

5-2019

Impact of Opioid Overdose Photos on Addiction Stigma, Explicit Bias, Willingness to Help, and Support for Policy Items

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**IMPACT OF OPIOID OVERDOSE PHOTOS ON ADDICTION STIGMA, EXPLICIT
BIAS, WILLINGNESS TO HELP, AND SUPPORT FOR POLICY ITEMS**

A Thesis

Presented to

The Faculty of the Department of Psychology

University of South Carolina Aiken

In Partial Fulfillment

Of the Requirements for the Program

Masters in Applied Clinical Psychology

By

Anne C. Parent

May 2019

Impact of Opioid Overdose Photos on Addiction Stigma, Explicit Bias, Willingness to Help, and
Support for Policy Items

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Abstract

Objective: Opioids, commonly used in hospitals and pain management centers for treating pain, are becoming increasingly abused. Prescription opioids and synthetic opioids are found frequently on the streets, highlighting the rampant spread of these drugs in the black market. Rates of opioid overdose have also dramatically increased in the past few years. Police departments have publicly posted photos of individuals who have overdosed on drugs in order to generate awareness of the issue to the community. Current research has not scientifically measured the impact of these social media campaigns designed to combat the opioid crisis. The present study used a between-subjects design to examine the effect of viewing opioid overdose photos on level of stigma, explicit bias, willingness to help, and support for drug-related policy items.

Method: Participants were randomly assigned to view overdose photos or non-overdose photos contained within an ostensible website created for the experiment. The participants then responded to measures asking about their attitudes about substance use.

Results: Results indicated that there was a lower willingness to help in participants who viewed opioid overdose images compared to those who viewed non-overdose images. The current study also demonstrated that level of contact with addiction was a significant predictor of stigma. Additionally, political affiliation strongly affected both stigma and support for policy items. Those who were more conservative had higher levels of stigma towards addicts and less support for policy items related to addiction.

Conclusions: The present study confirms that there are multiple factors playing a part in how individuals process viral opioid overdose photo. At the societal level, the results of this study have implications for deeper understanding of how social media and “scare tactic” photos truly

affect the public. Important implications for future media campaigns and police tactics to combat the opioid crisis are discussed.

Keywords: Opioids, addiction, stigma, bias, willingness to help

The course of this paper will examine the current state of the opioid crisis, responses to this crisis, media portrayals of addiction and how these portrayals impact public attitudes and addiction stigma. Stigma will be fully explored as it applies to substance users in society. The stage will be set for the current study, which extends existing research to look at the effect of opioid overdose photos on stigma, explicit bias, willingness to help, and support for policy items.

The Current State of the Opioid Crisis

Opioid prescriptions have dramatically increased over the past decades (Kolodny et al., 2015). Commonly called opioid pain relievers (OPRs), these drugs are written as prescriptions to help patients manage short-term or chronic pain (Kolodny et al., 2015). The terms ‘opiates’ and ‘opioids’ are frequently used interchangeably. Both substances are considered narcotics (Opiates vs. Opioids, n.d.). However, the two substances differ in how they are made. ‘Opiates’ generally refers to the substances derived directly from natural plants (Opiates vs. Opioids, n.d.). Heroin, morphine, and opium are all opiates. Opioids are created from material not considered to be natural (Opiates vs. Opioids, n.d.); most opioids are synthesized in a lab. There are over 500 opioid molecules from which pharmaceutical companies derive their drugs from. For the remainder of this paper for purposes of succinctness, both opiates and opioids will be referred to as “opioids”. Journalists have consistently used this term to include both heroin and prescription pills.

Whether the overprescribing of these strongly addictive narcotics is the cause of the current state of the opioid crisis has been a source of contention in the medical field. Pain became a primary focus during emergency room visits with doctors and was labeled the “5th vital sign” in 1995 by the president of the American Pain Society (Kolodny et al., 2015). This emphasis on treating pain led to prescription of drugs before much research had been released on

the effects of the drugs. Surprisingly, risk of addiction was originally considered low for OPRs (Kolodny et al., 2015).

Over the past several years, patients presenting to hospitals for acute pain have increasingly been prescribed opioids. In Aiken County in 2016, there were 880 opioid prescriptions written for every 1,000 residents (By the Numbers: The SC Opioid Epidemic, 2017). This is just below the state average of 940 opioid prescriptions for every 1,000 residents. Most people that are found to be misusing either synthetic or prescription opioids have received them from their own prescription or from a friend's or relative's prescription (Seth, Rudd, Noonan, & Haegerich, 2018). According to the National Institute on Drug Abuse (NIDA), about 21-29% of chronic pain patients prescribed opioids end up abusing them (Opioids, n.d.). Of those people prescribed OPR's, 8-12% develop an Opiate Use Disorder (OUD) as defined in the DSM (Opioids, n.d.). OUD is marked by an inability to stop using opioids, severe withdrawal when the drug is not available, and impairment of daily life activities due to drug use (American Psychiatric Association, 2013). In 2015, about 2 million Americans were diagnosed with OUD that involved OPRs (Opioids, n.d.). Many cases of OUD can go undiagnosed, however, due to medical comorbidities and chronic pain that can leave the person dependent on opioids to curb their withdrawal symptoms. People addicted to heroin can also be diagnosed with OUD. People with the nonmedical use of prescription pain killers are also more likely to transition to using heroin than people without nonmedical use of pain killers (Compton, Jones, & Baldwin, 2016). In a study done between 2008 and 2009, 86% of injection heroin users had used nonmedical prescription pain killers before they had started their use of heroin (Compton, Jones, & Baldwin, 2016). Some see heroin as a cheaper and more available alternative to prescription medication.

Previous nonmedical prescription opioid use is a risk factor for moving to heroin use, however it is still relatively rare for this transition to occur (Compton, Jones, & Baldwin, 2016).

Overdose (OD) deaths in America have also been on the rise recently, with over 72,000 Americans dying from a drug overdose in 2017 (Overdose Death Rates, 2018). According to the CDC, in 2016 over 42,000 deaths were a result of opioid overdose; opioids accounted for two-thirds of the total number of drug overdoses (Drug Overdose Death Data, 2016). Synthetic opioids other than methadone were the leading cause of U.S. overdose deaths in 2017, with over 29,000 individuals dying from overdosing on these substances (Overdose Death Rates, 2018). Heroin was the second leading cause of overdose deaths, with just under 16,000 deaths in 2017. In 16 states, deaths attributable to OD have risen by 54% (Opioids, n.d.).

South Carolina has experienced rising rates in prescription pill and heroin overdoses that mirror the national trend (South Carolina Opioid Summary, 2018). Specifically, in Aiken County there were 28 drug overdose deaths in 2016 (By the Numbers: The SC Opioid Epidemic, 2017). In addition, there were 26 deaths involving prescription drugs and 23 deaths involving opioids, compared to only two deaths involving heroin and two involving cocaine (By the Numbers: The SC Opioid Epidemic, 2017).

Strategies to Combat the Opioid Crisis

Both national and state governments and organizations have responded strongly to the recent increase in opioid abuse and overdose deaths. On the national level, the White House has labeled the increased use of opioids a “crisis”, other media sources calling it an “epidemic”. The Center for Disease Control and Prevention for the United States (CDC) has stated the opioid overdose epidemic is the “worst drug overdose epidemic in US history” (Paulozzi, 2010). The National Institute on Drug Abuse labels it the “Opioid Overdose Crisis” on their main webpage

(Opioids, n.d.). On the statewide level, in South Carolina specifically in December 2017, Governor Henry McMaster named the opioid crisis a “public health emergency” (By the Numbers: The SC Opioid Epidemic, 2017).

The opioid crisis is constantly evolving and changing as a public health problem. Recent changes in the opioid epidemic have arisen as new drugs become available on the black market (Dupont, 2018). Because the laws detailing which substances are legal and illegal change so slowly, many producers of synthetic opioids are able to make opioids that are not yet on the governments watch list. Often, the police are once again the first to see these changes occur on the streets. This poses a concern for data being collected on the total amount of opioid overdoses. It remains to be studied how many overdoses occur as a result of prescription opioids compared to illicitly manufactured opioids, such as opioids made in labs (Dupont, 2018). For now, synthetic opioids are considered prescriptions opioids for reporting purposes although this may be an area for further direction.

One of the strongest responses to the opioid crisis has been taken by police officers. Cops offer a unique perspective to the opioid problem. Law enforcement are often the first responders to calls of opioid overdose (Banta-Green, Beletsky, Schoeppe, Coffin, & Kuszler, 2013). In a survey done in 2013 of Seattle police officers and paramedics, 64% of the police officers surveyed had been present at the scene of an overdose within the past year (Banta-Green et al., 2013). Clearly, police officers offer a unique perspective on the opioid situation that may not be seen by the public eye. Over the years, the police have seen the worst of the opioid crisis and are called sometimes repeatedly to the same house to revive someone who has overdosed on opioids just a few days before.

Overdoses do not always result in death, however. There is a possibility of revival after individuals overdose. Naloxone, for example, works as an opioid antagonist to reverse an overdose. These reversal interventions are helpful in saving lives but are also costly and controversial. In a study done about police officer attitudes towards naloxone, an opioid overdose reversal drug that helps revive someone who has overdosed, police stated they were frustrated by their inability to help the situation going on around them (Ray, O'Donnell, & Kahre, 2015). This frustration may have led to their next attempt to curb the opioid epidemic. Police began an unofficial media campaign highlighting the danger of opioids by posting photos of people who had overdosed on social media in order to elicit a response from the public about the opioid crisis. The media plays a critical role in swaying the public's support for certain policy measures. Social media has become increasingly popular especially in younger age groups and images circulate easily on these websites. In an article published by Business Insider, police in Ohio discuss why they decided to post a photo of two grandparents overdosed with a young child in the back seat of their car (Mark, 2016). Police stated that they wanted to "show the other side" of the opioid crisis and alert the public to what they deal with on a regular basis. Although their motivations to post these photos of people are to help alert the public to the seriousness of the opioid crisis, it remains to be studied whether or not these images affect the public's stigma towards drug addiction, their willingness to help drug addicts, and their support for policy items related to treatment for drug addiction.

Media Campaigns to Combat Substance Use

Due to their presence at many opioid overdoses, police have been an increasingly important voice in the fight to combat the opioid crisis facing the country. Although publicly posting photos of overdoses is a relatively new strategy, this tactic has its roots in past strategies

for anti-drug campaigns. DARE, a police-led program popular in the 1990s and 2000s, attempted to show the harmful consequences of using substances to young people (Hansen & McNeal, 1997). The program emphasized the dangers of using drugs and what consequences it could lead to later in life. However, this program was not found to be successful at curbing drug use of all young kids who underwent the program (Hansen & McNeal, 1997). Instead, it was found that it created a boomerang effect. This meant that kids who had previous history with substances before going into the DARE program did not change their drug use because of the program (Hansen & McNeal, 1997). However, kids who had no previous history of substance use actually began using substances more because the program peaked their curiosity and made them interested in what different drugs could do (Hansen & McNeal, 1997).

The DARE program established that it is important to address the messages given to young adults about drugs. Young adults commonly use social media, a platform on which opioid overdose photos have previously been publicized. However, although created and implemented with the best of intentions, DARE was police-led. Police may lack the knowledge necessary to design effective drug campaigns or scientifically evaluate them. It remains to be studied how opioid overdose photos affect drug use in young populations. The age range that is continuing to misuse opioids in larger numbers is the 18-24 age group (Drug Overdose Death Data, 2016). It is critical to study whether this group is being affected by the photos portrayed in the media.

