase over time (Appel & Richter, 2007).

Because behavior change is often the end goal of health communications (e.g. uptake of preventative behaviors, treatment adherence), it is critical that health messages create strong attitudes that can lead to such behaviors (Green, 2006). According to Green (2006), narrative structure itself can enhance attitude strength: because narratives have a chronological, causal structure, readers/viewers are likely to remember more of the message due to the interrelationship (i.e. cause-and-effect) of elements in the story. Because an attribute of strong attitudes is high accessibility (Petty & Krosniak, 1995), this ability of narrative formats to enhance recall can help to strengthen attitudes (Green, 2006).

Cognitive balance theory (Heider, 1958), a motivational theory of attitude change, relates to narrative structure and attitude development, particularly in regard to the present research and its focus on character type. According to balance theory (Heider, 1958), individuals seek to maintain psychological balance in their liking relationships, and this has been demonstrated through a multiplicative system of affective valence. For example, if Person A likes Person B, and Person B likes Object C, but Person A dislikes Object C, then Person A, to maintain a balanced psychological system, must make one of two choices: 1) Person A may choose to no longer like Person B to continue to dislike Object C, or 2) Person A may choose to like Object C in order to continue liking Person B.

In regard to narratives, attitude, and stigma reduction, balance theory (Heider, 1958) can be applied to viewers' liking or disliking of normal and wise characters (Goffman, 1963) who choose to either stigmatize or not stigmatize (i.e., normalize) characters with stigmatized

conditions. For example, if individuals, after reading a brief stigmatization-reduction narrative, like the positive or transitional protagonists who chose not to stigmatize a character diagnosed with AATD, but do not like the character diagnosed with AATD, these individuals are also posed with two choices: They can either discontinue liking the protagonist, possibly leading to the application of a courtesy stigma to the protagonist (Goffman, 1963), or they can decide to like the character diagnosed with AATD, possibly leading to the reduced stigmatization of that character.

Because balance theory (Heider, 1958) asserts that individuals desire to maintain psychological balance in regard to these interpersonal systems, the types of characters portrayed in narrative stigma-reduction campaigns are critical. Not only can these character types influence whether or not audiences will like or dislike those characters, but within the context of narrative messages, strong attitudes can be created that will either reinforce or reduce stigmatization.

Affective Disposition Theory and Character Type

According to affective disposition theory (ADT) (Zillmann & Cantor, 1972), individuals are moral monitors who are constantly observing and assessing the morality of media characters. Characters deemed to be moral or good will be liked or looked upon more favorably than characters deemed to be immoral or bad. Once such attitudes have been formed, individuals anticipate outcomes for these characters: success and happiness for moral characters and failure or deserved punishment for immoral characters. When these anticipated outcomes occur, individuals experience relief and enjoyment. Thus, a primary factor in the enjoyment of narrative media, according to ADT, is the moral evaluation of characters' motivations and behaviors. There is strong support for the assumptions of ADT (e.g., Hoffner & Cantor, 1991; Krakowiak & Oliver, 2012; Oliver, 1993; Raney & Bryant, 2002); however, because ADT is theoretically

based in the enjoyment of a wide variety of narrative media, it has not, to date, been applied to narrative stigmatization reduction.

Since a key construct in ADT is the appraisal of character morality or moral monitoring, ADT is ideally suited for application to narrative stigmatization reduction efforts because stigma, at heart, is a moral issue (Goffman, 1963). According to Smith (2007), “stigma reactions concern more than worries of contracting a contagious disease; they are also concerned with moral standing” (p. 477). Thus, in a narrative stigmatization reduction campaign, the decisions that characters make in regard to stigmatizing or not stigmatizing other characters are inherently moral decisions with moral consequences. Individuals’ moral appraisals of such character behaviors can influence their affective dispositions toward those characters, who, according to SCT, are serving as role models and socializing agents for viewers’ own stigma-related attitudes and behaviors.

ADT may also be well-suited for application specifically to genetic illness since individuals who have tendencies toward genetic essentialism may derive moral interpretations (i.e., good/bad, right/wrong) of a genetic health condition; such moral biases can lead to stereotyping and discrimination (Dar-Nimrod & Heine, 2011). Thus, even though ADT was originally derived for outcomes relevant to media enjoyment (Zillmann & Cantor, 1972), the key theoretical concepts are applicable to stigma reduction and genetic illness, and to this research in particular, with its focus on the influence of character type on stigma reduction outcomes.

Character Type. According to ADT, the types of characters (i.e., moral or immoral) depicted in a narrative influence individuals affective dispositions toward those characters. Traditional heroes (e.g., Luke Skywalker) and villains (e.g., Darth Vader) fit well into this theorization, since they present a clear-cut morality of good and evil to viewers. Recent research,

though, has begun to explore more complex character types, such as liked, neutral, and disliked characters (Tian & Hoffner, 2010); antiheroes (Raney, 2009); and morally ambiguous characters (MACs) (Krakowiak & Oliver, 2012), who do both “good and bad things” (p. 117). Both antiheroes and MACs have been found to be as enjoyable as morally good characters, possibly due to similar outcome expectancies in the narratives (Krakowiak & Oliver, 2012). However, of particular interest to this research, Raney (2009) discovered that the processes that led to enjoyment were different for hero and antihero narratives, with moral judgment being replaced with character identification as a significant predictor of enjoyment of antihero narratives.

From this, it becomes apparent that even though the same outcomes are achieved, in this case enjoyment of a narrative, two different processes specifically related to the type of character presented in the narrative, guided the viewer to such an outcome. Thus, in regard to narrative stigma reduction, it begs the question: What type or types of characters—positive, transitional, or negative characters (Rogers et al., 1999)—in a short narrative stigma reduction effort, most effectively reduce(s) stigma related to AATD? And if more than one type of character effectively reduces stigma toward an individual diagnosed with AATD, are there different processes that lead viewers to similar conclusions?

Hypotheses, Research Questions, and Proposed Path Model

To date, the researcher knows of no research that has explored the different psychological processes that may be associated with positive, transitional, and negative characters in reducing genetic stigmatization in the context of a short narrative message in which only one character type is presented. This research is intended to address these questions for the twofold purpose of increasing the effectiveness of short stigmatization reduction narratives and better understanding

the effect that character type has in the narrative stigmatization reduction process. Therefore, in regard to effective stigmatization reduction using narrative messages, it is hypothesized that:

H1a: Willingness to be the freshman college roommate of someone diagnosed with AATD will increase significantly after reading a narrative stigma reduction message, regardless of narrative condition; however,

H1b: Participants in the positive and transitional narrative conditions will be significantly more willing to room with a person diagnosed with AATD than participants in the negative narrative condition.

H2a: Attitudes toward being the freshman college roommate of someone with AATD will become more positive after reading a narrative stigma reduction message, regardless of narrative condition. Similarly,

H2b: The perception that being near someone with AATD is dangerous will decrease after reading a narrative stigma reduction message, regardless of narrative condition.

Likewise,

H2c: The perception that individuals with AATD are more similar to otherwise healthy individuals than different will increase after reading a narrative stigma reduction message, regardless of narrative condition; however,

H2d: Attitude toward persons diagnosed with AATD will vary as a function of narrative condition, with participants in the positive and transitional narrative conditions reporting significantly more positive attitudes toward persons diagnosed with AATD than participants in the negative narrative condition.

H3: Emotional response to persons with AATD – specifically fear (H3a), anger (H3b), and shame (H3c) – will decrease after reading a narrative stigma reduction message, regardless of narrative condition. Likewise,

H3d: Emotional response of sympathy toward persons with AATD will increase after reading a narrative stigma reduction message, regardless of narrative condition; however,

H3e: Emotional response will vary as a function of narrative condition; specifically, participants in the positive and transitional narrative conditions will report having less fear, anger, and shame, and more sympathy toward persons diagnosed with AATD than participants in the negative narrative condition.

H4: Advocacy to stigmatize—specifically advocacy to keep the condition a secret (H4a), to withdraw from others (H4b), or to not educate others (H4c)—will decrease after reading a narrative stigma reduction message, regardless of narrative condition; however,

H4d: Advocacy to stigmatize will vary as a function of narrative condition; specifically, participants in the positive and transitional narrative conditions will report significantly less advocacy to stigmatize than participants in the negative narrative condition.

Moral approval. Based on the theoretical assumptions of ADT, the moral approval that readers of a brief narrative stigmatization reduction message have toward the protagonist's decision-making will influence their affective dispositions toward the protagonist. However, stigma is a complicated phenomenon. On one hand, the seeming good or moral decision may be for the protagonist not to stigmatize a person diagnosed with AATD (i.e., not to endorse greater social distance or exhibit negative attitudes and emotions). On the other hand, from a sociofunctional perspective of stigma (Kurzban & Leary, 2001; Neuberg, Smith, & Asher, 2000), viewers may perceive greater social distance from a person diagnosed with AATD, along with the corresponding attitudes and emotions, to be a moral rather than immoral decision based in the protection of the community. In other words, by stigmatizing the character diagnosed with AATD, the protagonist may be perceived as protecting him/herself and the community from a potential threat.

Though genetic illness does not pose a danger to community in regard to contagion, increased social distance and perceived dangerousness have nevertheless been positively associated with genetic illness (e.g., Bag, Yilmaz, & Kirpinar, 2006; Walker & Read, 2002). In addition, the marks associated with AATD (e.g., wheezing and wet, hacking cough) mirror the marks of infectious diseases (e.g., tuberculosis) and could be interpreted as dangerous based on the viewers' understanding of genetic illness (Haslam, 2011).

As such, it is possible for viewers to perceive the positive and transitional characters as being morally good for choosing decreased social distance and to perceive the negative character as being immoral or bad for choosing increased social distance. Conversely, viewers may also perceive the negative character as morally good for choosing increased social distance in an effort to protect self and community.

Therefore, based on the theoretical assumptions in ADT and the ambiguity associated with viewers' possible perceptions of morality and stigma, the following research question and hypothesis will be examined:

RQ1: Which character type(s) will viewers perceive as morally good in regard to characters' willingness to stigmatize an individual diagnosed with AATD?

H5: Moral approval of the protagonist will be positively associated with the affective dispositions formed toward the protagonist.

Perceived realism. Narratives give concrete form to abstract ideas (Green, 2006), and if the narrative seems like a realistic event, the impact of the story is increased (Potter, 1986). Even fiction is often believed to represent and reflect real life events (Caputo & Rouner, 20110).

One of the primary means of enhancing the realism of a narrative is the presentation of realistic characters; for example, hearing a woman speak about her experience getting a mammogram just in time to detect cancer and save her life can increase an individuals' perception of realism in regard to the importance of breast cancer screening, because it is a presentation of the character's concrete experience (Green, 2006).

However, some types of characters may be perceived as more realistic than others, particularly in how such characters' actions compare to those anticipated to occur in the real world (Krakowiak & Oliver, 2012). Purely good or moral characters may appear not to have any human weaknesses, which could lead to feelings of irritation (Hoorn & Konijn, 2003) or inadequacy (Aronson, 1969). Similarly, purely immoral, malevolent characters may be perceived as unrealistic. Conversely, transitional characters, because they exhibit weaknesses and wrestle with making moral or good decisions, may appear more realistic than completely positive or negative characters. For example, Krakowiak & Oliver (2012) found that morally ambiguous characters were perceived to be equally as realistic as morally good characters but more realistic than morally bad characters. Therefore, it is hypothesized that

H6: Positive and transitional characters will be perceived as more realistic than negative characters.

Character Identification. When determining characteristics of the most persuasive narratives, Schank and Berman (2002) appeal to character identification: "The strongest stories are those which listeners can see themselves in the role of the hero. The closer we can come to relating to the hero, the more personally relevant the story becomes, and the more likely we are to learn from it" (p. 308).

Cohen (2001) defined character identification as "an imaginative process through which an audience member assumes the identity, goals, and perspective of a character (p. 261), enabling an audience member to receive and interpret events in a media text as if they were happening to him/her instead of the character. According to Cohen (2001), character

identification is temporary and can vary in intensity as a narrative unfolds. Barker (2005) defines character identification as a tri-part process, in which audience members lose self-consciousness, become engaged in a narrative “*as if they were the character,*” and take on the point of view of the character, including moral perspectives, possibly losing “the line between fiction and reality, and absorb the character’s attitudes into the rest of their lives” (p. 357).

In regard to character identification, a prominent strategy in entertainment-education is to include transitional characters that represent the attitudes and beliefs of audience members who are unsympathetic to the recommended health behavior (Guttman, Gesser-Edelsburg, & Israelashvili, 2008). Viewers observe these transitional characters model the process of attitude and behavior change as the drama unfolds. Viewers may identify with this type of character more strongly than others and be more willing to adopt the recommended attitudes and behaviors as a result (Papa et al., 2000). According to Green (2006), viewers may be inspired to follow in the footsteps of transitional characters that move from negative to positive views throughout the course of a story. Therefore, it is hypothesized that

H7: Character type will be positively associated with character identification, with viewers identifying more with positive and transitional characters than with negative characters.

However, the concept of character identification has had a complex history (Barker, 2005; Cohen, 2001; Moyer-Gusé, 2008; Murphy et al., 2011). According to Cohen (2001), identification with characters has not been “carefully conceptualised or rigorously tested” (p. 245), resulting in a lack of agreement among scholars regarding accurate definitions and

measurement strategies (Cohen, 2001; Moyer-Gusé, 2008). Barker (2005) further says that identification has “*resisted* testing because its status is essentially rhetorical” (p. 358). Indeed, recent studies which include character identification as a key concept have employed conflicting definitions and scale items with which to measure character identification (e.g., Eyal & Rubin, 2003), overlapping such related concepts as character liking, perceived similarity, and wishful identification. For example, Kincaid (2002) classifies character identification as a “multifaceted construct” that includes character liking, perceived similarity, wishful identification, caring about the character, and perceptions that “others think they are like that character” (p. 138).

An important difference, however, among these concepts is that character liking, perceived similarity, and, to a large extent, wishful identification are experiences in which an individual maintains his or her own identity; character identification, however, is an experience in which an individual loses his or her own self awareness and essentially becomes one with the character (Barker, 2005; Cohen, 2001; Moyer-Guse, 2008).

These concepts have been combined into one overarching concept called involvement with a character (e.g., Moyer-Guse, 2008; Murphy et al., 2011), but there may be important differences among them relevant to the present research. For example, Greenwood (2007) found that females’ idealization of a female action hero in a video game was linked to more aggressive behavior and feelings than to identification (defined as perceived similarity) with that action hero. Though evidence for such a distinction has been somewhat inconclusive, these results point to distinct psychological mechanisms and outcomes (Greenwood, 2007). Therefore, because this research seeks to understand the potentially divergent processes underlying the effectiveness of different types of characters, concepts related to character identification will be treated as independent of each other to test for these different processes.

Empathy with the protagonist. Cohen (2001) stated that “empathy is a part of identification” (p. 260). Similarly, Chory-Assad and Cicchirillo (2005) noted that it is impossible for audiences to adopt a character’s goals, motivations, or feelings, without first being able to take the character’s perspective. She further states that empathic audience members are more likely than non-empathic audience members to recognize similarities between themselves and characters. For example, Ritterfeld and Jin (2006) examined whether or not empathy with the female protagonist of a film depicting a woman diagnosed with schizophrenia would decrease stigma toward mental illness. They found that greater empathy toward the female protagonist reduced mental illness stigma indirectly when it was mediated by the perceived entertainment and education values of the film. Therefore, it is hypothesized that:

H8a: Character type will be positively associated with empathy toward the protagonist, such that viewers will empathize more with positive and transitional protagonists than with negative protagonists.

H8b: In turn, empathy with the protagonist will be positively associated with character identification.

Perceived Similarity. According to Moyer-Guse (2008), perceived similarity (homophily) is the cognitive assessment of an individual’s perceived similarities to a media character in terms of such attributes as physical appearance, beliefs, values, personality, and other demographic variables. According to Green (2004), characters that match audience members on key attributes such as values and experiences are crucial. Similarly, Tian and

Hoffner (2010) state that audience members may be attracted to characters when they share common backgrounds, attitudes, and behaviors. According to Hoffner and Cantor (1991), perceived similarity is a core factor in whether or not an audience member will like or dislike a media character. Similarly, according to SCT, people are more likely to attend to and be influenced by others perceived to be similar to themselves (Bandura 1986, 2001).

On the other hand, Tian and Hoffner (2010) found that the more audience members liked a media character, the more similarities audience members perceived between themselves and the characters, which led to greater character identification. Further, Tian and Hoffner (2010) found that audience members distanced themselves from disliked characters, reducing their character identification with those characters; thus, audience members were more influenced by liked characters than disliked characters. Therefore, it is hypothesized that

H9a: Perceived similarity will be positively associated with character type, with viewers perceiving themselves to be more similar to positive and transitional characters and less similar to negative characters.

H9b: Perceived similarity will, in turn, lead to greater character identification with the protagonist.

Wishful identification. According to Moyer-Guse (2008), wishful identification is distinct from character identification, because wishful identification occurs when an individual desires to be like a media figure (Giles, 2002) or admires that figure (Lonial & Van Auken, 1986), and character identification occurs when an individual “takes on the role of the character

she or he is viewing” (Moyer-Guse, 2008, p. 410). This conceptual difference is important to the present research, because viewers may identify with (i.e., take on the role of) certain types of characters (e.g., transitional or negative) but experience wishful identification with other characters (e.g., positive). Therefore, it is hypothesized that

H10: Character liking of the protagonist will be positively associated with identification with the protagonist.

Ultimately, character identification can lead to behavior change. According to Moyer-Guse (2008), in regard to both SCT (Bandura, 1977) and balance theory (Heider, 1958), individuals often experience inertia, or the preference not to change attitudes, beliefs, and behaviors in an effort to maintain psychological balance and avoid cognitive dissonance. Character identification, however, may be a mechanism for overcoming inertia, because viewers may be more willing to consider divergent perspectives and envision themselves enacting a new behavior because they are experiencing it vicariously through a character (Moyer-Guse, 2008).

For example, Caputo and Rouner (2011) found that character identification directly reduced stigmatization (i.e., less social distancing behavior) toward persons with mental illness. However, in their investigation of the processes by which character identification influences behavioral outcomes, Moyer-Guse, Chung, and Jain (2011) found that character identification increased viewers’ self-efficacy, which in turn influenced their behavior.

Smith, Downs, and Witte (2007) also found that listeners exposed to a serial radio drama in Ethiopia, *Journey of Life*, which promoted behaviors to limit HIV transmission (condom use, monogamy, and abstinence), reported stronger behavioral intentions to engage in one of the

preventative behaviors when they had stronger feelings of self efficacy to perform the behavior. This self-efficacy was based on stronger 1) identification with the female protagonist, and 2) emotional involvement in the story. These findings are consistent with SCT (Bandura, 1986), which posits that watching another individual successfully perform a behavior can raise an individual's self-efficacy. Based on these findings (Caputo & Rouner, 2011; Moyer-Guse, Chung, & Jain, 2011; Smith, Downs, & Witte (2007), it is hypothesized that

H11: Character identification will be negatively associated with stigmatization.

Additionally,

H12a: Identification with the protagonist would be associated with increased self efficacy.

H12b: In turn, this increased self efficacy will lead to less intention to stigmatize.

Transportation. According to Green and Brock (2000, 2002), narrative transportation is the experience of absorption into a narrative media text. This process is the temporary shifting of a person from his/her reality to the reality created by a mediated text or story; during this process, individuals are metaphorically “transported” into a narrative text, where they begin to connect with characters and experience self-transformation *vis-à-vis* the characters' experiences (Green & Brock, 2000, 2002; Green, Brock, & Kaufman, 2004).

Transportation is a process of cognitive, affective, and imagery involvement that often serves as an escape into an exciting, enjoyable story world (Green, Brock, & Kaufman, 2004).

Green and Brock (2002) conceptualize transportation as a “distinct mental process,” convergent in that “all of the person’s mental systems and capacities become focused on the events occurring in the narrative” (p. 324). Appel and Richter (2008) describe transportation as the reader undertaking a “mental journey into the fictional world of the narrative” (p. 117).

According to Green (2004), transportation has been shown to increase perceived realism in narratives; however Krakowiak & Oliver (2012) suggest that the more realistic characters are perceived to be, the more viewers may become transported into a narrative. They point to Busselle and Bilandzic (2009), who found that viewers, who perceived a film as being more realistic, were more transported into the narrative. Therefore, it is hypothesized that

H13: Perceived realism will be positively associated with transportation.

According to Murphy and colleagues (2011), the conceptual relationship between character identification and transportation is unclear. Moyer-Guse (2008) asserts that the extent to which transportation and character identification are isomorphic needs to be addressed. According to Moyer-Guse (2008), a dimension of the definition of character identification, absorption (Cohen, 2001), overlaps with the definition of transportation (Green & Brock, 2000, 2002). Green, Brock, and Kaufman (2004) speculate that transportation may be a prerequisite for character identification. Though the specific dynamics of the relationship between transportation and character identification are as yet unclear, it is apparent from previous literature that these two concepts are related (Cohen, 2001; Green, Brock & Kaufman, 2004; Moyer-Guse, 2008) Therefore, it is hypothesized that

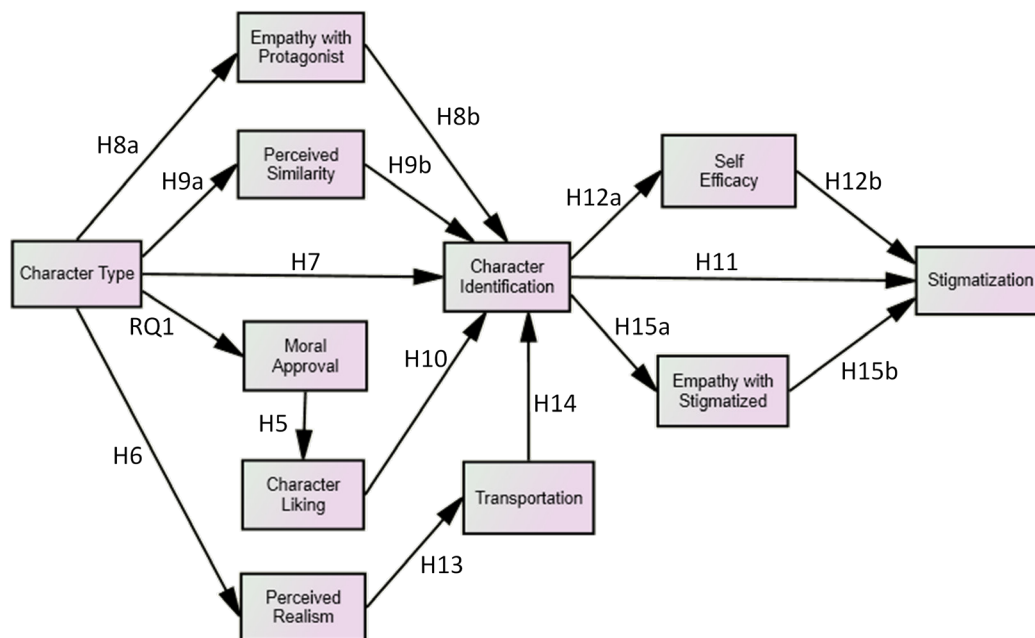
H14: Transportation will be positively associated with character identification.

Empathy with the stigmatized character. Batson and colleagues (1997), in a series of three experiments, found that experiencing empathy toward one member of a stigmatized group can improve attitudes toward the entire group, even demonstrating such effects 1-2 weeks after the experiment. Therefore, it is hypothesized that

H15a: Identification with the protagonist will be positively associated with empathy toward the character diagnosed with AATD.

H15b: Empathy with the character diagnosed with AATD will be negatively associated with stigmatization.

Figure 1. Proposed Path Model



Chapter 3

Methods

The purpose of this study was to explore the effectiveness of positive, transitional, and negative characters presented in a brief narrative message designed to reduce stigmatization toward young adults diagnosed with AATD. In an effort to understand the effectiveness of brief narrative health messages in reducing stigmatization and the potentially different psychological processes that underlie the effectiveness of different character types within those messages, several variables were hypothesized as being possible mediators between character type and reduced stigmatization. A one-factor (character type) between subjects experiment with pre- and post-test analysis was conducted using self-report measures to test the hypotheses and research questions.

The pre-test questionnaire included items regarding age, gender, class standing, race/ethnicity, empathy, disgust sensitivity, social anxiety, health anxiety, social support, the importance of moral principles, perceived importance/influence of freshman roommate, cynicism, perfectionism, perceptions of genetics, self esteem, stigmatization toward a person diagnosed with AATD (social distance, attitudes, and emotions; advocacy of secrecy, withdrawal, and education), and familiarity with AATD and genetic illness in general.

