Are All Substance Users Created Equal? Factors that Influence Stigma toward Individuals with Substance Use Disorders

by

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Abstract

Social stigma has been defined as a collection of negative attitudes, beliefs, thoughts or behaviors that influence an individual or group to fear, avoid, or discriminate against people with particular characteristics. Stigma can lead to a number of barriers to entering mental health treatment, and individuals who have multiple stigmatized characteristics are believed to be more at risk for experiencing myriad negative effects, including greater degrees of internalized stigmatization as well as sociopolitical consequences. The present study examined how race and drug of choice impact perceptions of individuals with substance use disorders. It was hypothesized that individuals would endorse more prejudicial and stigmatizing attitudes toward members of minority ethnic groups than toward Caucasian substance users. Furthermore, it was anticipated that individuals described as having an alcohol use disorder would be rated less negatively than individuals described as having cocaine or marijuana use disorders. Four hundred seventy seven undergraduate students participated in this study and 359 were included in analyses. Participants were presented with one of nine vignettes depicting an individual from one of three different ethnic groups, White, African American, or Latino, described as having problematic use of one of three substances, alcohol, marijuana, or cocaine. Participants were then asked to complete measures of social distancing, attribution, and beliefs regarding the cause of the disorder. Results showed main effects of drug of choice, with cocaine use being rated more negatively than either marijuana or alcohol use. In addition, alcohol use and cocaine use were rated as more likely to have a biological basis (i.e., less controllable) than marijuana use.

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INTRODUCTION

Stigma

In ancient Greece, criminals and traitors would be cut with knives or burned with branding irons, leaving marks called a "stigma" to warn others that the individual should be scorned, avoided, and was not to be trusted (Neuberg, Smith, & Asher, 2000). In his widely cited book on the nature of stigma, Goffman (1963) characterized "stigma" as an attribute that is socially defined as deeply discrediting. However, he goes on to say that defining stigma as an attribute of an individual is only a partial definition, and that, in fact, stigma refers to a "special kind of relationship between attribute and stereotype" (p. 4). Later researchers (Jones, Farina, Hastorf, Markus, Miller, & Scott, 1984) expanded on Goffman's definition and explained stigma as a "mark" or a "deviation from a norm" that associates the individual with undesirable characteristics that discredit him or her in the eyes of others. Other definitions include a pattern of social prejudice that an individual experiences as a result of others' judgments about his or her personal qualities or characteristics (Herek, & Glunt, 1993). Gary (2005) defines stigma as "a collection of negative attitudes, beliefs, thoughts, and behaviors that influences the individual, or the general public, to fear, reject, avoid, be prejudiced, and discriminate against people" (p. 980). In this paper, the term "stigma" will be used to describe this psychosocial phenomenon rather than the condition itself.

Goffman (1963) outlines three types of characteristics that are likely to be stigmatized: physical deformities or illness, blemishes of character (including homosexuality and mental illness), and the "tribal stigma" of race or religion. Forty-five years later, most stigmatized

groups can still be categorized according to Goffman's formulation (e.g., persons living with HIV/AIDS, individuals with mental illness, racial minorities). Recent literature has focused on stigma toward individuals with mental disorders and consistently shown that this group faces both discriminatory behaviors by others and internalized beliefs about themselves as worthy of stigmatization (Angermeyer, Matschinger, & Corrigan, 2004; Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003; Corrigan & Watson, 2002; Crisp, Gelder, Rix, Meltzer, & Rowlands, 2000; Rao, Mahadevappa, Pillay, Sessay, Abraham, & Luty, 2009; Wolkenstein & Meyer, 2008).

Many sources contribute to stigma. Attitudes in the community are one factor, but the media, health and social services, the educational system, and legislation also play a role in perpetuating the stigmatization of a particular group or condition (Van Brakel, 2006). Corrigan and Watson (2002) proposed that the perception of an individual as dangerous tends to increase the degree to which he or she is stigmatized, and they noted that mental illness is often viewed as a potentially dangerous condition. Weiner, Barry, and Magnusson (1988) noted that those conditions which appear to be under the control of the individual (termed "mental-behavioral") are more likely to be stigmatized than conditions that have a physiological or otherwise uncontrollable cause. Physical disabilities or medical conditions often do not carry with them the perception of an individual who is not be in control of his or her behavior, while mental illness may be viewed as more likely to result in dangerous or unpredictable acts (Esses & Beaufoy, 1994). The discrepancy between the ways people view physical illness and mental illness suggest that, despite the medical model of mental illness that has been propagated in the last few decades (see Schnittker, 2008), laypeople conceptualize these as disparate constructs.

Baumann (2007) suggests that individuals with mental disorders are seen as fundamentally different from individuals without these disorders. She cites evolutionary theory

as one possible explanation for discriminatory behavior toward mental illness – stating that the genes of the mentally ill are less desirable. Although individuals with mental disorders may be viewed as separate from other members of society, there are factors that protect against being stigmatized. When the perceiver is familiar with the stigmatized group, he or she is less likely to have negative attitudes toward members of that group. This idea, coined the 'contact hypothesis' was first put forth by Gordon Allport in 1954, and it has received support throughout the decades in reference to a number of different stigmatized groups (e.g., Angermeyer, et al., 2004; Bos, Shaalma, & Pryor, 2008; Pettigrew & Tropp, 2006; Zebrowitz, White, & Wieneke, 2008).

Though there are still many sociological and psychological hypotheses regarding the cause of mental illness stigma, research on the effects of stigma toward these individuals shows that the experience of being stigmatized detrimentally affects help-seeking behavior and increases the person's sense of subjective impairment (e.g., Ojeda & Bergstresser, 2008; Ritsher & Phelan, 2004; Starr, Campbell, & Herrick, 2002).Therefore, due to concerns about being stigmatized, individuals may not present for professional services that could assist in managing their disorder. In addition, the threat of stigmatization may be related to a decrease in the person's life satisfaction and emotional well-being (e.g., Markowitz, 1998; Rosenfield, 1997). Corrigan and Watson (2002) reviewed the literature on the stigma of mental illness and suggested that people with mental disorders know that they are members of a stigmatized group, and, as a consequence, may internalize the negative attributions expressed by others and exhibit lower self-esteem. Furthermore, Ritsher, Otilingam, and Grajales (2003) found that scores on a measure of internalized stigma of mental illness (ISMI) showed positive correlations with depressive symptoms and negative correlations with self-esteem, empowerment, and recovery orientation.

In addition to the internalized consequences of being stigmatized, there is also evidence that attitudes toward mental disorders can have effects on a number of socio-political outcomes. Difficulties finding employment and housing have been found to be associated with stigma toward mental illness (Gary, 2005; Penn & Martin, 1998). Professionals who work with individuals with mental disorders are not necessarily less likely to stigmatize them. Rao et al. (2009) investigated the attitudes of 108 health professionals working in mental health settings in the United Kingdom. Participants were presented with depictions of fictitious patients from a secure forensic hospital, patients exhibiting either a brief psychotic episode or schizophrenia, and patients with substance use disorders. Results indicated that participants had more stigmatizing attitudes toward individuals with schizophrenia than toward those with a brief psychotic episode and that attitudes toward individuals with schizophrenia who had been admitted to a secure facility were more negative than toward those who had not. In addition, participants endorsed more stigmatizing attitudes toward individuals with active substance use disorders than toward those who were in remission. While these results might be expected from laypersons, the implications of such attitudes in health professionals who work with mental illness suggest that the medical or psychiatric treatment of those with mental disorders may be affected by stigma.

Corrigan, Watson, Warpinski, and Gracia (2004) found that beliefs regarding the allocation of resources for the treatment of mental illness may also be tied to certain stigmatizing attitudes. In a sample of community college students, Corrigan et al. (2004) found that the belief that individuals with mental illness are to blame for their condition was inversely related to willingness to make charitable donations to the National Alliance on Mental Illness (NAMI) and feelings of pity were positively related to support for mandated treatment and NAMI

contributions. Not only do these results illustrate the importance of stigma in access to care, but they also again suggest that the perception of controllability plays a role in stigmatizing attitudes.

These examples, and the myriad others not mentioned here, consistently report negative consequences of stigma. The seemingly logical solution to the problem would be to develop programs to reduce stigma and discrimination, and many have attempted to do so (e.g. Angermeyer, 2002; Corrigan & Watson, 2002; Crisp, 2000; Sartorius, 1997). However, before functional programs can be put in place to reduce the occurrence of stigma, the pervasiveness and form of the phenomenon must be understood.

One complicating factor in the study of stigma is that many individuals belong to more than one stigmatized group. This issue has been explored as it relates to mental illness and older adults (Thomas & Shute, 2006), homosexuality and HIV/AIDS status (Hergovich, Ratky, & Stollreiter, 2003), and mental illness and ethnic minority status (Gary, 2005). To date, this literature has primarily focused on theoretical models of what has been termed "double stigma" as well as the subjective experiences of individuals possessing multiple stigmatized traits. What seems to have received less attention thus far is the actual degree to which members of the population at large endorse negative attitudes toward doubly stigmatized individuals and whether membership in more than one stigmatized group actually results in appreciably more prejudicial or stigmatizing attitudes. Thomas and Shute (2006) postulate that double stigma may be multiplicative, rather than additive, in nature; however, they provide only anecdotal evidence that this is the case. Two groups who have been documented in the literature as being highly stigmatized are substance users and racial minorities. It is unclear whether substance users who belong to racial minority groups are more stigmatized than their majority group counterparts. To

better understand how individuals conceptualize those who belong to both of these groups, one must first be aware of the stigma these groups face separately.

Stigma and Substance Use

According to the National Survey on Drug Use and Health, conducted by individuals at the Substance Abuse and Mental Health Services Administration (SAMHSA), in 2008 23.1 million people age 12 or older were in need of treatment for drug and/or alcohol abuse or dependence. SAMHSA defined an individual as being in need if he or she met DSM-IV criteria for substance abuse or dependence in the past 12 months or if he or she sought drug or alcohol treatment in the past 12 months. Of these 23.1 million, 4 million sought treatment, and of these, only 2.3 million received treatment at a specialty facility while the remainder received treatment via self-help groups (e.g., Alcoholics Anonymous), private doctor's offices, or in a prison or jail. This leaves 19.1 million individuals meeting criteria for a substance use disorder who did not seek treatment. Of the reasons for not seeking treatment given by those who recognized the need but did not seek it, fear that seeking treatment would have a negative impact on one's job and concern that receiving treatment may lead to negative perceptions of the individual within his or her community were among the top five (SAMHSA, 2008). These results indicate that stigma, or the perception that one will be stigmatized, is an important factor in deciding whether one will pursue appropriate treatment.

It has been widely reported that mental disorders are more highly stigmatized than physical disorders (Baumann, 2007; Corrigan, River, Lundin, Wasowski, Campion, Mathisen, et al., 2000; Luoma, Michael, Waltz, Hayes, Roget, Padilla, & Fisher, 2007), and substance use disorders are no exception. Although psychotic disorders are generally seen as dangerous and unpredictable, two elements that contribute to stigma, substance use disorders have been reported

to elicit more negative reactions than schizophrenia (Corrigan, et al., 2000; Crisp, et al., 2000; Link, Phelan, Besnahan, Stueve, & Pescolido, 1999). The idea that substance users are dangerous combined with the common perception that substance use disorders are controllable conditions might account for this pattern (Corrigan, et al., 2003).

In a telephone survey of over 1,700 adults assessing attitudes on eight dimensions toward seven common mental disorders, including depression, panic attacks, schizophrenia, dementia, eating disorders, alcoholism, and drug addiction, Crisp et al., (2000) found that drug addiction was rated highest on dimensions of dangerousness to others, being difficult to talk to, and unpredictability. Drug addiction and alcoholism were the two highest rated conditions on dimensions of controllability (i.e., "having only themselves to blame"), and ability to "pull themselves together" (p. 5). These results indicate that substance users are perceived as people who should be avoided, and the sympathy that may be felt toward individuals with uncontrollable conditions might not be offered to substance users. Despite efforts by the National Institute on Drug Abuse (NIDA) to establish substance use as a disease (NIDA, 2009), it is evident that problematic substance use is still widely viewed as within the individual's control. In addition, the difference in attitudes toward drug addiction and alcoholism could indicate that the public does not perceive substance users as a unitary group, but that there are differences in attitudes depending on whether the substance is alcohol or an illicit drug.

The negative attitudes toward substance use expressed by the general public may also be shared by health professionals working with these individuals. In a qualitative study of nurses working in general medicine in the UK, Peckover and Chidlaw (2007) explored attitudes and behaviors of the nurses whom they interviewed, as well as their perceptions of other health care professionals, regarding patients with substance use disorders. The statements they gathered

suggest that these nurses perceive some substance using patients, especially those using narcotics, as aggressive and posing a risk to the practitioner. A tendency to spend less time with these patients, and to invest less personal care, due to a belief that one's safety was in jeopardy was also noted. Spending less time focusing on these patients likely results in suboptimal care, as learning about the patient on a personal level is often helpful in informing treatment decisions. The authors recorded statements that indicate active discrimination within the healthcare system. For example, one nurse stated that she knows that general practitioners do not want to take on substance users as patients because they may be more difficult than patients who do not have substance use problems.

Using data from the General Social Survey (GSS), a nation-wide survey assessing attitudes and behaviors regarding a number of social issues, Link et al. (1999) examined attitudes toward four mental disorders, as depicted by vignettes, including alcohol dependence, depression, cocaine dependence, and schizophrenia. One of the response items assessed the degree to which the respondent believed the individual depicted was likely to engage in violent behavior. The authors reported that 71 percent of participants believed that violent behavior from an individual with alcohol dependence was very likely or somewhat likely, and 87 percent endorsed this same belief about an individual with cocaine dependence. This can be compared to 61 percent for a person with schizophrenia and 33 percent for a person with depression. An analysis of variance showed that the vignette accounted for 27.6 percent of the variance in beliefs, $F(4)=126.35$, $p<.001$, and results from the Sheffe test indicate that responses to depression and schizophrenia were significantly different from each other and from alcohol and cocaine dependence while there was no significant difference between alcohol and cocaine dependence.

