ASSESSING SUPPORT FOR SAFE INJECTION SITES AMONG ADULT CONSITUENTS IN NEW YORK

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Kathleen Giarratano

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Marisa Beeble, PhD
Thesis Chair

Tameka Gillum, PhD
Committee Member

Nancy Beshara, PsyD
Committee Member

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Assessing Support for Safe Injection Sites among Adult Constituents in New York

Kathleen J. Giarratano
The Sage Colleges

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Abstract

Drug misuse causes significant health consequences, morbidity, and mortality. The devastating statistics on the opioid epidemic emphasizes the detrimental consequences illegal substances have on society. Safe Injection Sites (SIS) allow injection drug users (IDUs) to use drugs in a hygienic and low risk environment. Though research supports their efficacy, there is a lack of support among the public when assessed anecdotally. Currently, there is no existing empirical literature on the public opinion of SIS within the United States. The current study sought to bridge this gap by exploring community perceptions of SIS in New York, an area heavily affected by the opioid crisis. This study provides evidence that the overall perception of SIS is largely undecided. Using hierarchical linear regression, it was found that participants who were employed had less favorable views of SIS, participants who are more liberal were more likely to support SIS, those with negative attitudes and beliefs towards drugs and drug users reported lower support for SIS and those who had familiarity with opioid drugs reported lower supportiveness for SIS. Implications for research and policy are discussed.

Introduction to Opioid Use

Opioid addiction rates have significantly increased in the United States in the past 17 years, resulting in alarming rates of opioid-related overdoses (Centers for Disease Control and Prevention [CDC], 2017). In addition to increased overdoses, the opioid epidemic, more broadly, has significantly compromised the social and economic welfare and public health of our communities. This public health crisis has risen to the national spotlight in more recent years, drawing attention to the need for short- and long-term harm reduction policies and practices that may mitigate the severity of this epidemic. This review provides a comprehensive understanding of opioid use, contributing factors to opioid related deaths, and an overview of Safe Injection Sites (SIS), an intervention designed to decrease overdose death. This study sought to address the scarcity of literature on community perceptions of SIS among a United States population.

Opioid Use and Dependency

Opioids are a category of substances, both legal and illegal, that interact with opioid receptors in the brain and body (National Institute on Drug Abuse [NIDA], 2018). Opioids include heroin, synthetic opioids (e.g., methadone, tramadol and fentanyl), and legal pain relievers (e.g., oxycodone, hydrocodone). Among these, heroin is currently the most commonly abused opioid (Praveen, Law, O'Shea, & Melichar, 2011). Opioids reduce the awareness of pain and cause euphoria during use. While euphoria is the primary motivation of users, opioid use also causes respiratory depression, mental confusion, drowsiness, constipation, and nausea (Substance Abuse Mental Health Services Administration [SAMHSA], 2015).

Repeated use of opioids increases an individual's tolerance (i.e., the need for more of the drug to achieve the desired effect) and dependence (i.e., condition where higher reliance is required to maintain drug effectiveness) on the drug, which in turn increases his or her risk for a

substance use disorder (Wise & Koob, 2014). Addiction theorists note that substance use disorders become compulsive when ongoing intake becomes required (Wise & Koob, 2014). The Diagnostic and Statistical Manual of Mental Disorders (DSM), 5th Edition, requires individuals to meet three or more of the following criteria to be diagnosed with an opioid use disorder: (1) have a strong desire to use opioids, (2) exhibit evidence of tolerance, (3) show difficulties controlling behavior at onset, levels of use, and termination, (4) experience withdrawal when not using the substance, (5) demonstrate behavior that is consistent with a substance use disorder, and (6) neglect pleasures or interests due to opioid use (Praveen et al., 2011). The rise of opioid use has significantly increased the rate of opioid overdoses. The risk of opioid-related overdoes is directly related to the tolerance that individuals build, as opioid users commonly try to intensify their euphoric experiences by increasing their dosage (SAMHSA, 2015), thereby inadvertently increasing their risk for detrimental medical complications or death.

Prevalence

The devastating statistics regarding opioid use and overdose rates draw attention to the detrimental consequences both legal and illegal substances have on society. According to the National Institute for Drug Abuse (NIDA), more than 130 Americans die a day from opioid overdoses. In 2017, more than 47,000 people died from overdosing on opioids; 494,000 people reported using heroin in the past year; 28,000 people died from overdosing on synthetic opioids; and 46 people die a day from overdosing on prescribed opioids (U.S. Department of Health and Human Services, 2019).

The Centers for Disease Control and Prevention (CDC) separately analyze four categories of opioids, including natural opioid analgesics (e.g., morphine and codeine), methadone, synthetic opioid analgesics (e.g., tramadol and fentanyl), and heroin. In an analysis

assessing these categories in relation to overdose deaths, synthetic opioids, other than methadone, resulted in the highest rates of death. Following this was heroin, then natural opioid analgesics, and finally methadone. These findings show that there has been a 17-year increase in prescription opioid overdose deaths, and a recent growth in heroin overdoses (CDC, 2017). Regardless of the substance itself, opioid involved deaths continue to rise in the United States, illustrating the true burden of the crisis within our society.