The post-test questionnaire included items regarding moral approval of characters, character liking, perceived similarity, perceived realism, character identification, transportation, self-efficacy, emotional response, empathy toward characters, attention, confusion, perceived relevance, enjoyment, and stigmatization toward a person diagnosed with AATD (social distance, attitudes, and emotions; advocacy of secrecy, withdrawal, and education).

Participants

170 undergraduate students (60% female; age: $M = 1.60$, $SD = .49$) enrolled in communications; criminal justice; information science and technology; and recreation, parks, and tourism management courses at a large northeastern university participated in this research study for extra credit. 7.1% reported to be African American; 6.5% Asian American; 78.8% Caucasian; 5.9% Hispanic; 0.6% Native American; and 1.2% Other. 33.5% were freshman; 33.5% sophomores; 15.3% juniors; and 17.6% seniors. Prior to seeing the stimulus materials, participants were asked about their familiarity with AATD. 92.9% reported having no or not very much familiarity with AATD ($M = 1.35$, $SD = .85$).

Experimental Design

In this one-factor between subjects experimental design, participants were given the pre-test questionnaire approximately one week prior to exposure to the stimulus materials. Participants were then randomly assigned to one of three gender-congruent, narrative stigmatization-reduction message conditions (i.e., females read one of three narrative conditions with female characters; males read one of three narrative conditions with male characters) (see Table 1 for sample sizes in each condition). After reading the stigmatization reduction message, participants completed the post-test questionnaire. Each of the three narratives for both males and females depicted a different type of protagonist (positive, transitional, or negative) either choosing to stigmatize (e.g., negative character) or not to stigmatize (e.g., positive and transitional characters) another character with AATD who was exhibiting the symptoms or marks associated with AATD-related pulmonary disease (e.g., wheezing; wet, hacking cough). This manipulation allowed for the testing of hypotheses regarding both stigmatization reduction and the character-type effectiveness of each condition.

Table 1

Experimental Conditions and Sample Sizes

Narrative Conditions	Gender		Total
	Male	Female	Both
Positive	<i>N</i> =23	<i>N</i> =34	<i>N</i> =57
Transitional	<i>N</i> =22	<i>N</i> =32	<i>N</i> =54
Negative	<i>N</i> =24	<i>N</i> =35	<i>N</i> =59
Total	<i>N</i> =69	<i>N</i> =101	<i>N</i> =170

Stimulus Material

Six narrative conditions were written and edited for this study (three female and three male narratives). The plot of the narratives included a protagonist whose freshman-year college roommate had AATD and was manifesting lung-associated signs of the condition. The protagonist had to decide if s/he would remain roommates with this person, despite his/her genetic condition.

The relationship between roommates was chosen because it presents an effective framework in which to test reduced stigmatization with the wise (Goffman, 1963) as role models (Bandura, 1977, 1986), particularly social distancing behavior, because a roommate represents an assigned yet voluntary and physically proximate relationship, unlike kinship, which is not voluntary. Similarly, the roommate relationship is not initially based on issues of attraction like friendship or romantic relationships, and so these issues do not confound the inferences that can be made based on participants' social-distancing decisions (e.g., Sigelman, Howell, Cornell, Cutright, & Dewey, 1991).

Each narrative condition was written to have similar content and word count; therefore, the only differences among them were the character types and stigmatization-related outcomes. Word count for the female conditions ranged from 1250 to 1264, and word count for the male conditions ranged from 1234 to 1270. The character-type manipulation constituted approximately 65% of each narrative, with the remaining 35% being consistent across all gender-congruent conditions.

The portion of the narratives consistent across all conditions included the introduction of the protagonist and scene setting, build up to the confrontation between the protagonist and the character diagnosed with AATD, and the description of AATD, which included a brief explanation of the condition, its signs/symptoms, and lifestyle impact as a result of having AATD. The portion of the narratives that represented the manipulation included the protagonist's outlook regarding college (either positive/excited or skeptical/fearful), his/her impressions of the AATD signs and explanation of the condition (either empathic and concerned for the other character or not empathic and concerned for self), his/her social-distancing decision (either desire for greater or less social distance), and the outcomes associated with that decision (positive or negative outcomes).

All six narrative conditions were written in the first-person and incorporated elements of dramatic story-telling, such as a protagonist, a conflict/crisis, and either a positive or negative resolution. The narratives were written based on the stages of dramatic narrative included in drama theory (Kincaid, 2002): scene-setting, build up, climax, conflict, resolution, and implementation. Specific elements of the narratives were guided by social cognitive theory (Bandura, 1977, 1986); specifically, the narratives portray role models successfully (or unsuccessfully) exhibiting self-efficacy and not stigmatizing someone with AATD by choosing

less rather than greater social distance. The narratives also detail the positive outcome expectancies of choosing not to stigmatize and the negative outcome expectancies of choosing to stigmatize. The female conditions feature a protagonist named Clair and a roommate named Samantha, and the male conditions feature a protagonist named Seth and a roommate named Doug (See Appendix A for an example narrative).

Scene-setting. In the scene-setting portion of the narratives, both Clair and Seth introduce themselves to the viewers as first-semester freshmen at an unspecified college. They are each majoring in music education. In the positive conditions, the protagonist thinks back to when s/he graduated from high school and describes his/her excitement about starting college and getting a roommate. In the transitional and negative conditions, the protagonist is more skeptical and fearful about starting college and living with a new person.

Build up. During the build-up in all conditions, the protagonist is portrayed as receiving his/her roommate's name and email address from his/her university during the summer. This is consistent with the freshman-year roommate process of the university at which this study was conducted. The protagonist then sends the roommate an email, receives a reply, and finds they have a lot in common. The protagonist also checks the Facebook page of the roommate and likes the pictures that s/he sees. Summer is described as ending quickly and college move-in day is upon them. In all conditions, the protagonist arrives in the dorm room first, early in the morning. No family is present when the protagonist meets the roommate, who arrives in the afternoon. The protagonist offers to help the roommate with his/her belongings, and as they are walking up a flight of stairs, the protagonist notices the roommate wheezing. This is the first AATD-related sign described in the narrative.

Climax. During the climax of the positive condition, the protagonist exhibits concern for the roommate, thinking that s/he may be sick, which would be bad for the roommate. In the transitional and negative conditions, the protagonist exhibits concern for him/herself, thinking that the roommate may be contagious and make the protagonist sick. In all conditions, the roommate then discloses the fact that s/he has AATD and describes the condition (e.g., genetic, incurable, can affect lungs or liver), including signs (e.g., wheezing, chronic hacking, wet cough) and lifestyle impacts (e.g., cannot smoke or be around smokers, which includes not going to parties, not being able to walk/run fast). In the positive condition, the protagonist observes how uncomfortable and embarrassed the roommate appears as s/he discloses this information. In the transitional and negative conditions, the protagonist notes how embarrassed and uncomfortable s/he feels. In all conditions, the roommate then poses a suggestion to the protagonist: You can choose not to be my roommate and I would understand.

Conflict. During the conflict phase, the protagonist in the positive condition considers the situation in a non-critical, empathic way. S/he actively takes the perspective of the roommate and reflects on how it would feel to be diagnosed with an incurable genetic disorder at a young age, to not be able to complete simple tasks that s/he takes for granted, and to be rejected by someone for having this condition. In the negative condition, the protagonist considers the situation in a highly critical, non-empathic way. S/he does not take the perspective of the roommate but remains grounded in his/her own perspective, considering with disgust the discomfort of listening to someone's chronic cough, how disturbed s/he would feel trying to do simple things like sleeping in the room, and how rejected s/he would feel if others in the dorm wouldn't be friends with him/her because the roommate has a terrible cough/condition. In the transitional condition, the protagonist considers first the negative elements of living with the roommate, but

then begins to consider the situation from his/her perspective. In this phase, the transitional protagonist transforms from a negative, self-focused viewpoint to a more positive, empathic viewpoint. At the end of this stage, after reflecting on the situation and prior to the protagonist's decision to remain or not remain roommates, each protagonist makes a statement of efficacy—explicitly stating that they can (positive and transitional characters) or cannot (negative character) room with this person.

Resolution. The protagonist in the positive condition says, without hesitation, that s/he would be willing to remain roommates with the person who has AATD. The roommate with AATD is noticeably relieved and happy, and they continue to unpack and settle into their room; they meet other people living in the dorm and enjoy the first evening in their new dorm room together. The protagonist in the transitional condition, after weighing the positive and negative characteristics of living with a person with AATD, says that s/he would be willing to remain roommates, and the same positive response and evening unfold. The protagonist in the negative condition says without remorse that s/he is unwilling to remain roommates with a person with AATD. The protagonist then leaves the room to talk with the resident assistant about switching rooms immediately. When the protagonist returns to the room, the roommate with AATD is quiet and withdrawn. That night, the resident assistant asks the roommate with AATD to move to another room since the protagonist's room is already unpacked and decorated.

Implementation. This final dramatic stage depicts the implementation of the decisions in the resolution. In the positive and transitional conditions, the protagonists respectively describe the good friendship that has developed between him/herself and the roommate. They have both made good friends, and their friends are depicted as being very supportive of the roommate with AATD. It is revealed in these two conditions that the roommate with AATD would have decided

not to live on campus if the protagonist had decided not to remain roommates. Instead of being isolated off campus, the roommate in these two conditions is socially integrated, and a positive outcome of this integration is the roommate's desire to become a resident assistant during his/her sophomore year. This decision speaks to the roommate's social comfort as well as his/her ability and desire to make a positive contribution to a wider sphere of influence than just the protagonist and their friends. At the end of both the positive and transitional conditions, the protagonists reflect that all of these benefits occurred simply because s/he decided to remain roommates with the person with AATD.

In the negative condition, the protagonist describes not seeing the former roommate around the dorm and stopping by the resident assistant to see what happened to him/her. The resident assistant tells the protagonist that the former roommate decided not to live on campus because s/he felt ashamed and rejected by the protagonist. The former roommate is described as not wanting to go through that experience again. The protagonist feels bad about this turn of events. In addition, the protagonist has never received another roommate because all of the other dorm-mates were satisfied with their roommate pairings for the semester. The protagonist describes this experience as lonely and isolating, and indicates that it has been more challenging to make social connections alone. After reflecting on the isolation that the former roommate must be feeling, s/he reflects that all of these negative outcomes occurred simply because s/he chose not to remain roommates with the person with AATD (see Appendix B for a comparison of plot differences across the female conditions from scene setting to resolution).

Procedure

Approximately one week prior to viewing the stimulus, participants received the online pre-test questionnaire. Participants first viewed an implied informed consent form and then

completed the questionnaire, which included demographic items as well as items measuring relevant traits, perceived importance/influence of freshman roommate, and familiarity with AATD. During the pre-test portion of the experiment, participants were assigned a code so that their pre-test responses could be matched with their post-test responses after viewing the stimulus materials (see Appendix C for pre-test questionnaire).

Approximately one week later, participants attended one of several evening sessions scheduled at a computer lab on the university campus. When participants arrived, they were told that they would be participating in part two of a research study regarding health communications and college students, but no explicit information was provided as to the true nature of the subject being investigated. Participants were then directed to a computer where they could access the stimulus materials and post-test questionnaire. After viewing a second implied informed consent form, participants read a randomly assigned, gender-congruent narrative stigmatization-reduction message. Participants then completed the post-test questionnaire, which both retested the stigmatization measures presented in the pre-test questionnaire and also assessed their cognitive and emotional responses to the narrative (see Appendix D for post-test questionnaire).

Manipulation Measures

Participants responded to six items that measured the character-type manipulation in each narrative condition. Using a 7-point, Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*), participants rated their impressions of whether or not the protagonist (Clair/Seth) exhibited consistently positive attitudes and behaviors toward Samantha/Doug, consistently negative attitudes and behaviors toward Samantha/Doug, or transitioned from negative to positive attitudes and behaviors toward Samantha/Doug (e.g., *Clair/Seth was always positive and*

accepting toward Samantha/Doug.) (positive condition Cronbach's $\alpha = .82$; transitional condition Cronbach's $\alpha = .74$; negative condition Cronbach's $\alpha = .94$).

Dependent Measures

All items were measured using 7-point Likert-type scales.

Moral approval was measured using one item from Raney (2006) (1 = *strongly disagree*; 7 = *strongly agree*) (e.g., *Clair/Seth's decision was appropriate given her/his situation*) and two additional items (1 = *strongly disagree*; 7 = *strongly agree*) (e.g., *Choosing to be Samantha's/Doug's roommate was the right thing to do*) (Cronbach's $\alpha = .85$).

Character liking was measured using three items (1 = *strongly disagree*; 7 = *strongly agree*) (e.g., *I like Clair/Seth*) (Cronbach's $\alpha = .92$).

Perceived similarity was measured using three items (1 = *strongly disagree*; 7 = *strongly agree*) (e.g., *I felt I had a lot in common with Clair/Seth.*) (Cronbach's $\alpha = .96$).

Perceived realism was measured using four items (1 = *strongly disagree*; 7 = *strongly agree*) adapted from Shapiro and Chock (2003) (e.g., *The events in the story were just like real life*) (Cronbach's $\alpha = .87$).

Transportation was measured was measured using Green and Brock's (2000) 12-item narrative transportation scale (1 = *strongly disagree*; 7 = *strongly agree*), which measures three components of transportation: affective (e.g., *I was emotionally involved in the narrative*), cognitive (e.g., *I was mentally involved in the message*), and imagery (e.g., *I had a vivid mental image of the characters in the message*) (Cronbach's $\alpha = .81$).

Self efficacy was measured using four items (1 = *strongly disagree*; 7 = *strongly agree*) (e.g., *I could live with someone who has AATD*) (Cronbach's $\alpha = .92$).

Character identification was measured using four items adapted from Cohen (2001) (1 = *strongly disagree*; 7 = *strongly agree*) (e.g., *I could feel the emotions Clair/Seth portrayed*) (Cronbach's $\alpha = .85$). Wishful identification was measured using four items (e.g., *I would like to be like Clair/Seth*) (Cronbach's $\alpha = .94$).

Empathy with the protagonist was measured using six items adapted from the empathic concern subscale and three items from the perspective-taking subscale of the interpersonal reactivity index (Davis, 1980, 1983) (1 = *strongly disagree*; 7 = *strongly agree*) (e.g., empathic concern: *I had concerned feelings toward Clair/Seth*; perspective-taking: *I tried to "put myself in Clair's/Seth's shoes"*) (Cronbach's $\alpha = .67$).

Similarly, empathy with the roommate diagnosed with AATD was measured using the same six empathic concern and three perspective-taking measures from the interpersonal reactivity index (Davis, 1980, 1983) (1 = *strongly disagree*; 7 = *strongly agree*) (Cronbach's $\alpha = .84$).

Overall, stigmatization was measured using 35 items. The stigmatization domains measured included social distance, attitude, emotional response, and advocacy to stigmatize. Social distance was measured with one scale item (1 = *not at all*; 7 = *extremely*) (*How willing are you to be the college roommate of someone who has AATD?*) and one categorical item (*yes/no*) (*Would you choose to be the college roommate of someone who has AATD?*).

Attitude toward living with someone who has AATD was measured using three items (1 = *strongly disagree*; 7 = *strongly agree*) (*I would not be able to cope with having a college roommate who had AATD*) (pre-test Cronbach's $\alpha = .74$, post-test Cronbach's $\alpha = .79$). Attitude regarding how different a person with AATD is from healthy persons was measured with three items (1 = *strongly disagree*; 7 = *strongly agree*) (e.g., *People who have AATD are totally*

different than healthy people) (pre-test Cronbach's $\alpha = .71$, post-test Cronbach's $\alpha = .76$). And attitude regarding how dangerous is it to be near a person with AATD was measure with three items (1 = *strongly disagree*; 7 = *strongly agree*) (e.g., *People with AATD present a health danger to people who don't have AATD.*) (pre-test Cronbach's $\alpha = .88$, post-test Cronbach's $\alpha = .92$).

Emotional response toward having a college roommate with AATD was measured using 12 items (1 = *strongly disagree*; 7 = *strongly agree*) adapted from Chung and Chan (2004) and Ritterfeld and Jin (2006). Three items measured each of four emotions, which included fear (e.g., *I can't blame anybody for being scared to be the roommate of someone with AATD*) (pre-test Cronbach's $\alpha = .83$, post-test Cronbach's $\alpha = .78$); anger (e.g., *I could understand if someone would be angry for being paired with a roommate who has AATD*) (pre-test Cronbach's $\alpha = .76$, post-test Cronbach's $\alpha = .73$); sympathy (e.g., *If I had a roommate who had AATD, I would feel very sympathetic toward him/her*) (pre-test Cronbach's $\alpha = .73$, post-test Cronbach's $\alpha = .69$); and shame (e.g., *I can't blame anybody for being ashamed of having a roommate with AATD*) (pre-test Cronbach's $\alpha = .97$, post-test Cronbach's $\alpha = .90$).

Advocacy of stigmatization was measured using nine items (1 = *strongly disagree*; 7 = *strongly agree*) adapted from Link et al., (1989). Three items measured advocacy of secrecy (e.g., *In order to get a college roommate, a person with AATD should keep it a secret*) (pre-test Cronbach's $\alpha = .94$, post-test Cronbach's $\alpha = .94$); three items measured advocacy of withdrawal (e.g., *If I had AATD, I would choose to live off campus rather than in a dorm with a roommate*) (pre-test Cronbach's $\alpha = .74$, post-test Cronbach's $\alpha = .73$); and three items measured advocacy of education (e.g., *If I had a friend who had AATD, I would encourage him/her to educate others about it*) (pre-test Cronbach's $\alpha = .87$, post-test Cronbach's $\alpha = .89$).

Control Variables

With the exception of two items measuring familiarity with AATD, all items were measured using 7-point Likert-type scales.

Trait empathy was measured using six items (1 = *strongly disagree*; 7 = *strongly agree*) from the empathic concern subscale and three items from the perspective-taking subscale of the interpersonal reactivity index (Davis, 1980, 1983) (e.g., empathic concern: *I often have tender, concerned feelings for people less fortunate than me*; perspective-taking: *I sometimes find it difficult to see things from the other person's point of view*) (Cronbach's $\alpha = .86$).

Social support was measured with 17 items (1 = *never*, 7 = *all of the time*) from the medical outcomes study (MOS) social support scale (Sherbourne & Stewart, 1991), which measures the availability of social support in four areas: tangible (e.g., *help with daily chores*); affection (e.g., *show love and affection*); positive social connection (e.g., *have a good time with*); and emotional informational support (e.g., *listen to you*) (Cronbach's $\alpha = .96$).

Perfectionism was measured with six items from Hewitt and colleague's (2011) perfectionistic self-presentation scale—junior form (1 = *strongly disagree*, 7 = *strongly agree*) (e.g., *If I seem perfect, other people will like me more.*) (Cronbach's $\alpha = .94$).

Self esteem was measured with 10 items from Rosenberg's (1965) self esteem scale (1 = *strongly disagree*, 7 = *strongly agree*) (e.g., *I feel that I have a number of good qualities*) (Cronbach's $\alpha = .90$).

Perceived importance of a freshman-year roommate was measured with eight items (1 = *not at all*, 7 = *extremely*), which asked participants to rate their perceptions of how much a freshman-year roommate influenced important life attributes (e.g., *happiness, academic success, popularity, and physical health*) (Cronbach's $\alpha = .90$).

Perceptions of genetic risk was measured with 11 items (Parrott, Kahl, Traeder, & Ndiaye, in press) (1 = *strongly disagree*, 7 = *strongly agree*) (e.g., *My genes make future illnesses more likely for me.*) (Cronbach's $\alpha = .89$).

The importance of moral principles was measured with one item from Raney (2006) (1 = *strongly disagree*, 7 = *strongly agree*) (*You should only act, when you are sure that it's morally correct*).

Social Anxiety was measured with six items (1 = *strongly disagree*, 7 = *strongly agree*) from Mattick and Clark's (1989) social interaction anxiety scale. (e.g., *When mixing socially, I am uncomfortable.*) (Cronbach's $\alpha = .93$).

Health anxiety was measured with 12 items (1 = *strongly disagree*, 7 = *strongly agree*) from the short health anxiety inventory (Salkovskis, Rimes, Warwick, & Clark, 2002) (e.g., *I constantly have images of myself being seriously ill*) (Cronbach's $\alpha = .79$).

Perceived resilience to stigma was measured with seven items (1 = *strongly disagree*, 7 = *strongly agree*) (e.g., *I would not hide the fact that I had a friend who had an unpopular personal characteristic*) (Cronbach's $\alpha = .78$).

Cynicism was measured with seven items (1 = *strongly disagree*, 7 = *strongly agree*) (e.g., *If you don't watch yourself, people will take advantage of you*) (Cronbach's $\alpha = .78$).

Disgust sensitivity was measured with 13 items (1 = *strongly disagree*, 7 = *strongly agree*) from the disgust scale-revised (Haidt, McCauley, & Rozin, 1994) (e.g., *It bothers me to hear someone clear a throat full of mucous*) (Cronbach's $\alpha = .86$).

Familiarity with AATD was measured with one item (1 = *not at all*, 7 = *extremely*), *How familiar are you with AATD?* Participants were then given a blank text field in which they could write what they knew about AATD. Participants were also asked (yes/no) if they had been

diagnosed with AATD or another genetic disorder, and if any of their friends/family had been diagnosed with AATD or a genetic illness other than AATD (*Yes/No/Unsure*).

Emotional involvement was measured using three items from Smith, Downs, and Witte (2007) (1 = *strongly disagree*; 7 = *strongly agree*) (e.g., *The story had a strong emotional impact on me*) (Cronbach's $\alpha = .88$).

Attention was measured with three items (1 = *strongly disagree*, 7 = *strongly agree*) (e.g., *I gave the message my full attention*) (Cronbach's $\alpha = .85$).

Confusion was measured with three items (1 = *strongly disagree*, 7 = *strongly agree*) (e.g., *I felt confused by the contents of the message*) (Cronbach's $\alpha = .78$).

Perceived relevance was measured with three items (1 = *strongly disagree*, 7 = *strongly agree*) (e.g., *The story was personally relevant*) (Cronbach's $\alpha = .89$).

Enjoyment was measured with three items (1 = *strongly disagree*, 7 = *strongly agree*) (e.g., *I enjoyed the story very much*) (Cronbach's $\alpha = .92$) (see Appendix E for a complete list of items for each variable).

Chapter 4

Results

In this study, four hypotheses tested the effectiveness of a brief narrative message in reducing stigmatization toward young adults diagnosed with AATD. Subsequently, 11 hypotheses and one research question explored the psychological processes underlying the effectiveness of the different character types – positive, transitional, and negative – within those messages. Several paired-sample *t* tests, ANOVAs, and MANOVAs were conducted to determine which narrative conditions were most effective in reducing stigma, and several path models were analyzed in regard to model fit and relevant theoretical assumptions. The findings are presented according to the hypotheses and research questions proposed, beginning with the stigma reduction results and concluding with the findings in regard to the path models.

Manipulation Check

A multivariate analysis of variance (MANOVA) revealed that the narrative, protagonist-type manipulation was successful, Wilks' $\Lambda = .11$, $F(6, 324) = 109.30$, $p = .00$, partial $\eta^2 = .67$. The univariate analyses revealed significant main effects for the positive condition, $F(2, 164) = 155.02$, $p = .00$, partial $\eta^2 = .65$, the transitional condition, $F(2, 164) = 88.53$, $p = .00$, partial $\eta^2 = .52$, and the negative condition, $F(2, 164) = 346.61$, $p = .00$, partial $\eta^2 = .81$.

Holm's sequential bonferroni post hoc comparisons revealed that participants in the positive narrative conditions ($M = 5.65$, $SD = 1.09$) perceived the protagonist to have been significantly more positive toward the roommate with AATD than in the transitional ($M = 4.56$, $SD = 1.17$) and negative conditions ($M = 2.08$, $SD = 1.08$). Similarly, participants in the transitional narrative conditions ($M = 5.03$, $SD = 1.41$) perceived the protagonist's treatment of the roommate with AATD to have evolved from negative to positive behaviors more significantly than participants in the positive ($M = 3.45$, $SD = 1.55$) and negative conditions ($M =$

1.62, $SD = 1.09$). And participants in the negative narrative conditions ($M = 6.31$, $SD = 1.06$) perceived the protagonist to have been significantly more negative toward the roommate with AATD than in the positive ($M = 1.40$, $SD = .84$) and transitional conditions ($M = 1.80$, $SD = 1.38$) (see Table 2 for comparison of character-type manipulation).

Therefore, the manipulation of protagonist type in each of the narrative message conditions was successful, allowing for the testing of the hypotheses related to both stigmatization reduction and the psychological processes underlying stigmatization reduction in this research.