Scare tactics are occasionally used by the media to demonstrate the “worst” situation that could happen if someone began using drugs. Campaigns like this include the “This is Your Brain on Meth” campaign, which show pictures of a person who previously was not on methamphetamine and put that image next to an image of the same person after years of use. It seems that police departments are attempting to show the worst outcome of using the drug. In a

study done by Twombly, Holtz, and Agnew in 2011, specific types of drug prevention messages were measured to assess for resonance on a young population. Resonance was defined as the ability of the message to change how likely the participant would be to misuse prescription pills. Examples of drug prevention messages in the study include communicating positive alternatives to drug use, refusal skills, and scare tactics. The results revealed that messages that used “scare tactics” were highly resonant to 69% of the seventh and eighth graders tested (Twombly, Holtz, & Agnew, 2011). There were also age differences, with seventh graders rating the messages as more resonant than eighth graders. Overall, the results show that scare tactics resonated more with young students and that the messages used should be changed based on the target population.

Media Portrayals of Addiction

The media communicates news and information every day to its consumers. According to Lancaster and fellow authors, the media can influence the public in four different ways (Lancaster, Hughes, Spicer, Matthew-Simmons, & Dillon, 2011). First, the media tells the public what issues to care about and why to care about those issues. By spreading the terms “epidemic” and “crisis”, the media is sending a message that the public should be concerned. The second method through which the media influences the public is by their determination of what to put in their reports and stories. Media outlets often select stories that have high emotional salience in order to get higher ratings and increase their viewership.

Addiction and substance use have been in the media for a long time. The term “junkie” came from the word “junkmen” and was one of the first terms used to describe people who had given their lives to drugs. The term originated from men who would look for scrap metal in

dumps in New York City to sell in to have money to buy heroin (Radcliffe & Stevens, 2008).

Drug users may be continuously seen as “junkies” throughout treatment and even into recovery.

By calling substance users certain names, media shapes the messages sent about substance abuse. Media also has extensive power to develop attitudes. After it is determined what to put in the story, the media is responsible for shaping attitudes about how dangerous the issues are by how it describes and details the events (Lancaster et al., 2011). For instance, on roads in Australia, a “heroin toll” is displayed alongside a “road toll” (Lancaster et al., 2011). This is meant to show the amount of recent deaths attributable to heroin alongside deaths attributable to road accidents. This communicates clear messages about the implications of the recent upsurge in heroin use while driving. Travelers driving down these roads will see this sign and draw conclusions about the salience of the issue of heroin use. Directly portraying the message on a roadway illustrates the issue as a danger to the public, implying that either people are driving while high on heroin or are overdosing. Putting the “heroin toll” next to the “road toll” of deaths also gives the public a reference to develop their own understanding of how important the issue is. The media seems to be saying, “You care about road safety and car accidents already and know how many people die from this, but have you thought of this issue?” Referencing road accidents gives people a point to understand how critical the heroin crisis is.

Finally, media and politics and public policy have a long-standing connection and directly change the impact of each other (Lancaster et al., 2011). Media, whether it has a clear purpose to or not, changes the public’s attitudes towards recent political changes. Lancaster states that authors of articles can either frame their viewpoint as “oppositional” or “supportive” and that this framework is followed for the entire article (Lancaster et al., 2011). By having a

framework through which the article is viewed, the authors develop a clear agenda that is communicated to the public and impacts their opinions on policy.

The importance of the media on the shaping of public opinion cannot be understated. Often, people who have very little knowledge and contact with substance users are consumers of media about substance use and gain their understanding of the issue from how the media portrays the issue (Lancaster et al., 2011). The media has the power to change both the opinions of entire groups of people regarding this issue, as well as drug policy (Matheson et al., 2014). There are numerous benefits of the media being actively involved in the development of awareness and understanding of drug addiction and drug epidemics. The same reasons that may make the media's attention to illicit substances also give the media the power to shape drug epidemics for the benefit of society. Many people may not be aware of the impact of illicit substances, so exposure to facts can provide education they might not otherwise have access to.

Media has the power to shift the message of an entire movement. Often, the media has a special role to play in the perpetuation of stigma. Media especially focuses on stereotypes in order to draw attention to certain issues (Corrigan, 2005). Media's portrayal of substance abusers tends to focus on symptoms rather than stories and the social issues that contribute to the development of that stigma (Hartman & Golub, 1999). The deeper social problems that contribute to the prescription opioid crisis are rarely addressed in the print media. The addict is portrayed as a person who is prone to violence, lives in an urban setting, and does anything to get their drug of choice (Hartman & Golub, 1999). Environmental, psychological, or genetic attributions of use are rarely discussed. Substance abuse has also been tied to violence, as was previously discussed. This began in the 1980s when the crack epidemic was hitting its height. Articles and news reports released the rates of violent acts associated with the increased use of

crack epidemic while drawing unsaid ties between the violent actions and the addicts themselves (Hartman & Golub, 1999). However, much of the violence perpetuated during the crack cocaine epidemic was a result of drug dealer warfare, not the addict. The media continued to associate the use with the violence. Instead, images are some of the signals most commonly portrayed and discussed by the media. That method of portraying information can be especially emotionally salient and elicit strong opinions from the public. The media also feeds heavily off “drug epidemics” and “crisis”. Although the heightened press given to the issue may draw the public’s attention towards treatment options and public policy, it remains to be seen how this increased media presence affects stigma and willingness to help addicts.

According to Hartman and Golub, the government is driven to action by the public’s perception of a problem rather than facts themselves. The importance lies with how the public collectively feels and perceives the issue (Hartman & Golub, 1999). If attention is drawn to an issue through the media, public perception can be affected, as well as the public’s idea of it as an issue to begin with. Only 3% of Americans stated drugs were America’s most critical issue in 1986 but by 1989, upwards of 64% of the country believed it was the most pressing issue (Hartman & Golub, 1999). This enormous increase in concern was a result of a multitude of factors. Increased press coverage could have affected the public’s perception of this as an issue. Press coverage also relates to actual substance use. In a study done in 2009, it was found that the amount of news articles discussing opioids could predict the amount of opioid-related mortalities that would happen the next year 88% of the time (Dasgupta, Mandl, & Brownstein, 2009). There seems to be a link between coverage and actions in the public.

An additional way in which the media affects drug policy and public opinion is their communication of the “controllability” of substance abuse. Matheson and fellow researchers

found evidence to support the fact that individuals in the public often will not hypothetically pay for the treatment of substance abusers because they feel that people addicted to substances are responsible for their addiction (Matheson et al., 2014).

In the same way that media has heightened blame on substance abusers, media attention has slowed portions of the crisis. For instance, in a study done in 2013, it was found that following periods that were high in opioid prescription misuse, physicians slowed down their prescribing of those opioids (Borwein, Kephart, Whelan, & Asbridge, 2013). By exposing the problems with over-prescribing, the media was able to make the public aware of an issue they may have not known about had it not been covered so extensively. Shaping the issue as a problem with over-prescribing rather than a problem with self-control or volition within the addict may have been helpful as well. It would have been interesting to know how stigma was affected during those years. Unfortunately, that study did not address that issue.

In sum, media can often contribute to public stigma towards addiction in the way they address substance use. Stigma will be further explored in several sections below.

Stigma towards Substance Users in Society

Stigma has been likened to a signal or mark that leads to development of a stereotype (Goffman, 1963). According to Goffman, these stereotypes lead to discrimination, or action against the individual or group with the stigma.

Substance use is a form of mental illness and may actually be more stigmatized than mental illness on its own (Corrigan, 2005). According to researchers, individuals with SUD or Substance Use Disorder as it is referred to in the DSM-V, may be more stigmatized because it may be the disorder that the public attributes personal weakness to instead of medical or biological reasoning (Corrigan, 2005). Substance abuse has a long history of being seen as a

condition dependent on the willpower of an individual. However, the medical community as well as the public are becoming more educated to alternative models that describes addiction as either a disease or a learned behavior relatively out of control of the person who has the condition (Graham & Poland, 2011). This medical model states that although there are environmental factors that play a role in the development of addiction, certain people have biological or genetic vulnerabilities to developing addictions to substances. This model also describes how the disease continues and how it affects brain chemistry and dopamine processing. According to the medical model, an addict would not be to blame for their disease. In other theories, such as the social learning theory, addicts are seen as more a product of their environment than the sole perpetrator of their addiction (Graham & Poland, 2011).

Due to the perception of addiction and SUD as caused by a lack of willpower, the public may be more likely to use signals from society to discriminate against these people. In a study done in 1996, researchers examined whether substance users or individuals with psychiatric conditions were responded to more harshly. Three different vignettes were given to participants, with these four conditions: schizophrenia, major depression, alcohol dependence, and cocaine dependence (Link, Phelan, Stueve, & Pescosolido, 1999). Although the symptoms were developed in the vignettes to be subclinical, the participant was asked about their attributions of causes of the disorder. These attributions could have been genetic, a chemical imbalance, the way the person was raised, or the person's bad character. According to the research, participants attributed alcohol dependence more to the way the person in the vignette was raised and the cocaine dependence to the person's bad, inherent character (Link et al., 1999).

Models of Stigma

The cognitive-behavioral view of stigma holds that certain stimuli leads people to viewpoints about the stigmatized group (Corrigan, 2005). The model includes signals such as symptoms, skill deficits, appearance, and labels, all of which contribute to the public's view of a specific condition.

It is critical to consider the way stigma towards people who abuse substances compares to stigma towards people with mental illness, as public policy measures are consistently being portrayed on the news differently for substance use compared to mental illness. Although steps are being made by clinicians and experts to inform the public regarding the lack of personal choice in development of an addiction, the public has yet to fully understand this concept.

Development of stigma may also be a response to deviant behavior. Deviance can be defined as a violation of social norms that results in separation or judgment from members of a group (Scheff, 1999). Deviant behavior goes beyond impolite behavior and may result in social ostracization. Scheff likens stigma to a type of "moral outrage" and is a direct response to deviant behavior. Stigma arises from an emotional response, typically either fear or anger, to this abnormal behavior (Scheff, 1999). When someone else exhibits normal behavior, the observer usually has logical, thoughtful responses or no thought related to the behavior. However, when someone else does not exhibit normal behaviors and instead, behaves unpredictably, people usually respond with emotion. Often, this emotion is their first instinct. According to Scheff, abnormal behavior elicits fear because it does not follow a predictable pattern and people do not know how to respond (Scheff, 1999). Although Scheff applies his theory of deviance to mental illness directly, substance abuse is also described as a mental illness and may be considered more deviant than other types of mental illness such as schizophrenia, depression, and anxiety (Scheff, 1999).

Stigma and deviance are highly intertwined. Deviant individuals are considered to be part of a group in society that is negatively judged. Stigma is defined as a social process in which a specific group (sometimes a deviant group) is negatively perceived or judged (Henderson, Stacey, & Dohan, 2008). Although the field of stigma research has found it difficult to back a single definition of the complicated phenomenon, Link and Phelan (2006) conceptualized stigma in 5 different parts. The first component involves identifying what makes humans different from each other. Link and Phelan emphasize that some differences are more socially relevant than others. For instance, someone's race is more salient in a situation than the size of their feet. In day to day life, humans are so unique from one another that it would be difficult to fully focus on all the differences that exist. Due to the social salience of some characteristics, these tend to get focused on more. Emphasizing the social aspect of stigma in its definition is critical, as messages about other groups are often conveyed through conversation, media portrayals, and "othering".

Link and Phelan go on to describe the second component of stigma which is how someone is labelled as having traits that are not good or unwanted by society. The third component of stigma involves creating distinct groups, one belonging and one not belonging. This is the part of stigma where the true labelling occurs between "us" and "them". A loss of social status is indicative of the fourth part of stigma.