Furthermore, when asked to make causal attributions regarding these disorders, 61.2 percent and 51.3 percent of respondents indicated that they believed "bad character" to be either a very likely or somewhat likely cause of cocaine dependence and alcohol dependence, respectively. For depression and schizophrenia, this particular causal attribution was made by 38.2 and 32.8 percent of the respondents, respectively, and these differences were significant (χ^2=80.0, p<.001). Finally, participants were asked to respond to a measure of social distance, which assessed their willingness to have certain social relationships with the individual depicted in the vignette. These included moving next door to the individual, spending an evening socializing, making friends with, working closely with, and having the individual marry into one's family. Results indicated that the greatest proportion of participants desired a high level of social distance from an individual with cocaine dependence (90 percent), followed by alcohol dependence (70 percent), schizophrenia (63 percent), and depression (47 percent). Results from an ANOVA indicate that the vignette accounted for 22.3 percent of the variance in responses, F(4)=90.69, p<.001), and each condition was significantly different from the others according to the Sheffe test. Social distance and the perception of dangerousness were significantly correlated (r=.43, p<.001).

These results indicate that substance use disorders are often perceived as controllable and dangerous, and that they encourage social distancing to a greater degree than do other mental disorders. As with Crisp et al., (2000), while alcohol and cocaine dependence were both viewed negatively, they were not considered the same. However, it should be taken into account that the vignette used by Link et al. (1999) to depict alcohol dependence portrayed an individual with fewer serious consequences for his behavior. For example, in the cocaine dependence vignette, the individual depicted ("John") has lost his job, spent his savings on cocaine, and stolen from

friends and family. On the other hand, when John is portrayed as dependent on alcohol, he experiences physical withdrawal and friends and family are concerned about his behavior. It is difficult to say whether the differences in responses are due to the drug of choice, per se, or the severity/social desirability of the behaviors described. To better understand stigma toward substance users, it would likely be helpful to examine attitudes toward individuals who exhibit similar behaviors and levels of impairment but whose drugs of choice differ.

Although popular media may perpetuate certain stereotypes, negative attitudes toward substance users date much farther back in American history. Musto (1987) traces the history of substance use stigma to the influx of Chinese immigrants in the 19th century. The use of opium was relatively common in this population, and the association between the drug and the stigmatized immigrants may have contributed to negative attitudes toward opium use. In addition, it has been argued that marijuana use became highly stigmatized during the 1940s and 1950s due to the popularity of the drug among African American jazz musicians (Schlosser, 2003). This historical trend continues today, as television and movies often place African Americans and Latinos in roles as drug-dealers who prey on children, adolescents, and helpless addicts and are involved in violent criminal behavior. The news-media has also given a great deal of attention to the drug trafficking from Central and South America, which could lead some to believe that these areas, and the individuals who inhabit them, are to blame for the current drug problem in the U.S. Further discussion of attitudes toward racial minorities is warranted, as any associations between substance use and minority status occur within a larger context of racial tension.

Stigma and Race

Of Goffman's (1963) three categories of stigmatized conditions, race would be considered a "tribal stigma." Levin and Levin (1982) stated that, of all the social categories, race, gender, and age are the most universally salient. In his seminal work, *On the Nature of Prejudice*, Gordon Allport (1954) explains that race is often used to understand the whole individual due to its visibility, and that humans are apt to believe that these visible characteristics are necessarily related to underlying similarities. In this section, Barker's (2003) definition of racism will be used. That is, racism is "stereotyping and generalizing about people, usually negatively, because of their race, commonly a basis of discrimination against members of racial groups" (p. 372).

Arhin and Thyer (2004) hypothesize that racism is perpetuated throughout generations via operant and respondent conditioning. They argue that if a child expresses racist attitudes and is rewarded by parents or peers, than he or she is likely to continue to hold and express these attitudes. Additionally, when racist language is accompanied by expressions of disgust or disdain, or when images of violence are associated with members of a particular race, then the relationship between negative emotions, such as fear, and racial cues is strengthened. Allport (1954) contends that prejudice and discrimination allow the majority to remain in the dominant position, and subordinating others is a natural process that occurs in many animal species. By institutionalizing racism, Caucasians were able to maintain their positions of power and privilege long after slavery in the U.S. ended.

Negative stereotypes of minorities have persisted throughout American history, and before the Civil Rights movement, the belief that most racial minority groups are inferior to Caucasians was an accepted reason for unequal access to resources such as education and

employment. Although the Civil Rights movement of the 1950s and 1960s did much to curb the public expression of racism, the effects of racial stigma can still be detected in studies of attitudes toward racial minorities. Charles and Massey (2003) reported that in a survey of nearly 4,000 college freshmen, Caucasian, Asian, and Latino participants tended to endorse negative stereotypes of African Americans, such as being lazy, prone to violence, poor, and on welfare. Latinos were stereotyped similarly by the other racial groups. These results indicate that racism continues into the present day.

Just as stigma toward mental illness has deleterious effects on the stigmatized individual, the perception that one is being discriminated against on the basis of race has a number of harmful consequences, including symptoms of depression (Finch, Kolody, & Vega, 2000) and anxiety (Dion, Earn, & Yee 1978). In studies of adolescent substance use, perceived discrimination has been associated with drug and alcohol use among African American and Latino adolescents (Okamoto, Ritt-Olson, Soto, Baezconde-Garbanati, & Unger, 2009). A sense of belonging is important to a child's development, and feeling as though one has been rejected on the basis of a characteristic that cannot be controlled may have a detrimental effect on identity formation.

Negative attitudes are most harmful when they are expressed in actual behaviors. Bertrand and Mullainathan (2003) conducted a study in which they sent fabricated resumes to various companies in two major metropolitan areas that were advertising employment opportunities. Each resume had a name that was either traditionally associated with African Americans or with Caucasians. Other than the names, the resumes were identical. They found that those resumes with the Caucasian-sounding names were invited for 50 percent more interviews than those with traditionally African American names. This trend was found even

among companies purporting to be "equal opportunity employers." Although it is not known exactly why these employers chose the Caucasian names more frequently, it can be reasonably conjectured that negative stereotypes of African Americans were at play, either consciously or unconsciously.

Research investigating beliefs about crime and criminals has shown that Caucasians report greater fear of a crime occurring when in the presence of an African American person than when in the presence of another Caucasian person (Chiricos, Eschholz, & Gertz, 1997). In addition, Caucasians are more likely to attribute violent crimes to racial minorities than to members of their own race (Gordon, Michels, & Nelson, 1996). Oliver and Fonash (2002) investigated whether Caucasians were more likely to misidentify criminal suspects based on race and nature of the crime. They found that Caucasians were more likely to inaccurately remember a suspect as being African American when the crime was violent than when the crime was non-violent, suggesting perhaps a subconscious belief that African Americans tend to be more violent than Caucasians. This stereotypical belief has been attributed to the overrepresentation of minorities in the media's reporting of criminal acts. Given the evidence cited above that a belief in the dangerousness of an individual leads to a greater desire for social distance, the perception of racial minorities as more likely to cause harm may be an important factor in racial discrimination.

A propensity for violence is not the only damaging stereotype perpetuated by the media. After exploring the representation of African Americans and poverty in the popular media and college textbooks, Clawson and Kegler (2000) concluded that members of this group are disproportionately portrayed as being of low socioeconomic status. They stated that media depictions suggest two-thirds of those below the poverty line are African American, while actual

estimates indicate that this number is closer to one-third. This is important to note because low socioeconomic status is associated with discrimination and marginalization (Room, 2005). In addition, this overrepresentation perpetuates the stereotype that African Americans overuse the welfare system, which leads to further stigmatization of both welfare recipients (due to pre-existing negative perceptions of African Americans) and also of African Americans (due to negative attitudes toward welfare) (Federico, 2005). The misrepresentation of African Americans in the media has not done much to help counter stereotypes, and these stereotypes have formed the basis for both overt and covert forms of racism.

Although in recent history they have been the most publicized target for discrimination, African Americans may not always bear the brunt of racism. According to the U.S. Census Bureau (2005), Latinos comprise the largest minority group in the United States. There are approximately 40 million Latinos in the U.S., accounting for 13.7 percent of the total population. If the growth rates remain the same, estimates are that by the year 2050, 25 percent of the population will identify as Latino. Despite the size of the Latino population, much less attention has been given to attitudes toward this group than toward African Americans (Okamoto, et al., 2009). This may be due to the long-standing history and awareness of racism toward African American people in America; however, as the Latino population grows, it is likely that they will experience similar discriminatory acts. This author wonders whether, while openly discriminating against African American individuals is generally considered socially unacceptable due to the attention this form of racism has received, it may actually be more acceptable to express negative attitudes toward Latinos. Given the size of the Latino population and the potential for being discriminated against, attitudes toward this group should receive further examination.

Rationale

To date, little has been done to investigate attitudes toward substance users who are also racial minorities. There is some evidence that race does impact attitudes toward substance use. Rush (1998) investigated how race, gender, and perceived controllability of stigmatized conditions affected participants' reactions to a target. She found that for drug use that was described as controllable, average ratings for Caucasian males and African American females were the same and were more negative than ratings for Caucasian females and African American males. On the other hand, for drug use that was depicted as uncontrollable, Caucasian males were rated the most positively, Caucasian females the most negatively, and African American males and females were in between. It is difficult to make sense of these results, and the study has a number of serious limitations.

First, each participant received 12 vignettes and each was given vignettes that were intended to depict either African American or Caucasian targets (indicated by the name of the individual described). However, the author reported that, when questioned after completing the survey, participants reported that they noticed the manipulation of whether the condition was controllable, but they did not notice the race of the target. This leads one to wonder whether they were rating the vignettes with the race that the author intended to represent in mind. Also, the dependent measures consisted of only five questions rating attitudes regarding responsibility, blame, likeableness, pity, and anger. It is unclear how responsibility and blame are distinct from one another, and if the author is already manipulating controllability of the condition, then it is expected that these two variables would be tied to that manipulation. From the author's description, it seems that certain elements that have been linked to stigma, including dangerousness, were not included. Finally, there were only 70 participants, and the conclusions

that can be drawn from such a small number of responses are limited. This study provides a starting point, but more needs to be done to understand the effect of dual membership in these stigmatized groups (i.e., substance user and racial minority) on attitudes.

The current study attempted to delineate how race interacts with substance use in determining attitudes. Gender was held constant as adding this variable may have occluded the salience of race. Later research can investigate how the manipulation of this variable impacts attitudes. In addition to vignettes describing African American and Caucasian males, vignettes describing Latino males were used as stimuli. It should not be assumed that attitudes toward African Americans can be generalized to other racial minorities, and given that Latinos are the largest minority group in the U.S., this addition seemed appropriate.

Just as attitudes toward racial groups may differ, various substances likely engender different responses. Both Crisp et al. (2000) and Link et al. (1999) found differences between attitudes toward alcohol dependence and drug dependence. However, since Crisp et al. did not define the drug to which they were referring and the cocaine dependence vignette in Link et al.'s study was drastically different from the alcohol dependence vignette, the question remains as to how the drug of choice influences attitudes regarding attributions and the desire for social distance. This study investigated attitudes toward three different drugs: alcohol, marijuana, and cocaine. Alcohol and cocaine have received some attention in the stigma literature, and the addition of marijuana as a variable was intended to provide more insight into stigma given that this substance is currently illegal in Alabama but is considered by many to be more benign than cocaine.

Weiner et al.'s (1988) assertion that perceived controllability plays a unique role in stigma toward mental illness is especially important given the differences in opinion as to

whether substance use is a behavioral problem or a disease in the more medical sense. The role of genetics in mental illness is not well-understood; however, there has been increased public attention to a biologically based conceptualization of mental disorders (Schnittker, 2008). Some argue that, since medical disorders tend to be less stigmatized than mental disorders, viewing mental illness as genetically or biologically based will increase tolerance toward these conditions (Condit, Ofulue, & Sheedy, 1998; Conrad, 2001). Others believe that a medical model of mental illness will only serve to decrease tolerance and increase stigma because this model presents mental disorders as essential categories (e.g., natural, immutable, discrete), and research has shown that psychological essentialism is associated with greater negative attitudes toward socially constructed groups (Haslam, Rothschild, & Ernst, 2002; Keller, 2005; Yzerbyt & Rocher, 2002).

The director of NIDA, Dr. Nora Volkow, released a statement saying, "Addiction is a chronic disease…as a chronic disease, addiction responds best to treatment approaches already applied to other chronic conditions" (NIDA, 2009). Whether laypeople have begun to view substance use in this way is still unclear. Schnittker (2008) found that a significantly larger proportion of individuals attributed alcoholism to genetics in 2006 than did in 1996; however, the attribution of this same disorder to "bad character" remained unchanged. These results indicate that there may have been a shift in public perceptions, but it is unclear whether a) the belief in a genetic model is necessarily incompatible with a moral or behavioral conceptualization, and b) the shifting attitudes toward alcohol use apply to other drugs.

Hypotheses

The goals of this study were threefold. First, the study investigated the main effects of drug of choice and race on attributions regarding substance users, desire for social distance, and

belief in the controllability of substance use disorders. Second, possible interactions between race and drug of choice were examined to explore the possibility that "double stigma" affects individuals who belong to this particular combination of stigmatized groups. Third, characteristics of the respondent, such as demographics (including age, gender, race, and degree of religious affiliation) and familiarity with substance use disorders, were examined to determine the degree, if any, to which these variables affect attitudes.

It was hypothesized that participants who were exposed to vignettes describing marijuana or cocaine users as opposed to alcohol users would report greater stigmatizing attitudes, and the author expected vignettes depicting African American or Latino individuals would be rated more negatively than those describing a Caucasian individual. It was also hypothesized that race and drug of choice would interact such that participants exposed to descriptions of illicit drug users who are racial minorities would endorse the highest number of stigmatizing attitudes. It was anticipated that alcohol use would be viewed as having a genetic basis (i.e., less controllable) at a higher rate than use of other drugs. Familiarity with substance use was expected to account for a significant portion of the variance in responses.