In addition, prior to reading the narrative, participants were asked about their familiarity with AATD. Participants reported very low familiarity with AATD ($M = 1.35$, $SD = .85$), with 92.9% reporting either no familiarity at all with AATD (79.4%) or not very much familiarity (13.5%). Thus, for the vast majority of participants, this research was their first exposure to information about AATD, and their responses were based on the information presented in this study rather than previous knowledge of the condition.

Table 2

Character-Type Manipulation Check

Perceptions of Protagonist Toward Roommate	Experimental Conditions			
		Positive $N=57$	Transitional $N=54$	Negative $N=59$
Positive through narrative	M	5.65 _a	4.56 _b	2.08 _c
	SD	1.09	1.17	1.08
Changed from negative to positive	M	3.45 _b	5.03 _a	1.62 _c
	SD	1.55	1.41	1.09
Negative through narrative	M	1.40 _b	1.80 _b	6.31 _a
	SD	0.84	1.38	1.06

Note. $N = 170$. Perceptions of the protagonist toward the roommate were measured on 7-point scales (1 = *strongly disagree*, 7 = *strongly agree*). Means in the same row that do not share subscripts differ at $p < .05$ according to Holm's sequential bonferroni post hoc comparisons.

Statistical Analysis of Stigmatization Reduction

Prior to analyzing the four hypotheses that tested the effectiveness of narrative messages featuring positive, transitional, and negative protagonists in reducing stigmatization toward individuals diagnosed with AATD, the data were examined for normality (See Table 3). The minimum and maximum values for each variable suggested a wide variation in participants' responses to the stigmatization measures. Means and standard deviations for each variable were judged to be acceptable, and skewness and kurtosis for all variables were judged to be acceptable (skewness < |2|, kurtosis < |2|, Garson, 2012). Cronbach's alpha for each variable was also deemed acceptable (> .70, Kline, 1999). The data were also checked for outliers with z-score criteria (± 3.29) (Tabachnick & Fidell, 2007). Five outliers were detected and eliminated from the data. Overall, the data appeared to be acceptable for analysis.

Table 3

Descriptive Statistics for Variables Measuring Stigmatization Reduction

Pre Test Measures	<i>M</i>	<i>SD</i>	MIN	MAX	Skewness	Kurtosis	α
Social Distance	4.48	1.45	1.00	7.00	-0.18	-0.64	--
Attitude	3.55	1.22	1.00	6.67	0.01	-0.37	0.74
Perceived Dangerousness	2.30	1.26	1.00	5.33	0.63	-0.87	0.88
Perceived Similarity	5.32	1.15	1.00	7.00	-0.57	0.43	0.71
Fear	3.84	1.39	1.00	7.00	-0.02	-0.58	0.83
Anger	3.80	1.24	1.00	7.00	-0.29	0.27	0.76
Sympathy	5.48	1.02	2.50	7.00	-0.36	-0.37	0.73
Shame	2.16	1.34	1.00	6.33	0.93	0.19	0.97
Advocating Secrecy	2.19	1.23	1.00	5.33	0.82	-0.47	0.94
Advocating Withdrawal	3.23	1.58	1.00	7.00	0.35	-0.65	0.74
Advocating Education	5.49	1.08	1.00	7.00	-0.67	0.57	0.87

Post Test Measures							
Social Distance	5.36	1.15	2.00	7.00	-0.61	0.07	--
Attitude	3.00	1.14	1.00	6.00	0.28	-0.41	0.79
Perceived Dangerousness	1.79	1.10	1.00	5.33	1.51	1.34	0.92
Perceived Similarity	5.10	1.06	2.33	7.00	-0.14	-0.77	0.76
Fear	3.65	1.29	1.00	6.33	-0.12	-0.61	0.78
Anger	3.62	1.13	1.00	6.33	0.19	-0.27	0.73
Sympathy	5.62	1.10	3.00	7.00	-0.52	-0.61	0.69
Shame	1.91	1.06	1.00	5.33	1.23	0.90	0.90
Advocating Secrecy	1.84	0.99	1.00	5.33	1.32	1.30	0.94
Advocating Withdrawal	2.72	1.46	1.00	6.50	0.68	-0.54	0.73
Advocating Education	5.71	1.09	1.33	7.00	-1.25	1.79	0.89

Note. *M* = means; *SD* = standard deviation; *MIN* = minimum value reported; *MAX* = maximum value reported; α = Cronbach's alpha. All variables measuring stigmatization reduction were coded into numerical values ranging from 1 (strongly disagree) to 7 (strongly agree). Social distance was measured with one item.

Hypothesis 1a predicted that willingness to be the freshman college roommate of someone diagnosed with AATD would increase significantly after reading a narrative stigma reduction message, irrespective of narrative condition. A series of paired-sample *t* tests revealed that, in each condition, there was a significant increase in participants' willingness to room with someone who had been diagnosed with AATD (see Table 4). In the positive condition, participants' willingness to room with someone with AATD before reading the narrative ($M = 4.53$, $SD = 1.31$) increased significantly after reading the narrative ($M = 5.63$, $SD = 1.01$), $t(56) = -6.61$, $p < .001$. Similarly, in the transitional condition, participants' willingness to room with someone with AATD before reading the narrative ($M = 4.46$, $SD = 1.42$) increased significantly after reading the narrative ($M = 5.35$, $SD = 1.17$), $t(53) = -5.03$, $p < .001$. And in the negative condition, participants' willingness to room with someone with AATD before reading the narrative ($M = 4.44$, $SD = 1.62$) increased significantly after reading the narrative ($M = 4.44$, SD

= 1.62), $t(56) = -3.28$, $p < .01$. Therefore, Hypothesis 1a was supported, demonstrating that each narrative condition led to a significant decrease in desired social distance.

Table 4

Stigmatization Reduction Scores for Willingness to Be Roommates

Narrative Conditions	Pre-Test <i>M (SD)</i>	Post-Test <i>M (SD)</i>	<i>t</i> statistic	<i>p</i> value	95% CI
Positive	4.53 (1.31)	5.63 (1.01)	-6.61	0.00	[-1.44, -0.77]
Transitional	4.46 (1.42)	5.35 (1.17)	-5.03	0.00	[-1.24, -0.53]
Negative	4.44 (1.62)	5.08 (1.23)	-3.28	0.002	[-1.05, -0.25]

Note. *M* = means; *SD* = standard deviation; *CI* = confidence interval.

As a further test of H1a, a series of McNemar chi-squares was conducted on participants' yes/no responses to their willingness to room with someone who had AATD. In the positive condition, there was a significant increase in participants' willingness to room with someone who had AATD from pre-test (36.8%) to post-test (66.7%), $\chi^2 (N = 57) = 15.21$, $p < .001$ (See Table 5).

Table 5

Contingency Table for Positive Condition: Willingness to Room

Post-Test Willingness to Room	Pre-Test Willingness to Room		Totals
	Yes	No	
Yes	20	18	38
No	1	18	19
Totals	21	36	57

Note. Cell values are raw scores.

In the transitional condition, there was also a significant increase in participants' willingness to room with someone who had AATD from pre-test (37%) to post-test (66.7%), χ^2 (N = 54) = 14.22, $p < .001$ (See Table 6).

Table 6

Contingency Table for Transitional Condition: Willingness to Room

Post-Test Willingness to Room	Pre-Test Willingness to Room		Totals
	Yes	No	
Yes	19	17	36
No	1	17	18
Totals	20	34	54

Note. Cell values are raw scores.

And in the negative condition, there was a significant increase in participants' willingness to room with someone who had AATD from pre-test (45.8%) to post-test (62.7%), χ^2 (N = 59) = 7.14, $p = .01$ (See Table 7).

Table 7

Contingency Table for Negative Condition: Willingness to Room

Post-Test Willingness to Room	Pre-Test Willingness to Room		Totals
	Yes	No	
Yes	25	12	37
No	2	20	22
Totals	27	32	59

Note. Cell values are raw scores.

From these chi-square analyses, it is demonstrated that when participants in each condition were asked to choose, yes or no, if they would be willing to room with someone who

has AATD, there was a significant increase in willingness after reading the narrative in all three conditions. These findings offers further support for H1a.

Hypothesis 1b predicted that participants in the positive and transitional narrative conditions would be significantly more willing to room with a person diagnosed with AATD than participants in the negative narrative condition. A one-way analysis of variance (ANOVA) with Holm's bonferroni post-hoc comparisons revealed support for this hypothesis, $F(2, 167) = 2.96, p = .055, \text{partial } \eta^2 = .03$. Specifically, participants in the positive condition were significantly more willing to room with someone who has AATD ($M = 5.63, SD = 1.10$) than participants in the negative condition ($M = 5.12, SD = 1.22$). Participants in the transitional condition did not differ significantly from either the positive or negative condition ($M = 5.35, SD = 1.17$). Therefore, Hypothesis 1b received partial support, because the transitional condition was not significantly different from the negative condition, although the positive condition was.

Hypothesis 2a predicted that attitudes toward being the freshman college roommate of someone with AATD would become less negative after reading a narrative stigma reduction message, regardless of narrative condition. A series of paired-sample t tests revealed that, in each condition, there was a significant decrease in participants' negative attitudes toward rooming with a student who had been diagnosed with AATD (see Table 8). In the positive condition, participants' negative attitudes toward rooming with someone with AATD before reading the narrative ($M = 3.35, SD = 1.18$) decreased significantly after reading the narrative ($M = 2.53, SD = 1.08$), $t(57) = 7.04, p < .001$. Similarly, in the transitional condition, negative attitudes toward rooming with someone with AATD before reading the narrative ($M = 3.67, SD = 1.09$) decreased significantly after reading the narrative ($M = 3.11, SD = 1.08$), $t(53) = 3.70, p < .01$. And in the negative condition, participants' negative attitudes toward rooming with someone with AATD

before reading the narrative ($M = 3.60$, $SD = 1.36$) decreased significantly after reading the narrative ($M = 3.37$, $SD = 1.11$), $t(57) = 2.22$, $p = .03$. These analyses offer support for Hypothesis 2a, suggesting that each narrative condition, regardless of protagonist type, reduced negative attitudes toward rooming with a person who has AATD.

Table 8

Stigmatization Reduction Scores for Attitude toward Being Roommates

Narrative Conditions	Pre-Test M (SD)	Post-Test M (SD)	t statistic	p value	95% CI
Positive	3.35 (1.18)	2.53 (1.08)	7.04	0.00	[0.56, 1.05]
Transitional	3.67 (1.09)	3.11 (1.08)	3.70	0.001	[0.26, 0.87]
Negative	3.60 (1.36)	3.37 (1.11)	2.22	0.03	[0.02, 0.45]

Note. M = means; SD = standard deviation; CI = confidence interval.

Hypothesis 2b predicted that the perception that being near someone with AATD is dangerous will decrease after reading a narrative stigma reduction message, regardless of narrative condition. A series of paired-sample t tests revealed that, in each condition, there was a significant decrease in participants' perceptions that being near someone with AATD is dangerous (see Table 9).

In the positive condition, participants' perceptions of dangerousness ($M = 2.16$, $SD = 1.29$) decreased significantly after reading the narrative ($M = 1.61$, $SD = 1.08$), $t(56) = 4.56$, $p < .001$. Similarly, in the transitional condition, participants' perceptions of dangerousness ($M = 2.57$, $SD = 1.39$) decreased significantly after reading the narrative ($M = 1.91$, $SD = 1.12$), $t(52) = 4.60$, $p < .001$. And in the negative condition, participants' perceptions of dangerousness ($M = 2.19$, $SD = 1.07$) decreased significantly after reading the narrative ($M = 1.86$, $SD = 1.09$), $t(58) = 2.46$, $p = .02$. These analyses support Hypothesis 2b, indicating that each narrative condition

significantly decreased participants' perceptions of the dangerousness posed by being near individuals with AATD.

Table 9

Stigmatization Reduction Scores for Perceptions of Dangerousness

Narrative Conditions	Pre-Test <i>M (SD)</i>	Post-Test <i>M (SD)</i>	<i>t</i> statistic	<i>p</i> value	95% CI
Positive	2.16 (1.29)	1.61 (1.08)	4.56	0.00	[0.30, 0.78]
Transitional	2.57 (1.39)	1.91 (1.12)	4.60	0.00	[0.37, 0.95]
Negative	2.19 (1.07)	1.86 (1.09)	2.46	0.02	[0.06, 0.58]

Note. *M* = means; *SD* = standard deviation; *CI* = confidence interval.

Hypothesis 2c predicted that the perception that individuals with AATD are more similar to otherwise healthy individuals than different would increase after reading a narrative stigma reduction message, regardless of narrative condition. A series of paired-sample *t* tests revealed that, in the positive and transitional conditions, there was a significant increase in participants' perceptions that individuals with AATD are more similar to otherwise healthy individuals than different, but not in the negative condition (see Table 10).

Specifically, in the positive condition, perceptions of similarity ($M = 5.19, SD = 1.15$) increased significantly after reading the narrative ($M = 5.49, SD = 1.29$), $t(55) = -2.13, p = .04$. Likewise, in the transitional condition, perceptions of similarity ($M = 5.08, SD = 1.01$) increased significantly after reading the narrative ($M = 5.39, SD = 1.03$), $t(51) = -2.11, p = .04$. However, in the negative condition, participants' perceptions of dangerousness ($M = 5.01, SD = 1.03$) increased after reading the narrative ($M = 5.10, SD = 1.10$), but this increase failed to reach significance, $t(56) = -.70, p = .50$. Therefore, these analyses offer partial support for Hypothesis 2c, indicating that the positive and transitional conditions were more effective than the negative

condition in significantly increasing perceptions that people with AATD are more similar to otherwise healthy people than different.

Table 10

Stigmatization Reduction Scores for Perceptions of Similarity

Narrative Conditions	Pre-Test <i>M (SD)</i>	Post-Test <i>M (SD)</i>	<i>t</i> statistic	<i>p</i> value	95% CI
Positive	5.19 (1.15)	5.49 (1.29)	-2.13	0.04	[-0.58, -0.02]
Transitional	5.08 (1.01)	5.39 (1.03)	-2.11	0.04	[-0.60, -0.01]
Negative	5.01 (1.03)	5.10 (1.10)	-0.70	0.50	[-0.34, 0.16]

Note. *M* = means; *SD* = standard deviation; *CI* = confidence interval.

Hypothesis 2d predicted that attitude toward persons diagnosed with AATD would vary as a function of narrative condition, with participants in the positive and transitional narrative conditions would report having significantly more positive attitudes toward persons diagnosed with AATD than participants in the negative narrative condition. A multivariate analysis of variance (MANOVA) revealed a significant main effect for narrative condition, Wilks' $\Lambda = .88$, $F(6, 320) = 3.39$, $p = .003$, partial $\eta^2 = .06$.

The univariate analysis for attitude toward being the college roommate of someone with AATD revealed a significant main effect for narrative condition, with participants in the positive narrative condition reporting a less negative attitude toward being the roommate of someone with AATD ($M = 2.50$, $SD = 1.07$) than participants in both the transitional ($M = 3.09$, $SD = 1.08$) and negative conditions ($M = 3.35$, $SD = 1.11$), $F(2, 162) = 8.80$, $p = .00$, partial $\eta^2 = .10$.

Although the univariate analysis for attitude regarding the danger of being near persons with AATD did not reveal a significant main effect for narrative condition, $F(2, 162) = .97$, $p = .38$, partial $\eta^2 = .01$, the univariate analysis for attitude toward persons with AATD being

different from healthy persons did reveal a significant main effect, $F(2, 162) = 3.18, p = .04$, partial $\eta^2 = .04$. Specifically, participants in the positive condition reported having significantly greater attitudes that persons with AATD were more similar to healthy persons than different ($M = 5.57, SD = 1.15$) than participants in the negative condition ($M = 5.06, SD = 1.11$), but were not significantly different from participants in the transitional condition ($M = 5.40, SD = 1.02$). Therefore, Hypothesis 2d received partial support.

Hypothesis 3a predicted that fear of persons with AATD would decrease after reading a narrative stigma reduction message, regardless of narrative condition. A series of paired-sample t tests revealed that only in the positive condition was there a significant increase in participants' willingness to room with a student who had been diagnosed with AATD, but not in the transitional or negative conditions (see Table 11).

Table 11

Stigmatization Reduction Scores for Fear of Persons with AATD

Narrative Conditions	Pre-Test <i>M (SD)</i>	Post-Test <i>M (SD)</i>	<i>t</i> statistic	<i>p</i> value	95% CI
Positive	3.60 (1.43)	3.21 (1.30)	3.36	0.001	[0.16, 0.63]
Transitional	4.01 (1.19)	3.83 (1.21)	1.22	0.23	[0.12, -0.48]
Negative	3.90 (1.50)	3.91 (1.27)	-0.11	0.92	[-0.33, 0.30]

Note. *M* = means; *SD* = standard deviation; *CI* = confidence interval.

In the positive condition, participants' experience of fear ($M = 3.60, SD = 1.43$) decreased significantly after reading the narrative ($M = 3.21, SD = 1.30$), $t(55) = 3.36, p = .001$. Conversely, in the transitional condition, participants' experience of fear ($M = 4.01, SD = 1.19$) decreased after reading the narrative ($M = 3.83, SD = 1.21$), but this decrease failed to reach significance, $t(52) = 1.22, p = .23$. And in the negative condition, participants' experience of fear

($M = 3.90$, $SD = 1.50$) decreased after reading the narrative ($M = 3.91$, $SD = 1.27$), and this decrease also failed to reach significance, $t(58) = -.11$, $p = .92$. These analyses provided partial support for Hypothesis 3a, with only the positive condition leading to a significant decrease in fear of being near persons with AATD.

Hypothesis 3b predicted that anger toward rooming with a person who has AATD would decrease after reading a narrative stigma reduction message, regardless of narrative condition. A series of paired-sample t tests revealed that only in the transitional condition was there a significant decrease in participants' anger (see Table 12). In the positive condition, participants' experience of anger ($M = 3.56$, $SD = 1.34$) decreased after reading the narrative ($M = 3.33$, $SD = 1.19$), but this decrease failed to reach significance, $t(53) = 1.59$, $p = .12$. However, in the transitional condition, participants' experience of anger ($M = 3.92$, $SD = 1.18$) decreased significantly after reading the narrative ($M = 3.67$, $SD = 1.07$), $t(52) = 2.03$, $p = .05$. But in the negative condition, participants' experience of anger ($M = 3.91$, $SD = 1.20$) decreased after reading the narrative ($M = 3.89$, $SD = 1.05$), and this decrease was non-significant, $t(58) = .15$, $p = .88$. These analyses revealed only partial support for Hypothesis 3b, in which only the transitional condition was effective in significantly reducing anger toward rooming with a person who has AATD.

Table 12

Stigmatization Reduction Scores for Anger toward Persons with AATD

Narrative Conditions	Pre-Test M (SD)	Post-Test M (SD)	t statistic	p value	95% CI
Positive	3.56 (1.34)	3.33 (1.19)	1.59	0.12	[0.06, 0.52]
Transitional	3.92 (1.18)	3.67 (1.07)	2.03	0.05	[0.003, 0.51]
Negative	3.91 (1.20)	3.89 (1.05)	0.15	0.88	[-0.21, 0.25]

Note. M = means; SD = standard deviation; CI = confidence interval.

Hypothesis 3c predicted that shame in regard to rooming with a person with AATD would decrease after reading a narrative stigma reduction message, regardless of narrative condition. A series of paired-sample t tests revealed that, in the positive and transitional conditions, there was a significant decrease in participants' shame in regard to rooming with a person with AATD, but not in the negative condition (see Table 13). In the positive condition, participants' experience of shame ($M = 1.90$, $SD = 1.20$) decreased significantly after reading the narrative ($M = 1.72$, $SD = .92$), $t(55) = 2.10$, $p = .04$. Similarly, in the transitional condition, participants' experience of shame ($M = 2.50$, $SD = 1.44$) decreased significantly after reading the narrative ($M = 1.92$, $SD = .99$), $t(50) = 3.39$, $p = .001$. But in the negative condition, participants' experience of shame ($M = 2.02$, $SD = 1.31$) increased after reading the narrative ($M = 2.10$, $SD = 1.21$), though this increase was non-significant, $t(57) = -.52$, $p = .61$. Therefore, these analyses offer partial support for Hypothesis 3c, with only the positive and transitional conditions effectively decreasing shame associated with rooming with someone who has AATD.

Table 13

Stigmatization Reduction Scores for Shame regarding Persons with AATD

Narrative Conditions	Pre-Test M (SD)	Post-Test M (SD)	t statistic	p value	95% CI
Positive	1.90 (1.20)	1.72 (0.92)	2.10	0.04	[0.01, 0.43]
Transitional	2.50 (1.44)	1.92 (0.99)	3.39	0.001	[0.24, 0.93]
Negative	2.02 (1.31)	2.10 (1.21)	-0.52	0.61	[-0.36, 0.21]

Note. M = means; SD = standard deviation; CI = confidence interval.

Hypothesis 3d predicted that sympathy toward persons with AATD would increase after reading a narrative stigma reduction message, regardless of narrative condition. A series of paired-sample t tests revealed that there was not a significant increase in participants' sympathy

toward persons with AATD in any of the narrative conditions (see Table 14). Though the means for each condition prior to the participants' reading the narrative were relatively high, the marginal increase in each condition was unexpected. Therefore, Hypothesis 3c was not supported.

Table 14

Stigmatization Reduction Scores for Sympathy toward Persons with AATD

Narrative Conditions	Pre-Test <i>M (SD)</i>	Post-Test <i>M (SD)</i>	<i>t</i> statistic	<i>p</i> value	95% CI
Positive	5.46 (0.97)	5.61 (1.08)	-1.15	0.25	[-0.39, 0.11]
Transitional	5.43 (0.15)	5.50 (0.15)	-0.59	0.56	[-0.29, 0.16]
Negative	5.55 (1.00)	5.75 (1.08)	-1.45	0.15	[-0.48, 0.08]

Note. *M* = means; *SD* = standard deviation; *CI* = confidence interval.

Hypothesis 3e predicted that emotional response would vary as a function of narrative condition; specifically, participants in the positive and transitional narrative conditions would report having significantly less fear, anger, and shame, and more sympathy toward persons diagnosed with AATD than participants in the negative narrative condition. A multivariate analysis of variance (MANOVA) revealed a significant main effect for narrative condition, Wilks' $\Lambda = .91$, $F(6, 326) = 2.65$, $p = .02$, partial $\eta^2 = .05$.

The univariate analysis for fear revealed a significant main effect for narrative condition, with participants in the positive condition reporting significantly less fear of persons with AATD ($M = 3.22$, $SD = 1.30$) than participants in both the transitional ($M = 3.83$, $SD = 1.20$) and negative conditions ($M = 3.92$, $SD = 1.27$), $F(2, 165) = 5.04$, $p = .01$, partial $\eta^2 = .06$. The univariate analysis for anger also revealed a significant main effect for narrative condition, with participants in the positive condition reporting less anger toward persons with AATD ($M = 3.27$,

$SD = 1.22$) than participants in the negative condition ($M = 3.89, SD = 1.05$), but not the transitional condition ($M = 3.67, SD = 1.06$), $F(2, 165) = 4.49, p = .01$, partial $\eta^2 = .05$. The univariate analysis for sympathy, however, did not reveal a significant main effect for narrative condition, $F(2, 165) = .96, p = .39$, partial $\eta^2 = .01$. Therefore, Hypothesis 3e received partial support.

Hypothesis 4a predicted that advocacy to keep the condition AATD a secret would decrease after reading a narrative stigma reduction message, regardless of narrative condition. A series of paired-sample t tests revealed that, in the positive and transitional conditions, there was a significant decrease in participants' advocacy of secrecy, but not in the negative condition (See Table 15). In the positive condition, participants' advocacy of secrecy ($M = 1.88, SD = 1.10$) decreased significantly after reading the narrative ($M = 1.58, SD = .89$), $t(56) = 2.59, p = .01$. Similarly, in the transitional condition, participants' advocacy of secrecy ($M = 2.52, SD = 1.31$) decreased significantly after reading the narrative ($M = 1.92, SD = .91$), $t(52) = 3.65, p = .001$. In the negative condition, participants' advocacy of secrecy ($M = 2.23, SD = .16$) decreased after reading the narrative ($M = 2.01, SD = .14$), but this increase was non-significant, $t(58) = 1.57, p = .12$. Therefore, these analyses offer partial support for Hypothesis 4a, with only the positive and transitional conditions effectively decreasing advocacy to keep the condition AATD a secret.