Drug users are part of a "stigma-vulnerable" population. This term was used by Henderson, Stacey, and Dohan in their study of stigma in physicians in an emergency department. An individual can be a part of a "stigma-vulnerable" population even if they are not directly affected by stigma but their group "has historically been negatively perceived or judged" (Henderson, Stacey, & Dohan, 2008, p. 1337). Much of the research on stigma towards drug addiction in the public eye is based on the stigma model for HIV developed by Earnshaw and

Chaudoir in 2009. This method of stigmatization involves understanding prejudices, stereotyping, and discrimination (Earnshaw, Smith, & Copenhaver, 2014) and incorporates the social processes that so often go along with stigmatization. Prejudices are the foundation of the formation of stigma in the public. These are the usually negative beliefs that the person holds about other groups of people. For instance, racism and sexism are both types of prejudices. Within a prejudicial attitude are stereotypes. Just as the word suggests, stereotypes are views held about a group that are seen as applying to everyone within that group (Earnshaw, Smith, & Copenhaver, 2014). Within the treatment community, these stereotypes may exhibit themselves as beliefs that substance using patients do not provide accurate medical histories, that they will not maintain compliance with treatment, or that they engage in unhealthy behaviors. Although these beliefs may hold true for some individuals and the physicians often have reason to hold these beliefs, a function of stereotypes is that they offer a filter through which everyone in that group is seen.

Despite being knowledgeable about stigma and its impacts on society, people can still perpetuate the prejudicial beliefs they hold about another group. In the field of substance use, stereotypes toward substance users are unfortunately often endorsed by counselors, physicians, or other health care workers. In a study that measured stigma in physicians in an emergency department, it was found that despite physicians being aware of stigma more than the average population, patients still faced stigma in the form of exclusion and perceived inaccurate medical histories (Henderson, Stacey, & Dohan, 2008).

Implications of Stigma towards Substance Users

Stigma is part of how drug users are conceptualized by the public. This conceptualization may impact how public policy decisions are made. As discussed above, the amount the public

believes an individual is in control of their actions also impacts helping behavior towards that individual (Corrigan, Kuwabara, & O'Shaughnessy, 2009). According to researchers, participants who read vignettes depicting addiction and rated those individuals as more responsible for their behavior were less likely to help them and more likely to avoid them (Corrigan, Kuwabara, & O'Shaughnessy, 2009). These patterns in helping behavior were not seen in vignettes depicting an individual with a mental illness alone or someone who was physically handicapped. This study suggests that substance abuse implies a level of lack self-control in the mind of the public and that the perception of lack of self-control leads to less willingness to help.

An additional study that measured willingness to help addicts was done in Norway in 2014. This was a seminal study in the field of addiction stigma because researchers measured levels of sympathy and willingness to help compared across 9 different addictions (Rise, Aaro, Halkjelsvik, & Kovac, 2014). Participants were prompted to "think of a person who is addicted to..." and then were given a substance. Measures of causality, responsibility, sympathy, anger, and willingness to help were assessed after each prompt with a different substance. The authors of the study argued that "deservingness" of help was a different construct than "willingness" to help and so, developed a question based around the concept of whether the addict the participant thought of deserved society's help. Results showed that most participants viewed addiction as an internal problem and put responsibility for the problem on the addicted individual. Sympathy and beliefs about causality/responsibility were found to be mediators in the relationship between the addiction and the deservingness of help (Rise et al., 2014). It is also important to note that the level of sympathy and causal beliefs differed greatly between the nine different addictions. Due to the fact that the current study will be focusing primarily on individuals suffering from an

opioid overdose, it was important to analyze the different beliefs about heroin drawn from the Rise study. Relative to the other substances measured, heroin had one of the lowest ratings of personal responsibility and one of the highest levels of sympathy.

Stigma has been defined as a dehumanization of a people group that either deviates from societal norms or is different in a certain capacity (Corrigan, 2005). It is also seen as a “spoiled identity in the public’s eye (Simmonds & Coomber, 2009). Stigma towards drug addiction and drug using behavior has been present in the media and society for an extended period of time. Beliefs about a group can also affect the decisions people make on policy items related to that group (Rise et al., 2014). People addicted to substances have been subject of stigma as is seen in the literature around the topic. Although the present study focused primarily on Opioid Use Disorder (OUD) due to the recent media coverage on this topic, within the drug using community, a hierarchy of stigma also exists and may be an area for future research.

Summary and Limitations of Current Research

The opioid crisis continues to be a matter of concern for communities across the nation. With rising rates of drug addiction and overdose (Drug Overdose Death Data, 2016), it is becoming increasingly important to understand implications of media campaigns surrounding the crisis. Media relies on emotionally salient messages to get viewers to pay attention (Lancaster et al., 2011). The media also shapes the public’s attitudes about people addicted to substances by the way they portray them (Lancaster et al., 2011). Portrayals of addicts in the media can also shape stigma, which may affect the way an individual does or does not support certain policy items related to addiction.

Addiction and substance abuse stigma research is extensive but lacking in several key areas. Viral opioid overdose photos have recently come into the press in the last four to five

years. To the author's knowledge, no other studies have looked for the impact of these photos on substance abuse stigma. There are also existing gaps in the literature in other aspects of addiction stigma research. For instance, much of the literature does not account for the characteristics of the participants completing the research study (Kulesza, Larimer, & Rao, 2013). There is also a clear lack of definition of the type of stigma being measured in the studies (Kulesza et al., 2013). According to Kulesza, only 70% of the studies done on substance use stigma had a clearly defined definition of stigma (Kulesza et al., 2013). In the current study, stigma is clearly defined. Measures that have been used in previous research and are reliable and valid will be used.

This research also extends the breadth of current research in that it compares images of the substance user in different conditions rather than comparing substance users to individuals with another mental illness such as depression or bipolar disorder. Because substance abuse is becoming more of a public health concern, it is necessary to understand how it is being portrayed to individuals who may not have had exposure to substance use in the past. The effects of viewing a certain images may impact attitudes about substance use and addiction as a whole. The explicit bias and attitudes that may result from being shown graphic images of overdose could have an impact on public policy.

Current Study

There is no study to the author's knowledge that has assessed the impact of viewing opioid overdose photos on stigma and willingness to help addicts. The current study used a between-subjects design to examine whether viewing images of opioid overdose compared to a control photo has an impact on the participants' addiction stigma, explicit bias, willingness to help addicts, and support for policy items related to addiction.

Measuring Stigma and Explicit Bias

Stigma is measured throughout the literature by examining how people respond to questions about attributions and beliefs related to substance use. Explicit bias in regards to substance use is commonly measured in the literature through participants' ratings of social distance, perceived dangerousness, and deservingness of treatment versus punishment. It is the standard way to measure addiction bias. In a study done by Kulesza and fellow researchers (2016), both explicit and implicit bias was measured in participants relating to people who inject drugs. This study also analyzed the effects that race/ethnicity and gender have on addiction stigma, as this had never been studied before. Unfortunately, in this study the population being tested was highly advantaged and was in a high SES group. In this study, it was found that participants completing the explicit bias measures were more likely to suggest that people who inject drugs get treatment rather than punishment and displayed compassion towards them. However, the implicit bias measure revealed different results. This bias measure showed that people who inject drugs were judged harshly and were more frequently associated with punishment (Kulesza et al., 2016).

Explicit bias can be measured in direct relation to public policy as well. Cruz and fellow researchers took the opportunity to measure the public's opinion of medically administered heroin in supervised facilities (Cruz, Patra, Fischer, Rehm, & Kalousek, 2007). The researchers asked questions designed to draw out the opinions the public had about these new proposals. More education and previous illicit substance use within the past 12 months predicted a more liberal leaning in the policy, in favor of the supervised injection facilities (Cruz et al., 2007).

Most explicit bias measures for addiction and substance abuse stigma are derived from previous research focused on mental illness stigma. Many studies use measures of social distance, dangerousness, and attitudes towards public policy to assess participant's attitudes

towards addiction. In a study done in 2009, stigmatizing attitudes held by health care professionals were measured through use of the Attitudes to Mental Illness Questionnaire (AMIQ; Rao et al., 2009). Explicit bias is usually measured through vignettes, as this study was. Through vignettes depicting current substance users and substance users in recovery, it was found that those individuals who were currently using were seen more negatively than those who were in recovery (Rao et al., 2009).

Measuring Willingness to Help

Stigma plays a large role in an individual's decision to provide support or indirectly provide support through voting in support of different measures. There are multiple ways researchers have delved into the issue of willingness to help addicts. Hypothetical donations are a form in which researchers measure willingness to help. Kogen and Dilliplane (2017) used this method of assessing willingness to help and found that how the media frames an issue directly impacts how the public watching or reading the content react. The participants were given either an emotional message that relied heavily on sympathy for the victims or a rational message to analyze the difference that these portrayals would have on the participants sympathy, personal efficacy, and willingness to help. Highly sympathetic messages portrayed the victim of a humanitarian crisis as "weak" and "powerless". More rational messages simply discussed the problem and what could be done about it. The solvability of the problem portrayed was manipulated as either having high, low, or control level of solvability. Willingness to help was measured by willingness to donate a portion of the gift card the participant received at the conclusion of the study.

Kogen and Dilliplane (2017) found that it was the participants were more willing to donate part of their gift card when the issue was portrayed as highly solvable than when

sympathy was used as a tactic. Although this project differed from the current project in many ways, it offers valuable evidence for the proposed purpose of the current study. Many police departments are relying on extreme, emotional images to elicit reactions from the community regarding the opioid epidemic.

Matheson et al. (2014) used a cross-sectional study to focus on measuring public attitudes towards paying for treatment of substance abusers and used both qualitative and quantitative methods to obtain accurate data. Called the “Willingness to Pay” method, participants were asked about what their economic decisions would be regarding the treatment of substance users (Matheson et al., 2014). These questions were open-ended and also asked about attitudes towards the misuse of certain drugs. Lending support for the previously discussed definition of stigma, researchers found that the participant’s views were mostly negative and generalized, meaning the opinions to applied to every person in that group of “substance abusers” they were asked about (Matheson et al., 2014). Research from this study also discovered that attitudes towards drug users were more positive by the participants who were female, unemployed, who drank alcohol themselves, and who had a personal history of misuse (Matheson et al., 2014). Limitations in this study included whether the WTP method was a valid measure of a person’s actual willingness to pay in the real world. It may be easier for someone to say that they will pay in order to appear socially acceptable in a research study than to pay towards treatment in reality. Despite the downsides, the WTP is one of the only currently used methods for valuation of economic interests in attitude and stigma research.

Other measures have been utilized to assess willingness to help that do not involve economic factors. The purpose of the current study was to determine whether these emotionally salient images are working in increasing the public’s willingness to help solve the issue or

provide public support for solving the issue. On the other hand, the emotion present in these images may not be providing workable solutions to the issue at hand and may make the public feel less likely to help if no solutions are presented. The study also demonstrated that presenting solutions may be a more beneficial way of getting the public to provide support for certain policy items. This remains out of the scope of the current study but remains a point of interest for further research.

Measuring Support for Policy Items

Individuals often make real-world decisions based on their attitudes and beliefs about specific groups of people. Therefore, measuring support for policy items can be an important way to assess for how attitudes change the person's real-world actions. Support for policy items has been measured in a study focused on stigma and discrimination towards mental illness compared to drug addiction (Barry, McGinty, Pescosolido, & Goldman, 2014). Their results demonstrated that there were more negative attitudes about drug addiction and the negative attitudes resulted in less support for policy items such as benefits, housing, job support, and funding to improve treatment (Barry et al., 2014).

Hypotheses

The following hypotheses were tested:

Hypothesis 1. Participants' scores on measures of stigma would be higher in groups that viewed the OD photos when compared to those who viewed the non-OD photos.

Hypothesis 2. Participants' scores on measures of explicit bias would be higher in groups that viewed the OD photos when compared to those who viewed the non-OD photos.

Hypothesis 3. Participants' scores on willingness to help would be lower in groups that viewed the OD photos when compared to those who viewed the non-OD photos.

Hypothesis 4. Participants' scores on measures of support for policy items would be lower in groups that viewed the OD photos when compared to those who viewed the non-OD photos.

Hypothesis 5. The condition to which a participant belongs would account for more variance in stigma, explicit bias, willingness to help, and support for policy items than their demographics (i.e., age, gender, political party) or their level of contact (i.e., level of personal experience) with substance abuse.