METHOD

Participants

Four-hundred seventy-seven participants completed the study during the summer and fall semesters of the same year at a large Southeastern university. The sole exclusionary criterion was that participants be at least 19 years old. Of these participants, 41 were dropped due to missing data, six were dropped due to validity scores on the AQ27 that were at least three standard deviations above the mean, and 71 were dropped due to spending too little time (i.e., less than 10 seconds) on the vignette page. Participants who were excluded were all Caucasian and majority female (N=92), and they did not differ significantly from those individuals who met criteria for inclusion.

Vignettes

Participants were presented with vignettes (Appendix A) depicting male substance users. Nine vignettes were used, and each included both a race (Caucasian, African American, or Hispanic) and a drug of choice (alcohol, marijuana, or cocaine). Gender was held constant across vignettes to avoid interactions between race and gender of the hypothetical individual or gender and drug of choice. The vignettes were adapted from one used in the MacArthur Mental Health Module of the GSS (National Opinion Research Center, 1996) to assess attitudes toward an individual with alcohol dependence. This vignette has been used in a number of studies assessing attitudes toward individuals with alcohol dependence (e.g., Link, et al., 1999; Martin, Pescosolido, & Tuch, 2000; Schnittker, 2008). The presenting symptoms were held constant, allowing for minor differences in wording to account for method of ingestion (i.e., the words

"drink" vs. "use") Each participant was randomly assigned one vignette to which he or she responded.

Demographics

Participants were asked to provide information regarding their age, gender, description of home-town (i.e., rural, suburban, or urban), ethnicity, major, approximate grade average, year in school, religious affiliation, and perceived degree of religiosity. In order to keep participants' data anonymous, names of participants were not collected.

Familiarity with Substance Use Disorders

There is evidence that familiarity with a stigmatized condition is associated with fewer negative attitudes, especially the perception of the condition as dangerous (Angermeyer, et al., 2004; Baumann, 2007). Using a procedure similar to one described by Angermeyer et al. (2004) in reference to mental disorders, participants reported whether they or any of their family members have experienced problems with substance use. They were also asked whether they, or a member of their family, have worked with individuals with substance use disorders in a professional or volunteer context. Finally, participants were asked whether they know of a friend, co-worker, or neighbor who has either experienced problems with substance use or has worked with individuals with substance use disorders. Responses to these questions divided participants into four hierarchical categories: 1) First-hand experience with substance use problems (i.e., the participant has experienced these problems or has a family member who has experienced these problems); 2) participant or family member has worked with individuals with substance use problems; 3) the participant knows someone (friend, co-worker, neighbor) who has had issues with substance use or has worked with individuals with substance use disorders; and 4) none of

these apply. If more than one of the above applied to a given participant, the highest level of familiarity was chosen.

Dependent Measures

Social Distancing. The concept of social distance as an indicator of stigma and expected discriminatory behavior has remained popular since the 1920s. The first measure of social distance was created by Bogardus in 1925 and was used in a series of five national studies of research on racial bias conducted using college student samples. This original measure was administered such that respondents rated a variety of racial groups along a seven point continuum with each point representing a certain degree of social closeness (marriage, close friend, co-worker, speaking acquaintance, visitor to my country, should be barred from my country). Higher scores for a particular group represented greater social distance (Parillo, & Donaghue, 2005). Since then, researchers have modified this original scale by adding different social interactions and most often changing the scaling so that the items do not refer to groups of people but to the different relationships one might have with a member of a particular group, and respondents rate their willingness to have each relationship (e.g., Angermeyer, Beck, & Matschinger, 2003; Horch & Hodgins, 2008; Link, et al., 1999; Martin, et al., 2000; Wolkenstein & Meyer, 2008).

One such modified scale, used by Angermeyer et al., (2003) and again by Wolkenstein & Meyer (2008), assessed participants' willingness to interact with the target individual, in this case an individual with schizophrenia, in the following social relationships: landlord, coworker, neighbor, member of the same social circle, personal broker, in-law, and child care provider. Participants were instructed to rate the degree to which they would accept the target person in the given situation on a 5-point Likert scale (1= "in no case at all" to 5= "in any case"). These

authors reported internal consistencies of α= .90 and α=.88, respectively, for this seven item scale. In the current study, this scale was adapted to assess participant's attitudes toward the given vignette, and it demonstrated an internal consistency of α = .82. Responses were reverse scored so that higher scores are associated with greater social distancing.

Attribution Questionnaire (AQ). Weiner et al. (1988) developed an eight-item measure of attribution and its effects on attitudes and behaviors toward individuals with physical illness and individuals with mental illness. Three questions pertained to the responsibility, blame, and mutability of the illness. The remaining five questions assessed the respondent's liking, pity, anger, charitable donations, and personal assistance toward each of the illnesses presented. Corrigan et al. (2003) expanded on Weiner's (1988) measure and created the Attribution Questionnaire (AQ), a 21 item measure assessing six constructs: personal responsibility (three items, α = .70), pity (three items, α = .74), anger (three items, α = .89), fear (four items, α = .96), helping and/or avoidant behavior (four items, α = .88), and coercion-segregation (four items, α = .89).

In later studies, Corrigan and his colleagues used an expanded version of the AQ that included six new items, four of which were designed to measure perceived dangerousness and two of which were related to coercion into treatment and willingness to interact in a helpful way (see, Corrigan, et al., 2004). The expanded measure, the AQ27 was reported to be comprised of nine factors: responsibility, pity, anger, danger, fear, unwillingness to help, coercion, segregation, and avoidance. Although the authors reported good one-week test-retest reliability (r = .75) for six of the nine factors, this author was unable to find published details showing the factor analysis that resulted in these nine factors. Brown (2008), also reportedly unable to find the evidence supporting Corrigan et al.'s (2004) factor solution, conducted exploratory factor

analysis on the AQ27 and found six factors: Fear/Dangerousness (α = .93), Help/Interact (α = .82), Responsibility (α = .60), Forcing Treatment (α = .79), Empathy (α = .77), and Negative Emotions (α = .81).

This author chose to also conduct exploratory factor analysis with the current sample, and, using PCA with varimax rotation, found seven factors with eigenvalues greater than one: Fear/Dangerousness (α = .96), Forcing Treatment (α = .81), Unwillingness to Help (α = .88), Responsibility (α = .62), Anger/Negative Emotions (α = .87), Lack of Pity (α = .82), and Unwillingness to Interact (α = .80). The items in each of these factors map onto Brown's factor solution with two exceptions - the items that comprise Brown's "Help/Interact" factor were divided into two separate factors ("Help" and "Unwillingness to Interact"), and the one item that did not load on any of Brown's factors had a significant loading on the "Forcing Treatment" factor in the current solution. After examining the internal consistency of Brown's "Help/Interact" factor (α = .71) using the current sample, it appeared that the division of these items into two separate factors resulted in more unitary constructs. Therefore, the seven factor solution was used. Table 1 contains the factor loadings for the seven-item solution. The items were rated using a nine-point Likert scale (1 = not at all, 9 = very much) with higher scores indicating greater stigmatizing attitudes. In addition, five validity items were added to the measure to assure that participants were responding in a consistent manner. These items were simply reworded items from the original measure (e.g., "I would feel pity for him" vs. "I would not feel pity for him") scored in the opposite direction of the original item. Validity scores were calculated by summing the differences in scores between each validity item and the original item from which it was derived. The validity items were not included in the factor analysis.

Controllability. Weiner et al.'s (1988, 1995) findings that the perceived controllability of a stigmatized condition affects attitudes, and the debate concerning the biological model of

mental illness, suggest that this variable should be addressed. To assess whether participants view substance use disorders as biologically or genetically based entities, the method used by Link et al. (1999) and Shnittker (2008) was employed. Participants were presented with a measure asking them to rate a series of statements regarding the cause of the substance use problems illustrated (e.g., "a chemical imbalance in the brain," "God's will") on a four-point Likert scale (1 = very unlikely to 4 = very likely). Consistent with Shnittker's (2008) use of this scale, scores were calculated in terms of three "models," Environmental, Medical, and Personal, used to describe the cause of mental illness, and specifically substance use. Each model was represented by two questions.

Procedure

Data collection occurred via the Sona system, and, after providing informed consent, participants responded to measures online. The researcher utilized the Qualtrics Survey Software to present vignettes and measures as well as record responses. Participants received extra credit from participating instructors. As previously noted, participants were randomly exposed to one of the nine vignettes. To control for possible order-effects, the presentation of the demographic questionnaire and familiarity with substance abuse ratings were counterbalanced, with half of the participants responding to these measures before reading the vignette and the other half responding to these measures after reading the vignette. In addition, the presentations of all dependent measures were counterbalanced to avoid potential order effects. Participants were encouraged to contact the researcher with questions regarding the study if needed.

Data Analysis

Before conducting analyses that addressed the hypotheses of this study, the data were inspected for inconsistent or careless responding, outliers, and assessed for normality. The software with which the online survey was built allows the survey designer to record response times to any

measure or question, and this was also used to detect careless responding. In addition, validity scores on the AQ27 were calculated to detect inconsistent response patterns. Before addressing the primary hypotheses, preliminary analyses were conducted to determine whether demographic variables and/or familiarity with substance use should be included in the analysis of variance (ANOVA) or analysis of covariance (ANCOVA) for each of the dependent variables. Bivariate correlations, independent samples t-tests, and one-way ANOVAs were used to assess whether given characteristics of the participants would be appropriate to add as either covariates or separate independent variables (in the case of categorical variables) for each dependent variable. The primary hypotheses were assessed using a series of ANOVAs, or ANCOVAs if found to be appropriate, that investigated the effects of race (African American, Caucasian, or Latino) and drug of choice (alcohol, marijuana, and cocaine) on social distancing, each of seven factors of the AQ27, and perceptions of controllability (i.e., medical, environmental, or personal).

RESULTS

Demographics

As mentioned in the previous section, 477 participants completed the study, and after dropping 118 participants for the reasons described above, 359 were included in analyses. The majority of the participants were female (75.2%) and the mean age was 20.43 years old (SD=1.71, ranging from 19 to 34), with one participant not reporting his or her age. Regarding race, 88.6% of the sample identified as Caucasian, and smaller percentages of African American (6.1%), Hispanic (1.1%), Asian (1.1%), Native American (.8%), and multi-racial or "other" (2.3%) were represented as well. Most of the participants were juniors or seniors in college (31.8% and 31.2%, respectively) majoring in Social Sciences (42.3%) or Health Professions (27.3%), and 60% had a GPA of 3.0 or higher. When asked to describe their hometowns, 69.1% of participants selected suburban (19.8% urban, 11.1% rural). The majority of participants identified Baptist (30.6%) or Methodist (20.9%) as their religious orientation, followed by Catholic (14.8%), Agnostic (7.0%), and Presbyterian (5.6%). Participants also rated their level of religious identification, and 74.9% rated themselves as moderately to very religious with only 9.5% reporting that they are not religious at all. The majority of participants (54.3%) reported first-hand experience with substance use problems (i.e., participant or family member), and only 10.9% indicated no experience with substance use disorders.

Participants were randomly assigned one of nine vignettes. Chi-square and one-way ANOVA procedures were utilized to assess differences in demographic variables across groups.

There were no significant difference in gender (χ^2 (8)=13.05, p=0.11), race (χ^2(48)=47.73, p=0.48), level of religious identification (χ^2(38)=23.23, p=0.87), or degree of familiarity with substance use (χ^2(24)=33.65, p=.09). A one-way ANOVA confirmed that there were no significant differences in age among groups, F(8,349)=.74, p=.65. Table 2 reports the main demographics of interest (gender, race, age, level of religious identification, and familiarity with substance use) divided by vignette groups.

Order Effects

After executing the randomization procedure described above to vary the order in which measures were presented, there were 12 different orders of presentation. A one-way ANOVA was conducted to determine whether there were significant differences in dependent measures based on order of presentation. For the Social Distancing scale, six of the seven factors of the AQ27 (Fear, Treatment, Help, Distance, Pity, and Responsibility), and two of the three Controllability factors (Medical and Personal), there was no effect of order. For one factor of the AQ27, Anger, F(11,347)=3.10, p<.01, and one factor of the Controllability scale, Environmental F(11,347)=2.96, p<.01, there was a significant effect of order.

Post-hoc tests revealed where these differences occurred. For Anger, there were significant differences between the orders labeled “4” (Demographics, Vignette, AQ27, Social Distancing, and Controllability) and “12” (Vignette, Social Distancing, AQ27, Controllability, Demographics) (Mean Difference=5.17, p=0.04), and also between the orders labeled “5” (Demographics, Vignette, AQ27, Controllability, Social Distancing) and “12” (Mean Difference=5.17, p=0.04). For Environmental, the significant differences were between the orders labeled “9” (Vignette, Controllability, Social Distancing, AQ27, Demographics) and “5” (Mean Difference=1.15, p=.03) and also between “11” (Vignette, AQ27, Controllability, Social

Distancing, Demographics) and "9" (Mean Difference=1.35, *p*=.02). While there are these 4 significant differences, the fact that there are a total of 122 possible combinations (12 orders X 11 dependent variables), these differences are likely due to chance. Also, although these four differences are significant at the α=.05 level, if one conducted a Bonferroni correction, these differences would not reach significance. Table 3 contains the means and standard deviations for all dependent measures by order of presentation.

Effects of Drug and Race on Measures of Stigma

To test for the main effects of race and drug of choice on each of 11 dependent variables (social distance scale, seven factors of AQ27, and three models of controllability), a series of ANOVAs and ANCOVAs were conducted. Since this was an exploratory study, the family-wise error was set at .10, and with a Bonferroni correction, the alpha level for each analysis was set at .01. The researcher made this choice because by setting the Type I error rate at a more conservative 5%, and correcting for the number of tests, the rate of Type II error would increase and important findings might be disregarded.