Table 15

Stigmatization Reduction Scores for Advocacy of Secrecy

Narrative Conditions	Pre-Test $M (SD)$	Post-Test $M (SD)$	t statistic	p value	95% CI
Positive	1.88 (1.10)	1.58 (0.89)	2.59	0.01	[0.07, 0.53]
Transitional	2.52 (1.31)	1.92 (0.91)	3.65	0.001	[0.27, 0.92]
Negative	2.23 (0.16)	2.01 (0.14)	1.57	0.12	[-0.06, 0.50]

Note. M = means; SD = standard deviation; CI = confidence interval.

Hypothesis 4b predicted that advocacy for persons with AATD to withdraw from others would decrease after reading a narrative stigma reduction message, regardless of narrative condition. A series of paired-sample t tests revealed that, in the positive and transitional conditions, there was a significant decrease in participants' advocacy of withdrawal, but not in the negative condition (see Table 16). In the positive condition, participants' advocacy of withdrawal ($M = 2.96$, $SD = 1.63$) decreased significantly after reading the narrative ($M = 2.32$, $SD = 1.21$), $t(56) = 3.10$, $p = .003$. Similarly, in the transitional condition, participants' advocacy of withdrawal ($M = 3.40$, $SD = 1.51$) decreased significantly after reading the narrative ($M = 2.73$, $SD = 1.44$), $t(53) = 3.85$, $p < .001$. In the negative condition, participants' advocacy of withdrawal ($M = 3.39$, $SD = 1.59$) decreased after reading the narrative ($M = 3.07$, $SD = 1.59$), but this increase just failed to reach significance, $t(55) = 1.89$, $p = .06$. Therefore, Hypothesis 4b received partial support, with only the positive and transitional conditions leading to a significant decrease in advocacy for persons with AATD to withdraw from others.

Table 16

Stigmatization Reduction Scores for Advocacy of Withdrawal

Narrative Conditions	Pre-Test M (SD)	Post-Test M (SD)	t statistic	p value	95% CI
Positive	2.96 (1.63)	2.32 (1.21)	3.10	0.003	[0.23, 1.07]
Transitional	3.40 (1.51)	2.73 (1.44)	3.85	0.00	[0.32, 1.01]
Negative	3.39 (1.59)	3.07 (1.59)	1.89	0.06	[-0.02, 0.66]

Note. M = means; SD = standard deviation; CI = confidence interval.

Hypothesis 4c predicted that advocacy for persons with AATD to educate others about the condition would increase after reading a narrative stigma reduction message, regardless of narrative condition. A series of paired-sample t tests revealed that only in the positive condition

was there a significant increase in participants' advocacy of education, but not in the transitional and negative conditions (see Table 17). In the positive condition, participants' advocacy of education ($M = 5.53, SD = 1.18$) increased significantly after reading the narrative ($M = 5.84, SD = .96$), $t(56) = -2.35, p = .02$. Conversely, in the transitional condition, participants' advocacy of education ($M = 5.36, SD = 1.03$) increased after reading the narrative ($M = 5.58, SD = 1.25$), but this increase was non-significant, $t(53) = -1.37, p = .18$. Similarly, in the negative condition, participants' advocacy of education ($M = 5.58, SD = 1.03$) increased after reading the narrative ($M = 5.70, SD = 1.05$), but this increase failed to reach significance, $t(58) = -.94, p = .35$. Therefore, Hypothesis 4c received partial support, with only the positive condition leading to a significant increase in advocacy for persons with AATD to educate others about the condition.

Table 17

Stigmatization Reduction Scores for Advocacy of Education

Narrative Conditions	Pre-Test $M (SD)$	Post-Test $M (SD)$	t statistic	p value	95% CI
Positive	5.53 (1.18)	5.84 (0.96)	-2.35	0.02	[-0.59, -0.05]
Transitional	5.36 (1.03)	5.58 (1.25)	-1.37	0.18	[0.10, -1.37]
Negative	5.58 (1.03)	5.70 (1.05)	-0.94	0.35	[-0.39, 0.14]

Note. M = means; SD = standard deviation; CI = confidence interval.

H4d predicted that advocacy to stigmatize would vary as a function of narrative condition; specifically, participants in the positive and transitional narrative conditions would report significantly less advocacy to stigmatize than participants in the negative narrative condition. A multivariate analysis of covariance (MANCOVA) was used to examine this relationship, controlling for social support and resilience to stigma. The analysis revealed a

significant main effect for narrative condition, Wilks' $\Lambda = .88$, $F(6, 242) = 2.71$, $p = .01$, partial $\eta^2 = .06$.

The univariate analysis for advocating secrecy revealed a significant main effect for narrative condition, with participants in the positive narrative condition reporting significantly less advocacy of secrecy ($M = 1.67$, $SD = .98$) than participants in the negative condition ($M = 2.19$, $SD = 1.19$); however, participants in the transitional condition ($M = 1.96$, $SD = .95$) did not differ significantly from participants in either the positive or negative conditions, $F(2, 123) = 3.22$, $p = .04$, partial $\eta^2 = .05$. The univariate analysis for advocating withdrawal also revealed a significant main effect for narrative condition, with participants in the negative condition reporting significantly greater advocacy of withdrawal ($M = 3.37$, $SD = 1.47$) than participants in both the positive ($M = 2.38$, $SD = 1.22$) and transitional ($M = 2.57$, $SD = 1.26$) conditions, $F(2, 123) = 7.53$, $p = .001$, partial $\eta^2 = .11$. The univariate analysis for advocating education, however, did not reveal a significant main effect for narrative condition, $F(2, 123) = .93$, $p = .40$, partial $\eta^2 = .02$. Therefore, Hypothesis 4d received partial support.

Summary of Stigmatization Reduction Findings

In review, all three of the narrative conditions demonstrated a significant reduction in desire for social distance from pre- to post-test; however, when the conditions were compared, the positive narrative condition was significantly more effective than the negative condition in reducing desire for social distance. Chi-square analysis revealed that 31.5% of participants in the positive condition and 31.5% of participants in the transitional condition moved from an initial unwillingness to room with someone who has AATD to being willing to room with such a person after reading the respective narratives. However, an equal number of participants in both the positive and transitional conditions—31.5% in both conditions—remained unwilling to room

with an individual diagnosed with AATD from pre- to post-test. In the negative condition, only 20% of participants moved from being unwilling to room with someone who has AATD to willing to room, while 34% remained unwilling from pre- to post-test. Only 2% percent of participants in the positive and transitional conditions who were initially willing to room with someone who has AATD became unwilling in the post-test, and 3% percent of participants in the negative condition changed from willing to unwilling in the post-test. It is critical to understand the factors mediating this process in order to enhance the effectiveness of such narrative messages.

Similarly, all three conditions reduced negative attitudes associated with rooming with someone who has AATD, but, again, the positive condition was significantly more effective than the transitional or negative conditions. Though all of the conditions significantly decreased perceptions of dangerousness of persons with AATD, no significant differences emerged among the conditions. However, in regard to perceptions that individuals with AATD are the same as otherwise healthy people, the positive and transitional conditions were significantly more effectively in increasing this perception than the negative condition. From these findings, the positive, and often transitional, conditions appear to be significantly more effective in reducing stigmatization associated with AATD than the negative condition.

However, in regard to influencing emotion associated with AATD stigmatization, the results are more complex. While the positive condition was most significantly effective in reducing fear associated with rooming with someone who has AATD, the transitional condition was most significantly effective in reducing anger. Both the positive and transitional conditions were more significantly effective in reducing shame associated with rooming with someone who has AATD than the negative condition, yet no condition demonstrated a significant increase in

sympathy toward persons with AATD. Though the positive and transitional conditions vary in their effectiveness in influencing emotion associated with AATD stigmatization, the negative condition never led to a significant reduction in stigmatization.

Finally, advocacy to stigmatize demonstrated again the effectiveness of both the positive and transitional conditions to lead to a significant reduction in both advocacy for individuals to keep their AATD diagnosis a secret and advocacy for individuals with AATD to withdraw from others. However, for advocacy to educate others about AATD, the positive condition was the only condition to lead to a significant increase.

These findings present a pattern in which the positive and/or transitional narrative conditions consistently led to a reduction in AATD-associated stigmatization, while the negative narrative condition, with few exceptions, did not. These differences beg the question of what processes may be mediating such effects, and if these processes differ among the experimental conditions. Path analysis of the mechanisms associated with the narrative conditions allowed for an investigation of these possible differences and clarified the different conditions' effectiveness in reducing stigmatization.

Statistical Analyses of the Proposed Path Model

Prior to analyzing the 11 hypotheses and one research question within the proposed path model, the data were examined for missing data, multivariate normality, and multicollinearity. Because data were analyzed using AMOS 19, all missing data needed to be addressed before the path model could be analyzed. As a result, a missing-values analysis was conducted using SPSS 19; subsequently, it was found that fewer than five percent of the data for each variable were missing (Tabachnick & Fidell, 2007), and, according to Little's MCAR test, the data were missing completely at random. Because of the small percentage of missing data, the missing values were imputed using Expectation-Maximization in SPSS 19. Once the missing values were

imputed, the descriptive statistics for each endogenous variable were then examined for normality (See Table 18).

Table 18

Descriptive Statistics for Dependent Variables in the Model

	<i>M</i>	<i>SD</i>	MIN	MAX	Skewness	Kurtosis	α
Empathy with Protagonist	3.57	1.00	1.00	6.83	0.06	0.24	0.67
Moral Approval	5.04	1.32	2.33	7.00	-0.25	-1.12	0.85
Character Liking	5.21	1.49	1.00	7.00	-0.73	-0.22	0.92
Perceived Similarity	4.25	1.66	1.00	7.00	-0.52	-0.70	0.96
Character Identification	4.38	1.22	1.00	7.00	-0.03	-0.11	0.85
Wishful Identification	3.99	1.72	1.00	7.00	-0.30	-1.04	0.94
Perceived Reality	5.22	0.97	2.67	7.00	-0.29	-0.34	0.87
Transportation	4.79	0.81	1.50	6.75	-0.56	1.12	0.81
Self Efficacy	5.02	1.22	1.25	7.00	-0.56	0.17	0.92
Empathy with Stigmatized Character	5.46	1.35	1.00	7.00	-0.93	0.45	0.84
Stigmatization (Social Distance)	5.36	1.15	2.00	7.00	-0.61	0.07	--

Note. *M* = means; *SD* = standard deviation; MIN = minimum value reported; MAX = maximum value reported; α = Cronbach's alpha. All variables measuring stigmatization reduction were coded into numerical values ranging from 1 (strongly disagree) to 7 (strongly agree). Social distance was measured with one item.

Means and standard deviations for each variable were considered acceptable, and the minimum and maximum values for each variable suggested a wide variation in participants' perceptions of the narratives across all three conditions. Both skewness and kurtosis were also acceptable (skewness < |2|, kurtosis < |2|, Garson, 2012). For all variables except for empathy with the protagonist, Cronbach's alpha was deemed acceptable (> .70, Kline, 1999). The data

were simultaneously checked for outliers with z-score criteria (± 3.29) (Tabachnick & Fidell, 2007). Overall, the data appeared to be multivariate normal and acceptable for use in path analysis.

Based on the ANOVA results for participants' willingness to room with a student diagnosed with AATD and the overall pattern of findings associated with the stigmatization reduction experiment, the three original experimental conditions – positive, transitional, and negative, were combined to form two conditions for the path analysis – positive/transitional and negative (Positive/Transitional N = 111; Negative N = 59). The means and standard deviations for both conditions were examined, and the data were deemed acceptable (See Table 19).

Table 19

Means and Standard Deviations by Experimental Condition for the Dependent Variables in the Proposed Path Model

Experimental Condition	Positive/Transitional	Negative
Empathy with Protagonist	3.78 (0.94)	3.18 (0.99)
Moral Approval	5.79 (0.89)	3.62 (0.64)
Character Liking	5.99 (0.97)	3.73 (1.14)
Perceived Similarity	5.00 (1.22)	2.85 (1.45)
Character Identification	4.68 (1.18)	3.81 (1.09)
Wishful Identification	4.88 (1.22)	2.33 (1.23)
Perceived Reality	5.26 (1.05)	5.16 (0.80)
Transportation	4.75 (0.86)	4.87 (0.70)
Self Efficacy	5.11 (1.17)	4.85 (1.31)
Empathy with Stigmatized Character	5.35 (1.39)	5.66 (1.24)
Stigmatization (Social Distance)	5.36 (1.15)	5.12 (1.22)

Note. Standard Deviations are in parentheses.

Once missing data and multivariate normality were examined, the bivariate correlations of all variables in the data were analyzed for multicollinearity (See Table 20). Several variables had correlations greater than .70, suggesting multicollinearity among these predictor variables (Tabachnick & Fidell, 2007). Though the proposed path model was analyzed without changes to these variables, the final path model reflects changes based on these high correlations. Also, according to the bivariate correlations, eight of the hypotheses and the research question were directionally appropriate and significant; however, seven hypotheses failed to reach significance (H6, H7, H8b, H10, H12a, H15a, H15b). These paths, along with the predictor variables suggesting multicollinearity, were re-evaluated and changed in the creation of the final path model.

Table 20

Bivariate Correlations for Variables in Path Model

	1	2	3	4	5	6	7	8	9	10	11	12
1. Narrative Condition	1.00											
2. Empathy with Protagonist	.29**	1.00										
3. Moral Approval	.79**	.17*	1.00									
4. Character Liking	.73**	.30**	.84**	1.00								
5. Perceived Similarity	.62**	.31**	.76**	.81**	1.00							
6. Character Identification	.34**	.26**	.46**	.54**	.64**	1.00						
7. Wishful Identification	.71**	.40**	.71**	.77**	.74**	.53**	1.00					
8. Perceived Reality	.05	-.05	.31**	.27**	.33**	.45**	.17*	1.00				
9. Transportation	-.07	.08	.12	.12	.18*	.49**	.09	.58**	1.00			
10. Self Efficacy	.10	-.32**	.20**	.09	.11	.13	.04	.31**	.23**	1.00		
11. Empathy with Stigmatized Character	-.11	.01	.05	.06	-.08	.13	-.08	.26**	.49**	.33**	1.00	
12. Stigmatization (Social Distance)	.16*	-.19*	.29**	.20*	.21**	.26**	.15	.40**	.36**	.16*	.23**	1.00

Note. * $p < .05$, ** $p < .01$

Narrative Condition was coded as a dichotomous variable: 0=Negative Condition, 1 = Positive/Transitional Conditions.

Test of the Proposed Path Model

To test the hypotheses and research question in the proposed path model, data were imported into AMOS 19. Because missing values were already imputed, the proposed model was ready to be created, and the path analysis was conducted. The significance of all paths in the model was examined in light of the hypotheses, and the chi-square goodness-of-fit test, with additional fit statistics, were used to determine overall model fit (See Figure 2 for results of proposed path model).

Research question 1 asked which protagonist type(s) would viewers perceive as morally good in regard to characters' willingness to stigmatize an individual diagnosed with AATD? First, a one-way ANOVA with Holm's sequential bonferroni post-hoc comparisons was conducted to test the differences among the original three conditions. The analysis revealed that participants in the positive ($M = 5.96$, $SD = .80$) and transitional conditions ($M = 5.61$, $SD = .96$) were significantly more likely than participants in the negative condition ($M = 3.62$, $SD = .64$) to morally approve of the protagonist, $F(2, 166) = 140.57$, $p = .00$, partial $\eta^2 = .63$. Participants in the positive and transitional conditions, however, were not significantly different from each other in regard to moral approval, further supporting the combination of the two conditions into one condition in the proposed path model.

The path analysis for RQ1 also revealed that participants in the positive/transitional narrative condition experienced significantly more moral approval of the protagonist than participants in the negative condition ($\beta = .79$, $p < .001$). Thus, in response to RQ1, significant differences did exist between the positive/transitional combined condition and the negative condition in regard to the moral approval of the protagonist, with participants in the positive/transitional condition experiencing greater moral approval. In accordance with affective

disposition theory, Hypothesis 5 (H5) predicted that moral approval of the protagonist would, in turn, be positively associated with the affective dispositions formed toward the protagonist. The path analysis revealed support for this hypothesis ($\beta = .84, p < .001$), with greater moral approval leading to significantly more liking of the protagonist.

Hypothesis 6 (H6) predicted that positive and transitional protagonists would be perceived as more realistic than negative protagonists. First, a one-way ANOVA with Holm's sequential bonferroni post-hoc comparisons was conducted to test the differences among the three original conditions. The analysis revealed no significant differences among the three conditions, $F(2, 165) = .36, p = .70$, partial $\eta^2 = .004$. Similarly, the path analysis between the positive/transitional condition and the negative condition for this hypothesis was not significant, revealing no support for this hypothesis ($\beta = .05, p = .52$). These findings suggest that the type of protagonist portrayed in the narrative did not influence perceptions of how realistic the characters and events in the narrative seemed to participants.

Hypothesis 7 (H7) predicted that type of protagonist would be positively associated with character identification, with viewers identifying more with positive and transitional protagonists than with negative protagonists. A one-way ANOVA with Holm's sequential bonferroni post-hoc comparisons was conducted to test the differences among the three original conditions. The analysis revealed that participants in the positive ($M = 4.65, SD = 1.29$) and transitional conditions ($M = 4.71, SD = 1.05$) were significantly more likely than participants in the negative condition ($M = 3.81, SD = 1.09$) to identify with the protagonist, $F(2, 167) = 11.06, p = .00$, partial $\eta^2 = .12$. Again, participants in the positive and transitional conditions were not significantly different from each other in regard to character identification. However, the path

analysis for this hypothesis was not significant ($\beta = -.02, p = .85$), indicating that narrative condition did not significantly influence participants' identification with the protagonist.

Hypothesis 8a (H8a) predicted that the type of protagonist would be positively associated with empathy toward the protagonist, such that viewers would empathize more with positive and transitional protagonists than with negative protagonists. A one-way ANOVA with Holm's sequential bonferroni post-hoc comparisons was conducted to test the differences among the three original conditions. The analysis revealed that participants in the transitional condition ($M = 4.05, SD = .96$) were significantly more likely than participants in the positive ($M = 3.53, SD = .86$) and negative conditions ($M = 3.18, SD = .99$) to experience empathy with the protagonist, $F(2, 164) = 11.85, p = .00, \text{partial } \eta^2 = .13$. Similarly, the path analysis for H8a revealed support for this hypothesis ($\beta = .29, p < .001$), with participants in the positive/transitional condition experiencing more empathy with the protagonist than participants in the negative condition. Hypothesis 8b (H8b), in turn, predicted that empathy with the protagonist would be positively associated with character identification with the protagonist; however, the path analysis for this hypothesis failed to reach significance ($\beta = .05, p = .35$), indicating that empathy with the protagonist was not associated with greater identification with the protagonist.

Hypothesis 9a (H9a) predicted that perceived similarity would be positively associated with the type of protagonist, with viewers perceiving themselves to be more similar to positive and transitional protagonists and less similar to negative protagonists. A one-way ANOVA with Holm's sequential bonferroni post-hoc comparisons was conducted to test the differences among the three original conditions. The analysis revealed that participants in the positive ($M = 5.00, SD = 1.36$) and transitional conditions ($M = 5.00, SD = 1.08$) were significantly more likely than participants in the negative condition ($M = 2.85, SD = 1.45$) to perceive themselves to be similar

to the protagonist, $F(2, 167) = 51.82, p = .00$, partial $\eta^2 = .38$. Similarly, the path analysis for H9a revealed support for this hypothesis ($\beta = .62, p < .001$). Hypothesis 9b (H9b), in turn, predicted that perceived similarity would lead to greater character identification with the protagonist. The path analysis for H9b was significant ($\beta = .53, p < .001$), indicating that greater perceived similarity to the protagonist leads to greater character identification with the protagonist.

Likewise, Hypothesis 10 (H10) predicted that liking of the protagonist would be positively associated with identification with the protagonist; however, the path analysis for this hypothesis failed to reach significance ($\beta = .09, p = .21$), indicating that liking of the protagonist was not associated with greater identification with the protagonist. Hypothesis 11 (H11) predicted that identification with the protagonist would then be negatively associated with stigmatization. The path analysis revealed support for H11 ($\beta = .16, p = .01$), indicating that increased identification with the protagonist predicted the amount of willingness to be the college roommate of someone diagnosed with AATD.

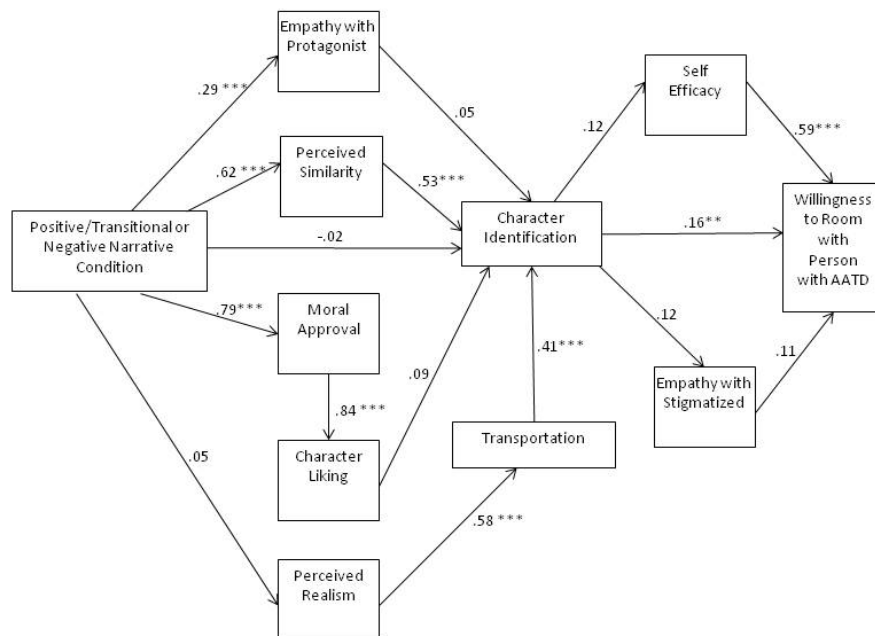
Hypothesis 12a (H12a) predicted that identification with the protagonist would be associated with increased self efficacy; however, this path was not significant ($\beta = .12, p = .12$), indicating that identification with the protagonist did not predict participants' sense of self efficacy. Hypothesis 12b (H12b) predicted that, in turn, self efficacy would lead to a decreased desire for social distance. This path was significant ($\beta = .59, p < .001$), indicating that self efficacy predicted willingness to be the roommate of someone diagnosed with AATD.

Hypothesis 13 (H13) predicted that perceived realism would be positively associated with transportation. The path analysis revealed support for this hypothesis ($\beta = .58, p < .001$), suggesting that perceived realism predicted transportation into the narrative. Hypothesis 14

(H14) predicted that, in turn, transportation would be positively associated with identification with the protagonist. Again, the path analysis revealed support for H14 ($\beta = .41, p < .001$), indicating that transportation predicted identification with the protagonist in the narrative.

With regard to cognitive balance theory, Hypothesis 15a (H15a) predicted that identification with the protagonist would be positively associated with empathy toward the character diagnosed with AATD. The path analysis, however, was not significant ($\beta = .12, p = .12$), suggesting that identification with the protagonist did not predict the amount of empathy toward the character with AATD. Hypothesis 15b (H15b) predicted that, in turn, empathy with the character diagnosed with AATD would be negatively associated with stigmatization. Similarly, the path analysis for this hypothesis was not significant ($\beta = .11, p = .06$), suggesting that empathy with the character diagnosed with AATD did not predict stigmatization.

Figure 2: Proposed Path Model with Standardized Coefficients



Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Narrative Condition was coded as a dichotomous variable: 0 = negative condition, 1 = positive/transitional condition. Character identification signifies participants' identification with the protagonist.

The overall fit of the model was analyzed using the chi-square goodness-of-fit test, along with the following fit indices: root mean square error of approximation (RMSEA), the comparative fit index (CFI), the standardized root mean square residual (SRMR), and RHO. Overall, the fit statistics indicated that the proposed path model was not a good fitting model, $\chi^2 = 314.69$, $df = 39$, $p = .00$, RMSEA = .21, CFI = .73, SRMR = .15, RHO = .62.

The poor fit of this proposed model could be attributed to several characteristics of the model itself: First, according to the bivariate correlations, several predictor variables appeared to have a high degree of multicollinearity, suggesting that they may have been measuring the same concept; second, several paths were non-significant, indicating that they may need to be reconsidered theoretically in light of the model fit; and third, the model was relatively complex, and a more parsimonious approach to the data may afford a better model fit.