Method

Participants

A total of 124 University of South Carolina Aiken students were recruited to participate in the present study through the SONA online system. The participants received 0.5 credits towards their 3-point research credit requirement for their Psychology 101 class in exchange for their participation. The study took approximately 20 minutes to complete, including time to go over the letter of invitation to participate (see Appendix A). This study was conducted in compliance with APA guidelines regarding the ethical treatment of research subjects and IRB approval was obtained before data collection began. Inclusion criteria consisted of students who are currently in Psychology 101 enrolled at USCA and were at least 18 years old at the time of the study. Exclusion criteria consisted of participants who only completed part of the study or those who stop after being provided the informed consent document. One participant's data was excluded because they did not receive the standardized letter of participation document prior to experiment completion.

Measures

Stigma dependent measures.

Community Attitudes Towards Substance Users. This is a 40-item questionnaire that was adapted from the original scale designed to measure community attitudes towards the mentally ill, called the *Community Attitudes Toward the Mentally Ill* (CAMI; 40 items; Taylor & Dear, 1980). The original scale was adapted for a study of Acceptance and Commitment Therapy on the stigmatizing attitudes and burnout rates of substance abuse counselors (Hayes et al., 2004). The current study will use the modifications made by Hayes and his team. These modifications include using the term “drug addicts” in substitution for the original term “the mentally ill”, “mental illness” with “drug addiction”, and “mental disturbance” with “drug addiction”. The term “alcoholics” was used with Hayes’ modifications but will be taken out of the current scale for further specification. The scale includes factors such as Authoritarianism, Benevolence, Social Restrictiveness, and Community Substance Abuse Ideology. Sample items on the CASA include “Drug addicts should not be denied their individual rights” and “No one has the right to exclude drug addicts”. One item from the original CAMI was taken out due to its inability to translate to drug addiction. In the study done by Hayes and fellow researchers, they achieved these Cronbach alpha levels: Authoritarianism = .63, Benevolence = .75, Social Restrictiveness = .78, and Community Approach = .92 (Hayes et al., 2004). The Benevolence and Community Approach subscales are reverse scored. The higher the score on the CASA, the higher the level of stigma towards substance users (see Appendix B).

Drug Use Stigmatization Scale. This scale is measured on a 7-item Likert scale and is designed to measure stigma towards users of illicit substances (Palamar, Kiang, & Halkitis, 2011; see Appendix C). Validation studies showed evidence for greater validity when using specific substances (i.e., marijuana, cocaine, opioids, etc.) when compared to using the general term “substances”. This study will use the opioid-specific DUSS. The term “opioids” will be

substituted for the term “substances”. A sample item is “Opioid users are weak-minded.”

Responses can range from 1 (Strongly Disagree) to 5 (Strongly Agree). Response totals are calculated and can range from 7-35 with higher scores representing a high level of stigma. In a study done by Drake and fellow researchers, a Cronbach's alpha of .612 for this measure (Drake, Codd, & Terry, 2018). The study was conducted with mental health practitioners as participants.

Explicit Bias dependent measures.

Perceived Dangerousness. To measure perceived dangerousness of individuals with previous substance use problems, the Perceived Dangerousness scale was adapted to incorporate “individuals with previous substance use problems” to align with the Social Distance for Substance Users scaled discussed below. This scale is an 8-item measure and was originally used by Link and fellow researchers to measure stigma towards former mental patients (Link et al., 1987). Items ranged from 0, “Strongly Agree”, to 5, “Strongly Disagree” using a six-point scale. Higher scores represent the belief that people with previous substance abuse problems are dangerous. Example items include, “If a group of individuals with previous substance use problems lived nearby, I would not allow my children to go to the movie theater alone” and “If I know an individual with a previous substance use problem, I will be less likely to trust him/her” (Link et al., 1987). Perceived dangerousness is a strong measure of stigma towards a group of people, and within the Link study achieved an internal consistency rating (Cronbach’s alpha) of the scale is .85 (Link et al., 1987; see Appendix D).

Social Distance. The Social Distance for Substance Users scale was used to assess an aspect of explicit bias towards drug addiction that participants had. The SDS-SU contains 7 items that measure an individual’s desire to interact with a person with a substance use problem. It was adapted by Brown from original scales developed by Link in his stigma research (Brown,

2011; Link, Cullen, Frank, & Wozniak, 1987). Examples of items include, “How would you feel about renting a room in your home to an individual with a previous substance use problem?”

Participant’s scores are added together with possible scores ranging from 7 to 28. The Social Distance responses range from 1, “Definitely Willing”, to 4 “Definitely Unwilling”. For instance, higher scores on this measure mean higher social distance. In the study done by Drake and fellow researchers that used this scale in a study of explicit measures of substance abuse stigma, a Cronbach’s alpha of .876 was achieved (Drake, Codd, & Terry, 2018; see Appendix E).

Willingness to Help dependent measure.

This scale is adapted from one used by Kogen and Dilliplane in 2017. It has been adapted for willingness to help addicted persons. Participants were asked, “If you won \$50 in a local lottery, how much would you be willing to donate, within the next year, to a charity focused on addiction awareness?”. Participants were then asked, “If you did not win any money, how much would you be willing to donate, within the next year, to a charity focused on addiction awareness?”. On both questions, participants were asked to write in a dollar amount (see Appendix F).

Support for Policy Items dependent measure.

Support for the following policy items was measured as yes or no questions: Insurance, government spending on treatment, housing, and job support. The following questions were used in a study done by Barry, McGinty, Pescosolido, and Goldman in 2014. These were phrased as a “favor” or “oppose” question: “Do you favor or oppose requiring insurance companies to offer benefits for the treatment of addiction that are equivalent to benefits for other medical services?”, “Do you favor or oppose increasing government spending on the treatment of addiction?”, “Do you favor or oppose increasing government spending on programs to subsidize housing costs for

people with addiction?” and the last question, “Do you favor or oppose increasing government spending on programs that help people with addiction find jobs and provide on-the-job support as needed?” (Barry et al., 2014). Favor was coded as “0” and Oppose was coded as “1”, with lower scores meaning a greater support for policy items. The term “drug” was taken out before the term “addiction” to maintain consistency with the Willingness to Help Addicted Persons scale discussed above (see Appendix G).

Individual characteristics.

Demographics. A general demographic questionnaire was given to the participants during the study. The participants were asked their race, gender, age, and political orientation (if any). Participants were also asked to check a box indicating whether the experience with drug addiction was with self, close friend, or with a family member. The gender of a participant has not been shown to affect addiction stigma or explicit bias (Kulesza et al., 2016). Rise et al. (2014) did not find main effects of gender on willingness to help addicted persons. In a study done by Holmes et al. (1999), no significant effects of any demographic variable were found to be associated with stigmatizing attitudes towards schizophrenia.

Political orientation was measured to control for effect of belonging to a certain political party on responses to the measures discussed above. Barry et al. (2014) found that political party was associated with support for policy items related to drug abuse and mental illness. In the questions related to drug abuse, Democrats’ responses indicated that they were more likely to support insurance benefits and job support than Republicans or Independents (Barry et al., 2014). Political orientation has not been measured extensively in relation to addiction stigma and bias.

Adlaf, Hamilton, Wu, and Noh (2009) found a significant difference in reported stigma towards substance use when doing their research on a middle school population. Their results

demonstrated that younger adolescents had higher rates of stigma than older adolescents did (Adlaf et al., 2009).

A participant's race has not been demonstrated to affect the level of stigma or explicit bias they exhibit in research studies in the past (Holmes et al., 1999; Kulesza et al., 2016). There have not been enough studies to determine whether race will be a factor in a participant's willingness to help or support for policy items, as the studies that used these measures controlled for the effects of this variable (see Appendix H). In the current study, race was included as an individual characteristic that may account for some of the variance in the dependent measures. Therefore, it was included in analysis as it pertains to the variance.

Level of Contact Report. A limitation of existing research on stigma of mental illness and addiction is the reliance on a single question to assess connection to people who are suffering from these conditions. The Level of Contact Report assesses differing levels of awareness and familiarity to disorders. Twelve situations are included in this report that range from no contact with a particular disorder to an extremely intimate history with the disorder. The Report was originally developed and adapted from several stigma studies in order to effectively measure level of contact with individuals with mental health issues (Holmes, Corrigan, Williams, Canar, & Kubiak, 1999). Interrater reliability in the original design was determined to be 0.83 when raters ranked the twelve situations from least intimate to most intimate contact. The Report was further validated by Holmes and fellow researchers by using 100 individuals in a research study. Corrigan, Green, Lundin, Kubiak, and Penn (2001) used the Level of Contact Report in a study that measured familiarity with and social distance from people with serious mental illness. Examples of situations listed in the Report include "My job involves providing services/treatment for persons with a severe mental illness" (ranking score of 8 out of 12) and "A

friend of the family has a severe mental illness” (ranking score of 9 out of 12). In the current study, the phrase ‘severe mental illness’ will be replaced by ‘substance use problem’. The current study utilized their method of determining level of contact through the rank score of the most intimate situation checked by the research participant. For instance, if an individual checked the two situations given above, they received a level of contact score of 9 because that is the more intimate level of contact as decided upon by a panel of experts.

Experience with addiction was measured to assess for the confounding variable of past knowledge of substance users. Participants may have responded in either extreme if they knew or currently know someone struggling with addiction. Level of contact has been shown to impact an individual’s stigmatizing attitudes in research on mental illness stigma (Holmes et al., 1999). Participants in Holmes et al.’s study demonstrated fewer stigmatizing attitudes the more contact they had with them. It remains to be shown how experience with addiction impacts willingness to help and support for policy items, as this has not been fully measured in previous studies (see Appendix I).

Procedure

A between-subjects, randomized design was used for this study. IRB approval was obtained prior to the beginning of data collection. A letter of participation was read to each participant before the experiment began and the participant was provided with a copy of the letter to take with them after the study. For the purposes of this study, opioids included both illicit drugs (e.g., heroin) and nonmedical use of prescription painkillers (e.g., Oxycontin, codeine, Percocet). This was clearly stated in the letter of participation.

After agreeing to participate in the study, each participant was left alone in the experiment room and began the study. To measure the impact of overdose photos compared to

non-overdose photos, an ostensible website was created for the purposes of the experiment. Participants viewed four screenshots of this ostensible website before completing the demographic measure and other measures. Some participants were randomly assigned to a version of the website that depicted four photos of staged actors overdosed (see Appendix K). The other participants saw a version of the website that depicted the same individuals, except the individuals were upright and awake in the photos (see Appendix L). The photos in both conditions had the following label “This person is addicted to opioids and has overdosed” to control for attitudes about overdosing in general and keep all variability constant aside from the actual images themselves.

The screenshots were presented in the same order to every participant. At the end of viewing the fourth and final website screenshot, the participant first completed factual recall questions about information portrayed on the website screenshots, as well as several questions about the website’s visual design. These were given to participants in order to hide the purpose of the experiment and ensure that participants were paying attention to the screenshots. After completing these questions, the participants then completed the demographics, level of contact, stigma, bias, willingness to help, and support for policy items measures. All measures in the study aside from the factual recall and design questions were counterbalanced to account for variance.

No participants indicated distress or the need to speak to a counselor following the study. After data analysis was completed, participants were emailed a debriefing form explaining the purpose and nature of the study (see Appendix J). In the form, participants were told that all photos were staged by actors and did not portray individuals that were overdosing.

Data was collected from November 26th, 2018 to March 27th, 2019.

Results

SPSS was used to run analysis on this data set. Participant's group were coded "0" for the control group and "1" for the experimental group.

Preliminary Analysis

Correlation analysis was done for the explicit bias scales and the stigma scales. The Social Distance scale and the Perceived Dangerousness scale were found to be significantly correlated, $r = .66, p < .001$. Thus, the scores participants received on the explicit bias measures (social distance and perceived dangerousness) were added together to create one sum score. This total score defined the dependent variable (explicit bias). The CAMI and the Drug Use Stigmatization Scale were also found to be significantly correlated, $r = .77, p < .001$. The two stigma measures (CAMI and Drug Use Stigmatization Scale) were combined in the same way to create one variable (stigma). The dependent variables in the present study are "explicit bias", "stigma", "willingness to help", and "support for policy items".