The researcher chose a series of ANOVAs and ANCOVAs over a multivariate analysis of covariance (MANCOVA) due to significant correlations among dependent variables (Table 4), which would diminish the power of the latter test (Tebachnick & Fidell, 2001). Before conducting analyses, preliminary checks ensured that there were no violations of the assumptions of normality, linearity, and reliable measurement of the covariate. The assumptions of homogeneity of regression slopes and homogeneity of variances were also inspected and found satisfactory for each set of analyses. Means and standard deviations for all dependent measures by vignette group are listed in Table 5. These descriptives for groups divided by race and drug are provided in Table 6.

Models for ANCOVA were constructed using demographic variables and familiarity with substance use by first determining whether there were either: a) significant correlations between continuous variables (i.e., age, degree of religious affiliation), or b) significant differences between groups for categorical variables (i.e., gender, race, familiarity). There were no significant correlations between age and any dependent variables (see Table 7); therefore, age was not included as a covariate in any of the analyses. In addition, a one-way ANOVA shows there were no significant differences between groups for participant race on dependent variables; therefore, this variable was also not included in any of the models (see Table 8). Those variables for which there were significant correlations with dependent variables or differences among groups (i.e., degree of religious affiliation, gender, and familiarity) were included in the models for the relevant dependent variables. See Tables 7, 9, and 10 for correlations, descriptives, and results of preliminary analyses.

Social Distancing Scale. A 3 x 3 between-subjects ANCOVA was conducted with the total score on the social distancing scale as the dependent variable and vignette race and vignette drug as the independent variables. Degree of religious identification was entered as a covariate due to its significant correlation with this dependent measure (r=.15, p<.01). Social distance scores varied significantly with drug of choice, $F(2,344) = 6.46$, p =.002, η^2 = .04; however, main effect of race was not significant, $F(2,349)=1.59$, p=.21, and there was no significant interaction between race and drug of choice, $F(4,349)=.13$, p=.97. Post-hoc analyses conducted using Fisher's LSD test revealed that there were significant differences between cocaine use and both alcohol and marijuana use, but not between alcohol use and marijuana use. Degree of religious affiliation added unique adjustment to scores on this measure, $F(1,344)=7.25$, p=.007, η^2 = .02. Means and standard deviations for each dependent variable based on different levels of

religious affiliation are presented in Table 11. Although both drug of choice and religiosity were significant sources of variance in participants' willingness to have social interactions with the individuals described in the vignettes, the effect sizes are quite small, suggesting that neither contributes greatly to the overall variance in responses.

Attribution Questionnaire. Due to the variety of attitudes related to stigma measured by the AQ27, each of the seven factors was analyzed separately. The researcher chose separate analyses to gain more specific information regarding attributions. The total score on the AQ27 does not allow one to look at the different pieces that may comprise stigmatizing attitudes.

Fear. A one-way ANOVA found that there were significant differences among levels of Familiarity for the Fear factor of the AQ27, $F(3, 355)=5.79$, $p=.001$; therefore, this variable was included as an independent variable in the ANCOVA. In addition, there was a significant difference between males (M=24.67, SD=12.60) and females (M=31.29, SD=14.53) on this factor, $t(357)=3.84$, $p<.001$, and gender was also added as an independent variable. Finally, a significant correlation between religiosity and Fear was detected ($r=.21$, $p<.01$), and so this variable was added to the model as a covariate. The resulting model was a 2 x 4 x 3 x 3 (Gender x Familiarity x Race x Drug) ANCOVA with religiosity as a covariate.

Results showed significant effects for Familiarity, $F(3,291)=5.22$, $p=.002$, $\eta^2=.05$, and Drug of choice, $F(2,291)=9.65$, $p<.001$, $\eta^2=.06$, at the significance level set by this researcher. There were no significant effects for Race, $F(2,291)=.77$, $p=.47$, nor were there significant interactions among any of the independent variables (p-values range from .22 to .99). Religiosity again added unique variance to scores on this measure, $F(1,291)=14.40$, $p<.001$, $\eta^2=.05$. Post-hoc analyses conducted using Fisher's LSD test showed that individuals with any familiarity with substance use (i.e., the first three levels of familiarity) were significantly different from

individuals with no familiarity (i.e., the fourth level), but these first three levels were not significantly different from each other. In addition, post-hoc analyses indicated that the same pattern seen with the social distance measure – cocaine significantly different from the two other drugs, which were not significantly different from each other – was also observed for this factor.

Anger. An independent samples T-test showed a significant difference between males (M=16.61, SD=5.92) and females (M=18.41, SD=5.91) on the Anger factor of the AQ27, t(357)=2.50, p=.01; therefore, this variable was utilized in the model. Also, religiosity was significantly correlated with Anger (r=.15, p<.01) and was added to the model. This resulted in a 2 x 3 x 3 (Gender x Race x Drug) ANCOVA with religiosity as a covariate. Results indicated no significant main effects for Race, F(2,340)=2.84, p=.06, Drug, F(2,340)=2.09, p=.13, or Gender, F(1,340)=2.58, p=.11. Interactions among these variables were also not significant, with p-values ranging from .32 to .87. Religiosity was significant as a covariate, F(1,340)=6.66, p=.01, η^2 =.02. These results suggest that manipulating race and drug of choice did not significantly affect feelings of anger toward the individuals presented.

Unwillingness to Interact. In preliminary analyses, there was no significant correlation between gender and willingness to interact, nor were there differences among levels of familiarity for this factor (See Tables 9 and 10 for details). Religiosity was significantly correlated with participants' willingness to interact with the individuals described (r=.22, p<.01). The resultant model was a 3 x 3 (Race x Drug) ANCOVA with religiosity as a covariate. Results indicated a significant main effect of Drug, F(2,349)=5.31, p=.005, η^2 =.03, but not for Race, F(2,349)=.42, p=.66, and there was no significant interaction between these two variables, F(4,349)=.57, p=.69. Religiosity was again a significant predictor for this factor, F(1,349)=18.50, p<.001, η^2 =.05. Post-hoc analyses were consistent with previous results in

showing cocaine as rated more negatively than either marijuana or alcohol, which were not significantly different from each other. These results suggest that, although drug of choice does affect responding, the degree to which a participant ascribes to his or her religion is more predictive of this variable.

Unwillingness to Help. For this variable, preliminary analyses did not show any significant correlations, or differences among groups, with the demographic variables of interest. Therefore, the model used was a 3 x 3 (Race x Drug) ANOVA. There were no significant main effects for either Race, $F(2,350)=.75$, $p=.47$, or Drug, $F(2,350)=.18$, $p=.84$, and the interaction was also not significant, $F(4,350)=1.19$, $p=.31$. It seems that willingness to help is not predicted by the variables that may be predictive of other facets of stigma, suggesting the need for further investigation of this construct.

Lack of Pity. Preliminary analyses suggested that religiosity ($r=-.23$, $p<.01$) could be an important predictor of this variable. A 3 x 3 (Race x Drug) ANCOVA with religiosity as a covariate was run. Results revealed a significant main effect for Drug, $F(2,348)=4.87$, $p=.008$, $\eta^2=.03$, but not for Race, $F(2,348)=.88$, $p=.22$, and the interaction was also non-significant, $F(4,348)=.54$, $p=.71$. Religiosity acted as a significant predictor of scores on this variable, $F(1,348)=19.08$, $p<.001$, $\eta^2=.05$. Post-hoc analysis using Fisher's LSD test showed the same pattern as previous variables regarding cocaine use versus use of other substances. Also of note, unlike the other variables for which religiosity was a significant predictor, this variable is negatively correlated with religiosity, which suggests that individuals who are more religious also have more pity toward individuals with substance use (see Table 11).

Forced Treatment. The idea that the individuals described in the vignette should be forced to engage in a treatment program was significantly correlated with religiosity ($r=.15$,

$p<.01$). Preliminary analyses ruled out other demographic variables as important for this factor. A 3x3 (Race x Drug) ANCOVA with religiosity as a covariate was run, and results indicated significant main effects for Drug, $F(2,349)=18.85$, $p<.001$, $\eta^2=.10$. There were no significant effects for Race, $F(2,349)=.30$, $p=.74$, or interaction between Drug and Race, $F(4,349)=.29$, $p=.89$. Religiosity also had significant effects on this variable, $F(1,349)=9.60$, $p=.002$, $\eta^2=.03$. Fisher's LSD test was consistent with other variables for which Drug had a significant main effect (i.e., cocaine use rated higher on this variable than alcohol or marijuana).

Responsibility. Preliminary analyses did not identify any demographic variables for which there was statistical evidence that they should be added as covariates or additional independent variables. Therefore, as with the Unwillingness to Interact factor, a 3 x 3 (Race x Drug) ANOVA was conducted. For this factor, neither Race, $F(2,350)=1.34$, $p=.26$, nor Drug, $F(2,350)=3.91$, $p=.02$, showed significant main effects at the $\alpha=.01$ level. The Race x Drug interaction was also non-significant, $F(4,350)=.31$, $p=.87$.

Controllability. The controllability scale was divided into three different models of substance use problems: a personal model, an environmental model, and the medical model. Each of these models represents different ways to conceptualize the cause of these problems.

Personal. Exploration of possible covariates or additional independent variables did not find statistical evidence for including additional variables beyond the experimental manipulations. A 3 x 3 (Race x Drug) ANOVA showed no significant effects for Race, $F(2,350)=.32$, $p=.73$, Drug, $F(2,350)=.36$, $p=.70$, or their interaction, $F(4,350)=.96$, $p=.53$. Examining the means of the different models of causality, it appears that endorsement of the personal model is consistently lower than the medical or environmental models, except for marijuana use, where the personal and environmental models have equal means.

Environment. In preliminary analyses, none of the demographic variables of interest were implicated as reasonable covariates or additional independent variables for this model of causality. A 3 x 3 (Race x Drug) ANOVA resulted in non-significant main effects for Race, $F(2,350)=.54$, $p=.59$, or Drug, $F(2,350)=2.68$, $p=.07$; however, the interaction between these two variables was significant, $F(4,350)=3.38$, $p=.01$, $\eta^2=.04$. The degree to which participants endorsed an environmental model of substance abuse differed depending on both the race and drug of choice described. Alcohol and marijuana use for the Caucasian vignette were rated higher on this variable than cocaine use. For the African American vignette, cocaine use was rated as more likely to be caused by the environment than alcohol or marijuana use, and participants rated alcohol use as more consistent with an environmental model than either cocaine or marijuana use for the Latino vignette. See Figure 1 for a graph of this interaction.

Medical. After checking for possible covariates or additional independent variables, it was decided that a 3 x 3 (Race x Drug) ANOVA was most appropriate. Results indicated that Drug had significant main effects, $F(2,350)=14.71$, $p<.001$, $\eta^2=.08$, but Race did not, $F(2,350)=.43$, $p=.65$. The interaction was also not significant, $F(4,350)=.55$, $p=.70$. Post-hoc analyses revealed a different pattern than that found with other dependent variables. It appears that alcohol use and cocaine use were both significantly different from marijuana use in the degree to which individuals saw them as medically based, and they were not significantly different from each other.

Summary

Results suggest that only some of the initial hypotheses were correct. First, there were no main effects of race on any of the dependent measures; however, there were main effects of drug of choice on five of the eight dependent variables related to stigmatizing attitudes. There were no

significant interactions between race and drug of choice on any of these variables. The hypothesis that alcohol abuse would be seen as more medically based than marijuana or cocaine abuse was only partially correct. Alcohol use was rated higher than marijuana on this variable, but cocaine use was not rated significantly differently than alcohol use. Finally, familiarity with substance abuse did not have the expected effects on stigmatizing attitudes. This variable was only significantly associated with one of the eight variables related to stigma and was not associated with any of the controllability variables. However, for the one stigma-related variable for which familiarity was added as an independent variable (Fear), it did account for a significant proportion of the variance.

DISCUSSION

Although many of the hypotheses for this study were not supported, or were only partially supported, the results have interesting implications. Race was not shown to be a significant predictor of attitudes, but drug of choice was significant on multiple dependent variables. Specifically, cocaine use seemed to be viewed differently from alcohol or marijuana use. Interactions between drug of choice and race did not support the hypothesis that "double stigma" might be at play in attitudes toward racial minorities with substance use problems; however, evidence from other sources (e.g., NIDA, 2003) suggests that there is a relationship between race and consequences of substance use, including more frequent incarceration of minorities for drug-related offenses. A significant finding that was not anticipated was the impact of religiosity on stigmatizing attitudes. The literature suggests that familiarity with substance use or other mental illness is a significant predictor of stigmatizing attitudes (e.g., Angermeyer, et al., 2004; Bos, Shaalma, & Pryor, 2008; Pettigrew & Tropp, 2006; Zebrowitz, White, & Wieneke, 2008), but this variable was only shown to contribute to differences in scores on one dependent variable in this study. Finally, the findings regarding a medical conceptualization of substance use (versus an environmental or personal conceptualization) were not as expected, but these results might offer some insight into both how the public views various substances and also how a belief in a medical model may or may not act as a protective factor against stigma.

Stigma and Cocaine Use

The results of the current study are consistent with previous research comparing attitudes toward cocaine use to attitudes toward other mental illnesses (see Link et al., 1999). The findings

are of additional importance because the symptoms were consistent across substances, yet cocaine use was still more highly stigmatized. Individuals exposed to the vignette describing cocaine use endorsed more desire for social distance, more fear, less pity, and greater belief that the individual described should be forced to engage in substance use treatment. There are a number of possible explanations for why cocaine use was more highly stigmatized than either of the other substances presented. Marijuana was included in this study because, unlike alcohol, it is illegal in the state of Alabama (and in 36 of the 50 states). It was expected that marijuana use would be more stigmatized than alcohol due to its legal status; however, this was not the case.