Modifications to the Proposed Path Model

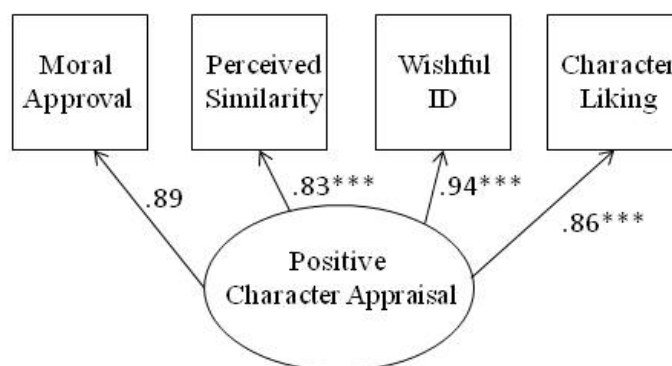
According to Tabachnick and Fidell (2007), variables with a bivariate correlation of .70 or higher may be combined to create a composite of the redundant variables. To explore the possibility that the highly correlated ($> .70$) predictor variables – perceived similarity, character liking, moral approval, wishful identification, and character identification – were measuring a latent concept, a factor analysis with promax rotation was first conducted to test the factor structure of the items comprising each variable (See Appendix F). The analysis suggested the presence of three dimensions, accounting for 72.22% of the total variance of the items.

Though the simple structure of these factor loadings is tentative due to the high loadings of several items on all three factors, a pattern emerged indicating differences among positive character appraisal – comprised of all of the character liking and perceived similarity items, as

well as three of the moral approval items – and character identification, whose four items loaded on a separate factor.

To further explore the relationships among these variables for inclusion in the final path model, a confirmatory factor analysis was conducted in AMOS 19. The chi-square goodness-of-fit test and the fit indices suggested that, overall, this was not a particularly good-fitting model, $\chi^2 = 26.02$, $df = 5$, $p = .00$, RMSEA = .16, CFI = .97, SRMR = .04 (90% CI: .10-.22). When character identification was removed from the model, as indicated by the factor analysis, the fit of the model was judged to be good, $\chi^2 = 3.3$, $df = 2$, $p = .19$, RMSEA = .06, CFI = 1.00, SRMR = .01 (90% CI: .00-.18). In light of the results of the chi-square test as well as the fit indices, this model, which included the latent variable positive character appraisal, was used as part of the overall final path model (See Figure 3).

Figure 3. Confirmatory Factor Analysis for Final Path Model



Note. Observed variables are scale variables comprised of items that were coded into numerical values ranging from 1 (strongly disagree) to 7 (strongly agree). $\chi^2 = 3.3$, $df = 2$, $p = .19$, RMSEA = .06, CFI = 1.00, SRMR = .01 (90% CI: .00-.18).

After the creation of the latent variable positive character appraisal, the paths in the proposed model were assessed for statistical and theoretical significance. To improve the fit of the final path model, the paths that failed to reach significance were eliminated from the model (Krakowiak & Oliver, 2012). Of note, three of the five paths leading to character identification

and two of the three paths leading away from character identification were non-significant (See Figure 2). This was of theoretical as well as statistical importance given that character identification, in the proposed model, had been regarded as the primary mechanism through which participants would exhibit decreased social distance (Moyer-Gusé, 2008). Instead, the related but distinct latent variable positive character appraisal seemed likely to be this mechanism instead, given the significance of the paths leading to and from the observed variables that comprised the latent variable. Based on the non-significance of the paths associated with character identification and the formation of the variable positive character appraisal, character identification was removed from the model.

Similarly, perceived realism was removed from the model—based both on the non-significance of the path between narrative condition and perceived realism in the proposed model and on the absence of differences among participants' perceptions of realism in the three original narrative conditions in the ANOVA test.

Finally, empathy with the stigmatized character was also removed from the model. This decision was based on the non-significance of the path leading from character identification to empathy with the stigmatized character and the path leading from empathy with the stigmatized character to willingness to room with a person diagnosed with AATD. Like character identification, the removal of empathy with the stigmatized character, was of theoretical importance. In regard to cognitive balance theory (Heider, 1958), empathy with the stigmatized character was asserted to be a mechanism leading from identification with the protagonist to decreased social distance. However, this relationship was not statistically significant in influencing participants' willingness to room with someone diagnosed with AATD.

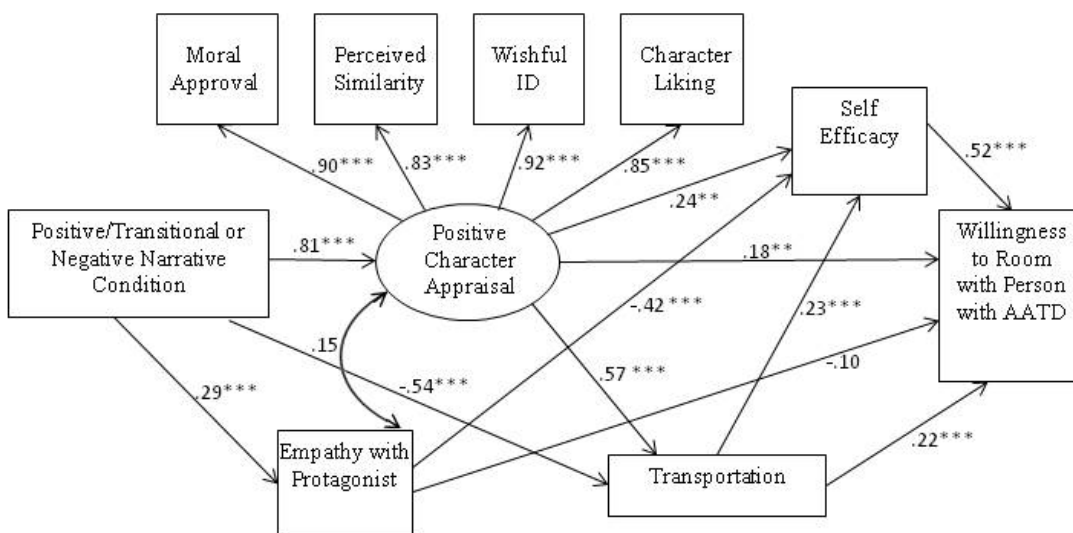
Once the non-significant paths and two variables were removed from the proposed model, new paths were drawn between narrative condition and positive character appraisal, positive character appraisal and self efficacy, positive character appraisal and transportation, positive character appraisal and willingness to room, narrative condition and transportation, empathy with the protagonist and self efficacy, transportation and self efficacy, and transportation and willingness to room. Several of the paths related to positive character appraisal replace the hypothesized paths related to character identification. Other paths, though not originally hypothesized, had theoretical foundation in previous research (Green, 2004, 2006; Moyer-Gusé, 2008), and the inclusion of these paths opened the possibility that other variables, particularly transportation into the narrative, may be playing a greater role in decreasing desired social distance than initially hypothesized.

Additionally, with the creation of the latent variable positive character appraisal and the removal of the non-significant paths and two variables from the proposed model, the final model became somewhat less complex than the proposed path model. This final model, therefore, presents a clearer picture of the psychological processes mediating the narrative message conditions and decreased social distance.

Final Path Model

Figure 4 shows the final path model with standardized regression coefficients. Though the chi-square goodness-of-fit test for the model was significant, $\chi^2 = 63.59$, $df = 20$, $p = .00$, this test is known to be sensitive to large sample sizes. Therefore, several fit indices were analyzed, RMSEA = .11, CFI = .95, SRMR = .04, RHO = .92 (90% CI .08-.15). Based on the overall pattern of these fit indices, the model was judged to have acceptable fit (Bentler & Bonett, 1980; Hu & Bentler, 1999; Tucker & Lewis, 1973).

Figure 4. Final Path Model with Standardized Regression Coefficients



Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Narrative Condition was coded as a dichotomous variable: 0 = negative condition, 1 = positive/transitional condition. Error terms for empathy with protagonist and positive character appraisal are correlated.

Though RMSEA appears higher than what is generally deemed acceptable (Browne & Cudeck, 1993; Hu & Bentler, 1999), RMSEA can become unstable when residual covariances are small. According to Browne and colleagues (2002), standard chi-square-based fit indices are more sensitive to misfit when unique variances are small. Therefore, it is suggested that the correlation residuals be examined, and if all or most of the residuals are small, then model misfit should be deemed low. For the final path model, the residual covariances were very low, indicating that the model is providing a good approximation of the data (See Table 18). Consequently, it is very possible that the indication of misfit in the higher RMSEA could be due to the higher level of misfit detectability associated with small correlation residuals that are otherwise indicating excellent fit (Browne et al., 2002).

Table 21

Residual Covariance for the Final Path Model

	1	2	3	4	5	6	7	8	9
1. Narrative Condition	.00								
2. Transportation	.00	.00							
3. Empathy with Protagonist	.00	.04	.00						
4. Self Efficacy	.03	-.02	.02	-.02					
5. Willingness to Room	.01	-.02	.02	-.02	-.02				
6. Perceived Similarity	-.06	.08	.06	-.02	-.01	.00			
7. Character Liking	-.02	-.01	.01	-.07	-.06	.05	.00		
8. Wishful Identification	.03	-.04	.23	-.16	-.12	.09	.00	.00	
9. Moral Approval	.03	-.01	-.15	.11	.10	-.03	.01	-.09	.00

Therefore, based on the overall pattern of indices—all of which, except for RMSEA, are considered acceptable (Hu & Bentler, 1999; Tucker & Lewis, 1973)—and the small residual covariances (Browne et al., 2002), the final model was judged to have acceptable fit.

According to the final model, the narrative message condition significantly influenced participants' positive appraisal of the protagonist ($\beta = .81, p < .001$). Positive character appraisal, in turn, led to a significant increase in both perceived self efficacy ($\beta = .24, p = .001$) and transportation into the narrative ($\beta = .57, p < .001$). Transportation also led to a significant increase in self efficacy ($\beta = .23, p < .001$). Both perceived self efficacy ($\beta = .52, p < .001$) and transportation ($\beta = .22, p < .01$), in turn, significantly predicted participants' willingness to be the roommate of someone diagnosed with AATD.

Of note, narrative message condition negatively influenced participants' transportation into the narrative ($\beta = -.54, p < .001$). This suppression effect occurred as a result of positive character appraisal positively mediating the relationship between narrative message condition and transportation. While transportation plays a statistically significant role in leading to increased self efficacy and decreased social distance in the final model, it does so as a result of participants' positive character appraisals rather than as a direct result of their narrative message condition. Also of interest, positive character appraisal led directly to a significant increase in participants' willingness to be the roommate of someone with AATD ($\beta = .18, p < .01$). Though both self efficacy and transportation mediated this relationship in the final model, positive character appraisal alone also influenced participants' decreased social distance.

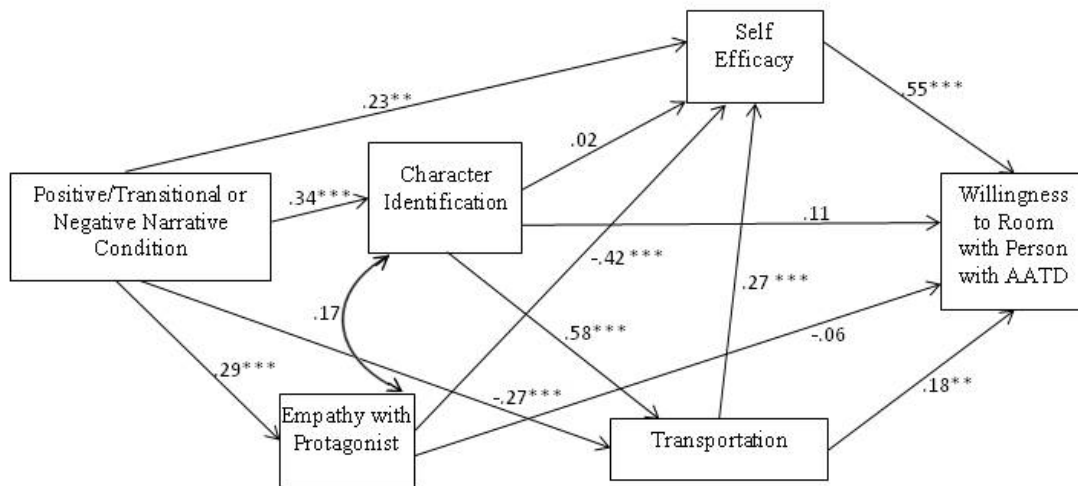
In contrast, though narrative message condition led to a significant increase in empathy with the protagonist ($\beta = .29, p < .001$), empathy with the protagonist led to a significant decrease in self efficacy ($\beta = -.42, p < .001$). Similarly, empathy with the protagonist led to a decrease in participants' willingness to room with someone who has AATD, though this path was non-significant ($\beta = -.10, p < .13$). Therefore, this final model demonstrates that positive character appraisal—through self efficacy, transportation, and directly—significantly predicted the amount of desired social distance; however, empathy with the protagonist led to a significantly decreased experience of self efficacy and a slight, non-significant prediction of participants' willingness to room with a person with AATD.

Comparison Path Model

Because identification with the protagonist had been the central mechanism of the proposed model, and because the conceptualization of character identification has been cited in previous research as theoretically problematic (Barker, 2005; Cohen, 2001; Moyer-Gusé, 2008;

Murphy et al., 2011), a comparison model was developed, replacing positive character appraisal with character identification to examine how character identification may operate differently than positive character appraisal in the final model (See Figure 5). Based on the chi-square goodness-of-fit test and several fit indices, the overall fit of the comparison model was deemed to be acceptable, $\chi^2 = 3.45$, $df = 2$, $p = .18$, RMSEA = .07, CFI = .95, SRMR = .02, RHO = .95 (90% CI = .00- .18).

Figure 5. Comparison Path Model with Standardized Regression Coefficients



Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Narrative Condition was coded as a dichotomous variable: 0 = negative condition, 1 = positive/transitional condition.

Error terms for empathy with protagonist and character identification are correlated.

Character identification signifies participants' identification with the protagonist.

In the comparison model, narrative condition significantly led to increased character identification ($\beta = .34$, $p < .001$). In turn, character identification led to a significant increase in transportation into the narrative ($\beta = .58$, $p < .001$). However, unlike positive character appraisal, character identification did not lead to a significant increase in self efficacy ($\beta = .02$, $p = .83$), nor did it lead directly to a significant increase in participants' willingness to be the roommate of someone with AATD ($\beta = .11$, $p = .09$). This difference is theoretically important: According to

the comparison model, if a message's ultimate goal is to reduce genetic stigmatization, then character identification, unless it leads to increased transportation into the narrative, does not predict desire for social distance.

Transportation performed similarly in the comparison model as it did in the final model. The same suppression effect occurred, with narrative message condition leading to a significant decrease in transportation ($\beta = -.27, p < .001$). Transportation, again, led to a significant increase in self efficacy ($\beta = .27, p < .001$) and significantly predicted participants' willingness to room with someone who has AATD ($\beta = .18, p < .01$).

Empathy with the protagonist also performed similarly in the comparison model as it did in the final model. Narrative message condition led to a significant increase in empathy for the protagonist ($\beta = .29, p < .001$), and empathy with the character again led to a significant decrease in self efficacy ($\beta = -.42, p < .001$) and negatively predicted participants' willingness to room with someone who has AATD, although this path was, again, non-significant ($\beta = -.06, p = .37$).

Finally, in the comparison model, a new significant path was added that increased the overall fit of the model, different from the final path model. In the comparison model, narrative message condition led directly to a significant increase in perceived self efficacy ($\beta = -.06, p < .01$). Although the existence of this path in the final model would not have changed the overall fit of that model, the path itself would not have been significant ($\beta = .16, p = .21$). This is an interesting change from the final model: Narrative message condition was not a significant predictor of self efficacy in the final model, but positive character appraisal was; conversely, narrative message condition was a significant predictor of self efficacy in the comparison model, but character identification was not ($\beta = .02, p = .83$). Similar to the final model, self efficacy in the comparison model did significantly predict desire for social distance ($\beta = .55, p < .001$).

Therefore, self efficacy in the comparison model continued to be a significant predictor of participants' willingness to room with someone who has AATD, but it was the narrative message condition that led to this effect, not character identification.

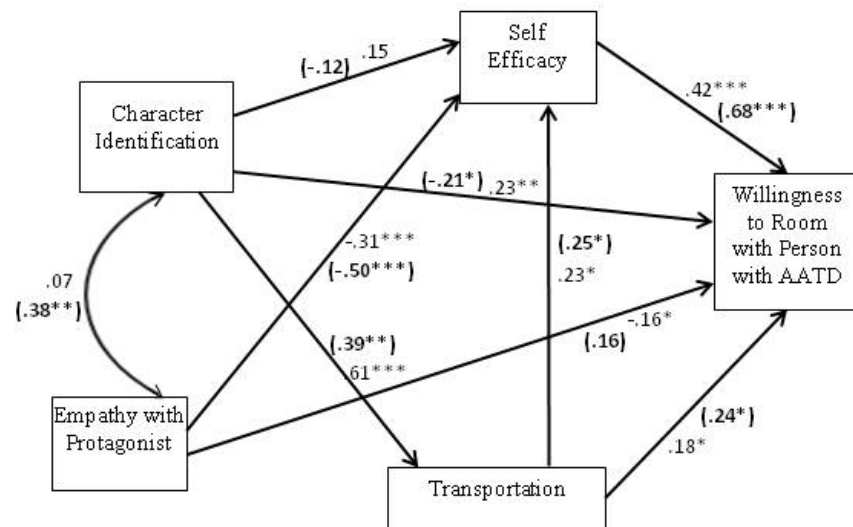
Multigroup Models: Character Identification and Wishful Identification

Finally, to further investigate the different psychological processes that may underlie the combined positive/transitional narrative condition and the negative narrative condition, two multigroup comparison models were created. These analyses examined the role of character identification and wishful identification between the two narrative conditions. Wishful identification was chosen as the specific mechanism for this multigroup model rather than the more inclusive positive character appraisal as a way to directly explore participants' aspirational motivations (i.e. wanting to be like/emulate the protagonist). Wishful identification, or idealization of a character, has been shown to lead to behavior change as well as operate differently than character identification in previous research (e.g., Greenwood, 2007). This multigroup comparison investigates the possible differences between wishful and character identification and their different functions in both the positive/transitional and negative conditions. The paths in both multigroup models reflect the same structure as the final path model.

Figure 6 contains the multigroup model examining character identification. According to the chi-square goodness-of-fit test and associated fit indices, the model was judged to have good fit, $\chi^2 = 1.90$, $df = 2$, $p = .38$, RMSEA = .00, CFI = 1.00, SRMR = .03, RHO = 1.00 (90% CI = .00-.15). When constrained and unconstrained models were compared to test the invariance between the two narrative conditions, it was found that the regression weights between the

positive/transitional condition and the negative condition were not invariant, $\Delta \chi^2 = 27.38$, $df = 9$, $p < .01$.

Figure 6. Multigroup Model: Character Identification



Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Standardized coefficients in parentheses indicate negative narrative condition; standardized coefficients in plain text indicate positive/transitional narrative condition.

Character identification signifies participants' identification with the protagonist.

According to the multigroup model in Figure 6, character identification in neither the positive/transitional condition ($\beta = .15$, $p = .18$) nor the negative condition ($\beta = -.12$, $p = .35$) led to a significant increase in self efficacy; additionally, the negative condition led to a decrease in self efficacy, though this decrease was non-significant. This failure to reach significance in both conditions may be problematic in that self efficacy in both conditions significantly predicted the amount of desire for social distance (positive/transitional: $\beta = .42$, $p < .001$; negative: $\beta = .68$, $p < .001$).

Similarly, character identification in the positive/transitional condition ($\beta = .07$, $p = .47$) was not significantly correlated with empathy with the protagonist; conversely, character

identification in the negative condition was ($\beta = .38, p < .01$). This also may be problematic for the negative condition because, in turn, empathy with the protagonist led to a significant decrease in self efficacy for both the positive/transitional ($\beta = -.31, p < .001$) and negative conditions ($\beta = -.50, p < .001$). In addition, in the negative condition, empathy with the protagonist negatively predicted willingness to room with someone who has AATD, although this decrease was non-significant ($\beta = -.16, p = .15$). Likewise, character identification in the negative condition significantly predicted more desired social distance ($\beta = -.21, p = .04$); however, in the positive/transitional condition, character identification significantly predicted the amount of desired social distance ($\beta = .23, p < .01$).

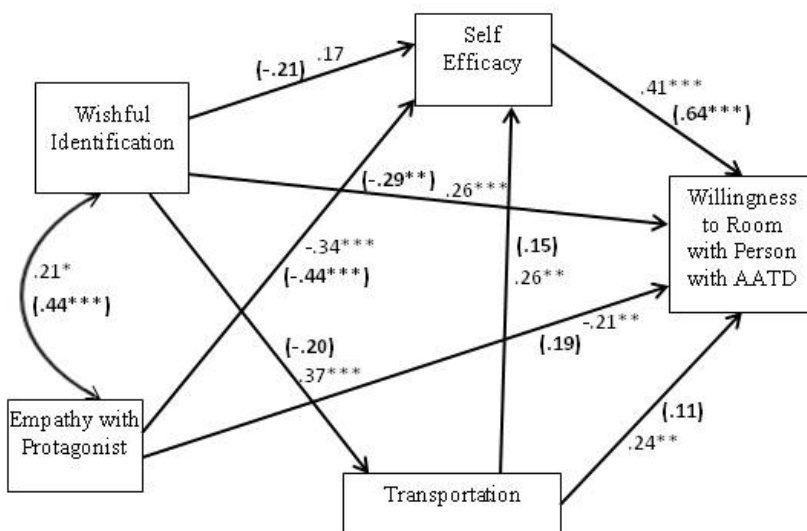
This model suggests, then, that character identification in neither condition led to a direct increase in self efficacy, and that character identification in the negative condition led to a significant increase in empathy with the protagonist which, in turn, led to a significant decrease in self efficacy. Likewise, character identification in the negative condition led directly to a decrease in willingness to room with someone diagnosed with AATD, while, in the positive/transitional condition, it led to a significant increase in willingness. Thus, character identification, though not leading to greater self efficacy, may lead directly to reduced social distance in the positive/transitional condition, but not in the negative condition.

However, character identification did lead to a significant increase in transportation in both conditions (positive/transitional: $\beta = .61, p < .001$; negative: $\beta = .39, p < .01$). In turn, transportation in both conditions led to a significant increase in both self efficacy (positive/transitional: $\beta = .23, p = .04$; negative: $\beta = .25, p = .04$) and willingness to room with someone who has AATD (positive/transitional: $\beta = .18, p = .04$; negative: $\beta = .24, p = .02$). This

suggests that, for both conditions, transportation may be the mechanism that leads from character identification to significantly increased self efficacy and decreased social distance.

Figure 7 contains the multigroup model examining wishful identification. According to the chi-square goodness-of-fit test and associated fit indices, the model was judged to have good fit, $\chi^2 = 2.1$, $df = 2$, $p = .35$, RMSEA = .02, CFI = 1.00, SRMR = .04, RHO = 1.00 (90% CI = .00- .16). When constrained and unconstrained models were compared to test the invariance between the two narrative conditions, it was found that the regression weights between the positive/transitional condition and the negative condition were not invariant, $\Delta \chi^2 = 47.80$, $df = 9$, $p < .001$.

Figure 7. Multigroup Model: Wishful Identification



Note. * $p < .05$, ** $p < .01$, *** $p < .001$
 Standardized coefficients in parentheses indicate negative narrative condition; standardized coefficients in plain text indicate positive/transitional narrative condition.
 Wishful identification signifies participants' identification with the protagonist.

According to the multigroup model in Figure 7, wishful identification with the positive/transitional protagonist did not lead to a significant increase in self efficacy ($\beta = .17$, $p = .08$). Wishful identification with the negative protagonist, however, led to a decrease in self

efficacy, though this decrease was non-significant ($\beta = -.21, p = .08$). Conversely, both the positive/transitional and negative conditions were significantly correlated with empathy with the protagonist (positive/transitional: $\beta = .21, p = .03$; negative: $\beta = .44, p < .001$), which, in turn, led to a significant decrease in self efficacy in both conditions (positive/transitional: $\beta = -.34, p = p < .001$; negative: $\beta = -.44, p < .001$). In the positive/transitional condition, empathy with the protagonist also significantly predicted a lesser amount of willingness to room with someone who has AATD ($\beta = -.21, p < .01$); in the negative condition, empathy with the protagonist predicted a greater amount of willingness to room, but this path failed to reach significance ($\beta = .19, p = .07$). This model suggests that, in both conditions, wishful identification does not lead directly to a significant increase in self efficacy. Though both conditions show a significant increase in empathy with the protagonist, the effect of this increase may be problematic, because it leads to a significant decrease in self efficacy in both conditions and significantly predicted a greater amount of desired social distance in the positive/transitional condition.