Preliminary analyses of all data are described, followed by results of hypothesis testing. Demographics for level of contact with substance use problems and political affiliation are examined. Descriptive analyses for the following measures (stigma, explicit bias, willingness to help, and support for policy items) are explored, as well as the results from the correlational analyses. Results of hypothesis testing are then presented. In the first part, the results from the univariate ANOVAs are examined. Next, the results from the hierarchical regression and two-way ANOVAs are discussed.

Sample characteristics. The sample was relatively young ($M = 19.34, SD = 1.62$). Over half (58%) of the sample was White and a majority were female (64.5%). One participant identified themselves as a transgender male and one participant preferred to not disclose their

gender. Thus, there were 2 fewer participants (122 total) for the analyses that included gender. Summaries of the sample can be found in Tables 1, 2, and 3.

Most participants (98.6%) reported that they had had some form of experience with substance abuse. Of those with experience with substance abuse, 53 out of 122 (43.4%) reported that they had a friend of the family with a substance use problem. Having a friend of the family with a substance abuse problem was the most common experience reported. Five participants reported that they lived with a person with a substance use problem and 3 individuals reported that they themselves had a substance use problem.

Participants also indicated their political affiliation on a scale. The mean rating for political affiliation was 3.63 ($SD = 1.54$) with a range of 1 (Conservative) to 7 (Liberal).

Chi-Square statistics were calculated for the categorical variables to ensure that demographic variables did not differ significantly across conditions. Both political affiliation and level of contact were converted to categorical variables and these versions of the variables were used in the Chi-Square analyses. Political affiliation was divided into three different categories: Conservative, Neutral, and Liberal, with 1-3 being Conservative, 4 being Neutral, and 5-7 being Liberal. A median split was conducted on level of contact and was divided into two categories, with 1-9 indicating a low level of contact ($n = 63$) and 10-12 indicating a high level of contact ($n = 61$). The remaining variables (gender and race) were also coded as categorical variables.

A total of 58 participants were randomly assigned to view the non-overdose photos, with the remaining 66 participants randomly assigned to view the overdose photos ($N = 124$). The gender of participants did not differ significantly in each condition, $X^2(1, n = 122) = 0.02, p = .43$. Conditions also did not differ significantly based on race [$X^2(6, N = 124) = 10.35, p = .18$], level of contact with a substance abuser [$X^2(1, N = 124) = 1.72, p = .59$], or political affiliation

$[X^2(2, N = 124) = 1.10, p = .24]$. The means and standard deviations of these variables based on condition and gender are reported in Tables 1 and 2, respectively. The sample's racial make-up is depicted in Table 3.

An independent samples t-test was run to ensure that average age of participants did not differ between conditions. Participants in the overdose condition did not differ significantly in age ($M = 19.43, SD = 1.63$) than the participants in the non-overdose condition ($M = 19.26, SD = 1.62$), $t(122) = .59, p = .56$.

Explicit bias as a variable was examined on a scale from 1-76, with higher scores indicating a higher level of explicit bias ($M = 47.3, SD = 9.86$). Stigma as a variable was examined on a scale from 1-294, with higher scores indicating a higher level of stigma ($M = 144.19, SD = 31.43$). Willingness to help scores ranged from 0 to 200 ($M = 33.68, SD = 32.94$) with lower scores indicating a lower willingness to help. Support for policy items scores ranged from 0-4, with higher scores indicating a greater support for policy items ($M = 2.57, SD = 1.18$). The means, standard deviations, and ranges of these variables based on condition and gender is also reported in Tables 1 and 2.

Correlational analysis. Correlational analyses were first used to examine how the dependent variables and the individual characteristic variables were related. Correlation statistics and descriptive analysis are fully reported in Table 4. It should be noted that the continuous versions of both political affiliation and level of contact were used for the correlational analysis. Correlations were computed among the four dependent variables, condition, and four individual characteristic variables. Gender was not included in the correlation matrix. The results suggest that 12 out of 28 correlations were statistically significant. Specifically, political affiliation was found to correlate significantly with explicit bias, stigma, and support for policy items. Thus, the

participants who rated themselves as more conservative tended to be higher on explicit bias [$r(122) = -.21, p = .02$], higher on stigma [$r(122) = -.42, p < .001$], and lower on support for policy items [$r(122) = -.28, p < .001$] related to addiction treatment. Participants who rated themselves as more conservative demonstrated less support for policy items related to government funding for addiction treatment. Level of contact with substance abuse was also correlated with explicit bias, $r(122) = -.18, p = .049$. This suggests that individuals with higher levels of contact with addiction had less explicit bias than those who had lower levels of contact.

Manipulation check. On average, participants responded with 82.4% accuracy to the five manipulation questions about the factual information presented on the ostensible website screenshots. Specifically, there was no significant difference in accuracy of the responses when comparing participants who viewed the overdose photos ($M = 4.12, SD = 0.90$) and those who viewed the non-overdose photos ($M = 4.12, SD = 0.92$), $t(122) = -.003, p = .99$. This suggests that participants' attention to the screenshots in each condition was not different.

Hypothesis Testing

The hypotheses that stigma, explicit bias, willingness to help, and support for policy items would be directly impacted by the condition the participant was randomly assigned to was tested with a series of between-subjects univariate analyses of variance. Stigma, explicit bias, willingness to help, and support for policy items were used as between-subjects dependent variables.

Hypothesis one. It was hypothesized that there would be higher stigma in the participants that viewed the overdose photos. To test this hypothesis, a univariate analysis of variance (ANOVA) was utilized with condition entered as the independent variable and stigma as the

dependent variable. This hypothesis was not supported by the results. A main effect was not found for condition on stigma, $F(1, 122) = .33, p = .56$.

Hypothesis two. It was also hypothesized that there would be higher explicit bias in the participants that viewed the overdose photos. Results from the ANOVA with Condition entered as the independent variable and explicit bias as the dependent variable did not reveal a main effect of condition. This hypothesis was not supported by the results. A main effect was not found for condition on explicit bias, $F(1, 122) = .53, p = .47$.

Hypothesis three. This hypothesis posited that there would be lower willingness to help in the participants that viewed the overdose photos compared to those who viewed the non-overdose photos. In support of this hypothesis, results indicated a significant main effect for condition on willingness to help. Specifically, this indicates that willingness to help differed significantly across conditions, $F(1, 122) = 5.12, p = 0.025$. This suggests that those who saw the overdose photos demonstrated a lower willingness to help addicts ($M = 26.40, SD = 23.07$) than those who viewed the non-overdose photos ($M = 39.10, SD = 37.71$).

Hypothesis four. It was also hypothesized that there would be lower support for policy items related to addiction in the participants that viewed the overdose photos. To test this hypothesis, a univariate analysis of variance (ANOVA) was utilized with condition entered as the independent variable and support for policy items as the dependent variable. This hypothesis was not supported by the results. A main effect was not found for condition on support for policy items, $F(1, 122) = .18, p = .67$.

Hypothesis five. Based on the findings of the correlational analysis discussed above, further analysis was done to explore whether a significant amount of variance in the criterion

variables can be accounted for by the predictor variables. It should be noted that the continuous versions of both political affiliation and level of contact were used for the regression analysis.

A hierarchical regression was utilized with each of the predictor variables. Four separate three-stage hierarchical multiple regressions were conducted with stigma, explicit bias, willingness to help, and support for policy items as the criterion variables in each. Age, gender, and political affiliation were entered at Stage 1 of the regressions to control for demographic variables. Level of contact was entered at Stage 2 and condition at Stage 3. The two participants' data who identified as either male or female were excluded from the regression analysis. The individual characteristic variables were entered in this order as it seemed plausible to start with the most general categories and gradually introduce variables more specific to addiction and the experiment itself. The regression statistics are reported in Tables 5, 6, 7, and 8, respectively.

A hierarchical multiple regression was conducted for the criterion variable stigma. Overall, the model was significant at Stage 1, 2, and 3, $F(5, 116) = 5.33, p < .001, R^2 = .19$. Introducing the level of contact variable explained an additional 5.3% of variation in stigma as gender, age, political affiliation, and level of contact together accounted for 18.6% of the variation in stigma. This change in R^2 was significant, $F(4, 117) = 6.67, p < .001$. The hierarchical multiple regression for stigma revealed two significant predictors, political affiliation and level of contact. Specifically, at Stage 2, level of contact and political affiliation were significant predictors of stigma. When all individual characteristics and condition were added into the model, both political affiliation, $b = -.40, t(116) = -4.48, p < .001$, and level of contact, $b = -.18, t(117) = -2.12, p = .04$, were significant predictors of stigma (see Table 5). Higher levels of contact were associated with lower stigma.

The hierarchical multiple regression for explicit bias did not reveal any significant predictors at any stages of the regression (see Table 6) and at Stage 3 the whole model was nonsignificant, $F(5, 116) = 1.86, p = .11, R^2 = .07$.

A hierarchical multiple regression was done for willingness to help. Overall, the model was marginally significant at Stage 3, $F(5, 116) = 1.81, p = .12, R^2 = .07$. However, introducing condition in Stage 3 explained an additional 5% of variation in willingness to help as gender, age, political affiliation, level of contact, and condition together constituted 7.2% of the variance in willingness to help scores. This change in R^2 was significant, $F(1, 116) = 6.09, p = .015$. Condition emerged as the most significant predictor of willingness to help, $b = -.23, t(116) = -2.47, p = .02$. These results are depicted in Table 7.

Finally, a hierarchical multiple regression was conducted for the criterion variable support for policy items. Overall, the model was significant at Stage 1, $F(3, 118) = 3.58, p = .02, R^2 = .09$. The variables in Stage 1, which included gender, age, and political affiliation, explained 8.3% of the variation in support for policy items. This analysis revealed that political affiliation was a significant predictor of support for policy items, $b = .23, t(116) = 2.38, p = .02$. Adding the other variables did not increase the predictive value. No other individual characteristics, including condition, were significant predictors of support (see Table 8).

Exploratory Analyses

Multiple ANOVAs were conducted to see if there were gender differences across study variables. Political affiliation was found to be significantly different based on gender, $F(1, 121) = 7.34, p = .01$. Specifically, there was a greater percentage of males that were conservative compared to the percentage of females that were conservative. There was also a greater percentage of females that were neutral compared to the percentage of males that were neutral.

support for policy items was approaching significance ($p < .10$). These results indicated that females tended to have greater support for addiction policy items than males did. Furthermore, there were no gender differences on explicit bias or stigma.

Two-way analyses of variance were conducted to further explore how the individual characteristic variables may have interacted with condition to affect the dependent variables. In the two-way analysis, condition was always the first variable, and then other variables were chosen as the second independent variable based on results of the regression analyses. Specifically, the predictor variables that were shown to most strongly relate to the criterion variables based on the significant beta coefficients provided in the hierarchical regression analyses were selected for further analyses of interaction effects. The categorical versions of both political affiliation and level of contact were used in this analysis. A 2 x 3 ANOVA was used to analyze the effect of political affiliation on stigma and support for policy items. A 2 x 2 ANOVA was used to analyze the effect of level of contact on stigma.