One hypothesis for the difference in the degree of stigmatizing attitudes toward cocaine and marijuana is the frequency of use in the general population. According to the National Survey on Drug Use and Health (NSDUH), in 2009, 18.1 % of adults ages 18-24 reported use of marijuana in the past month while only 1.4% of adults in this age range reported use of cocaine within that same time period (SAMHSA, 2010). Lifetime use (i.e., ever used the substance at all) for marijuana and cocaine were reported at 36.8% and 6.4%, respectively, for high school students in 2009 (Center for Disease Control, CDC, 2010). Although familiarity was only significant for the Fear variable, it might be that college students are more aware of and familiar with marijuana use than cocaine use, thereby decreasing the level of stigma toward this drug.

The above data suggest that marijuana may be considered more socially acceptable than cocaine. Some might argue that these differences are an artifact of cost (i.e., cocaine is more expensive to purchase), but the advent of crack cocaine has greatly decreased the financial cost of cocaine use in the U.S., and in the United Kingdom, it was reported that a “line” of cocaine was less expensive than a pint of lager or glass of wine (Kirkup, 2009). Another possible explanation for the different rates of use is the availability of the drug, as marijuana is more

widely available; however, it is unclear whether the availability of marijuana is associated with the level of social acceptability or is due to other factors (e.g., ease of production). In addition to these more logistical variables, the issue of potential risk involved in the use of these drugs might explain both the rates of use for these two substances as well as the differences in attitudes.

The physical dangers of cocaine use are different from marijuana use. Even one-time use of cocaine can, but rarely does, result in heart attack and/or death. Since marijuana has little effect on the heart or respiratory system, death from overdose is impossible. Marijuana use may increase anxiety or paranoia but the possible health costs of the drug tend to be related to long-term use (e.g., emphysema) (ONDCP, 2010). Data from 2001 indicate 193,034 emergency room incidents involving cocaine and only 110,512 involving marijuana (ONDCP, 2002). It should be noted that 40% of marijuana-related incidents also involved cocaine. The health risks involved in cocaine use may partially explain the higher degree of stigma toward use of this drug than use of marijuana; however, alcohol use can, and does, result in death. According to the CDC (2010), chronic alcohol use is the 3rd leading lifestyle-related cause of death in the United States, and withdrawal from alcohol, unlike withdrawal from cocaine, marijuana, or even heroin, can be fatal. While the physical dangers associated with cocaine use may have affected attitudes, it seems likely that perceived interpersonal danger is a more important factor to consider.

Although the U.S. Drug Enforcement Administration (DEA) classifies marijuana as a Schedule I drug (i.e., a substance with a high potential for addiction and no known medical benefits), 14 states and Washington DC have legalized marijuana for medical purposes. On the other hand, cocaine is illegal in all 50 states, and possession of even a small amount is considered a felony in most states (DEA, 2010). If one is willing to commit a felony in order to use a substance, it might be assumed that the individual is more willing to commit other crimes.

The "War on Drugs" operates on just such a hypothesis, instituting more severe penalties for possession of illicit substances (White & Gorman, 2000).

Media representations of cocaine users depict impulsive, often violent, individuals who will do anything to obtain the drug. An examination of numerous reports on drug use and criminal behavior suggests that patterns of violent and property crimes and patterns of cocaine use are unrelated for most of the cities surveyed. However, the relationship between alcohol use and violent crimes was consistently significant across U.S. cities (Martin, Maxwell, White, & Zhang, 2004). A separate study investigating violent behaviors in individuals presenting to the ER with cocaine-related chest pain found that age and frequency of binge-drinking episodes were the predictive factors of violence for these individuals, not frequency of cocaine use (Walton, Cunningham, Chermack, Tripathi, Weber, Maio, et al., 2009). Despite evidence that alcohol use is more predictive of violent behavior, the image of cocaine users as more dangerous continues to persist.

Race and Substance Use

This study did not support the hypothesis that race and drug of choice would interact such that stigmatizing attitudes would vary depending on the combination to which a participant was exposed. The only variable for which this interaction was significant was the environmental model of the controllability scale. This interaction suggests that participants viewed cocaine use as more likely to be caused by environment than alcohol or marijuana use for African Americans but the least likely to be caused by environment for Caucasians. There may be some implicit association between these results and stigmatizing attitudes because more controllable conditions tend to be more highly stigmatized (Weiner, et al., 1988); however, it is not clear whether participants believe one's environment to be controllable or uncontrollable.

Of particular interest to this researcher is the lack of evidence to support a racial component to stigmatizing attitudes toward substance users when other data indicate that individuals of racial minority status are disproportionately punished by the legal system for drug-related offenses (including possession). Based on NSDUH data from 2009, non-Hispanic Whites, African Americans, and Latinos had comparable rates of illegal drug use, which contradicts some arguments that the higher representation of minorities in urban areas leads to increased rates of substance use (SAMHSA, 2010). However, according to a report by the Drug Policy Alliance (2011), while African Americans represent approximately 13% of drug users, they represent over 59% of those convicted of drug-related offenses. Another argument that the War on Drugs unfairly targets racial minorities is the discrepancy between the legal consequences of selling crack-cocaine vs. powdered cocaine. The sale of five grams of crack-cocaine carries a federally mandated minimum sentence of 5 years in prison, but an individual would need to sell 500 grams of powdered cocaine to receive the same sentence. Crack-cocaine is cheaper to obtain and tends to be more widely used in lower SES communities, which often includes predominantly non-White urban areas (Drug Policy Alliance, 2011). Issues such as racial profiling by law enforcement officials have also been cited as possible reasons for the disproportionate number of racial minorities imprisoned for drug-related offenses (Kalunta-Crumpton, 1999).

Given that racial minorities represent the majority of incarcerated drug-offenders, one might expect a learned association in the general population between race and criminal drug use. This possible association might lead one to desire more social distance from an individual who is both a racial minority and a substance user because this combination has been paired with the concept of "criminal." In the current study, this pattern was not observed. One possibility is that

overt racial stereotyping or discrimination is considered a socially undesirable behavior, and participants were aware that they were being asked to report attitudes toward an individual of a particular race. It is also possible that the schema of cocaine use as dangerous was more salient than the race of the individual described. Finally, the racial implications of the current drug policies may not be representative of individual attitudes but more indicative of a flawed system that has been in place for longer than many of these respondents have been alive.

Religiosity

The geographic region from which this sample was drawn is traditionally associated with higher levels of religious identification. However, it was still somewhat surprising that over half of the participants identified as either mostly or very religious, and less than 10% reported that they were not at all religious. Of the demographic variables explored, religiosity was associated with the greatest number of dependent variables. In this study, religiosity was more influential than familiarity, a variable that has been investigated in numerous studies on stigma toward different groups, yet this researcher has been unable to locate past studies in which religiosity was examined as a predictor of stigmatizing attitudes toward substance use. In the current study, religiosity was entered as a covariate, but it appears from the results that this is an important variable to consider more in depth.

Religiosity has not been widely studied as a predictor of attitudes toward individuals with substance use disorders, but it has been indicated as a predictor of substance use behaviors. Past research suggests that highly religious adolescents are less likely to use alcohol, marijuana, or cigarettes (Wallace, Brown, Bachman, & Laveist, 2003). Young adults with strong religious affiliations also report lower rates of alcohol consumption (Crawford, 1995; Holman, Thomas, Jensen, Capell, & Woodard, 1993). Krause (2003) found a similar pattern among older adults, in

that individuals affiliated with fundamentalist churches and who find meaning in religion are less likely to consume alcohol. There is less evidence regarding the role of religion in drug use than in alcohol use; however, across studies, it appears that it is the importance of religion in the respondent's life rather than the religious denomination that is the important factor in this relationship. While religion may be a protective factor in preventing problematic substance use, the results of the current study suggest that it is a risk factor for the development of stigmatizing attitudes toward individuals with substance use problems.

The relationship between stigmatizing attitudes and degree of religious identification was similar across most dependent variables (i.e., the higher the degree of religiosity the greater the endorsement of stigmatizing attitudes); however, results on the Lack of Pity variable showed the opposite pattern. This finding suggests that, although individuals who endorse strong identification with their religious beliefs tend to also endorse more fear, anger, desire for social distance, and belief that individuals with substance use disorders should be forced to engage in treatment, they also have more sympathy toward these individuals than participants who report less religiosity. It is interesting that this sympathy does not translate into fewer negative beliefs about people with substance use problems, and it is unclear from these data the specific beliefs underlying endorsement of negative attitudes (e.g., moral teachings against substance use, information from media sources). The presence of pity does not seem to preclude stigma; however, it may be a useful foothold in beginning to change attitudes and behaviors toward substance users.

Familiarity

The lack of significant effects for familiarity with substance use was unexpected and requires some further discussion. Familiarity has been discussed as a protective factor against

stigma in the literature regarding a number of stigmatized conditions, including problematic gambling (Horch, & Hodgins, 2008), mental illness (Corrigan, Edwards, Green, Diwan, & Penn, 2001), and epilepsy (Austin, Schafer, & Deering, 2002); however, the results of this study did not support this association. One possibility for this finding is the way in which familiarity was measured. Although the method used has been used in previous studies (Angermeyer, et al., 2004), it may not have allowed for the degree of sensitivity needed to detect differences among groups. Over half of the respondents indicated a "Level 1" degree of familiarity, reporting that they or a family member have personal experience with a substance use disorder. This category may have captured too broad a group, as "family member" was not defined as an immediate family member and could have been interpreted to include very distant relatives with whom one has had little or no contact.

While it is possible that familiarity truly does not impact attitudes other than fear, it seems more likely that there was an issue with measurement. In a study of attitudes toward individuals with depression, Marie and Miles (2007) utilized a technique that allowed participants to indicate the precise relationships they have had with individuals with this mental disorder. Their method included 14 possible relationships that participants could endorse regarding their familiarity level, including an "other, not listed" category. From these 14 categories, the authors divided respondents into only three levels of familiarity, but the highest of these levels was reserved for those individuals who had experienced the disorder themselves or who had an immediate family member who had experienced the disorder. Any other relationship was assigned a label of "moderate" familiarity. These authors found significant effects for familiarity, which might be a result of the separation between a close family relationship and

other family relationships, or it could indicate actual differences between either the samples or views about the different disorders (i.e., depression vs. substance use).

An additional measurement issue might be the way in which the questions were worded. The items elicited information about familiarity with substance use problems in general; however, there was no way for participants to indicate the exact substance with which they were familiar. Familiarity with alcohol abuse may not generalize to cocaine or marijuana use; therefore, familiarity with the exact disorder described may not have been accurately assessed in many cases. In future studies, more precise measurement of familiarity may yield results more consistent with the previous literature.

The Medical Model

The research hypothesis regarding the medical model of substance use was that alcohol use problems would be viewed as more likely to be medically based than marijuana or cocaine use problems. This was partially correct in that alcohol use was rated more highly on this variable than marijuana use, but cocaine use was also viewed as more likely to be medically based than marijuana use. One explanation for this similarity between these two substances (alcohol and cocaine) is that both are known to cause significant physical withdrawals in individuals with long-term use. In addition, the erroneous belief that marijuana does not have a physically "addictive" component may cause some to think of it as related to choice rather than some physiological factor.

As mentioned previously, there is some debate regarding the utility of a medical conceptualization of substance use disorders in terms of stigma. Rather than clarify this relationship, the results of the current study muddy them further. Those who have argued that conceptualizing substance use disorders as medical problems will decrease stigma (e.g., Condit,

Ofulue, & Sheedy, 1998; Conrad, 2001) might be surprised by the comparable ratings for alcohol and cocaine use, two substances for which the pattern of stigmatizing attitudes differed. However, participants were not forced to choose among medical, environmental, or personal models, which allowed for endorsement of multiple potential causes for the disorder described. Further investigation of this issue is warranted, and use of a more extensive measure to evaluate these models might shed light on the underlying beliefs regarding specific causes of different forms of substance use disorders.

Limitations

As is the case with every research endeavor, this study was not without its limitations. First, the sample used was exclusively college students at a particular school in a specific region of the country. While this limits the generalizability of the findings, the researcher believed it to be a reasonable starting point for an exploratory study. The characteristics of the sample were less than desirable (e.g., far more females than males, vast majority Caucasian, limited age range), and this may have led to decreased variability in responses. For future studies, a community sample, or collection of samples, would likely provide more generalizable responses and generate more variability in responses to better understand the phenomena under investigation.

Second, the design of the study likely impacted the results obtained. The researcher chose to use a between-subjects design rather than a within-subjects design for two reasons. First, by exposing each participant to only one vignette, it was believed that the experimental manipulation would be less obvious, thereby decreasing the likelihood that participants' responses would be affected as they realized that the vignettes were the same except for race and drug of choice. Second, given the number of vignettes and length of dependent measures, the

researcher feared that participants would become fatigued and be less thoughtful about their responses as they continued to see similar vignettes and the same questions repeatedly. In hindsight, it may have been useful to expose each participant to more than one vignette without exposing each person to all nine vignettes; however, given the exploratory nature of this study, simplicity was considered to be the best route.

Third, as with most studies on stigma, the current study relied on self-reports. Participants reported their perceptions of their own possible behavior toward a hypothetical individual. This may have affected responses in a few ways. One of the primary concerns is that of social desirability. While stigmatizing attitudes have existed throughout history and across cultures, it is often considered socially unacceptable to be explicit about these attitudes. The fact that the vignettes specified the race of the individual being described may have cued participants to report socially desirable attitudes as they likely realized that race was an important piece of the description.

In addition, self-report describes one's beliefs about one would do when confronted with a particular situation, but it does not describe what one actually does in that situation. A behavioral study – one in which participants are faced with a real people rather than hypothetical ones – could provide insight into the behavioral manifestations of stigmatizing attitudes; however, such a study would have been costly and extremely difficult to conduct given the resources available. By adding this behavioral component, future studies could expand on the current findings and provide important information regarding not only stigmatizing attitudes but also consistency or discrepancy between reported and actual behaviors.