Wishful identification, however, did significantly predict less desired social distance in the positive/transitional condition ($\beta = .26, p < .001$), but it also significantly predicted more desired social distance in the negative condition ($\beta = -.29, p < .01$). This difference is theoretically important in that individuals who wish to be like the positive/transitional protagonist may experience a desire for decreased social distance from someone with AATD, while those who wish to be like the negative protagonist may experience a desire for more social distance.

An interesting difference can also be seen in the relationship between wishful identification and transportation. In this model, wishful identification led to a significant increase in transportation in the positive/transitional condition ($\beta = .37, p < .001$) and also to a decrease in

transportation in the negative condition, though this decrease was non-significant ($\beta = -.20, p < .13$). For the positive/transitional condition, transportation led to both a significant increase in self efficacy ($\beta = .26, p < .01$) as well as more willingness to room with someone who has AATD ($\beta = .24, p < .01$). However, these paths were not significant for the negative condition, with transportation not leading to a significant increase in self efficacy ($\beta = .15, p = .16$) or decreased social distance ($\beta = .11, p = .24$). This is important, because, for both conditions, self efficacy significantly predicted less desired social distance (positive/transitional: $\beta = .41, p < .001$; negative: $\beta = .64, p < .001$).

Summary of Multigroup Models

Thus, similar to the multigroup model for character identification, transportation in the model for wishful identification was the primary mechanism for increasing self efficacy and willingness to room with someone who has AATD for participants in the positive/transitional condition. However, for participants in the negative condition, transportation did not lead to significant increases in either. Because wishful identification did not lead directly to a significant increase in self efficacy for either condition, and because empathy for the protagonist significantly decreased self efficacy in both conditions, transportation was the only mechanism that could significantly predict the amount of desired social distance.

For the positive/transitional condition, a wishful identification significantly predicted the amount of desired social distance; additionally, wishful identification led to significantly increased transportation which either significantly predicted desired social distance or led to significantly increased self efficacy, which, in turn, significantly predicted desired social distance. This was not so for the negative condition: Wishful identification did not lead to a significant increase in transportation; conversely, it led to a decrease in transportation, though

this decrease was non-significant. It is important to consider that this directional difference may be attributable to the difference in sample size between the two conditions (positive/transitional $N = 111$; negative $N = 59$). However, transportation also did not significantly predict either self efficacy or willingness to room with someone who has AATD for the negative condition, and this indicates that wishful identification with the negative protagonist did not significantly predict desired social distance through any mechanism in this model.

When comparing the two multigroup models, the positive/transitional protagonist performed the same in both models in regard to decreased desire for social distance: Character and wishful identification both significantly predicted desire for social distance; character and wishful identification both significantly predicted transportation, which significantly predicted desire for social distance; and character and wishful identification both significantly predicted transportation, which significantly predicted self efficacy, which then significantly predicted desire for social distance.

In contrast, the negative protagonist only predicted desire for social distance in two ways: Character identification leading to increased transportation which either directly predicted the amount of desired social distance or character identification leading to increased self efficacy which, in turn, predicted the amount of desired social distance. Unlike the positive/transitional protagonists, wishful identification with the negative protagonist did not significantly predict desire for social distance at all.

Overall Summary of Findings

In review, narrative messages designed to reduce stigmatization associated with a genetic condition, alpha-1 antitrypsin deficiency, demonstrated effectiveness from pre- to post-test, particularly the positive and transitional protagonist conditions. Though the negative protagonist

condition, from pre- to post-test, demonstrated a significant reduction in desired social distance and perceived danger and an increase in positive attitude toward being the roommate of someone with AATD, it did not show a significant reduction in any other stigmatization measure. And when compared to the positive and transitional conditions, the negative condition never demonstrated more significant stigmatization reduction than the other two narrative conditions. While the positive and transitional protagonist conditions demonstrated effective stigmatization reduction for the majority of measures from pre- to post-test, often they did not differ significantly when compared in ANOVA and MANOVA tests. This similarity led to their being combined into one condition for the subsequent path analyses.

The path analyses revealed the existence of a latent variable—positive character appraisal—which significantly predicted the amount of desired social distance, as well as self efficacy and transportation, both of which also predicted desired social distance. Empathy for the protagonist, on the other hand, led to a significant decrease in self efficacy and did not significantly predict desired social distance. This finding suggests that positive character appraisal and empathy for the protagonist operated very differently within the narrative contexts. Similarly, when a model was created to compare positive character appraisal and character identification, the comparison model revealed that character identification did not significantly predict self efficacy or willingness to room with someone who has AATD. Thus, the two models suggest that positive character appraisal, character identification, and empathy for the protagonist may serve as very different mechanisms in a narrative.

Finally, identification with the protagonist did not lead to a significant increase in empathy for the stigmatized character, and, in turn, empathy for the stigmatized character did not significantly predict the amount of desired social distance. This finding was surprising in light of

the design of many stigmatization reduction campaigns, which often attempt to engender audience empathy for stigmatized persons as a means for reducing stigmatization. These findings have both theoretical and practical relevance to the design of stigmatization reduction messages.

Chapter 5

Discussion

This research investigated the effect that positive, transitional, and negative protagonists had on the effectiveness of a brief narrative message to reduce stigmatization associated with the genetic condition Alpha-1 Antitrypsin Deficiency (AATD). Within the context of Goffman's (1963) conceptualization of “the wise” – empathic individuals who choose to affiliate with stigmatized persons – it was hypothesized, overall, that positive and transitional protagonists would be more effective at reducing AATD-associated stigmatization than negative protagonists. The results of the stigmatization-reduction portion of this experiment offered support for this hypothesized relationship, with positive and/or transitional protagonists demonstrating significantly greater stigmatization reduction—including social distance, attitudes, and advocacy to stigmatize—than negative protagonists.

To further explore the processes mediating these outcomes, path analyses were conducted that demonstrated the effects of positive character appraisal, character identification, empathy with the protagonist, narrative transportation, and perceived self efficacy on the effectiveness of the different protagonist types in reducing stigmatization. These findings, summarized in the previous section, now warrant further examination for their theoretical and practical meaning.

Theoretical Implications of Findings

The hypotheses and research questions in this study were situated within the context of affective disposition theory (Zillmann & Cantor, 1972), cognitive balance theory (Heider, 1958), and social cognitive theory (Bandura, 1977). While each theory provides a framework for drawing inferences from the findings, the findings also have implications relevant to each theory and generate questions for future research.

In regard to affective disposition theory (ADT), the findings in the proposed path model supported the relationships proposed by this theory, namely that moral approval of a character's behavior leads to positive affective dispositions toward that character. As theorized in ADT, the more heroic or "good" characters (i.e., positive and transitional protagonists) received more moral approval, and therefore more character liking, than the "bad" characters (i.e., negative protagonists). In accordance with ADT, the proposed model indicated that these positive affective dispositions would lead to greater character identification; however, this relationship failed to be significant. It was also hypothesized that character identification, in turn, would lead to reduced desire for social distance, and in this way, ADT would have functioned in the model as theorized. Instead, the theorized relationship ended with participants experiencing more positive affective dispositions.

When the relationship between moral approval and positive affective disposition was further explored, it was found that moral approval and character liking had a high degree of multicollinearity ($r = .84$). This multicollinearity may have accounted for the significant relationship between the two variables in the proposed path model. To correct for this, a confirmatory factor analysis revealed that these two variables, along with perceived similarity and wishful identification, were factors of a latent variable, positive character appraisal. Once this latent variable was included in the final path model, it significantly predicted decreased desire for social distance.

Though much previous research supports the hypothesized relationships within ADT (e.g., Hoffner & Cantor, 1991; Raney & Bryant, 2002), the high degree of multicollinearity found in this research suggests that moral approval and character liking should be examined closely to ensure that each variable is measuring a distinct concept, so that any significant

directional relationships found between them are not due to their strong correlation with one another.

In accordance with cognitive balance theory (CBT), the findings in this study did not support the theorized relationships. In the proposed path model, it was hypothesized that character identification would lead to significantly greater empathy with the character diagnosed with AATD; in turn, empathy would lead to significantly reduced desire for social distance. However, neither of these relationships was significant.

A possible reason for this lack of support may have been due to the way the variables in the proposed model were conceptualized. Because character identification was measured as the participants' experience of being one with the protagonist (e.g., I could feel the emotions the protagonist portrayed), character identification may have failed to capture the positive affective disposition theorized to be a mechanism that leads to a balanced increase in positive affective disposition toward another person/object in CBT. Therefore, empathy with the stigmatized character was placed in a revised path model that included the latent variable positive character appraisal. However, positive character appraisal—which does capture positive affective disposition and character approval—still did not lead to a significant increase in empathy toward the character diagnosed with AATD and produced an ill-fitting model; therefore, empathy with the stigmatized character was removed from the final path model.

This led to a consideration of how empathy (e.g., I had concerned feelings toward the character) was functioning in the model. An examination of the bivariate correlations revealed that character liking and empathy with the protagonist had a very low degree of correlation ($r = .06$), which indicated that empathy may not have been the most accurate test of CBT in this model. Future research that seeks to examine the influence of audience liking of a “wise”

character on positive affective dispositions toward a stigmatized character should be cautious of how the mechanisms in the model are conceptualized and measured so that the hypothesized relationships reflect a more precise test of CBT.

Finally, in regard to social cognitive theory (SCT), which emphasizes the effect of vicarious experience on both audience behavior and perceived self efficacy, the findings in the research provided somewhat complex results. First, the greater effectiveness of both the positive and transitional protagonists than the negative protagonist to lead to a significant reduction in stigmatization reflects the theorized relationships among the constructs in SCT, which posits that when a behavior is modeled and positive outcomes are depicted, individuals viewing the model will be more likely to emulate the model (Bandura, 1977). Individuals who read narratives with positive and transitional protagonists were significantly more likely than those who read narratives with negative protagonists to report willingness to be the roommate of someone who has AATD.

An interesting finding emerged, however, in regard to self efficacy. In the final model with positive character appraisal, no path exists between the narrative conditions and self efficacy because this path would have been non-significant ($\beta = .16, p = .21$). However, in the comparison model with character identification, narrative condition led directly to a significant increase in self efficacy. Conversely, positive character appraisal led to a significant increase in self efficacy, while character identification does not. This phenomenon also occurred in the multigroup models: Neither character identification nor wishful identification led to a significant increase in self efficacy for the positive/transitional condition. And for the negative condition, both wishful identification and character identification with the protagonist led to a non-significant decrease in self efficacy.

These findings suggest that positive character appraisal, not character identification, was the primary mechanism that led to increased self efficacy. Interestingly, when positive character appraisal was absent from the model, this significant increase was derived directly from the narrative condition. It may be possible, then, that the aspect of the narrative condition that is leading to increased self efficacy is a positive appraisal of the protagonist, and this warrants further examination.

It was unexpected that wishful identification, which captures the aspirational desires of the participants (e.g., I would like to be like the protagonist), did not lead to a significant increase in self efficacy. It may be possible that positive character appraisal, which includes approval, aspiration, liking, and perceived similarity with the protagonist, provides a more effective mechanism for increased self efficacy than wishful identification alone. Individuals' perceptions of similarity with the model as well as their moral approval of the model may be generating significantly increased self efficacy, and these relationships also warrant further exploration.

These findings in regard to self efficacy are critical because self efficacy, as posited in SCT, was the only mechanism to lead to significant reductions in desired social distance in every model. Because self efficacy was so consistently effective in leading to a reduction in stigmatization, it is particularly problematic that both character identification and wishful identification with the negative protagonist led to a reduction in self efficacy. This finding provides a foundation for why a stigmatization reduction message should use a negative protagonist with caution.

Finally, as regards SCT and stigmatization, the negative protagonists, because of their reformation at the end of the narrative (i.e., coming to an understanding that his/her treatment of the roommate with AATD led to hurtful consequences), may have actually been presented as a

transformational character. In other words, the negative protagonists did not remain negative through the end of the narrative, and, instead, transformed into more aware and empathic characters. This narrative technique was purposeful in the study design due to the ethical risk of increasing stigmatization through the depiction of a thoroughly negative character without the concurrent depiction of positive and transitional characters to offset the attitudes and behaviors of the negative character. Indeed, even with the depiction of a transformational character, such results emerged. Therefore, in regard to SCT and stigmatization reduction, more research exploring the effects of transformational and negative role modeling would further help to tease apart differences in their influence on attitudes, emotional response, and behavior.

Implications for Narrative Theory

As the results suggest, empathy for the protagonist, character identification, transportation, and positive character appraisal, functioned in very different ways in the models. This finding is of particular interest due to questions posed in previous literature regarding the overlap that these concepts have (Barker, 2005; Cohen, 2001; Green, 2006; Kincaid, 2002; Moyer-Gusé, 2008). Of note, in both the final and comparison models, empathy with the protagonist led to a significant decrease in self efficacy and a non-significant decrease in willingness to room with someone who has AATD. This effect could be seen in both multigroup models, as well, with empathy with the protagonist leading to a significant decrease in self efficacy for both the positive/transitional and negative conditions. In both multigroup models, empathy with the protagonist also led to a significant increase in desire for social distance in the positive/transitional condition.

These findings suggest that experiencing feelings of concern or protectiveness for the protagonist may diminish the belief that a person can do—or possibly may diminish the desire to

do—what the protagonist is modeling, because the protagonist is perceived as being in a situation of alarm or unease. Because this effect was also seen in the positive/transitional condition, these findings further suggest that experiencing empathic concern for the protagonist may also negate the effect of the positive outcome expectancies portrayed in the narrative, which serve to enhance emulation of the modeled behaviors (Bandura, 1977). This finding is supported in previous research (e.g., Ritterfeld & Jin, 2006), in which empathy with a protagonist was only effective in reducing stigma when it was mediated by the perceived entertainment and educational value of a film. In light of this finding, designers of stigmatization reduction messages may be cautious in creating protagonists intended to engender empathic concern as this approach could produce results antithetical to the desired effect. However, because empathy has been conceptualized and measured in different ways, future research should test empathy with the protagonist in regard to cognitive perspective taking as well as empathic concern to compare the effects of these different conceptualizations.

Similar to empathy with the protagonist, character identification did not significantly increase self efficacy, though positive character appraisal did. However, in the multigroup model, character identification did lead directly to a significant decrease in desired social distance in the positive/transitional condition; conversely, it led directly to a significant increase in desired social distance in the negative condition. These findings suggest that identifying with a character—feeling like the protagonist, taking on the point of view of the protagonist (Barker, 2005; Cohen, 2001)—may not necessarily lead a person to believe that s/he could successfully execute the protagonist's behaviors, although it could lead to a willingness to execute those behaviors. This is an interesting phenomenon in that character identification may lead an individual toward a behavioral intention, but this intent is not necessarily motivated by a

heightened sense of efficacy. Problematic, however, is the finding that identification with the negative protagonist led participants toward greater intention to stigmatize. This, again, reinforces the notion that choosing a negative protagonist for a stigmatization reduction message could be a risky option that leads to unintended and possibly damaging consequences.

Though character identification alone demonstrated limited effectiveness in increasing self efficacy and decreasing desired social distance, character identification did lead to a significant increase in narrative transportation, which, in turn, led to a significant increase in self efficacy and significant decrease in desired social distance. Though this relationship between character identification and transportation is supported by much previous research (e.g., Green, 2006; Green, Brock, & Kaufman, 2004), it has also been noted to be unclear due to the possible overlap in what is being measured (Moyer-Gusé, 2008; Murphy et al., 2011). In this research, the bivariate correlation ($r = .49$), though moderate, did not suggest multicollinearity ($< .60$). Additionally, in the comparison model, a suppression effect occurred between character identification and transportation: Narrative condition led directly to a significant decrease in transportation; however, when this relationship was mediated by character identification, the relationship between character identification and transportation became positive and significant. Also, in the comparison model, character identification did not lead to a significant reduction in desired social distance, while transportation did. These findings suggest that in this research, character identification and transportation were not isomorphic, but instead worked as different mechanisms leading to a reduction in stigmatization. The practical implication of this finding suggests that creating a message that is transporting is critical to reducing stigmatization since this was the only mechanism in the narrative that led from character identification to self efficacy.

Finally, from the findings, positive character appraisal demonstrated the greatest effectiveness in reducing stigmatization. Unlike empathy with the protagonist and character identification, positive character appraisal led to a significant increase in self efficacy, a significant increase in transportation—which also led to significant increases in both self efficacy and willingness to room with someone who has AATD—and it led directly to a significant increase in willingness to room with someone who has AATD. The differences in the ways that positive character appraisal and character identification operated in this research suggest that they are conceptually independent rather than being a “multifaceted construct” (Kincaid, 2002, p. 138). One possible explanation for these differences in function in regard to self efficacy may be the effect that moral approval, liking, perceived similarity, and wishful identification have on individuals’ experiences of themselves after viewing the protagonist. According to Algoe and Haidt (2009), when individuals observe “acts of moral beauty”—such as generosity, compassion, gratitude, or virtue—they experience a feeling of being uplifted or elevated, and this leads to a desire to be better, less selfish, and emulate the behavior that was modeled (p. 106). Perhaps after viewing a protagonist who displays moral virtue, individuals experienced this sensation of elevation, which may then lead to a greater sense of self efficacy and a desire to emulate the modeled behavior. Future research should explore the possibility that positive character appraisal, which includes a moral component, may lead to a sensation of elevation and ultimately to greater self efficacy and a decreased desire to stigmatize others. From a practical perspective, this research suggests that creating protagonists who engender positive character appraisal—particularly protagonists who model positive, accepting behavior toward stigmatized others—may heighten self efficacy and decrease stigmatization in narrative stigmatization reduction messages.

Implications for AATD and Genetic Stigmatization

According to the stigmatization reduction findings, there does not seem to be considerable stigmatization associated with the pulmonary marks related to AATD. In particular, even before reading the narrative, participants reported very low advocacy to keep an AATD diagnosis a secret and very low advocacy of persons with AATD to withdraw from others. Conversely, there was a high degree of advocacy for individuals with AATD to educate others about the condition. These findings are encouraging for individuals with AATD in regard to disclosing their condition to others and educating others about what living with AATD is like.

Also encouraging was the high degree of perceived similarity to others reported, with participants, overall, responding that individuals with AATD are more similar to otherwise healthy people than different. This has positive implications for group entitativity; in other words, according to these findings, persons with AATD may not be perceived as belonging to a separate group or category from otherwise healthy people, which could lead to stigmatization (Smith, 2011).

In regard to emotions experienced in relation to rooming with someone who has AATD, the results were more varied, with low reports of feeling ashamed to live with someone who has AATD and very high reports of feeling sympathy toward a roommate with AATD. Reports of fear and anger associated with living with someone who has AATD were higher than reports of shame, and these emotions did not reduce as readily from pre- to post-test. Only in the positive condition was there a significant reduction of fear and only in the transitional condition was there a significant reduction in anger. These two emotions are critical to reduced stigmatization, because both are associated with increased social distance (Cottrell & Neuberg, 2005; Haidt, McCauley, & Rozin, 1994; Smith, 2007).

One possibility in this research that may explain participants' fear, and perhaps anger, in living with a person with AATD emerged when participants were asked if there was any other information they would like to know about the events or characters in the story. Several participants responded with confusion regarding whether or not AATD was contagious. In the narrative conditions, it was stated that AATD was a genetic disorder, but it was never explicitly stated that AATD was not contagious. For several participants, this seemed to be a cause for concern and may explain reports of fear as well as perceived dangerousness of being near persons with AATD. This finding has practical implications for how individuals and organizations present AATD to others. Because many people may not understand that a genetic disorder is not contagious, it may be important in public messages or personal disclosures to explicitly state that AATD is not contagious. This may reduce a desire for social distance, as well as fear associated with contracting the disorder, and possibly anger associated with perceptions that an individual with AATD bears responsibility in protecting others from getting the disorder (Smith, 2011).

Future research should explore both fear and anger responses to being near persons with AATD in more depth to understand the motivational factors underlying these emotions and the associated behavioral intentions. Similarly, although these findings associated with the pulmonary marks related to AATD are encouraging in regard to stigmatization, they may not be applicable to the liver-related marks of AATD (e.g., jaundice). Future research should also focus specifically on liver-related marks, thereby enabling a comparison of stigmatization associated with both lung-affected and liver-affected AATD.

Finally, due to the low familiarity with AATD reported by over ninety percent of participants, it is apparent that AATD is not a very well known condition. This provides

individuals and organizations who communicate about AATD a unique opportunity to introduce AATD to a wider audience while closely attending to whether or not such communication fosters the emergence of stigma surrounding the condition. For this reason, communications practitioners may consider using the model of stigma communication (Smith, 2011) as a guide for presenting AATD in such a way that does not encourage group entitativity, stereotyping, blame, or perceptions of dangerousness regarding AATD or the people who have it.

Implications for Stigmatization Reduction

From this research, several inferences can be drawn regarding the design of narrative stigmatization reduction messages and the model of stigma communication (Smith, 2011). According to the findings, all three narrative conditions—positive, transitional, and negative—significantly reduced desire for social distance from pre- to post-test, which suggests that, despite the type of protagonist portrayed, narratives are an influential method of reducing stigmatization, and this has been demonstrated in myriad stigmatization reduction campaigns. However, when these conditions were compared, the positive condition demonstrated significantly greater effectiveness than the negative condition. Thus, the type of protagonist does play an important role in effective stigmatization reduction, with the positive and transitional protagonists leading to greater stigmatization reduction than negative protagonists. In fact, the findings suggest that negative protagonists may produce the unintended consequence of increasing stigma, and this is very problematic.

However, a closer investigation of the participants' behavioral intentions through chi-square analysis revealed that less than half of participants who indicated stigmatizing behavior in the pre-test (i.e., “normals”, Goffman, 1963) changed to non-stigmatizing behavior after reading the narrative. While these findings indicate that stigmatization-reduction narratives may

influence normals to become wise (Goffman, 1963), they nevertheless also reveal a sizeable percentage of participants in all three conditions who did not indicate an intention to change stigmatizing behavior from pre- to post-test. Further examination of these participants—including characteristics such as social support, disgust sensitivity, social anxiety, or health anxiety—may help to explain their reluctance to room with someone who has AATD. An encouraging finding, however, is that a very small percentage of participants in each condition shifted from being willing to room with someone who has AATD in the pre-test to being unwilling in the post-test. These findings indicate that the narratives in all three conditions were effective in retaining participants who were already “wise” (Goffman, 1963) in their non-stigmatizing behavioral intentions.

In addition, a central purpose of the research was to determine not only what types of protagonists would be most effective in reducing stigmatization, but also if these protagonists, who were portrayed as “the wise” according to Goffman’s (1963) conceptualization of empathic persons who chose to affiliate with stigmatized individuals, would be effective in reducing stigmatization. According to Goffman (1963), a concern for the wise is courtesy stigma: the community extending to associates of a stigmatized person the same devaluation and discrimination experienced by the stigmatized other. Instead, in this research, the wise protagonists—those in the positive and transitional conditions—engendered significantly greater moral approval, perceived similarity, character liking, and wishful identification with these protagonists than negative protagonists. This positive character appraisal is contradictory to courtesy stigma and indicates that the portrayal of “wise” protagonists in narrative stigmatization reduction messages may be effective in presenting role models that rouse approval and emulation rather than further stigmatization.

It is important to note, however, that in this research, AATD did not provoke strong stigmatization, and it is within this context that these inferences must be situated. Similar research should be conducted with health conditions known to have stronger associated stigmatization (e.g., HIV/AIDS, mental illness) to determine if such a portrayal of “wise” persons generates similar positive character appraisal or if it instead promotes courtesy stigma, and future research should also explore the effectiveness of narrative messages to reduce existing perceived courtesy stigmas associated with specific conditions. In this way, the effectiveness of “wise” role models who choose to affiliate with stigmatized individuals can be explored and understood more fully.

In regard to the model of stigma communication (Smith, 2011), these findings suggest that the marks associated with lung-affected AATD did not create a strong sense of group entitativity for persons with AATD, as seen in participants’ responses that persons with AATD are more similar to otherwise healthy people than different. There also seemed to be limited conveyance of responsibility to persons with AATD, as was seen in participants’ minimal advocacy for individuals to keep their diagnosis a secret or withdraw from others. Similarly, there was a negligible degree of perceived dangerousness associated with being near a person with AATD. Because participants were not exposed to a label in regard to AATD (i.e., alphas) and were not provided an opportunity to label persons with AATD, this research cannot assess participants’ willingness to label people with AATD.

Overall, there seemed to be relatively limited stigma surrounding AATD, and this manifested in limited stigmatization of persons with AATD in the context of the research. Future narrative stigmatization reduction messages should explicitly test the components of the model of stigma communication to determine if the portrayal of “wise” protagonists can significantly

reduce the perception of group entitativity associated with marks and labels and perceptions of responsibility and danger associated with specific conditions.