Results indicated that there was a significant main effect of political affiliation on stigma, $F(2, 118) = 11.90, p < .001$, and support for policy items, $F(2, 118) = 5.12, p = .01$ (see Tables 9 and 10, respectively). These results echo the results obtained from the original correlation analysis and the regression analysis. Post hoc analyses were done to analyze the nature of the difference in political affiliation. These follow up tests indicated that individuals who rated themselves as more liberal ($M = 123.10, SD = 31.94$) displayed significantly lower levels of stigma than those who rated themselves as neutral ($M = 145.75, SD = 27.96$) or conservative ($M = 156.33, SD = 27.85$), $p < .001$. In regards to support for policy items, individuals who rated themselves as conservative ($M = 2.15, SD = 1.12$) displayed significantly lower support for policy items than those who rated themselves as neutral ($M = 2.77, SD = 1.23$) or liberal ($M =$

2.90, $SD = 1.10$), $p = .02$. Refer to Table 11 for more information. Although the main effects proved significant, the interaction effects were non-significant for stigma, $F(2, 118) = .45$, $p = .64$, and support for policy items, $F(2, 118) = .66$, $p = .52$. This indicated that the political affiliation effect did not differ in the overdose photo condition compared to the non-overdose condition for any of these criterion variables.

Results indicated a significant main effect of level of contact on stigma, $F(1, 120) = 7.43$, $p = .01$. Individuals with higher level of contact had lower levels of stigma. The interaction effect of condition x level of contact was non-significant for stigma, yielding an F ratio of $F(1, 120) = .05$, $p = .83$ (see Table 9).

Discussion

The purpose of the current study was to examine how viewing images of opioid overdose affect level of stigma, explicit bias, willingness to help, and support for policy items related to addiction. In addition, several demographic characteristics were also measured to assess whether they also accounted for variance in participants' responses. The present study sought to examine the nature of these potential relationships between the variables. As expected, many of these individual characteristic variables were shown to be correlated with the dependent variables, indicating that the political affiliation is related to an individuals' stigma and support for policy items related to addiction, while viewing overdose photos yielded powerful influence on an individual's willingness to help addicts.

The first prediction of the present study was that explicit bias would be higher in groups that had viewed the overdose photos than in groups that had viewed the non-overdose photos. The results of the present study did not confirm this prediction. The regression results also

demonstrated there was no significant effect of the individual characteristic variables on explicit bias.

The second prediction of the study was that stigma would be higher in groups that had viewed the overdose photos than in groups that had viewed the non-overdose photos. Similar to the results obtained for explicit bias, this was not confirmed. However, political affiliation significantly predicted stigma. The regression results indicated that political affiliation was strongly predictive of stigma even when condition was entered into the model. The analysis of variance also confirmed this finding. Level of contact was also a predictor of stigma in the regression. A main effect was found in the analysis of variance when level of contact was converted to a dichotomous variable based on the median split. Individuals who had reported a higher level of contact with substance abusers reported a significantly lower level of stigma overall.

Interestingly, the individual characteristic variables accounted for variance in stigma than explicit bias. This may be because the questions asked on the explicit bias questionnaires, which comprised Social Distance scale and Perceived Dangerousness scale, may have been too hypothetical and included situations too far removed from the participants' daily lives. For example, a question from the Social Distance scale was, "How would you feel about having your children marry an individual with a previous substance use problem?" In the same way, the Stigma scales may have been more attitude based and general. Thus, these scales may be more susceptible to the individual characteristic variables than the explicit bias scales. Additionally, Stigma was more strongly correlated with political affiliation than explicit bias was in the correlation matrix. Level of contact may have predicted stigma and not explicit bias because individuals with greater experience with substance abusers may know people who are not

dangerous and do not have problems living close to them because of their experience. On the other hand, the same individuals with experience with substance abusers may still hold on to beliefs about those substance users despite not needing social distance or perceiving dangerousness. Those individuals still have the stigmatizing attitudes towards substance abusers.

The present study does not provide evidence that viewing photos of opioid overdoses negatively affects individuals' level of explicit bias, stigma, or support for policy items. However, individuals could have been subject to the social desirability bias and did not want to seem as though they had negative attitudes towards individuals with opioid addictions. In addition, individual characteristics may have had a stronger effect than the condition did and impacted the way the individual responded, as was suggested by the regression analysis.

The study also predicted that willingness to help and support for policy items would be lower in the group that viewed the overdose photos than those who viewed the non-overdose photos. As hypothesized, results indicated that willingness to help was significantly lower in the group that viewed the overdose photos. It is possible that those who saw the overdose photos viewed the addicts in the photos in a more negative view than those who saw photos of individuals upright and awake. Portraying individuals in a possibly disturbing and graphic way may sensationalize the opioid crisis and generate an unwillingness to help addicts. These results also indicate that despite individuals' explicit bias and stigma, their willingness to help is still affected by viewing opioid overdose photos and has an impact on their behavior regardless of what beliefs they come into the room with. This can inform further use of media and news coverage of addiction, as well as how police approach the issue of raising awareness of the opioid crisis in their communities. Willingness to help was used in the present study as a behavioral measure of how much an individual would hypothetically donate to an addiction-

focused charity. Although not an exact measure of behavior, willingness to help was the measure most tied to what an individual would do in a certain situation. It is of interest that this was the measure affected by which photos the individual viewed. Possibly, viewing a graphic opioid overdose image affects how individuals make decisions related to helping behavior. The prediction was not shown to be true with support for policy items. Individuals may have been more impacted by previously held beliefs about the government and the experiment may not have been strong enough to override these views.

Overall, the predictor variables accounted for a low level of the variance in the criterion variables. Gender of the participant was not found to significantly affect participants' explicit bias, stigma, willingness to help, or support for policy items which is consistent with the research of Kulesza (Kulesza et al., 2016). Gender may have overlapped with political affiliation of the participant (see Table 2). Specifically, a greater percentage of the males rated themselves as conservative when compared with the percentage of females that rated themselves as conservative. Similarly, females were more likely to rate themselves as neutral or liberal. Thus, political affiliation may have overshadowed or encapsulated the effect of gender in the analyses of stigma and support for policy items. Political affiliation accounted for much of the variance in both stigma and support for policy items. Participants who were more conservative rated higher on stigma measures and rated lower on support for policy items. The results of the variable gender in the hierarchical regression were consistent with the results of the Rise study that developed the measure of willingness to help (Rise et al., 2014). Rise and fellow researchers found that gender did not affect an individual's willingness to help. However, as discussed above, the overlap of gender with political affiliation may help explain these results.

Age was shown to be significantly correlated with explicit bias (see Table 4). Specifically, individuals who were younger tended to have greater explicit bias. This was consistent with past research (Adlaf et al., 2009). It is possible that younger individuals have not come into contact with substance abuse problems as much as older individuals and thus, are relying on attitudes and beliefs rather than experiences. While people age, they tend to have a greater understanding for the difficulty's others go through and may be less likely to exhibit explicit bias towards another individual. Younger individuals may have more black and white thinking about the world.

Past research has shown similar results to the results found for political affiliation (Barry et al., 2014), although these studies asked participants about which specific political party they belonged to. The current study used a sliding scale with the labels Conservative and Liberal to allow for more flexibility in an individual's definition of their own political affiliation. To the author's knowledge, there were no past studies that specifically measured political affiliation and its effects on addiction stigma and explicit bias.

Finally, level of contact with addiction was measured to assess how much awareness or contact the person has with people who have substance abuse problems. Previous research had not measured level of contact with addiction and how it impacted stigma, explicit bias, support for policy items, and willingness to help. The current study's regression results align with Holmes' study done in 1999. Holmes studied stigmatizing attitudes surrounding mental health and found that greater contact with mental health correlated with lower stigmatizing attitudes. The current study demonstrated that individuals with higher level of contact with substance abuse problems tended to have lower stigma and explicit bias. Level of contact did not appear to impact willingness to help or support for policy items. Perhaps greater contact with substance

use indicates a greater understanding of the complexity of the problem and the many ways individuals attempt to get help. Individuals' personal experience with substance use may also decrease "all-or-none" or black-and-white thinking about the issue. It is possible that the previous experience with addiction helps an individual understand and have fewer negative attitudes towards addicts but may not impact their direct behavioral actions. Further research could explore the connection between level of contact and implicit bias.

Limitations

Despite the significant results that were found in the current study, the current study had several weaknesses and limitations that need to be considered. First, there was a limited demographic makeup of the population that presented for the experiment. The entire sample consisted of undergraduate students enrolled in Introductory Psychology courses at the University of South Carolina Aiken, a university in the southeastern United States. There may have been a lack of representation of people from differing socioeconomic levels, education levels, or geographic location. It may be important to address geographic location in further studies. Gender was also misrepresented in the current study. Overall, women accounted for 64.5% of the sample ($n = 80$) and men comprising 33.9% of the sample ($n = 42$). Further studies should take this into consideration and try to include more males in their samples.

Second, there was also a limited range of ages of participants in the sample. The exact ages of participants that were 24 years or older was not asked about and thus, an exact mean age is impossible to obtain. The youngest participant was 18 years old. Given the limited range of ages available in the sample, it may be important for future research to include a wide variety of ages of participants to obtain more generalizable data.

The manipulation demonstrated a clear effect on willingness to help, although it did not draw out an effect on the other variables. It is difficult to determine what made willingness to help more impacted by the condition than the other dependent measures. It is possible that the willingness to help measure was not as dependent on previously held beliefs or attitudes (as is evidenced by the lack of predictive value of the individual characteristic variables). It is possible that viewing four screenshots of a website for four minutes is not a long enough time for the images to have an impact on the participants. Although appropriate measures were taken to ensure that the participant had turned off their cell phone and had it put away, it is possible that participants may have been distracted during the timer for each screenshot. If possible, it may be necessary to have participants view more images in succession or have them view the images for a longer period of time to make the manipulation stronger.

Due to time constraints and limited available police-posted overdose photos, it was necessary to stage overdose photos with individuals who were not drug addicts to minimize variance between conditions. The fact that the photos were staged may have impacted the results of the experiment because participants may have viewed the photos as not as realistic or may have suspected the photos were staged. Additionally, the actors portrayed in the photos were all Caucasian females and although the same people were portrayed in both the non-overdose images and overdose images, it may be important to include photos of overdosed individuals of different races, ethnicities, and gender in future studies. The current study attempted to remain consistent with police-posted photos, which predominantly displayed white overdosed individuals.

Finally, the current study only used measures of explicit bias. Future research may consider adding measures of implicit bias to more precisely measure individuals' attitudes towards substance abuse and addicts.

Strengths

Despite having limitations, the current study displayed significant strengths as well. This was the first study to examine the effects of opioid overdose photos on stigma, bias, willingness to help, and support for policy items. Specifically, this was the first study to the author's knowledge to analyze the impact of displaying possibly graphic photos of individuals within the context of the current opioid crisis. There has also been a lack of literature examining this topic even with scare tactics using graphic photos for drug use prevention in past decades. This study fills an important and timely gap in the literature and can inform further experiments focused on this topic.

Another strength of this study was that the true purpose of the study was well-hidden from participants. There was other information on the webpages to deter participants from guessing the purpose of the experiment and to increase the realistic nature of the experiment. There were also memory recall questions at the beginning of the questionnaires to ensure that participants were paying attention to the manipulation. The memory recall questions also assisted in hiding the purpose of the experiment from participants.

Future Research

The results of this study clear a path for future investigation. Future research has many directions to take to further analyze the effect of viral media posts on the public's attitudes about substance abuse and addicts. It will be important that future research investigate the impact of the race and/or gender of the individual portrayed in the overdose photos on attitudes. In addition,

measuring the implicit bias an individual comes into the study with might prove an important area for future work. Most studies used in the literature review for the current study used either implicit or explicit bias measures, not both.

Future research may also benefit from utilizing actual police-posted overdose photos or from generating photos that include subjects that are male and other races/ethnicities in different settings. Looking forward, further attempts could prove quite beneficial to the literature and there are multiple areas to examine.

Additionally, the current study design did not directly measure whether the opioid overdose photos had the effect that the police wanted them to have. As discussed in the above sections, police often post these photos to raise awareness of the impact of the opioid crisis and to create more understanding of the issue. Future studies can focus on the possible positive effects of viewing opioid overdose photos. For instance, as discussed above, many police also post these photos to decrease the community's desire to use opioids. Measuring these variables (awareness and understanding of the crisis) after exposing participants to opioid overdose photos is an important area to explore and could give provide more information.