Affected Populations

The greatest increase in opioid use occurred in groups with historically low rates. These groups include women, people of higher socioeconomic status, and those who are privately insured (CDC, 2017). In 2015, the CDC identified populations who are at greatest risk for having a heroin addiction, the most commonly misused opioid. These included Non-Hispanic whites, males, those who are 18 to 25 years old, people living in large metropolitan areas, individuals who are addicted to cocaine, people addicted to prescription opioid painkillers, and people without insurance or enrolled in Medicaid (CDC, 2017).

The CDC (2017) has also analyzed the top states where opioid overdose deaths have significantly increased from 2015 to 2016. West Virginia, Ohio, New Hampshire, Pennsylvania, and Kentucky are the five states with the highest rates of drug overdose deaths (CDC, 2017). However, there has also been a significant rise in drug-related overdose deaths in other states from 2015 to 2016. To recount a few, New York has seen a 32.4% increase, Connecticut has experienced a 24% increase, the District of Columbia has seen a 108.6% increase, and New Jersey has experienced a 42.3% increase (CDC, 2017). Constituents of these states are disproportionately affected when compared to those in other states within the United States.

As previously mentioned, as an individual increases their consumption of opioids, the

tolerance one has developed narrows the gap between the amount required to achieve the euphoric effect one desires and the amount of the drug that will cause respiratory depression, and ultimately, an overdose (Bird, 2010). Therefore, individuals injecting high quantities of opioids are at greater risk for death. Among these types of users, standardized data provide trends in drug-related deaths by sex and age group. That is, men are 1.8 times more likely to die from drug overdoses than their female counterparts. In addition, older injectors are 2 to 6 times more likely than newer users to die from their use (Bird, 2010). Other research has supported these findings. In an article analyzing literature on mortality across regions, it was discovered that males had higher crude mortality rates (i.e., measure of the number of deaths against the person) and lower standardized mortality ratios (i.e., the number of deaths observed in the sample compared to the expected number of deaths for a sample of the same age and gender from the general population) between different countries. This means that males experienced a higher number of deaths but there was no significant difference when comparing between countries (Degenhardt et al., 2011). Though the rate of death is higher among males than females, opiate overdose deaths have increased 400% among women (SAMHSA, 2015), indicating just as significant of a concern.

When considering age, the number of youth drug users continues to rise. A study that sought to identify prevalence and predictors of heroin-related overdose among young injection drug users found six predictors of recent overdose. These six predictors included first injections, current cocaine injection and “goofball” injection (heroin and amphetamine use concurrently), history of incarceration, having been tested for hepatitis, and witnessing overdoses of others (Ochoa et al., 2005). Earlier research has identified differences in the rate of overdose between subpopulations of youth. Researchers found that youth who borrow needles and youth who identify as LGBTQ were at greater risk for overdosing. Additionally, 48% of the youth

participants had experienced an overdose at some point during their use (Ochoa, Hahn, Seal, & Moss, 2001). The opioid epidemic does not discriminate, it affects all demographics. Nonetheless, there are specific cohorts of the population that are at greater risk for overdose.

Contributing Factors

Risk factors may increase vulnerability to addiction, though no single factor contributes to the overall existence of the opioid epidemic. As with many other diseases, the greater the exposure to risk factors, the greater an individual's vulnerability. Research has identified several biological, environmental, and social risk factors that contribute to this crisis.

Biological. The medical community did not begin to address addiction until the end of the 20th century (Kreek et al., 2012). When addiction began to be explored scientifically, scientists found genetic factors that contribute to addiction vulnerability. Studies have shown that polymorphisms in several genes, a discontinuous genetic variation which includes genes such as opioid receptors and ligands, were identified as correlates of drug addiction (Kreek et al., 2012). The most studied polymorphism is a gene known as 118A>G, which produces an amino acid substitution. This gene variant has been associated with alcoholism and heroin addiction. Carriers of 118G show an elevation in sensitivity to pain (Kreek et al., 2012). Since opioids relieve pain, carriers of 118G are at risk for being dependent upon opioids. Furthermore, 118G carriers are more sensitive to euphoric effects. This further corresponds with opioid addiction as opiates are known to increase euphoria. The 118G gene has shown to be linked specifically with opioid dependence, stress responsivity, and treatment responses. This allele is most common among Europeans and those of Asian descent and has a lower prevalence among African Americans (Levran, Yuferov, & Kreek, 2012).