Limitations and Directions for Future Research

This research has limitations that create a platform for future research. First, this study's findings are based on a one-time exposure to a brief narrative message. Though one of the purposes of this study was to understand how different character types operate in brief rather than lengthy, serial narrative messages, this controlled, laboratory exposure may not capture participants' 'real-life' responses were they to have been exposed to the message in a different format and setting. And because this study does not include a follow-up measure, it is impossible to determine the durability of the reported behavioral intentions and attitudes. Additionally, because the message was presented as a written narrative, these findings do not take into account other factors, such as the sound of a wet, hacking cough or the appearance and ethnicity of the characters, and these may have influenced participants' perceptions had the message been presented in an audio or video format. Future research could compare written, audio, and video formats to investigate possible differences in stigmatization reduction based on media format. Similarly, future research could also include a follow-up measure to test the durability of the reported behavioral intentions and attitudes to better understand how enduring the stigmatization reduction effects are.

Also, because several participants expressed confusion regarding the contagiousness of AATD, future research may explore how individuals understand the term 'genetic' as regards contagion. It may be, also, that the limited stigmatization surrounding AATD was due to the low perception that AATD was contagious. Future research could compare AATD with an infectious disease to determine if there is greater stigmatization associated with the infectious disease than

the genetic condition. Likewise, although it is encouraging that AATD does not foster a strong desire to stigmatize individuals diagnosed with the condition, this finding is also a possible limitation of the study. Future research could test these findings with a condition that is known to engender stigmatization (e.g., mental illness) to see if the findings are replicable.

Finally, the age of the participants may be a limitation in the study. Though lung-affected AATD symptoms can manifest in adolescents and young adults, lung-affected AATD is generally an adult-onset condition, with symptoms manifesting in the fourth or fifth decade of life. While the college roommate scenario presented in the narrative message made stigmatization of AATD via desired social distance relevant to a young adult population, this study could be replicated with an older sample and a different scenario (e.g, workplace environment) to test AATD-related stigmatization with a protagonist who is an older adult.

Conclusion

This research investigated the effectiveness of positive, transitional, and negative protagonists in brief narrative messages to reduce stigmatization of persons diagnosed with AATD. Results indicated that positive and transitional protagonists were not only more effective in reducing stigmatization than negative protagonists, but that negative protagonists may even have the potential to increase stigmatization. Exploration of the psychological processes mediating this reduced stigmatization revealed that positive character appraisal of the protagonist, not character identification with the protagonist, was the primary mechanism that led to greater self efficacy and reduced stigmatization. Transportation into the narrative was also found to be an important mechanism in increasing self efficacy and reducing stigmatization. Further, different processes mediated stigmatization reduction for positive/transitional and negative protagonists. Interestingly, neither empathy with the protagonist nor empathy with the

character diagnosed with AATD led to significant stigmatization reduction. Theoretically, these findings indicate that positive character appraisal, character identification, and empathy with the protagonist may work as distinct mechanisms within the context of narrative stigmatization reduction messages. The practical implications of these findings suggest that designers of narrative stigmatization reduction messages should strive to create narratives that are transporting, with positive or transitional protagonists who engender positive character appraisal, which, in turn, can increase self efficacy and reduce stigmatization.

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Appendix A

Example Narrative Condition

Female Transitional Condition

Alpha-1 and On-Campus Living: Caring, Friendship, and Support

Hi! I'm Clair. I'm a first-semester college freshman majoring in music education. I've played the guitar for years and absolutely love music.

After I graduated from high school, I was so looking forward to college. I was excited about what it would be like to move to a new place, make new friends, have cool classes and activities, and live with a roommate. I was especially excited about living with a new person after so many years living with my brothers.

A couple months before school started, my college sent the name and email address of my roommate. Her name was Samantha. I sent her an email, and she wrote back right away. We had a lot in common: We were both neat freaks... we loved 'bromances' and all things chocolate, and we were both education majors. I friended her on Facebook, and the pics on her wall were so fun. I couldn't wait to meet her.

Summer flew by, and then it was move-in weekend. I had arrived early in the morning, but Samantha didn't get there until late afternoon, so my family was already gone when we finally got to meet. Because she had grown up in the same town as our college, her family didn't come with her, so I helped her move her things in. She had a lot of stuff, and we had to carry a bunch of crates up the stairs since the elevator was so busy.

That's when I started to notice her wheezing....

When we got back to the room, she was completely out of breath. I asked her if she was okay. She just nodded and said she'd get the rest of her stuff later. But while she was unpacking, she started coughing.... a really bad, hacking, wet cough. The kind you get when you have bronchitis or pneumonia.

I was really concerned about her now. What if she were sick just as school was starting? That would be terrible for her. I asked her again if she was okay. This time, she shook her head and told me she needed to tell me something.

She told me that when she was 13 she was diagnosed with a rare genetic disorder called alpha-1 antitrypsin deficiency...alpha-1 for short. It's a condition that affects a person's lungs or liver. Her doctor had thought she had asthma, but the asthma meds didn't change her symptoms. That's when she got tested for alpha-1 and found out she had it.

Samantha said that medication helps her, but Alpha-1 isn't curable. Since the condition affects her lungs, Alpha-1 could eventually lead to diseases like Emphysema or lung cancer. Samantha can get these diseases even though she has never smoked a day in her life...and never will. Because of alpha-1, Samantha can't be around smokers at all, so the party scene is definitely out. She can't run or walk very fast without getting out of breath, and she wheezes and coughs ... a lot.

I could tell she was embarrassed as she was telling me about what it was like having alpha-1...and worried about how I was going to respond to the news. She said she didn't want to tell me about her condition in an email because she was afraid I wouldn't want to be her roommate.

Then she looked me square in the eye and said, “If you don’t want me to be your roommate I totally understand. I guess I’d be bummed, too, if I found out my roommate had an incurable disorder that makes her cough all the time. It’s gross, I know.”

I thought about living with someone who was constantly coughing and wheezing, maybe even throughout the night...but then I thought about how hard it must be to be diagnosed with an incurable condition, especially so young, to not be able to do basic things like walking and running without breathing problems. I thought about how I would feel if I were in her position...how rejected I would feel if my roommate wouldn’t live with me. I couldn’t do that to her. Live with someone who coughs a lot? I can do this.

That’s when I told her I wanted to be her roommate. I told her that we had so much in common, and I wasn’t going to lose a friend because of a bad cough, no matter what it sounded like or how often it happened.

As soon as I said that, she just seemed so relieved. Like a huge worry was gone. She was instantly happier, chatting in the same bubbly way that she did when she first arrived. That night, we had a great time getting our room ready. We hung posters and lights, went shopping for food for the mini fridge, and met some of the other girls in our dorm. It was great having Samantha to hang out with since I didn’t know anyone else on campus yet. I had a feeling Samantha and I were going to hit it off living together and be great friends.

And you know what? We are. It’s the end of our first semester, and she’s my best friend on campus. We’re planning to live together during the spring semester, too. Just a couple days ago, Sam and I were talking about that first conversation when she told me she had alpha-1. She said that if I hadn’t wanted to live with her, she probably wouldn’t have lived on campus at all. She had figured that if I wouldn’t live with her, then nobody would.

I had no idea how important my decision to room with her was until she said that. I’m so glad I said yes!

Sam would have been so isolated if she hadn’t lived on campus. You make so many social connections living on campus as a freshman...friends that you keep for years. I had no idea then the impact that my decision had made.

And she’s made a lot of good friends already...friends who aren’t bothered by coughing or wheezing or not going to frat parties on Saturday nights. She gets a lot of support from us, and we encourage her when she’s tired or not feeling well. Next to her family, we’re her biggest champions. It takes courage to live life in spite of having an incurable condition like alpha-1, and we’re behind her 100%.

I’m so glad she told me about her alpha-1 diagnosis, because I’ve learned what it means to be a real friend: a person who’s willing to stick by someone even when things are uncomfortable or less than perfect. Living with Sam and learning about alpha-1 has given me the opportunity to grow as a person, and I feel really good about that.

And I feel good about the fact that my living with Sam has had a positive impact on her. She says that our being roommates gave her the courage to stay on campus, meet new people, and volunteer to be a resident assistant next year! How awesome is that?

I definitely would have roomed with her again next year, but she’ll be such a good friend and role model for incoming freshmen...after everything she has been through with alpha-1, she’s very compassionate and accepting of people’s unique life experiences.

It’s hard to think that she would have missed this great opportunity if she hadn’t lived on campus with me. And all of this happened simply because I told her that I would live with her. That wasn’t hard at all. In fact, it was the best decision I made all semester.

Appendix B

Plot Differences in Female Conditions

Plot Stage	Narrative Condition		
	Positive	Transitional	Negative
Scene Setting: Outlook on getting a roommate	After I graduated from high school, I was so looking forward to college. I was excited about what it would be like to move to a new place, make new friends, have cool classes and activities, and live with a roommate. I was especially excited about living with a new person after so many years living with my brothers.	After I graduated from high school, I was looking forward to college, but I had the same fears that most people have—what would it be like moving away from home, finding new friends, juggling classes and activities, and living with a roommate? I was especially concerned about living with a person I had never met before.	After I graduated from high school, I was looking forward to college, but I had the same fears that most people have—what would it be like moving away from home, finding new friends, juggling classes and activities, and living with a roommate? I was especially concerned about living with a person I had never met before.
Build Up: Noticing the ‘marks’ associated with AATD	I was really concerned about her now. What if she were sick just as school was starting? That would be terrible for her. I asked her again if she was okay. This time, she shook her head and told me she needed to tell me something.	I thought, what if she’s sick? I was really concerned about catching something just as school was starting. That would’ve been terrible! I asked her again if she was okay. This time, she shook her head and said she needed to tell me something.	I thought, what if she’s sick? I was really concerned about catching something just as school was starting. That would’ve been terrible! I asked her again if she was okay. This time, she shook her head and said she needed to tell me something.
Climax: Response to disclosure of AATD	I could tell she was embarrassed as she was telling me about what it was like having alpha-1...and worried about how I was going to respond to the news. She said she didn’t want to tell me about her condition in an email because she was afraid I wouldn’t want to be her roommate.	I felt embarrassed and uncomfortable as she was telling me about alpha-1, and I didn’t know how I was going to respond to the news. She said she didn’t want to tell me about her condition in an email because she was afraid I wouldn’t want to be her roommate.	I felt embarrassed and uncomfortable as she was telling me about alpha-1, and I didn’t know how I was going to respond to the news. She said she didn’t want to tell me about her condition in an email because she was afraid I wouldn’t want to be her roommate.

Conflict:
Protagonist
considers
situation

I thought about living with someone who was constantly coughing and wheezing, maybe even throughout the night...but then I thought about how hard it must be to be diagnosed with an incurable condition, especially so young, to not be able to do basic things like walking and running without breathing problems. I thought about how I would feel if I were in her position...how rejected I would feel if my roommate wouldn't live with me. I couldn't do that to her. Live with someone who coughs a lot? I can do this.

I thought about living with someone who was constantly coughing and wheezing, maybe even throughout the night...I thought about how hard it would be to sleep with her hacking all the time. And to be honest, I thought about how gross her cough was. But then I thought about how hard it must be to be diagnosed with an incurable condition so young, to not be able to do basic things like walking and running without problems. I thought about how I would feel if I were in her position...how rejected I would feel if my roommate wouldn't live with me. Maybe I was being a little self-centered worrying more about the sound of Samantha's cough than how she would feel if I said no to living with her. Yeah, it could definitely be challenging sometimes, but live with someone who coughs a lot? I thought. I can do this.

I thought about living with someone who was constantly coughing and wheezing, maybe even throughout the night... I thought about how hard it would be to sleep with her hacking all the time. And frankly, I thought about how gross her cough was. How could I have people over with a roommate who sounded like she was dying? I thought about how rejected I would feel if no one wanted to be my friend because my roommate sounded like she had the plague. Live with someone who's constantly hacking up a lung? No thank you.

Resolution:
Remaining
or not
remaining
roommates

That's when I told her I wanted to be her roommate. I told her that we had so much in common, and I wasn't going to lose a friend because of a bad cough, no matter what it sounded like or how often it happened.

That's when I told her I wanted to be her roommate. I told her that we had so much in common, and I wasn't going to lose a friend because of a chronic cough, no matter what it sounded like or how often it happened.

That's when I told her I couldn't be her roommate. I just wasn't able to live with someone who had a disorder like that...a chronic cough like that.

Appendix C

Pre-Test Questionnaire

1. Please type your PSU ID (e.g., abc123@psu.edu).
2. What is your gender (male/female)?
3. What is your racial/ethnic background?
 - White-not Hispanic (includes Middle Eastern)
 - Black-not Hispanic
 - Hispanic or Latino/a
 - Asian or Pacific Islander
 - American Indian or Alaska Native
 - Other
4. What is your class rank? (Freshman/Sophomore/Junior/Senior/Graduate Student)
5. In general, how much do the following statements describe you?
 - a. I often have tender, concerned feelings for people less fortunate than me.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
 - b. Sometimes I don't feel very sorry for other people when they are having problems.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
 - c. When I see someone being taken advantage of, I feel kind of protective towards them.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
 - d. I sometimes find it difficult to see things from the other person's point of view.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
 - e. Before criticizing somebody, I try to imagine how I would feel if I were in their place.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
 - f. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
 - g. Other people's misfortunes do not usually disturb me a great deal.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
 - h. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
 - i. I am often quite touched by things that I see happen.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
 - j. I would describe myself as a pretty soft-hearted person.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
 - k. I try to look at everybody's side of a disagreement before I make a decision.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

l. I sometimes try to understand my friends better by imagining how things look from their perspective.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

m. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

n. I believe that there are two sides to every question and try to look at them both.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

6. People sometimes look to others for companionship, assistance, and other types of support. How often is each of the following kinds of support available to you if you need it?

a. Help if confined to bed

Never 1 2 3 4 5 6 7 **Always**

b. Take to doctor

Never 1 2 3 4 5 6 7 **Always**

c. Prepare meals

Never 1 2 3 4 5 6 7 **Always**

d. Help with daily chores

Never 1 2 3 4 5 6 7 **Always**

e. Show love and affection

Never 1 2 3 4 5 6 7 **Always**

f. Hug you

Never 1 2 3 4 5 6 7 **Always**

g. Love you

Never 1 2 3 4 5 6 7 **Always**

h. Have good time with

Never 1 2 3 4 5 6 7 **Always**

i. Get together for relaxation

Never 1 2 3 4 5 6 7 **Always**

j. Do something enjoyable with

Never 1 2 3 4 5 6 7 **Always**

k. Listen to you

Never 1 2 3 4 5 6 7 **Always**

l. Confide in

Never 1 2 3 4 5 6 7 **Always**

m. Share worries with

Never 1 2 3 4 5 6 7 **Always**

n. Understand your problems
Never 1 2 3 4 5 6 7 **Always**

o. Give you good advice
Never 1 2 3 4 5 6 7 **Always**

p. Give you information
Never 1 2 3 4 5 6 7 **Always**

q. Give advice you really want
Never 1 2 3 4 5 6 7 **Always**

7. In general, how much do the following statements reflect how you feel about yourself?

a. I always have to look as good as I can.
Not at all like me 1 2 3 4 5 6 7 **Just like me**

b. It is important to act perfectly around other people.
Not at all like me 1 2 3 4 5 6 7 **Just like me**

c. If I seem perfect, other people will like me more.
Not at all like me 1 2 3 4 5 6 7 **Just like me**

d. I try hard to look perfect around other people.
Not at all like me 1 2 3 4 5 6 7 **Just like me**

e. I like trying to look perfect to other people.
Not at all like me 1 2 3 4 5 6 7 **Just like me**

f. I have to look like I always do things perfectly.
Not at all like me 1 2 3 4 5 6 7 **Just like me**

8. In general, how much do agree or disagree with the following statements?

a. I am able to do things as well as most other people.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. I wish I could have more respect for myself.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. I feel that I have a number of good qualities.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. I feel I do not have much to be proud of.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. I feel that I am a person of worth, at least on an equal plane with others.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. I take a positive attitude toward myself.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

g. On the whole, I am satisfied with myself.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

h. I certainly feel useless at times.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

i. At times I think I am no good at all.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

j. All in all, I am inclined to feel that I am a failure.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

9. How much do you perceive that a freshman-year college roommate can impact the following areas of your life? This could be either a positive or negative impact.

a. Happiness

Not at All 1 2 3 4 5 6 7 **Extremely**

b. Overall Wellbeing

Not at All 1 2 3 4 5 6 7 **Extremely**

c. Academic Success

Not at All 1 2 3 4 5 6 7 **Extremely**

d. Social Life

Not at All 1 2 3 4 5 6 7 **Extremely**

e. Popularity

Not at All 1 2 3 4 5 6 7 **Extremely**

f. Physical Health

Not at All 1 2 3 4 5 6 7 **Extremely**

g. Class Attendance

Not at All 1 2 3 4 5 6 7 **Extremely**

h. Social Growth

Not at All 1 2 3 4 5 6 7 **Extremely**

10. Slide the slider to indicate how you feel about the following statements (Scale 1-7):

a. When mixing socially, I am uncomfortable.

b. I have difficulty talking with other people.

c. I worry about expressing myself in case I appear awkward.

d. I find myself worrying that I won't know what to say in social situations.

e. I feel I'll say something embarrassing when talking.

f. When mixing in a group, I find myself worrying I will be ignored.

11. How much do each of the following statements describe how you think about illness?

a. I spend most of my time worrying about my health.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

- b. I am aware of aches/pains in my body all the time.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- c. I am constantly aware of bodily sensations or changes.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- d. Thoughts of illness are so strong that I no longer even try to resist them.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- e. As a rule I am not afraid that I have a serious illness.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- f. I constantly have images of myself being seriously ill.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- g. I do not have any difficulty taking my mind off thoughts about my health.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- h. If I hear about an illness I always think I have it myself.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- i. If I have a bodily sensation or change I must know what it means.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- j. I usually think that I am seriously ill.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- k. If I had a serious illness I would still be able to enjoy things in my life quite a lot.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- l. A serious illness would ruin every aspect of my life.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
12. How much do you agree or disagree with the following statements about genes/genetics?
- a. My genes make future illnesses more likely for me.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- b. Genes make some people more likely to become ill from germs.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- c. Genes cause each person's body to react differently to things in the environment.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- d. Genes make some people more likely to benefit from medicine than others.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- e. Genes make some people more likely to become ill when exposed to toxins in the environment.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. Genes play a very important role in the health of children.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

g. Genes can protect one's health from harms in the environment.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

h. Genes influence how serious an illness will be.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

i. My genes are the best predictor for how badly a disease will affect me.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

j. Genes make disease more severe for some people.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

k. Genes make some adults more likely to get certain diseases.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

13. You should only act, when you are sure that it's morally correct.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

14. Slide the sliders to indicate how much you agree with the following statements about friendship (Scale 1-7):

- a. I would remain friends with a person, even if my other friends didn't like him/her.
- b. If I had a friend with an unpopular characteristic, I would hide the fact that I am friends with him/her.
- c. I would publicly stand up for a person who was being teased or mocked by others.
- d. It doesn't bother me to be good friends with someone who is unpopular.
- e. I would never be friends with someone who was unpopular.
- f. If a friend was making fun of one of my other friends, I would tell them to knock it off.
- g. I would be embarrassed if my friends knew I was friends with someone who was unpopular.

15. Please indicate your feelings about other people using the scale provided.

a. Most people can be trusted.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. Human nature is fundamentally cooperative.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. If you don't watch yourself, people will take advantage of you.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. You can't be too careful when it comes to trusting people.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. Most people help others.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. No one is going to care much what happens to you, when you get right down to it.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

g. Most people look out for themselves.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

16. How much do the following statements describe you?

a. It bothers me to hear someone clear a throat full of mucous.

Not at All 1 2 3 4 5 6 7 **Extremely**

b. I never let any part of my body touch the toilet seat in public restrooms.

Not at All 1 2 3 4 5 6 7 **Extremely**

c. It would bother me tremendously to touch a dead body.

Not at All 1 2 3 4 5 6 7 **Extremely**

d. If I see someone vomit, it makes me sick to my stomach.

Not at All 1 2 3 4 5 6 7 **Extremely**

e. I probably would not go to my favorite restaurant if I found out that the cook had a cold.

Not at All 1 2 3 4 5 6 7 **Extremely**

f. Even if I was hungry, I would not drink a bowl of my favorite soup if it had been stirred by a used but thoroughly washed flyswatter.

Not at All 1 2 3 4 5 6 7 **Extremely**

g. Seeing a cockroach in someone else's house doesn't bother me.

Not at All 1 2 3 4 5 6 7 **Extremely**

17. How do you feel about the following statements?

a. You see maggots on a piece of meat in an outdoor garbage pail.

Not at All disgusting 1 2 3 4 5 6 7 **Extremely disgusting**

b. You discover that a friend of yours changes underwear only once a week.

Not at All disgusting 1 2 3 4 5 6 7 **Extremely disgusting**

c. A friend offers you a piece of chocolate shaped like dog doo.

Not at All disgusting 1 2 3 4 5 6 7 **Extremely disgusting**

d. You accidentally touch the ashes of a person who has been cremated.

Not at All disgusting 1 2 3 4 5 6 7 **Extremely disgusting**

e. You are about to drink a glass of milk when you smell that it is spoiled.

Not at All disgusting 1 2 3 4 5 6 7 **Extremely disgusting**

f. Your friend's pet cat dies, and you have to pick up the dead body with your bare hands.

Not at All disgusting 1 2 3 4 5 6 7 **Extremely disgusting**

18. Please tell us how familiar you are with the health condition alpha-1 antitrypsin deficiency (also known as alpha-1 or AATD)?

Not at All 1 2 3 4 5 6 7 **Extremely Familiar**

19. In the space below, please tell us what you know about alpha-1 antitrypsin deficiency (also known as alpha-1 or AATD).

**Imagine that you are a first-semester freshman,
and you have been assigned to a roommate who has
alpha-1 antitrypsin deficiency (AATD).**

Please read the following information about AATD.

- AATD is a genetic disorder.
- AATD affects people's lungs and/or liver.
- AATD makes people's lungs and/or liver more susceptible to disease and damage.
- For example, an individual with lung-affected AATD may develop Chronic Obstructive Pulmonary Disease (COPD), emphysema, or lung cancer even if s/he has never smoked cigarettes.
- An individual with liver-affected AATD may develop cirrhosis or liver cancer even if s/he never consumed alcohol.
- AATD can only be diagnosed with a blood test, but common signs and symptoms of lung-affected AATD are shortness of breath, wheezing, chronic cough and phlegm production (i.e., chronic bronchitis), recurrent chest colds, bronchiectasis, non-responsive asthma, and year-round allergies.
- If an individual has lung-affected AATD, it is likely that s/he will have symptoms related to the disorder. These symptoms include wheezing; chronic (continuous) wet, hacking cough similar to a cough induced by bronchitis or pneumonia; fatigue; and shortness of breath.
- Lung-affected AATD impacts an individual's lifestyle. These lifestyle changes include: eating a healthy diet, not walking or running very fast, not smoking, not being around second-hand smoke (such as at college parties), and not being around air pollutants.
-

20. After reading this information, how willing are you to be the college roommate of someone who has AATD?

Not at all 1 2 3 4 5 6 7 **Extremely**

21. After reading this information, would you choose to be the college roommate of someone who has AATD?

Yes

No

22. After reading the information about AATD, how much do you agree with the following statements?

a. I would not be able to cope with having a college roommate who had AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. Being the college roommate of someone with AATD is something I would be happy to do.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. I would feel very happy to be the college roommate of someone with AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

23. After reading the information about AATD, I think

a. People who have AATD are totally different than healthy people.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. People with AATD present a health danger to people who don't have AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. People who have AATD are just like anybody else.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. I could get AATD from being near someone who has it.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. People diagnosed with AATD are very similar to people who do not have AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. To prevent getting AATD, I should stay away from people who have it.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

24. After reading the information about AATD,

a. I can't blame anybody for being scared to be the roommate of someone with AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. I would feel quite uneasy if I had a roommate who had AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. I would feel anxious if my roommate had AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. I could understand if someone would be angry for being paired with a roommate who has AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. I can't understand how anyone would be irritated by having a roommate who has AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. I would feel very angry at my college/university for allowing someone with AATD to be my roommate.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

g. I would feel very sympathetic toward my roommate if s/he had AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

h. I would feel deep concern for my roommate if he/she had AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

i. I think anyone who had a roommate with AATD would feel compassion toward him/her.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

j. I would feel embarrassed if my friends knew that I had a roommate with AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

k. I can't blame anybody for being ashamed of having a roommate with AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

1. I would feel self-conscious around others if they knew my roommate had AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

25. After reading the information about AATD, I think

a. A person with AATD should keep it a secret if s/he wants someone to remain college roommates with him/her.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. If you have been diagnosed with AATD, the best thing you can do is keep it a secret.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. If I had a close relative with AATD, I would advise him/her not to tell anyone about it.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. If I had AATD, I would choose to live off campus rather than in a dorm with a roommate.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. College students with AATD should opt for a single room instead of sharing a room with someone else.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. Students with AATD should choose to be roommates with other students who have AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

g. People with AATD should help their friends/family to understand what AATD is like.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

h. If a friend was uncomfortable around a person who had AATD, the person with AATD should educate that friend about the condition.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

i. People with AATD should participate in organized efforts to teach others more about AATD and the problems of people who have AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

26. Have you ever been diagnosed with AATD?

Yes

No

27. Have any of your friends or family members been diagnosed with AATD?

1. No

2. Yes

3. Not Sure

26. Have you ever been diagnosed with a genetic disorder other than AATD?

Yes

No

28. Have any of your friends or family members been diagnosed with a genetic disorder other than AATD?

Yes

Unsure

No

Appendix D

Post-Test Questionnaire

1. Please type your PSU ID (e.g., abc123@psu.edu).

2. What is your gender (male/female)?

**You are about to read a story related to the health and well-being of young-adult college students.
Please read this story *carefully* and then answer the questions that follow.**

3. After reading this information, how willing are you to be the college roommate of someone who has AATD?

Not at all 1 2 3 4 5 6 7 **Extremely**

4. After reading this information, would you choose to be the college roommate of someone who has AATD?

Yes

No

5. After reading the information about AATD, how much do you agree with the following statements?

a. I would not be able to cope with having a college roommate who had AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. Being the college roommate of someone with AATD is something I would be happy to do.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. I would feel very happy to be the college roommate of someone with AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

6. After reading the information about AATD, I think

a. People who have AATD are totally different than healthy people.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. People with AATD present a health danger to people who don't have AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. People who have AATD are just like anybody else.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. I could get AATD from being near someone who has it.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. People diagnosed with AATD are very similar to people who do not have AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. To prevent getting AATD, I should stay away from people who have it.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

7. After reading the information about AATD,

a. I can't blame anybody for being scared to be the roommate of someone with AATD.