Furthermore, future studies can use direct measures of behavior to assess how viewing viral opioid overdose images impacts individual's behavior. The present study provided support for the hypothesis that showing opioid overdose images to the public may lower their willingness to help addicts. This was measured using a hypothetical measure of willingness to help. Other studies could provide participants with a gift card and give them an opportunity to donate some of the funds, as was done in a study that measured willingness to help individuals affected by a crisis (Kogen & Dilliplane, 2017).

Finally, measuring the impact of these viral photos on individuals who are struggling with addiction may further the literature in the understanding of self-stigma and willingness to get treatment. Populations in rehabilitation centers or methadone clinics may be sources of information as to what effect these opioid overdose photos are having on people who may have overdosed themselves in the past.

Summary and Implications

Despite the limitations discussed above, the present study indicated several significant findings. The current study examined the effect of viewing opioid overdose photos, designed to mimic police-posted overdose photos, on an individual's attitudes towards addicts and substance abuse problems. Specifically, participants viewed four screenshots of an ostensible website created for the experiment and saw either four overdose photos or four non-overdose photos. Participants then completed measures related to their explicit bias, stigma, willingness to help addicts, and support for policy items related to addiction treatment.

The data indicated that willingness to help was significantly lower in the participants who viewed the overdose photos compared to those who viewed the non-overdose photos. Due to the paucity of literature on this topic, future research may want to investigate this impact further. Additionally, there was a main effect of political affiliation on stigma and support for policy items. These results are consistent with past research and further confirms that individuals who rated themselves as more conservative also had higher scores of stigma and were less likely to support policy items related to addiction treatment. Level of contact with addiction was shown to be a significant predictor of stigma, which aligns with research done in the past on this topic.

Along with the significant results, important implications also exist for the null results. Although further study is needed, the current study found no evidence that viewing overdose

directly impacts explicit bias, stigma, or support for policy items. Instead, more ingrained or societal level variables accounted for the variance in these variables observed in the sample. In addition, regardless of individuals' demographic characteristics, their willingness to help was impacted by viewing the photos. Thus, the results suggest that viewing opioid overdose photos may influence how much someone would be willing to help individuals struggling with addiction. This may be especially important because willingness to help may have more important practical implications for individuals with addiction than the other dependent variables.

The present study confirms that there are multiple factors playing a part in how individuals process viral opioid overdose photo. At the societal level, the results of this study have implications for deeper understanding of how social media and “scare tactic” photos truly affect the public. The results of this study indicate that more care and attention should be taken to posting opioid overdose photos, as it may have an impact on the willingness of individuals to help those afflicted with addiction. There are behavioral implications for the public after posting these photos and these results suggest that there may be harm being done by putting these photos out into the digital world. Thus, further research may want to focus on additional implications of opioid overdose photos on implicit bias and direct measures of behavior towards addicts.

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Table 1

Means and Standard Deviations of Variables by Condition

Variable	Range	Non-overdose Photos		Overdose Photos	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Explicit Bias	1-76	47.02	9.75	47.78	9.68
Stigma	1-294	143.91	32.34	145.34	29.28
Willingness to Help	1-200	39.05	37.71	26.38	23.07
Support for Policy	0-4	2.62	1.27	2.53	1.12
Level of Contact	1-12	7.39	3.05	7.82	3.01
Political Affiliation	1-7	3.88	1.44	3.35	1.60
Age	18-24	19.37	1.58	19.28	1.63

Table 2

Study Variables by Gender

Variable	Male		Female	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	19.67	1.82	19.14	1.45
Explicit Bias	47.62	9.38	47.33	9.90
Stigma	148.98	29.82	142.4	30.98
Willingness to Help	27.74	21.70	34.70	35.21
Support for Policy*	2.31	1.20	2.69	1.17
Level of Contact	7.79	3.01	7.52	3.05
Political Affiliation**	3.10	1.59	3.86	1.43
% Conservative	54.76		28.75	
% Neutral	26.19		45.00	
% Liberal	19.05		26.25	

Note. * $p < .10$, ** $p < .01$

Table 3

Summary of Sample's Race/Ethnicity by Condition and Gender in Percentage

Variable	Condition		Gender	
	Non-overdose Photos	Overdose Photos	Male	Female
White	50.00	65.15	71.43	51.25
Black	39.66	25.75	19.05	38.75
Indian	0.00	1.52	0.00	1.25
Asian	0.00	1.52	0.00	1.25
Hispanic	5.17	3.03	2.38	5
Other	0.00	3.03	4.76	0.00
Prefer Not to Answer	5.17	0.00	2.38	2.5

Table 4

Correlations Among and Descriptive Statistics for Study Dependent Variables and Individual Characteristic Variables (N = 124)

Variables	1	2	3	4	5	6	7	8
1. Explicit Bias	--							
2. Stigma	.75**	--						
3. Support for Policy Items	-.34**	-.53**	--					
4. Willingness to Help	.37**	-.37**	.28**	--				
5. Race	-.02	.02	.00	.13	--			
6. Age	-.18*	-.14	.11	-.05	.02	--		
7. Level of Contact	-.18*	-.17	-.07	.10	.01	.06	--	
8. Political Affiliation	-.21**	-.42**	.28**	.04	-.06	-.20**	-.04	--

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

Table 5

Summary of Hierarchical Regression Analysis for Individual Characteristic Variables Predicting Stigma

Variable	Stage 1			Stage 2			Stage 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Age	-.45	1.69	-.02	-.26	1.67	-.01	-.25	1.68	-.01
Gender	-.89	5.73	-.01	-1.06	5.64	-.02	-.93	5.70	-.02
PA	-7.70	1.80	-.38**	-7.96	1.78	-.40**	-8.10	1.82	-.40**
LOC				-1.82	.85	-.18*	-1.80	.85	-.18*
Condition							-2.05	5.21	-.03
R^2		.15			.19			.19	
<i>F</i>		7.13**			6.67**			5.33**	
<i>F</i> for change in R^2		7.13**			4.63*			.15	

Note. PA = political affiliation, LOC = level of contact.

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

Table 6

Summary of Hierarchical Regression Analysis for Individual Characteristic Variables Predicting Explicit Bias

Variable	Stage 1			Stage 2			Stage 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Age	-.69	.57	-.11	-.63	.56	-.10	-.63	.56	-.10
Gender	.13	1.93	.01	.07	1.91	.00	.05	1.91	.00
PA	-1.02	.60	-.16	-1.10	.60	-.17	-1.08	.61	-.17
LOC				-.55	.29	-.17	-.55	.29	-.17
Condition							.38	1.76	.02
<i>R</i> ²		.05			.07			.07	
<i>F</i>		1.85			2.33			1.96	
<i>F</i> for change in <i>R</i> ²		1.85			3.66			.05	

Note. PA = political affiliation, LOC = level of contact.

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

Table 7

Summary of Hierarchical Regression Analysis for Individual Characteristic Variables Predicting Willingness to Help

Variable	Stage 1			Stage 2			Stage 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Age	-1.51	1.85	-.07	-1.54	1.86	-.08	-1.50	1.82	-.08
Gender	6.76	6.30	.10	6.83	6.31	.10	7.73	6.20	.12
PA	-.75	1.98	-.04	-.64	1.98	-.03	-1.49	1.97	-.07
LOC				.72	.95	.07	.86	.93	.08
Condition							-14.05	5.69	-.22*
R^2		.02			.02			.07	
<i>F</i>		.76			.71			1.81	
<i>F</i> for change in R^2		.76			.57			6.09*	

Note. PA = political affiliation, LOC = level of contact.

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

Table 8

Summary of Hierarchical Regression Analysis for Individual Characteristic Variables Predicting Support for Policy Items

Variable	Stage 1			Stage 2			Stage 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Age	.05	.07	.07	.05	.07	.07	.05	.07	.07
Gender	.27	.23	.11	.27	.23	.11	.26	.23	-.11
PA	.18	.07	.23*	.17	.07	.23*	.18	.07	.23*
LOC				-.03	.04	-.07	-.03	.04	-.07
Condition							.03	.21	.01
<i>R</i> ²		.08			.09			.09	
<i>F</i>		3.58*			2.84*			2.56	
<i>F</i> for change in <i>R</i> ²		3.58*			.65			.02	

Note. PA = political affiliation, LOC = level of contact

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

Table 9

Analysis of Variance (ANOVA) Between Condition and Stigma

Variable	Sum of Squares	df	Mean Square	<i>F</i>	Sig
Condition	505.94	1	505.94	.53	.47
Level of Contact	7062.93	1	7062.93	7.43	.01
Condition*LOC	45.26	1	45.26	.05	.83
Condition	59.51	1	10125.8	.07	.79
Political Affiliation	20251.6	2	379.27	11.90	.00
Condition*PA	758.54	2	851.24	.45	.64

Note. PA = political affiliation, LOC = level of contact.

Table 10

Analysis of Variance (ANOVA) Between Condition and Support for Policy Items

Variable	Sum of Squares	df	Mean Square	<i>F</i>	Sig
Condition	.12	1	6.83	.09	.76
Political Affiliation	13.65	2	.88	5.12	.01
Condition*PA	1.76	2	1.33	.66	.52

Note. PA = political affiliation.

Table 11

Means and Standard Deviations of Political Affiliation Level on Criterion Variables

Variable	<i>n</i>	<i>M</i>	<i>SD</i>
Stigma			
Conservative	46	156.33	27.85
Neutral	48	145.75	27.96
Liberal	30	123.10	31.94
Support			
Conservative	46	2.15	1.12
Neutral	48	2.77	1.26
Liberal	30	2.90	1.06

Note. *M* = mean, *SD* = standard deviation; *Support* = support for policy items

Appendix A

Invitation to Participate

Dear USCA student,

My name is Anne Parent. I am a graduate student in the Psychology Department at the University of South Carolina. I am conducting a research study as part of the requirements of my Masters' degree in Clinical Psychology, and I would like to invite you to participate.

I am studying the impact of media design on attitudes about different topics. If you decide to participate, you will be asked to view screenshots of a website and answer questions related to the topics presented on the website.

You will be asked to view several screenshots from a website discussing the opioid crisis. The website's purpose is to inform and educate the public about opioid overdoses. For the purposes of this study, both heroin and nonmedical use of prescription painkillers will be considered opioids.

Four screenshots will be presented, with one minute to view each screenshot. The website may depict images that could be disturbing to some viewers. If you become distressed at all during the survey, please notify the Investigator. The website will also have information about opioid overdoses. It is important that you read the information on the website screenshots.

You will also be asked to complete a series of questionnaires describing your attitudes about various topics, including your opinions about the design of the opioid overdose website.

Participation is confidential. Study information will be kept in a secure location at the University of South Carolina. The results of the study may be published or presented at professional meetings, but your identity will not be revealed.

You will receive ½ research credit towards your 3 required research credits for participating in the study.

Participation, non-participation or withdrawal will not affect your grades in any way. If you begin the study and later decide to withdraw, you will not be punished and there are other research credit opportunities available to satisfy your research requirement.

We will be happy to answer any questions you have about the study. You may contact me via email: ap28@usca.edu or Maureen Carrigan, Ph.D., phone: (803) 641-3545 or email: MaureeC@usca.edu. You may also contact the University of South Carolina's Office of Research Compliance (803) 777-7095 if you have any questions about your rights as a research subject.

Thank you for your consideration. If you would like to participate, please notify the Investigator. When you are done, please notify the Investigator and follow up via email or phone if you have any concerns.