Future Directions

In addition to addressing the limitations described above, future studies could build on the current findings to contribute to a better understanding of stigma, substance use, and race. One possibility would be to investigate the relationship between attitudes and beliefs regarding public policy. Stigmatizing attitudes could impact the provision of funding for prevention and treatment efforts, as well as the consequences (e.g., incarceration vs. mandated treatment) of using illegal substances or violating the law under the influence of drugs or alcohol (e.g., DUI, assault). A study conducted by the Health Foundation of Greater Cincinnati (2010) found that the majority of respondents (71%) strongly favored increasing the availability of treatment and support options for individuals seeking substance use treatment. However, this study also found that a majority of respondents (67%) believe it to be very important to strengthen the enforcement of current laws regarding use of illegal substances. These results suggest that respondents want treatment seekers to get help but they also support legal punishment for individuals who use illegal drugs.

The study conducted in Ohio does provide some insight into beliefs regarding the consequences of substance use; however, it did not address the issue of how stigmatizing attitudes might be related to these beliefs. Future studies could investigate this possible relationship in an effort to improve understanding as well as influence education and strategies for addressing the social concerns associated with substance use. In addition, this author expects that further evaluating the role of religiosity in attitudes would also uncover a relationship between this variable and beliefs regarding how substance use disorders should be addressed from a legal standpoint.

In this study, cocaine use appeared to be the variable that was most predictive of stigmatizing attitudes. Results indicate that alcohol and marijuana are viewed similarly, but this author wonders whether there are other dimensions for which alcohol and marijuana would be evaluated differently. Beliefs regarding treatment (aside from those related to whether individuals should be forced into treatment), or legal consequences for use, might be more affected by this difference in drug of choice. In addition, although results did not support a main effect for race, it is difficult for this author to believe that race is not related to stigma. While individuals may not endorse stigmatizing attitudes based on race, actual behavior may be very different from reported behavior. In addition, respondents might not have more fear, anger, desire for social distance, etc., based on race, but beliefs regarding treatment or punishment may vary depending on this characteristic.

Implications

Although many of the original hypotheses were not supported, a number of relevant findings regarding stigma and substance use were obtained. Cocaine use was consistently more stigmatized than alcohol or marijuana use. Despite evidence that alcohol is at least equally dangerous if not more, both to the health of the individual and to potential victims of violent crimes, cocaine was more feared and engendered more desire for social distance. This suggests that stigma may persist regardless of evidence that it is unwarranted, and this tendency to maintain stigma without evidence is likely evident in attitudes toward other stigmatized groups For example, the belief that muslims are all extremists who engage in terrorist activities persists for many despite the evidence against that conclusion.

The similarities in reports of stigmatizing attitudes toward marijuana use and alcohol use could be indicative of a general trend in the U.S. toward social acceptance of marijuana. Since

2006, five states and Washington DC have legalized medical marijuana, bringing the total to 14 plus DC, and attempts to legalize recreational use in some states are beginning to be regarded as legitimate by the popular media. While it may be some time before states in the "Deep South" change their policies, as none have so far, it does seem that the general trend is moving in that direction.

It is unclear whether the level of stigmatizing attitudes toward marijuana has changed due to changing policies or vice versa, but it does seem that public policy and degree of stigma are linked. This researcher wonders whether other policy changes might affect traditionally stigmatized groups, for example, whether the legalization of gay marriage might also be related to changes in attitudes toward that group. If both of the above assumptions are true, i.e., attitudes persist despite contradictory evidence and public policy is related to stigma, this has serious implications for highly stigmatized groups. Those groups, including cocaine users, might suffer not only from the consequences of stigma but also from public policies that are based on unfounded conclusions about the group.

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APPENDIX

Vignettes

John is a Caucasian man with a high school education. In the past few years, he has used alcohol on occasion. During the last month John has started to drink more than his usual amount of alcohol. In fact, he has noticed that he needs to drink twice as much as he used to get the same effect. Several times, John has tried to cut down, or stop drinking, but he can't. Each time he has tried to cut down, he felt strong cravings, became very agitated, and he couldn't sleep, so he took another drink. His family has complained that he has become unreliable, making plans one day, and canceling them the next.

John is a Caucasian man with a high school education. In the past few years, he has used marijuana on occasion. During the last month John has started to use more than his usual amount of marijuana. In fact, he has noticed that he needs to use twice as much as he used to get the same effect. Several times, John has tried to cut down, or stop using marijuana, but he can't. Each time he has tried to cut down, he felt strong cravings, became very agitated, and he couldn't sleep, so he smoked marijuana. His family has complained that he has become unreliable, making plans one day, and canceling them the next.

John is a Caucasian man with a high school education. In the past few years, he has used cocaine on occasion. During the last month John has started to use more than his usual amount of cocaine. In fact, he has noticed that he needs to use twice as much as he used to get the same effect. Several times, John has tried to cut down, or stop using cocaine, but he can't. Each time he has tried to cut down, he felt strong cravings, became very agitated, and he couldn't sleep, so he used more cocaine. His family has complained that he has become unreliable, making plans one day, and canceling them the next.

Jamaal is an African American man with a high school education. In the past few years, he has used alcohol on occasion. During the last month Jamaal has started to drink more than his usual amount of alcohol. In fact, he has noticed that he needs to drink twice as much as he used to get the same effect. Several times, Jamaal has tried to cut down, or stop drinking, but he can't. Each time he has tried to cut down, he felt strong cravings, became very agitated, and he couldn't sleep, so he took another drink. His family has complained that he has become unreliable, making plans one day, and canceling them the next.

Jamaal is an African American man with a high school education. In the past few years, he has used marijuana on occasion. During the last month Jamaal has started to use more than his usual amount of marijuana. In fact, he has noticed that he needs to use twice as much as he used to get the same effect. Several times, Jamaal has tried to cut down, or stop using marijuana, but he can't. Each time he has tried to cut down, he felt strong cravings, became very agitated, and he couldn't sleep, so he smoked marijuana. His family has complained that he has become unreliable, making plans one day, and canceling them the next.

Jamaal is an African American man with a high school education. In the past few years, he has used cocaine on occasion. During the last month Jamaal has started to use more than his usual amount of cocaine. In fact, he has noticed that he needs to use twice as much as he used to get the same effect. Several times, Jamaal has tried to cut down, or stop using cocaine, but he can't. Each time he has tried to cut down, he felt strong cravings, became very agitated, and he couldn't sleep, so he used more cocaine. His family has complained that he has become unreliable, making plans one day, and canceling them the next.

Jose is a Hispanic man with a high school education. In the past few years, he has used alcohol on occasion. During the last month Jose has started to drink more than his usual amount of alcohol. In fact, he has noticed that he needs to drink twice as much as he used to get the same effect. Several times, Jose has tried to cut down, or stop drinking, but he can't. Each time he has tried to cut down, he felt strong cravings, became very agitated, and he couldn't sleep, so he took another drink. His family has complained that he has become unreliable, making plans one day, and canceling them the next.

Jose is a Hispanic man with a high school education. In the past few years, he has used marijuana on occasion. During the last month Jose has started to use more than his usual amount of marijuana. In fact, he has noticed that he needs to use twice as much as he used to get the same effect. Several times, Jose has tried to cut down, or stop using marijuana, but he can't. Each time he has tried to cut down, he felt strong cravings, became very agitated, and he couldn't sleep, so he smoked marijuana. His family has complained that he has become unreliable, making plans one day, and canceling them the next.

Jose is a Hispanic man with a high school education. In the past few years, he has used cocaine on occasion. During the last month Jose has started to use more than his usual amount of cocaine. In fact, he has noticed that he needs to use twice as much as he used to get the same effect. Several times, Jose has tried to cut down, or stop using cocaine, but he can't. Each time he has tried to cut down, he felt strong cravings, became very agitated, and he couldn't sleep, so he used more cocaine. His family has complained that he has become unreliable, making plans one day, and canceling them the next.

Demographics

1. Age: _____

2. Gender: O Male O Female

3. Which area best describes where you grew up?
   - O Rural (Country)
   - O Suburban/Small Town (Outside a large city or in a small town)
   - O Urban (City)

4. Which of the following best describes your primary race/ethnicity? (Please check only one choice.)
   - O Asian-American
   - O Black/African American
   - O Native American
   - O Hispanic
   - O White/Caucasian
   - O Multiracial (specify: _____)
   - O Other (specify: _____)

5. Which category does your major fall into?
   - O Arts (Art, Dance, Design, Language, Music, Theatre)
   - O Business (Accounting, Computer Science, Economics, Finance, Marketing)
   - O Health Professions (Athletic Training, Physical Therapy, Physician's Assistant, Premed)
   - O Humanities (Education, English, History, Philosophy, Journalism, Religion)
   - O Math/Engineering
   - O Natural Science (Biology, Chemistry, Physics, Geography)
   - O Social Science (Anthropology, Communication Disorders, Human/Child Development, Political Science, Psychology, Sociology, Social Work)
   - O Undeclared
   - O Other (specify: _____)

6. What is your average grade? (Please circle only one choice.)
   - O A
   - O B
   - O C
   - O D
   - O F

7. What is your current year in school? (Please circle only one choice.)
   - O First year (Freshman)
   - O Sophomore
   - O Junior
   - O Senior
   - O Graduate

8. What is your religious affiliation?
   - O Agnostic
   - O Atheist
   - O Baptist
   - O Buddist
   - O Catholic
   - O Disciples of Christ
   - O Episcopalian
   - O Hindu
   - O Jewish
   - O Lutheran
   - O Methodist
   - O Muslim
   - O Mormon (LDS)
   - O Pentecostal
   - O Presbyterian
   - O Protestant
   - O Other _____ (please specify)

9. Please rate your level of religious identification.
   - O not at all religious
   - O slightly religious
   - O moderately religious
   - O mostly religious
   - O very religious

Familiarity with Substance Use Disorders

1. Have you, or one of your family members, ever experienced problems with substance us?
   - Yes
   - No

2. Have you, or one of your family members, worked with individuals with substance use disorders in a professional or volunteer setting?
   - Yes
   - No

3. Do you know of a friend, co-worker, or neighbor who has either experienced problems with substance use or has worked with individuals with substance use disorders?
   - Yes
   - No

Social Distance Scale

Please indicate your willingness to associate or have a relationship with the individual about whom you read using the following scale. Please give your first feeling reactions in every case.

1. As a landlord.
   1 2 3 4 5

In no case at all In any case

2. As a co-worker.
   1 2 3 4 5

In no case at all In any case

3. As a neighbor.
   1 2 3 4 5

In no case at all In any case

4. As a member of the same social circle.
   1 2 3 4 5

In no case at all In any case

5. As your personal broker.
   1 2 3 4 5

In no case at all In any case

6. As a family member through marriage.
   1 2 3 4 5

In no case at all In any case

7. As your child care provider.
   1 2 3 4 5

In no case at all In any case

Attribution Questionnaire

Answer each of the following questions about the individual described.

1. I would feel aggravated by this man.
   0 1 2 3 4 5 6 7 8 9

   Not at all Very much

2. I would feel unsafe around him.
   0 1 2 3 4 5 6 7 8 9

   Not at all Very much

3. This man would terrify me.
   0 1 2 3 4 5 6 7 8 9

   Not at all Very much

4. How angry would you feel at this individual?
   0 1 2 3 4 5 6 7 8 9

   Not at all Very much

5. If I were in charge of this man's treatment, I would require him to take his medication.
   0 1 2 3 4 5 6 7 8 9

   Not at all Very much

6. I think he poses a risk to his neighbors unless he is hospitalized.
   0 1 2 3 4 5 6 7 8 9

   Not at all Very much

7. If I were an employer, I would interview this man for a job. (Reverse scored)
   0 1 2 3 4 5 6 7 8 9

   Not at all Very much

8. I would be willing to talk to him about his problems. (Reverse scored)
   0 1 2 3 4 5 6 7 8 9

   Not at all Very much

9. I would feel pity for him. (Reverse scored)
   0 1 2 3 4 5 6 7 8 9

   Not at all Very much

10. I would think that it was his own fault that he is in the present condition.

0 1 2 3 4 5 6 7 8 9

Not at all Very much

11. How controllable, do you think, is the cause of this man's present condition?

0 1 2 3 4 5 6 7 8 9

Not at all Very much

12. How irritated would you feel by this man?

0 1 2 3 4 5 6 7 8 9

Not at all Very much

13. How dangerous would you feel this man is?

0 1 2 3 4 5 6 7 8 9

Not at all Very much

14. How much do you agree that this man should be forced into treatment with his doctor if he does not want to?

0 1 2 3 4 5 6 7 8 9

Not at all Very much

15. I think it would be best for this man's community if he were put away in a psychiatric hospital.

0 1 2 3 4 5 6 7 8 9

Not at all Very much

16. I would share a car pool with this man every day. (Reverse scored)

0 1 2 3 4 5 6 7 8 9

Not at all Very much

17. How much do you think an asylum, where he can be kept away from his neighbors, is the best place for him?

0 1 2 3 4 5 6 7 8 9

Not at all Very much

18. I would feel threatened by this man.

0 1 2 3 4 5 6 7 8 9

Not at all Very much

19. How scared of this man would you feel?

0 1 2 3 4 5 6 7 8 9

Not at all Very much

20. How likely is it that you would help him? (Reverse scored)

0 1 2 3 4 5 6 7 8 9

Not at all Very much

21. How certain do you feel that you would help this man? (Reverse scored)

0 1 2 3 4 5 6 7 8 9

Not at all Very much

22. How much sympathy would you feel for him? (Reverse scored)

0 1 2 3 4 5 6 7 8 9

Not at all Very much

23. How responsible, do you think, is this man for his condition?

0 1 2 3 4 5 6 7 8 9

Not at all Very much

24. How frightened of this man would you feel?

0 1 2 3 4 5 6 7 8 9

Not at all Very much

25. If I were in charge of this man's treatment, I would force him to live in a group home.

0 1 2 3 4 5 6 7 8 9

Not at all Very much

26. If I were a landlord, I probably would rent an apartment to this man. (Reverse scored)

0 1 2 3 4 5 6 7 8 9

Not at all Very much

27. How much concern would you feel for this man? (Reverse scored)

0 1 2 3 4 5 6 7 8 9

Not at all Very much

28. I would feel safe around this man. (Validity item, reverse scored)

0 1 2 3 4 5 6 7 8 9

Not at all Very much

29. I would not feel threatened by this man. (Validity item, reverse scored)

0 1 2 3 4 5 6 7 8 9

Not at all Very much

30. I would not think that it is his own fault that he is in his present condition. (Validity item, reverse scored)

0 1 2 3 4 5 6 7 8 9

Not at all Very much

31. I would not feel pity for him. (Validity item)

0 1 2 3 4 5 6 7 8 9

Not at all Very much

32. If I were an employer, I would not interview this man for a job. (Validity item)

0 1 2 3 4 5 6 7 8 9

Not at all Very much

Controllability Scale

Thinking about the individual about whom you read, please rate the degree to which you believe the following statements are true regarding his substance use using the following scale.