- Strongly disagree** 1 2 3 4 5 6 7 **Strongly agree**
- b. I would feel quite uneasy if I had a roommate who had AATD.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- c. I would feel anxious if my roommate had AATD.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- d. I could understand if someone would be angry for being paired with a roommate who has AATD.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- e. I can't understand how anyone would be irritated by having a roommate who has AATD.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- f. I would feel very angry at my college/university for allowing someone with AATD to be my roommate.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- g. I would feel very sympathetic toward my roommate if s/he had AATD.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- h. I would feel deep concern for my roommate if he/she had AATD.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- i. I think anyone who had a roommate with AATD would feel compassion toward him/her.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- j. I would feel embarrassed if my friends knew that I had a roommate with AATD.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- k. I can't blame anybody for being ashamed of having a roommate with AATD.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- l. I would feel self-conscious around others if they knew my roommate had AATD.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- m. I know I would feel disgusted living with someone who has AATD.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- n. Hearing a roommate who has AATD cough a lot would be disgusting.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- o. The coughing and wheezing associated with AATD would often make living with that person disgusting.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
8. After reading the information about AATD, I think
- a. A person with AATD should keep it a secret if s/he wants someone to remain college roommates with him/her.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- b. If you have been diagnosed with AATD, the best thing you can do is keep it a secret.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. If I had a close relative with AATD, I would advise him/her not to tell anyone about it.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. If I had AATD, I would choose to live off campus rather than in a dorm with a roommate.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. College students with AATD should opt for a single room instead of sharing a room with someone else.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. Students with AATD should choose to be roommates with other students who have AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

g. People with AATD should help their friends/family to understand what AATD is like.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

h. If a friend was uncomfortable around a person who had AATD, the person with AATD should educate that friend about the condition.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

i. People with AATD should participate in organized efforts to teach others more about AATD and the problems of people who have AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

9. In your own words, how would you describe the events and characters in the story that you just read?

10. Using the statements below, how would you describe the story that you just read?

As a reminder, Clair/Seth was the roommate who was not diagnosed with alpha-1.

a. Clair/Seth was always positive and accepting toward Samantha/Doug.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. Clair/Seth struggled a bit to remain roommates with Samantha/Doug, but in the end decided to stay roommates with her/him.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. Clair/Seth was very unaccepting of Samantha's/Doug's condition, and didn't remain roommates.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. It seemed easy for Clair/Seth to choose to room with Samantha/Doug; s/he didn't struggle with the choice.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. Clair/Seth had to weigh the pros and cons, but then decided to remain roommates with Samantha/Doug.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. Clair/Seth regretted her/his choice to not remain roommates with Samantha/Doug.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

11. How much do you agree with the following statements?

a. Clair/Seth's decision was appropriate given her/his situation.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
 b. It would have been wrong for Clair/Seth not to stay roommates with Samantha/Doug.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. Choosing to be Samantha's/Doug's roommate was the right thing to do.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. Clair/Seth should not have remained roommates with Samantha/Doug.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. I think Clair/Seth made the right choice.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. I approved of Clair's/Doug's decision.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

12. How much do the following statements describe your feelings toward Clair/Seth?
 As a reminder, Clair/Seth was the roommate who was not diagnosed with alpha-1.

a. I liked Clair/Seth.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. I thought Clair/Seth was a dislikable character.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. I think I would like Clair/Seth if I met them in real life.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. I could be friends with someone like Clair.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

13. How much do the following statements reflect how similar you think Clair/Seth is to you?

a. *Clair/Seth seemed just like me.*
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. *I felt I had a lot in common with Clair/Seth.*
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. *There were not a lot of similarities between Clair/Seth and myself.*
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

14. How much do you agree or disagree with the following statements about Clair/Seth?
 As a reminder, Clair/Seth was the roommate who was not diagnosed with alpha-1.

a. I had concerned feelings toward Clair/Seth.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. I didn't feel very sorry for Clair/Seth.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. I felt kind of protective toward Clair/Seth.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

- d. I found it difficult to see things from Clair's/Seth's perspective.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- e. I tried to understand Clair/Seth better by imagining things from her/his perspective.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- f. I tried to "put myself in Clair's/Seth's shoes."
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- g. Clair's/Seth's problems didn't disturb me a great deal.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- h. I didn't feel much pity toward Clair/Seth.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- i. I was touched by what happened to Clair/Seth.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
15. How much do you agree or disagree with the following statements about Clair/Seth?
 As a reminder, Clair/Seth was the roommate who was not diagnosed with alpha-1.
- a. I could feel the emotions Clair/Seth portrayed.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- b. I felt I knew exactly what Clair/Seth was going through.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- c. I felt as if I were Clair/Seth.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- d. I felt I could really get inside Clair's/Seth's head.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- e. I would like to be like Clair/Seth.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- f. I wish I could make decisions the way Clair/Seth can.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- g. I'd like to interact with other people the way Clair/Seth did.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- h. I think it would be good to be like Clair/Seth.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
16. How much do you agree or disagree with the following statements?
- a. The events in the story were just like real life.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**
- b. The characters' personalities were just like real life people.
Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. The characters were like people I've met before.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. Something like this could happen to me.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. The characters in the story acted just like people in real life.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. I thought the story seemed realistic.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

17. While reading the story,

a. I could easily picture the events in it taking place.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. Activity going on in the room around me was on my mind.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. I could picture myself in the scene of the events described in the message.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. I was mentally involved in the message.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. I wanted to learn how the message ended.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. The message affected me emotionally.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

g. I found myself thinking of ways the message could have turned out differently.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

h. While reading the message, I found my mind wandering.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

i. I found the events in the narrative relevant to my everyday life.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

j. I had a vivid mental image of the characters in the message.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

After finishing the message,

k. I found it easy to put it out of my mind.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

l. I feel the events in the narrative have changed my life.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

18. After reading the story, how much do you agree or disagree with the following statements?

a. I could live with someone who has AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. I believe can live with someone who has a chronic cough.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. I know cannot live with someone who has severe breathing problems.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. I'm able to live with someone who has AATD.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

19. How emotional did the story make you feel?

a. The story made me feel emotional.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. The story had a strong emotional impact on me.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. The story was an emotional story.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

20. How much do you agree or disagree with the following statements about Samantha/Doug?

As a reminder, Samantha/Doug was the roommate who was not diagnosed with alpha-1.

a. I had concerned feelings toward Samantha/Doug.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. I didn't feel very sorry for Samantha/Doug.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. I felt kind of protective toward Samantha/Doug.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. I found it difficult to see things from Samantha's/Doug's perspective.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. I tried to understand Samantha/Doug better by imagining things from her/his perspective.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. I tried to "put myself in Samantha's/Doug's shoes."

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

g. Samantha's/Doug's problems didn't disturb me a great deal.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

h. I didn't feel much pity toward Samantha/Doug.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

i. I was touched by what happened to Samantha/Doug.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

21. How much do you agree or disagree with the following statements?

When I read the story....

a. I paid close attention to the contents of the message.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. I expended effort thinking of the contents of the message.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. I gave the message my full attention.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

d. I felt confused by the contents of the message.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

e. I could follow the message smoothly.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

f. I felt the message was easy to understand.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

22. How much do you agree or disagree with the following statements?

a. The story was personally relevant.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. I could relate to the events described in the story.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. The events in the story were not applicable to my life.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

23. Select the number of stars (click on the individual stars to highlight them) that best indicates your enjoyment of the story (scale 1-7).

a. I enjoyed reading the story.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

b. The story was enjoyable to read.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

c. I would describe the story as interesting.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

24. What questions do you still have in your mind about the characters or the events in the story? What information was not included in the story that you would still like to know?

Appendix E

Complete List of Items for Each Measured Variable

All variables below are measured on a 1-7 point, Likert-type scale (e.g., 1 = *strongly disagree*, 7 = *strongly agree*) unless otherwise noted. See Chapter 3, Methods, for scale labels for each variable.

DEPENDENT MEASURES:

Social Distance

After reading this information, how willing are you to be the college roommate of someone who has AATD?

After reading this information, would you choose to be the college roommate of someone who has AATD (Yes/No)?

Attitude toward being the roommate of someone with AATD

I would not be able to cope with having a college roommate who had AATD.

Being the college roommate of someone with AATD is something I would be happy to do.

I would feel very happy to be the college roommate of someone with AATD.

Perception of Differences/Similarities

People who have AATD are totally different than healthy people.

People who have AATD are just like anybody else.

People diagnosed with AATD are very similar to people who do not have AATD.

Perception of Dangerousness

I could get AATD from being near someone who has it.

People with AATD present a health danger to people who don't have AATD.

To prevent getting AATD, I should stay away from people who have it.

Fear

I can't blame anybody for being scared to be the roommate of someone with AATD.

I would feel quite uneasy if I had a roommate who had AATD.

I would feel anxious if my roommate had AATD.

Anger

I could understand if someone would be angry for being paired with a roommate who has AATD.

I can't understand how anyone would be irritated by having a roommate who has AATD.

I would feel very angry at my college/university for allowing someone with AATD to be my roommate.

Sympathy

I would feel very sympathetic toward my roommate if s/he had AATD.

I would feel deep concern for my roommate if he/she had AATD.

I think anyone who had a roommate with AATD would feel compassion toward him/her.

Shame

I would feel embarrassed if my friends knew that I had a roommate with AATD.

I can't blame anybody for being ashamed of having a roommate with AATD.

I would feel self-conscious around others if they knew my roommate had AATD.

Disgust

I know I would feel disgusted living with someone who has AATD.
 Hearing a roommate who has AATD cough a lot would be disgusting.
 The coughing and wheezing associated with AATD would often make living with that person disgusting.

Advocacy of Secrecy

A person with AATD should keep it a secret if s/he wants someone to remain college roommates with him/her.

If you have been diagnosed with AATD, the best thing you can do is keep it a secret.
 If I had a close relative with AATD, I would advise him/her not to tell anyone about it.

Advocacy of Withdrawal

If I had AATD, I would choose to live off campus rather than in a dorm with a roommate.
 College students with AATD should opt for a single room instead of sharing a room with someone else.
 Students with AATD should choose to be roommates with other students who have AATD.

Advocacy of Education

People with AATD should help their friends/family to understand what AATD is like.
 If a friend was uncomfortable around a person who had AATD, the person with AATD should educate that friend about the condition.
 People with AATD should participate in organized efforts to teach others more about AATD and the problems of people who have AATD.

Moral Approval

Clair/Seth's decision was appropriate given her/his situation.
 It would have been wrong for Clair/Seth not to stay roommates with Samantha/Doug.
 Choosing to be Samantha's/Doug's roommate was the right thing to do.
 Clair/Seth should not have remained roommates with Samantha/Doug.
 I think Clair/Seth made the right choice.
 I approved of Clair's/Doug's decision.

Character Liking

I liked Clair/Seth.
 I thought Clair/Seth was a dislikable character.
 I think I would like Clair/Seth if I met them in real life.
 I could be friends with someone like Clair.

Perceived Similarity

Clair/Seth seemed just like me.
 I felt I had a lot in common with Clair/Seth.
 There were not a lot of similarities between Clair/Seth and myself.

Empathy toward the Protagonist

I had concerned feelings toward Clair/Seth.
 I didn't feel very sorry for Clair/Seth.
 I felt kind of protective toward Clair/Seth.
 I found it difficult to see things from Clair's/Seth's perspective.
 I tried to understand Clair/Seth better by imagining things from her/his perspective.
 I tried to "put myself in Clair's/Seth's shoes."

Clair's/Seth's problems didn't disturb me a great deal.
 I didn't feel much pity toward Clair/Seth.
 I was touched by what happened to Clair/Seth.

Character Identification with the Protagonist

I could feel the emotions Clair/Seth portrayed.
 I felt I knew exactly what Clair/Seth was going through.
 I felt as if I were Clair/Seth.
 I felt I could really get inside Clair's/Seth's head.

Wishful Identification with the Protagonist

I would like to be like Clair/Seth.
 I wish I could make decisions the way Clair/Seth can.
 I'd like to interact with other people the way Clair/Seth did.
 I think it would be good to be like Clair/Seth.

Perceived Realism

The events in the story were just like real life.
 The characters' personalities were just like real life people.
 The characters were like people I've met before.
 Something like this could happen to me.
 The characters in the story acted just like people in real life.
 I thought the story seemed realistic.

Narrative Transportation

I could easily picture the events in the story taking place.
 Activity going on in the room around me was on my mind.
 I could picture myself in the scene of the events described in the message.
 I was mentally involved in the message.
 I wanted to learn how the message ended.
 The message affected me emotionally.
 I found myself thinking of ways the message could have turned out differently.
 While reading the message, I found my mind wandering.
 I found the events in the narrative relevant to my everyday life.
 I had a vivid mental image of the characters in the message.
 I found it easy to put it out of my mind.
 I feel the events in the narrative have changed my life.

Perceived Self Efficacy

I could live with someone who has AATD.
 I believe can live with someone who has a chronic cough.
 I know cannot live with someone who has severe breathing problems.
 I'm able to live with someone who has AATD.

Empathy with the Character Diagnosed with AATD

I had concerned feelings toward Samantha/Doug.
 I didn't feel very sorry for Samantha/Doug.
 I felt kind of protective toward Samantha/Doug.
 I found it difficult to see things from Samantha's/Doug's perspective.
 I tried to understand Samantha/Doug better by imagining things from her/his perspective.
 I tried to "put myself in Samantha's/Doug's shoes."

Samantha's/Doug's problems didn't disturb me a great deal.
 I didn't feel much pity toward Samantha/Doug.
 I was touched by what happened to Samantha/Doug.

MANIPULATION CHECK:

Narrative Manipulation Check

Clair/Seth was always positive and accepting toward Samantha/Doug.
 Clair/Seth struggled a bit to remain roommates with Samantha/Doug, but in the end decided to stay roommates with her/him.
 Clair/Seth was very unaccepting of Samantha's/Doug's condition, and didn't remain roommates.
 It seemed easy for Clair/Seth to choose to room with Samantha/Doug; s/he didn't struggle with the choice.
 Clair/Seth had to weigh the pros and cons, but then decided to remain roommates with Samantha/Doug.
 Clair/Seth regretted her/his choice to not remain roommates with Samantha/Doug.

CONTROL VARIABLES:

Emotional Response

The story made me feel emotional.
 The story had a strong emotional impact on me.
 The story was an emotional story.

Attention to the Narrative

I paid close attention to the contents of the message.
 I expended effort thinking of the contents of the message.
 I gave the message my full attention.

Confusion

I felt confused by the contents of the message.
 I could follow the message smoothly.
 I felt the message was easy to understand.

Perceived Relevance

The story was personally relevant.
 I could relate to the events described in the story.
 The events in the story were not applicable to my life.

Enjoyment

I enjoyed reading the story.
 The story was enjoyable to read.
 I would describe the story as interesting.

Familiarity with AATD/Genetic Disorders

Please tell us how familiar you are with the health condition alpha-1 antitrypsin deficiency (also known as alpha-1 or AATD)?
 Have you ever been diagnosed with AATD (Yes/No)?
 Have any of your friends or family members been diagnosed with AATD (Yes/No/Unsure)?
 Have you ever been diagnosed with a genetic disorder other than AATD (Yes/No)?
 Have any of your friends or family members been diagnosed with a genetic disorder other than AATD (Yes/No/Unsure)?

Trait Empathy

I often have tender, concerned feelings for people less fortunate than me.
 Sometimes I don't feel very sorry for other people when they are having problems.
 When I see someone being taken advantage of, I feel kind of protective towards them.
 I sometimes find it difficult to see things from the other person's point of view.
 Before criticizing somebody, I try to imagine how I would feel if I were in their place.
 When I'm upset at someone, I usually try to "put myself in his shoes" for a while.
 Other people's misfortunes do not usually disturb me a great deal.
 When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
 I am often quite touched by things that I see happen.
 I would describe myself as a pretty soft-hearted person.
 I try to look at everybody's side of a disagreement before I make a decision.
 I sometimes try to understand my friends better by imagining how things look from their perspective.
 If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.
 I believe that there are two sides to every question and try to look at them both.

Social Support

People sometimes look to others for companionship, assistance, and other types of support. How often is each of the following kinds of support available to you if you need it?

Help if confined to bed
 Take to doctor
 Prepare meals
 Help with daily chores
 Show love and affection
 Hug you
 Love you
 Have good time with
 Get together for relaxation
 Do something enjoyable with
 Listen to you
 Confide in
 Share worries with
 Understand your problems
 Give you good advice
 Give you information
 Give advice you really want

Perfectionism

I always have to look as good as I can.
 It is important to act perfectly around other people.
 If I seem perfect, other people will like me more.
 I try hard to look perfect around other people.
 I like trying to look perfect to other people.
 I have to look like I always do things perfectly.

Self Esteem

I am able to do things as well as most other people.
 I wish I could have more respect for myself.
 I feel that I have a number of good qualities.

I feel I do not have much to be proud of.
 I feel that I am a person of worth, at least on an equal plane with others.
 I take a positive attitude toward myself.
 On the whole, I am satisfied with myself.
 I certainly feel useless at times.
 At times I think I am no good at all.
 All in all, I am inclined to feel that I am a failure.

Perceived Impact of Freshman College Roommate

How much do you perceive that a freshman-year college roommate can impact the following areas of your life? This could be either a positive or negative impact.

Happiness
 Overall Wellbeing
 Academic Success
 Social Life
 Popularity
 Physical Health
 Class Attendance
 Social Growth

Social Anxiety

- a. When mixing socially, I am uncomfortable.
- b. I have difficulty talking with other people.
- c. I worry about expressing myself in case I appear awkward.
- d. I find myself worrying that I won't know what to say in social situations.
- e. I feel I'll say something embarrassing when talking.
- f. When mixing in a group, I find myself worrying I will be ignored.

Health Anxiety

I spend most of my time worrying about my health.
 I am aware of aches/pains in my body all the time.
 I am constantly aware of bodily sensations or changes.
 Thoughts of illness are so strong that I no longer even try to resist them.
 As a rule I am not afraid that I have a serious illness.
 I constantly have images of myself being seriously ill.
 I do not have any difficulty taking my mind off thoughts about my health.
 If I hear about an illness I always think I have it myself.
 If I have a bodily sensation or change I must know what it means.
 I usually think that I am seriously ill.
 If I had a serious illness I would still be able to enjoy things in my life quite a lot.
 A serious illness would ruin every aspect of my life.

Genetic Risk

My genes make future illnesses more likely for me.
 Genes make some people more likely to become ill from germs.
 Genes cause each person's body to react differently to things in the environment.
 Genes make some people more likely to benefit from medicine than others.
 Genes make some people more likely to become ill when exposed to toxins in the environment.
 Genes play a very important role in the health of children.
 Genes can protect one's health from harms in the environment.
 Genes influence how serious an illness will be.

My genes are the best predictor for how badly a disease will affect me.
 Genes make disease more severe for some people.
 Genes make some adults more likely to get certain diseases.

Importance of Moral Principles

You should only act, when you are sure that it's morally correct.

Resilience to Stigma

I would remain friends with a person, even if my other friends didn't like him/her.
 If I had a friend with an unpopular characteristic, I would hide the fact that I am friends with him/her.
 I would publicly stand up for a person who was being teased or mocked by others.
 It doesn't bother me to be good friends with someone who is unpopular.
 I would never be friends with someone who was unpopular.
 If a friend was making fun of one of my other friends, I would tell them to knock it off.
 I would be embarrassed if my friends knew I was friends with someone who was unpopular.

Cynical Worldview

Most people can be trusted.
 Human nature is fundamentally cooperative.
 If you don't watch yourself, people will take advantage of you.
 You can't be too careful when it comes to trusting people.
 Most people help others.
 No one is going to care much what happens to you, when you get right down to it.
 Most people look out for themselves.

Disgust Sensitivity

It bothers me to hear someone clear a throat full of mucous.
 I never let any part of my body touch the toilet seat in public restrooms.
 It would bother me tremendously to touch a dead body.
 If I see someone vomit, it makes me sick to my stomach.
 I probably would not go to my favorite restaurant if I found out that the cook had a cold.
 Even if I was hungry, I would not drink a bowl of my favorite soup if it had been stirred by a used but thoroughly washed flyswatter.
 Seeing a cockroach in someone else's house doesn't bother me.
 You see maggots on a piece of meat in an outdoor garbage pail.
 You discover that a friend of yours changes underwear only once a week.
 A friend offers you a piece of chocolate shaped like dog doo.
 You accidentally touch the ashes of a person who has been cremated.
 You are about to drink a glass of milk when you smell that it is spoiled.
 Your friend's pet cat dies, and you have to pick up the dead body with your bare hands.

Appendix F

Factor Loadings with Promax Rotation

Indicator Variable	Factor 1 Positive Character Appraisal	Factor 2 Character Identification	Factor 3 Moral Approval
Protagonist made right choice	.92	.47	.55
I'd like to interact with people the way the protagonist did	.91	.58	.43
I liked the protagonist	.91	.56	.68
I approved of the protagonist's decision	.90	.44	.52
I think it would be good to be like the protagonist	.90	.52	.41
The protagonist's decision was appropriate given his/her situation	.89	.52	.58
The protagonist seemed just like me	.87	.69	.55
I could be friends with someone like the protagonist	.86	.57	.65
I wish I could make decisions the way the protagonist did	.84	.48	.28
I felt I had a lot in common with the protagonist	.83	.70	.56
I think I would like the protagonist if I met him/her in real life	.80	.53	.64
Reverse of I thought the protagonist was a dislikable character	.78	.42	.46
I would like to be like the protagonist	.74	.49	.20
I felt as if I was the protagonist	.52	.87	.29
I felt I knew exactly what the protagonist was going through	.46	.85	.29
I felt I could really get inside the protagonist's head	.43	.84	.24
I could feel the emotions the protagonist portrayed	.56	.74	.39
Choosing to be roommates was the right thing to do	.34	.22	.76

It would have been wrong for the protagonist to not stay roommates	.26	.25	.71
Reverse of The protagonist should not have remained roommates	.46	.23	.70
Eigenvalue:	11.36	1.71	1.38
Proportion of explained variance:	56.80	8.52	6.90
Total Eigenvalue:	14.45		
Total proportion of explained variance:	72.22		

Note. Responses to each item were coded into numerical values ranging from 1 (strongly disagree) to 7 (strongly agree). Because the conditions were gender-congruent, for each item, male participants read “Seth” rather than “protagonist,” and female participants read “Clair.”

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AWARDS

Second Place, Promising Professor Award, Mass Communication and Society Division, AEJMC, 2011.

Top Paper Award, Cultural and Critical Studies Division, AEJMC, 2011.

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