With kind regards,

Anne Parent

471 University Parkway, Aiken, SC

Ap28@usca.edu

Appendix B

Community Attitudes Towards Substance Abuse

0 – Strongly disagree; 1 – Disagree; 2 – Slightly disagree; 3 – Neutral; 4 – Slightly agree; 5 – Agree; 6 – Strongly agree

Authoritarianism

- ___ 1. One of the main causes of drug addiction is a lack of self-discipline and will power.
- ___ 2. The best way to handle drug addicts is to keep them behind locked doors.
- ___ 3. There is something about drug addicts that makes it easy to tell them from normal people.
- ___ 4. As soon as a person shows signs of a drug addiction, he should be hospitalized.
- ___ 5. Drug addicts need the same kind of control and discipline as a young child.
- ___ 6. Drug addiction is an illness like any other.
- ___ 7. Drug addicts should not be treated as outcasts of society.
- ___ 8. Less emphasis should be placed on protecting the public from drug addicts.
- ___ 9. Virtually anyone can become addicted to drugs.

Benevolence

- ___ 10. Drug addicts have for too long been the subject of ridicule.
- ___ 11. More tax money should be spent on the care and treatment of drug addicts.
- ___ 12. We need to adopt a far more tolerant attitude toward drug addicts in our society.
- ___ 13. Our mental hospitals seem more like prisons than like places where drug addicts can be cared for.
- ___ 14. We have a responsibility to provide the best possible care for drug addicts.
- ___ 15. Drug addicts don't deserve our sympathy.
- ___ 16. Drug addicts are a burden on society.
- ___ 17. Increased spending on drug addiction treatment is a waste of tax dollars.
- ___ 18. There are sufficient existing services for drug addicts.
- ___ 19. It is best to avoid anyone who is a drug addict.

Social Restrictiveness

- ___ 20. Drug addicts should not be given any responsibility.
- ___ 21. Drug addicts should be isolated from the rest of the community.

___ 22. A person would be foolish to marry another person who has suffered from drug addiction, even though they seem fully recovered.

___ 23. I would not want to live next door to someone who has been a drug addict.

___ 24. Anyone with a history of drug addiction should be excluded from taking public office.

___ 25. Drug addicts should not be denied their individual rights

___ 26. Drug addicts should be encouraged to assume the responsibilities of normal life.

___ 27. No one has the right to exclude drug addicts from their neighborhood.

___ 28. Drug addicts are far less of a danger than most people suppose.

___ 29. Most people who were once drug addicts can be trusted as babysitters.

Community approach

___ 30. Residents should accept the location of drug addiction treatment services in their neighborhoods to serve the needs of their local community.

___ 31. The best therapy for many drug addicts is to be part of a normal community.

___ 32. As far as possible, drug addiction treatment services should be provided through community based facilities.

___ 33. Locating drug addiction treatment services in residential neighborhoods does not endanger local residents.

___ 34. Residents have nothing to fear from people coming into their neighborhood to obtain drug addiction treatment services.

___ 35. Having former drug addicts living within residential neighborhoods might be good therapy but the risks to residents are too great.

___ 36. It is frightening to think of people with drug addictions living in residential neighborhoods.

___ 37. Locating drug addiction treatment facilities in a residential area downgrades the neighborhood.

Appendix C

Drug Use Stigmatization Scale

Please indicate to what extent you agree or disagree with the following statements.

1 – Strongly disagree; 2 – Disagree; 3 – Neutral; 4 – Agree; 5 – Strongly agree

- ___ 1. Using opioids is morally wrong
- ___ 2. Opioid users should go to prison.
- ___ 3. Opioid users are weak minded.
- ___ 4. Opioid users have no future.
- ___ 5. Most opioid users are not well educated.
- ___ 6. Opioid users are dishonest.
- ___ 7. Opioid users make me angry.

Appendix D

Perceived Dangerousness Scale

Please indicate to what extent you agree or disagree with the following statements.

0 – Strongly agree; 1 – Agree; 2 – Not sure but probably agree; 3 – Not sure but probably disagree; 4 – Disagree; 5 – Strongly disagree

___ 1. If a group of individuals with previous substance use problems lived nearby, I would not allow my children to go to the movie theater alone.

___ 2. If an individual with a previous substance use problem applied for a teaching position at a grade school and was qualified for the job I would recommend hiring him or her.

___ 3. One important thing about people with substance use problems is that you cannot tell what they will do from one minute to the next.

___ 4. If I know an individual has had a substance use problem, I will be less likely to trust him.

___ 5. The main purpose of substance use clinics should be to protect the public from people with substance abuse problems

___ 6. If an individual with a previous substance use problem lived nearby I would not hesitate to allow young children under my care to play on the sidewalk.

___ 7. Although some individuals with substance use problems may seem all right it is dangerous to forget for a moment that they are mentally ill.

___ 8. There should be a law forbidding an individual with a previous substance use problem the right to obtain a hunting license.

Appendix E

Social Distance Scale for Substance Users

Please indicate to what extent you agree or disagree with the following statements.

0 – Definitely unwilling; 1 – Probably willing; 2 – Probably unwilling; 3 – Definitely unwilling

___ 1. How would you feel about renting a room in your home to individuals with a previous substance use problem?

___ 2. How about as a worker on the same job as an individual with a previous substance use problem?

___ 3. How would you feel having an individual with a previous substance use problem as a neighbor?

___ 4. How about as the caretaker of your children for a couple of hours?

___ 5. How about having your children marry an individual with a previous substance use problem?

___ 6. How would you feel about introducing an individual with a previous substance use problem to a young woman you are friendly with?

___ 7. How would you feel about recommending an individual with a previous substance use problem for a job working with a friend of yours?

Appendix F

Willingness to Help Addicted Persons

1. If you won \$50 in a local lottery, how much would you be willing to donate, within the next year, to a charity focused on addiction awareness?

Dollar Amount: \$ _____

2. If you did not win any money, how much would you be willing to donate, within the next year, to a charity focused on addiction awareness?

Dollar Amount: \$ _____

Appendix G

Support for Policy Items

Please indicate whether you favor or oppose the following policy items.

___ 1. Do you favor or oppose requiring insurance companies to offer benefits for the treatment of addiction that are equivalent to benefits for other medical services?

___ 2. Do you favor or oppose increasing government spending on the treatment of addiction?

___ 3. Do you favor or oppose increasing government spending on programs to subsidize housing costs for people with addiction?

___ 4. Do you favor or oppose increasing government spending on programs that help people with addiction find jobs and provide on-the-job support as needed?

Appendix H

Demographic Questionnaire

Today's Date (mm/dd/yyyy): ___/___/___

1) Gender (please circle one):

Male Female Transgender Female Transgender Male
Other

2) Age (please circle one):

18 19 20 21 22 23 24 or above

3) Racial/Ethnic Identification:

Black or African-American Hispanic Asian or Pacific Islander
White or Caucasian Native American or Alaskan Native Other: _____

4) Political Affiliation:

Conservative Liberal
1 2 3 4 5 6 7

Appendix I

Level-of-Contact Report

Please read each of the following statements carefully. After you have read all the statements below, place a check by the statements that best depict your exposure to persons with a substance use problem.

_____ I have watched a movie or television show in which a character depicted a person with a substance use problem.

_____ My job involves providing services/treatment for persons with a substance use problem.

_____ I have observed, in passing, a person I believe may have had a substance use problem.

_____ I have observed persons with substance use problems on a frequent basis.

_____ I have a substance use problem.

_____ I have worked with a person who had a substance use problem at my place of employment.

_____ I have never observed a person that I was aware had a substance use problem.

_____ My job includes providing services to persons with a substance use problem.

_____ A friend of the family has a substance use problem.

_____ I have a relative who has a substance use problem.

_____ I have watched a documentary on the television about substance use problems.

_____ I live with a person who has a substance use problem.

Appendix J
Debriefing Form

Dear USCA Student,

You are receiving this email because you recently participated in a study entitled “Opioid Overdose Study”. During this study, you were asked to view several screenshots of a website and answer questions related to the website and your attitudes. You were told that the purpose of the study was to measure attitudes about various topics and the design of the website. The actual purpose of the study was to measure how viewing images of opioid overdoses affect individual’s stigma, bias, willingness to help, and support for policy items related to addiction.

We did not tell you everything about the purpose of the study because sometimes people change the way they answer questions if they know the true purpose of experiments. It was important to hide the nature of the study to obtain accurate and unbiased data. Your participation was important for gaining important insight into the effect of viral opioid overdose images on the public’s attitudes about substance abuse.

If you have any concerns about your participation or the data you provided in light of this disclosure, please discuss this with us. We will be happy to provide any information we can to help answer questions you have about this study.

The responses in this study are de-identified and cannot be linked to you.

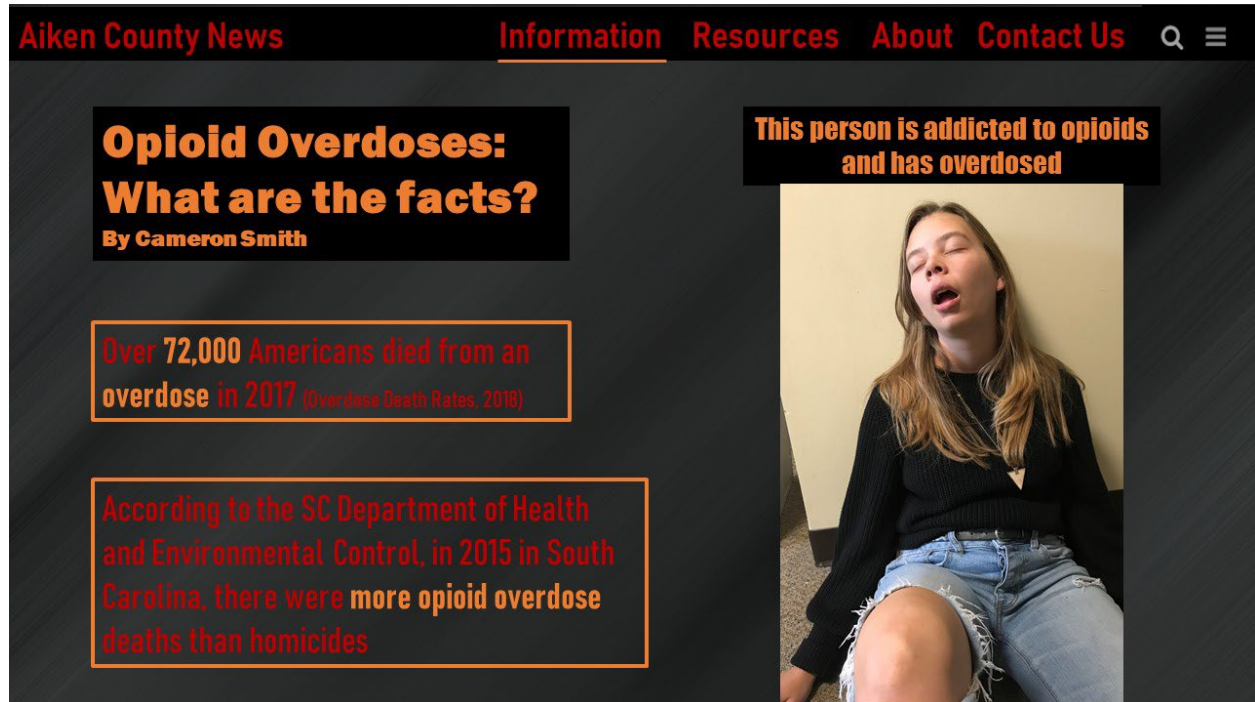
If you have questions, concerns, or complaints please feel free to contact: *Anne Parent, Graduate Student, Applied Clinical Psychology Program, University of South Carolina Aiken, ap28@usca.edu* or *Dr. Maureen Carrigan, Faculty Supervisor, Department of Psychology at (803) 641-3545 or by email at MaureeC@usca.edu.*

Research at the University of South Carolina Aiken involving human participants is carried out under the oversight of the Institutional Review Board (IRB). For information about the rights of people who take part in research, please contact: University of South Carolina’s Office of Research Compliance (803) 777-7095 if you have any questions about your rights as a research subject.

Please again accept our appreciation for your participation in this study.

Appendix K

Sample Screenshot from Overdose Condition



Appendix L

Sample Screenshot from Non-Overdose Condition