1 = very unlikely,
2 = unlikely
3 = neutral
4 = likely
5 = very likely

1. It is caused by his own bad character. (Personal)
2. It is caused by a chemical imbalance in the brain. (Medical)
3. It is caused by the way he was raised. (Environmental)
4. It is caused by stressful circumstances in his life. (Environmental)
5. It is a genetic or inherited problem. (Medical)
6. It is God's will. (Personal)

Table 1.Factor Loadings for the AQ27.

Items	Factor Loadings 1	2	3	4	5	6	7
2. I would feel unsafe around him.	**.75**			-.24	.36		
3. This man would terrify me.	**.86**						
6. I think he poses a risk to his neighbors unless he is hospitalized.	**.60**	.49					
13. How dangerous would you feel this man is?	**.82**	.27					
18. I would feel threatened by this man.	**.89**	.26					
19. How scared of this man would you feel?	**.90**	.21					
24. How frightened of this man would you feel?	**.89**	.24					
5. If I were in charge of this man's treatment, I would require him to take his medication.		**.55**		-.26	.24		
14. How much do you agree that this man should be forced into treatment with his doctor if he does not want to?	.23	**.73**		-.22			
15. I think it would be best for this man's community if he were put away in a psychiatric hospital.	.48	**.69**					
17. How much do you think an asylum, where he can be kept away from his neighbors, is the best place for him?	.48	**.64**					
24. If I were in charge of this man's treatment, I would force him to live in a group home.	.37	**.62**					
8. I would be willing to talk to him about his problems.			**.79**				
20. How likely is it that you would help him?			**.92**				
21. How certain do you feel that you would help this man?			**.90**				
7. If I were an employer, I would interview this man for a job.				**.81**			
16. I would share a car pool with this man every day.				**.76**	-.21		
26. If I were a landlord, I probably would rent an apartment to this man.				**.85**			
1. I would feel aggravated by this man.	.28				**.81**		
4. How angry would you feel at this individual?	.27	.25			**.79**		
12. How irritated would you feel by this man?	.35				**.78**		
9. I would feel pity for him.						**.90**	
22. How much sympathy would you feel for him?			.24			**.87**	
27. How much concern would you feel for this man?			.39			**.62**	
10. I would think that it was his own fault that he is in the present condition.							**.74**
11. How controllable, do you think, is the cause of this man's condition?							.68
23. How responsible, do you think, is this man for his condition?							**.78**

Note: Significant loadings denoted in bold. Factor loadings <.20 not reported. For factors, 1=Fear/Danger, 2=Forced Treatment, 3=Unwilling to Help, 4=Unwilling to Interact, 5=Anger/Negative Emotion, 6=Lack of Pity, 7=Responsibility

Table 2: Demographics

	Gender		Age		Race				Degree of Religious Affiliation					Familiarity			
Group	N	M	F	Mean	White	Black	Latino	Other	I	II	III	IV	V	A	B	C	D
1	44	16	28	20.27	38	5	0	1	3	5	12	15	9	17	8	14	5
2	38	6	32	20.21	32	3	0	3	2	8	8	12	8	19	2	7	10
3	43	8	35	20.45	39	2	1	1	4	10	8	12	9	25	3	13	2
4	34	12	22	21.03	31	0	1	2	6	2	10	6	10	22	4	5	3
5	40	6	34	20.35	37	3	0	0	3	8	9	11	9	19	4	14	3
6	40	7	33	20.43	33	2	2	3	5	5	6	14	10	30	4	3	3
7	37	12	25	20.38	32	3	0	2	5	3	8	8	13	19	3	11	4
8	46	14	32	20.54	42	2	0	2	4	8	13	9	12	27	5	10	4
9	37	8	29	20.24	34	2	0	1	2	7	9	9	10	17	5	10	5

Note: 1=Caucasian Alcohol, 2=Caucasian Marijuana, 3=Caucasian Cocaine, 4=AA Alcohol, 5=AA Marijuana, 6=AA Cocaine, 7=Latino Alcohol, 8=Latino Marijuana, 9=Latino Cocaine; I = Not at all Religious; II = Slightly Religious; III = Moderately Religious; IV = Mostly Religious; V = Very Religious; A = Participant or family member; B = Worked with individuals with SUD; C = Knows of someone with SUD or who has worked with SUD; D = None of the Above

Table 3. Means and Standard Deviations for Variations in Order of Presentation

		Measures										
		Social[a] Distance	AQ27[b]: Fear	AQ27[c]: Anger	AQ27[d]: Distance	AQ27[e]: Help	AQ27[f]: Pity	AQ27[g]: Treat	AQ27[h]: Responsible	Control[i]: Environ.	Control[j]: Medical	Control[k]: Personal
Order 1	Mean	21.03	26.77	17.23	22.29	8.77	12.14	21.00	19.43	7.29	6.06	4.49
	SD	4.42	12.15	5.56	4.64	5.38	5.16	8.10	4.67	1.13	1.61	1.34
	N	35	35	35	35	35	35	35	35	35	35	35
Order 2	Mean	19.62	28.76	15.69	21.97	9.93	12.43	20.79	18.41	6.38	5.83	3.86
	SD	6.34	12.50	5.91	4.88	5.66	6.84	7.65	4.94	1.61	1.79	1.25
	N	29	29	29	29	29	29	29	29	29	29	29
Order 3	Mean	19.48	30.38	18.17	21.93	10.55	13.62	24.00	19.72	6.66	5.86	3.86
	SD	4.86	12.75	5.02	4.93	5.72	5.19	8.82	4.08	1.78	2.00	1.19
	N	29	29	29	29	29	29	29	29	29	29	29
Order 4	Mean	19.31	31.78	**20.26**	21.51	9.11	12.60	21.94	18.63	7.14	6.57	4.11
	SD	3.94	16.50	6.61	5.09	4.54	5.67	9.30	5.62	1.46	1.90	1.16
	N	35	35	35	35	35	35	35	35	35	35	35
Order 5	Mean	19.64	31.15	**20.26**	22.23	7.72	12.80	23.97	21.10	**7.36**	5.72	4.51
	SD	4.63	14.00	5.10	4.97	4.18	4.75	7.08	4.63	1.53	1.88	1.41
	N	39	39	39	39	39	39	39	39	39	39	39
Order 6	Mean	22.66	30.03	18.38	24.72	10.72	13.34	23.48	19.97	6.72	5.07	4.03
	SD	4.85	18.01	6.11	3.72	6.36	5.77	10.90	4.92	1.69	2.00	1.12
	N	29	29	29	29	29	29	29	29	29	29	29
Order 7	Mean	21.63	28.85	17.11	23.04	9.37	13.04	22.04	19.30	7.30	5.59	4.19
	SD	4.84	14.39	6.37	4.67	5.09	6.35	9.68	4.47	1.46	1.72	1.57
	N	27	27	27	27	27	27	27	27	27	27	27
Order 8	Mean	19.76	24.50	19.21	21.56	10.03	13.74	18.32	19.82	7.24	5.88	4.09
	SD	4.36	12.31	5.74	5.50	6.25	6.29	8.98	5.58	1.33	1.82	1.33
	N	34	34	34	34	34	34	34	34	34	34	34

Note: Continued on next page.

Table 3. Means and Standard Deviations for Variations in Order of Presentation, Continued

		Social[a] Distance	AQ27[b] Fear	AQ27[c] Anger	AQ27[d] Distance	AQ27[e] Help	AQ27[f] Pity	AQ27[g] Treat	AQ27[h] Respons.	Control[i] Environ.	Control[j] Medical	Control: Personal
Order 9	Mean	19.76	29.36	16.03	20.82	9.82	13.88	22.79	19.42	**6.21**	6.09	4.36
	SD	7.08	14.19	5.69	6.90	6.50	7.41	8.87	4.54	1.14	1.89	1.39
	N	33	33	33	33	33	33	33	33	33	33	33
Order 10	Mean	21.76	31.24	16.14	24.38	10.38	15.52	21.14	21.10	6.38	5.57	4.19
	SD	4.25	15.50	5.83	3.72	6.67	5.25	10.46	5.10	1.07	1.69	1.47
	N	21	21	21	21	21	21	21	21	21	21	21
Order 11	Mean	20.00	35.40	20.12	23.76	9.56	12.68	24.64	20.32	**7.56**	6.12	4.80
	SD	5.88	14.64	5.42	4.20	5.83	6.28	6.70	4.53	1.29	1.62	1.29
	N	25	25	25	25	25	25	25	25	25	25	25
Order 12	Mean	21.48	29.17	**15.09**	21.04	8.13	12.22	22.91	20.78	6.87	6.09	4.74
	SD	5.57	14.78	5.79	7.02	5.25	7.22	9.37	4.66	1.25	2.04	1.54
	N	23	23	23	23	23	23	23	23	23	23	23

Note: [a]$F(11,347)=1.39$, *ns*; [b]$F(11,347)=1.06$, *ns*; [c]$F(11,347)=3.10$, $p<.01$; [d]$F(11,347)=1.67$, *ns*; [e]$F(11,347)=0.87$, *ns*; [f]$F(11,346)=.62$,*ns*; [g]$F(11,347)=1.26$, *ns*; [h]$F(11,347)=0.97$, *ns*; [i]$F(11,347)=2.96$, $p<.01$; [j]$F(11,347)=1.24$, *ns*; [k]$F(11,347)=1.52$, *ns*; Bolded items denote significant differences within columns.

Table 4: Intercorrelations for Social Distancing Scale, Factors of AQ-27, and Models of Controllability

Measure	1	2	3	4	5	6	7	8	9	10	11
1. Social Distancing Scale	--										
2. AQ-27: Fear	.29**	--									
3. AQ-27: Anger	.27**	.58**	--								
4. AQ-27: Distance	.55**	.33**	.39**	--							
5. AQ-27: No Help	.12*	.07	.04	.07	--						
6. AQ-27: No Pity	-.02	-.11*	-.05	-.06	.42**	--					
7. AQ-27: Forced Treatment	.30**	.70**	.49**	.32**	.08	-.02	--				
8. AQ-27: Responsibility	.09	.09	.22**	.07	-.01	.26**	.10	--			
9. Controllability: Environment	.00	.08	.09	.07	.06	-.18**	.08	.08	--		
10. Controllability: Medical	-.04	.13*	.09	-.05	-.01	-.29**	.09	-.24**	.31**	--	
11. Controllability: Personal	.11*	.14**	.10*	.04	-.01	.08	.19**	.29**	.14**	.01	--

Note: ** = $p<.01$; * = $p<.05$

Table 5. Means and Standard Deviations for Each Dependent Variable by Vignette Condition

	Social Distance	AQ-27: Fear	AQ-27: Anger	AQ-27: Distance	AQ-27: Help	AQ-27: Pity	AQ-27: Treatment	AQ-27: Responsible	Control: Environ.	Control: Medical	Control: Personal
Caucasian											
Alcohol	20.43	24.84	17.89	21.73	9.87	12.39	20.30	19.25	7.34	6.48	4.16
M	4.20	11.06	4.91	4.95	4.80	4.78	7.94	4.82	4.16	1.91	1.31
SD	44	44	44	44	44	44	44	44	44	44	44
N											
Caucasian											
Marijuana	20.47	25.08	18.50	22.26	7.92	13.29	19.00	20.82	7.26	5.26	4.11
M	4.83	14.27	7.07	5.51	5.08	6.63	9.32	5.22	1.48	1.94	1.45
SD	38	38	38	38	38	38	38	38	38	38	38
N											
Caucasian											
Cocaine	22.12	36.88	19.88	23.93	9.30	11.98	26.14	19.42	6.58	6.30	4.30
M	5.88	14.41	5.73	4.54	6.41	5.87	8.18	4.72	1.56	1.71	1.26
SD	43	43	43	43	43	43	43	43	43	43	43
N											
AA											
Alcohol	18.62	26.94	16.35	20.50	9.53	12.71	20.09	19.41	6.79	6.12	4.38
M	4.13	11.21	4.98	5.33	5.05	5.99	7.19	4.05	1.37	1.51	1.23
SD	34	34	34	34	34	34	34	34	34	34	34
N											
AA											
Marijuana	19.43	24.80	18.05	22.18	9.83	15.60	20.58	21.48	6.73	5.20	4.35
M	5.84	12.35	6.12	5.76	5.85	6.54	6.98	4.81	1.41	1.79	1.69
SD	40	40	40	40	40	40	40	40	40	40	40
N											

Note: Continued on next page.

Table 5. Means and Standard Deviations for Each Dependent Variable by Vignette Condition, Continued

	Social Distance	AQ-27: Fear	AQ-27: Anger	AQ-27: Distance	AQ-27: Help	AQ-27: Pity	AQ-27: Treatment	AQ-27: Responsible	Control: Environ.	Control: Medical	Control: Personal
AA											
Cocaine											
M	21.58	35.73	18.10	23.68	8.65	11.88	25.70	19.93	7.10	6.23	4.13
SD	4.90	15.34	6.54	4.82	5.52	5.10	9.94	4.78	1.66	2.07	1.40
N	40	40	40	40	40	40	40	40	40	40	40
Latino											
Alcohol											
M	19.54	30.32	17.22	22.08	9.32	13.14	21.84	19.35	7.49	6.54	4.03
SD	4.79	12.34	5.24	4.70	5.74	5.81	9.96	5.01	1.17	1.68	1.07
N	37	37	37	37	37	37	37	37	37	37	37
Latino											
Marijuana											
M	19.76	25.39	17.04	21.70	10.80	14.39	20.07	20.04	6.43	5.11	4.35
SD	6.18	13.51	6.10	5.88	5.93	6.55	7.93	4.72	1.41	1.62	1.25
N	46	46	46	46	46	46	46	46	46	46	46
Latino											
Cocaine											
M	21.49	37.41	18.43	22.84	9.57	12.54	26.24	18.32	6.89	5.81	4.59
SD	4.48	16.15	6.44	4.64	5.79	5.97	8.71	5.14	1.35	1.70	1.42
N	37	37	37	37	37	37	37	37	37	37	37

Table 6. Means and Standard Deviations for each Dependent Variable by Race and Drug of Choice

	Social Distance	AQ-27: Fear	AQ-27: Anger	AQ-27: Interact	AQ-27: Help	AQ-27: Pity	AQ-27: Treatment	AQ-27: Responsible	Control: Environ.	Control: Medical	Control: Personal
Caucasian											
M	21.02	29.06	18.76	22.65	9.08	12.52	21.91	19.78	7.06	6.05	4.19
SD	5.75	14.35	5.93	5.04	5.50	5.75	8.95	4.92	1.52	1.91	1.33
N	125	125	125	125	125	125	125	125	125	125	125
AA											
M	19.94	29.27	17.56	22.20	9.32	13.43	22.23	20.32	6.88	5.83	4.28
SD	5.16	13.93	5.96	5.42	5.48	6.07	8.52	4.63	1.49	1.86	1.45
N	114	114	114	114	114	114	114	114	114	114	114
Latino											
M	20.23	30.62	17.53	22.17	9.97	13.43	22.51	19.30	6.90	5.77	4.33
SD	5.31	14.80	5.94	5.14	5.82	6.15	9.14	4.95	1.38	1.75	1.26
N	120	120	120	120	120	120	120	120	120	120	120
Alcohol											
M	19.61	27.23	17.22	21.48	9.59	12.72	20.73	19.33	7.23	6.39	4.18
SD	4.40	11.66	5.03	4.99	5.15	5.46	8.41	4.63	1.34	1.72	1.21
N	115	115	115	115	115	115	115	115	115	115	115
Marijuana											
M	19.87	25.10	17.81	22.02	9.60	14.44	19.90	20.74	6.78	5.19	6.78
SD	5.65	13.28	6.40	5.68	5.74	6.58	8.06	4.91	1.46	1.76	1.46
N	124	124	124	124	124	124	124	124	124	124	124
Cocaine											
M	21.74	36.66	18.84	23.51	9.17	12.12	26.03	19.25	6.85	6.13	4.33
SD	5.12	15.16	6.23	4.65	5.89	5.62	8.89	4.88	1.54	1.83	1.36
N	120	120	120	120	120	119	120	120	120	120	120

Table 7: Correlations between Age and Dependent Measures and Religiosity and Dependent Measures.

	Social Distance	AQ27: Fear	AQ27: Anger	AQ27: Interact	AQ27: Help	AQ27: Pity	AQ27: Treatment	AQ27: Responsibility	Control: Environment	Control: Medical	Control: Personal
Age	-.05	.01	.01	-.10	-.07	-.06	-.08	-.06	.13	.09	-.08
Religiosity	.15*	.21*	.15*	.22*	-.05	-.23*	.15*	.02	.06	.00	.12

Note: *=p<.01

Table 8. Means and Standard Deviations for Dependent Variables by Participant Race.

Race	Social Distance[a]	AQ27: Fear[b]	AQ27: Anger[c]	AQ27: Interact[d]	AQ27: Help[e]	AQ27: Pity[f]	AQ27: Treatment[g]	AQ27: Responsible[h]	Control: Environment[i]	Control: Medical[j]	Control: Personal[k]
Caucasian											
M	20.37	29.28	18.06	22.31	9.53	13.24	22.22	19.74	6.92	5.91	4.25
SD	5.19	14.04	5.87	5.22	5.55	6.05	8.82	4.74	1.47	1.80	1.35
N	318	318	318	318	318	318	318	318	318	318	318
AA											
M	21.55	28.82	16.00	21.36	9.18	12.64	20.73	20.77	7.18	5.45	4.50
SD	4.74	16.60	6.70	5.40	6.19	6.36	9.20	5.98	1.47	1.99	1.44
N	22	22	22	22	22	22	22	22	22	22	22
Latino											
M	16.75	36.75	19.50	23.25	13.00	12.50	28.75	20.25	6.50	5.75	4.25
SD	6.60	11.59	6.56	4.11	8.00	6.25	12.45	6.85	1.29	1.71	0.96
N	4	4	4	4	4	4	4	4	4	4	4
Asian											
M	24.50	43.25	22.25	24.50	10.25	14.75	24.00	23.25	8.00	5.50	5.00
SD	3.12	18.21	5.32	4.51	6.99	3.20	7.07	5.85	1.63	1.73	1.15
N	4	4	4	4	4	4	4	4	4	4	4
Native American											
M	22.33	48.67	21.00	27.00	4.67	11.00	32.67	18.33	6.67	5.67	4.00
SD	7.37	11.15	9.85	1.00	6.35	6.56	3.79	4.16	1.53	3.21	1.73
N	3	3	3	3	3	3	3	3	3	3	3
Multiracial											
M	18.00	26.67	14.67	25.17	6.00	8.83	17.67	17.33	7.17	6.67	3.83
SD	2.37	11.08	3.44	3.49	2.37	2.14	3.67	5.24	1.47	3.08	1.17
N	6	6	6	6	6	6	6	6	6	6	6
Other											
M	18.50	36.00	18.50	17.00	9.00	12.50	18.50	19.50	8.00	6.00	3.50
SD	7.78	31.11	10.61	2.83	4.24	0.71	16.26	0.71	0.00	2.83	0.71
N	2	2	2	2	2	2	2	2	2	2	2

Note: [a] $F(6,352)=1.27$, *ns*; [b] $F(6,352)=1.82$, *ns*; [c] $F(6,352)=1.25$, *ns*; [d] $F(6,352)=1.33$, *ns*; [e] $F(6,352)=1.05$, *ns*; [f] $F(6,352)=0.68$, *ns*; [g] $F(6,352)=1.52$, *ns*; [h] $F(6,352)=0.80$, *ns*; [i] $F(6,352)=0.74$, *ns*; [j] $F(6,352)=0.43$, *ns*; [k] $F(6,352)=0.54$, *ns*

Table 9. Means and Standard Deviations by Gender

Gender	Social Distance[a]	AQ27: Fear[b]	AQ27: Anger[c]	AQ27: Interact[d]	AQ27: Help[e]	AQ27: Pity[f]	AQ27: Treatment[g]	AQ27: Responsible[h]	Control: Environment[i]	Control: Medical[j]	Control: Personal
Male											
M	19.34	24.67	16.61	20.80	10.24	13.65	21.34	19.85	6.96	5.87	4.26
SD	5.48	12.50	5.92	5.75	5.91	6.71	8.21	4.79	1.45	1.81	1.44
N	89	89	89	89	89	89	89	89	89	89	89
Female											
M	20.77	31.29	18.41	21.86	9.20	12.61	22.50	19.77	6.94	5.89	4.27
SD	5.03	14.53	5.91	4.90	5.48	5.65	21.34	4.87	1.47	1.86	1.32
N	270	270	270	270	270	270	270	270	270	270	270

Note: [a] $t(357)=2.27$, *ns*; [b] $t(357)=3.84$, $p<.001$; [c] $t(357)=2.50$, $p=.01$; [d] $t(357)=1.29$, *ns*; [e] $t(357)=-1.52$, *ns*; [f] $t(356)=-1.82$, *ns*; [g] $t(357)=1.08$, *ns*; [h] $t(357)=-0.14$, *ns*; [i] $t(357)=-0.06$, *ns*; [j] $t(357)=0.12$, *ns*; [k] $t(357)=0.05$, *ns*

Table 10. Means and Standard Deviations by Level of Familiarity

Religiosity	Social Distance[a]	AQ27: Fear[b]	AQ27: Anger[c]	AQ27: Interact[d]	AQ27: Help[e]	AQ27: Pity[f]	AQ27: Treat[g]	AQ27: Responsible[h]	Control: Environ.[i]	Control: Medical[j]	Control: Personal[k]
Level 1											
M	20.06	29.15	18.08	21.19	8.86	13.14	21.65	19.73	6.89	5.96	4.14
SD	5.47	14.71	6.23	5.73	5.62	6.13	9.03	4.87	1.46	2.00	1.32
N	195	195	195	195	195	195	195	195	195	195	195
Level 2											
M	21.55	31.11	18.21	22.00	9.39	12.82	24.08	19.29	6.92	5.66	4.79
SD	3.95	11.90	4.51	4.78	4.46	5.55	8.47	5.21	1.30	1.62	1.49
N	38	38	38	38	38	38	38	38	38	38	38
Level 3											
M	19.95	26.55	17.16	22.60	10.53	13.76	21.37	19.75	6.80	5.85	4.29
SD	5.00	13.50	5.88	4.23	5.83	6.12	8.34	4.91	1.44	1.67	1.28
N	87	87	87	87	87	87	87	87	87	87	87
Level 4											
M	22.10	37.62	18.97	22.90	10.10	11.85	25.13	20.69	7.59	5.89	4.33
SD	4.76	13.93	5.97	4.79	5.75	5.30	8.99	4.24	1.53	1.84	1.38
N	39	39	39	39	39	39	39	39	39	39	39

Note: [a] $F(3.,355)=2.57$, *ns*; [b] $F(3,355)=5.79$, $p=.001$; [c] $F(3,355)=0.95$; [d] $F(3,355)=0.33$, *ns*; [e] $F(3,355)=2.00$, *ns;* [f] $F(3.354)=0.95$, *ns*; [g] $F(3,355)=2.53$, *ns*; [h] $F(3,355)=0.60$, *ns*; [i] $F(3,355)=2.95$, *ns*; [j] $F(3,355)=0.32$, *ns*; [k] $F(3,355)=2.57$, *ns.* 1=self or family member; 2=worked with SUD; 3=know someone; 4=none of the above.

Table 11. Means and Standard Deviations by Degree of Religious Identification

	Level of Religious Identification				
Measure	Not at all N=34	A little bit N=56	Moderately N=83	Mostly N=96	Very M=90
Social Distance[a]					
M	**18.50**$_{1}$	**19.84**	**19.89**	**21.29**$_{1}$	**21.03**
SD	**6.32**	**5.29**	**5.08**	**4.96**	**4.74**
AQ27: Fear[b]					
M	**21.50**$_{1,2}$	**28.61**	**27.67**	**32.39**$_{1}$	**32.27**$_{2}$
SD	**14.18**	**15.51**	**13.37**	**14.20**	**13.43**
AQ27: Anger[c]					
M	**13.91**	**18.13**	**17.80**	**19.63**	**17.79**
SD	**6.44**	**6.42**	**5.81**	**5.45**	**5.45**
AQ27: Unwilling to Interact[d]					
M	**18.82**$_{1,2,3}$	**21.84**	**22.14**$_{1}$	**23.17**$_{2}$	**23.30**$_{3}$
SD	**6.50**	**5.57**	**5.29**	**4.62**	**4.29**
AQ27: Treatment[e]					
M	**17.88**$_{1,2}$	**21.68**	**21.54**	**23.94**$_{1}$	**22.97**$_{2}$
SD	**8.72**	**9.64**	**8.29**	**9.19**	**8.08**
AQ27: Lack of Pity[f]					
M	**15.56**$_{1,2}$	**14.82**$_{3,4}$	**13.98**	**11.68**$_{1,3}$	**11.90**$_{2,4}$
SD	**7.67**	**4.96**	**5.70**	**5.56**	**5.98**
AQ27: Unwilling to Help[g]					
M	10.24	9.61	9.82	8.82	9.40
SD	6.59	5.82	5.46	5.29	5.56
AQ27: Responsibility[h]					
M	19.94	19.14	19.63	20.58	19.44
SD	4.97	4.93	5.13	4.69	4.63
Control: Medical[i]					
M	5.97	5.84	5.90	5.84	5.91
SD	1.91	1.85	1.90	1.88	1.76

Note: Continued on next page.

Table 11. Means and Standard Deviations by Level of Religious Identification, Continued.

	Level of Religious Identification				
Measure	Not at all N=34	A little bit N=56	Moderately N=83	Mostly N=96	Very M=90
Control: Environmental[j]					
M	6.68	7.07	6.82	6.93	7.11
SD	1.57	1.51	1.45	1.56	1.28
Control: Personal[k]					
M	3.74	4.14	4.23	4.47	4.36
SD	1.31	1.09	1.21	1.38	1.55

Note: Note: [a] $F(4,354)=3.61$, $p=.01$; [b] $F(4,354)=5.05$, $p=.001$; [c] $F(4,354)=6.19$, $p<.001$; [d] $F(4,354)=5.73$, $p<.001$; [e] $F(4,354)=3.36$, $p=.01$; [f] $F(4,353)=5.54$, $p<.001$; [g] $F(4,354)=0.57$, *ns*; [h] $F(4,354)=1.04$, *ns*; [i] $F(4,354)=0.05$, *ns*; [j] $F(4,354)=0.84$, *ns*; [k] $F(4,354)=2.12$, *ns*. Bolded rows contain measures for which there were significant differences among groups. Subscripts indicate locations of significant differences between groups according to Tukey HSD.

Figure 1. Interaction between Race and Drug