Environmental. Research evidence has indicated that environment and life experiences

influence drug abuse and the development of addiction. Exposure to a positive environment reduces the occurrence of psychiatric disorders and vulnerability to cocaine addiction (Nader et al., 2012). Nader and colleagues (2012) examined the correlation between environmental enrichment (i.e., positive environmental conditions) and cocaine addiction and found that having a loss of environmental enrichment (i.e., chronic exposure to stress) increases risk for drug abuse. Accumulating research has shown that environmental enrichment not only reduces the risk for cocaine addiction but other drug dependencies as well (Nader et al., 2012). It is important to note that typically those living within lower socioeconomic communities have less exposure to positive environments. This would infer that drug dependency is higher among this population, as loss of environmental enrichment increases vulnerability. However, drug dependency among individuals in higher income communities have been steadily increasing (CDC, 2017). This would suggest that it is not only physical environmental enrichment but perceived enrichment that contributes to dependency (Nader et al., 2012).

There are an extensive number of familial risk factors that may contribute to substance use. Childhood maltreatment, marital status of parents, history of substance use, parent-child relationships, socioeconomic status, and level of parental education are among the most common and serious risk factors (Whitesell, Bachand, Peel, & Brown, 2013). Childhood maltreatment has been linked to a significant increase in risk for adolescents to participate in substance use, with 29% of children who have been neglected reporting substance misuse. Maltreatment such as physical and sexual abuse has also been linked to substance use disorders (Whitesell et al., 2013). Physical and sexual abuse effect the amygdala, overstimulating this part of the brain, thereby resulting in an excess amount of dopamine. An excess in dopamine decreases the brain's natural production of the neurotransmitter, which in turn causes an individual to become

dependent on a drug to supply the brain with dopamine. High levels of dopamine play a large role in the misuse of opiates, ethanol, cocaine, and nicotine (Whitesell et al., 2013). The cognitive development of adolescents is a central component when addressing susceptibility to substance abuse. Familial factors are a key component to positive cognitive development, and when these factors are comprised, individuals are at greater risk for use.

Social. Social factors also contribute to an increased risk for substance abuse. Some of these factors include peer relationships, leisure boredom, and association with gangs. Peer pressure is one of the most important risk factors in the development of a substance use disorder (Studer et al., 2016). Peer pressure is defined as the pressure to behave a certain way as prescribed by our age cohort. There is a positive association between peer pressure and misconduct, therefore increasing the risk of deviant behaviors such as drug use. Studer and colleagues (2016) analyzed the association between peer pressure and risky substance use. These researchers found that, in agreement with previous studies, there is a positive relationship between peer pressure and misconduct. They further found that misconduct was significantly associated with substance use (Studer et al., 2016). Popularity has also been linked as a risk factor to drug dependency. The more an individual believes they are popular among their friend group, the more likely they are to conform to peer pressure (Whitesell et al., 2013).

Deviant peer relationships strongly influence the development of drug dependency. Gang affiliation elevates criminal behavior, misconduct, and promotes the cycle of substance use (Whitesell et al., 2013). Higher rates of substance use have been reported by individuals who identify as belonging to a gang. Moreover, gang affiliation decreases positive parent-child relationships which increases negative familial risk factors. Leisure boredom has also been identified as a risk factor for increasing substance use. Leisure boredom is the perception of an

absence of available leisure experiences that would satisfy needs for arousal (Hendricks, Savahl, & Florence, 2015). A study examining whether peer pressure and leisure boredom influenced substance use found that leisure boredom as a single factor was not significant in predicting substance use; however, in conjunction with leisure boredom, peer pressure and deviant peer relationships may precipitate higher prediction of drug dependency (Hendricks et al., 2015).

Consequences of Opiate Dependency

Drug dependency causes significant harm to society, the brain, body, and relationships. The total economic consequence of misusing opioid prescriptions alone costs the United States $78.5 billion a year (CDC, 2017). The costs of healthcare, addiction treatment, criminal justice involvement, and lost productivity is a large burden placed on economic welfare. There are also tremendous health and social consequences of the opioid epidemic.

Health. Opioid dependency influences both physical and mental health. Studies have suggested that poor health conditions are major contributing factors for an individual to seek addiction treatment, giving evidence to the detrimental effects of drug addiction (Mashesha et al., 2013). Mashesha and colleagues (2013) examined self-reported health status among opioid dependent users and found that heroin users who use more frequently reported poorer perceived health. However, they also found that almost half of participants perceived themselves as having fair or good health (Mashesha et al., 2013). This suggests that being under the influence misleads health perception. People suffering from addiction commonly have medical issues such as cancer, cardiovascular disease, and cognitive impairments after long-term use (CDC, 2017). Continuous misuse of drugs impairs cognitive functioning by adapting memory systems (CDC, 2017). Additionally, HIV/AIDS, hepatitis B, hepatitis C, tuberculosis, and dental and oral hygiene problems are common occurrences among opiate users (Supic, Petrovic, Milicevic,

Trajkovic, & Bukumiric, 2013). Often, drug misuse and mental illness coexist, causing greater harm as the drug use exacerbates the mental disorder (CDC, 2017). Other research has inferred that the relationship between mental illness and substance use disorders is reciprocal rather than one leading to another (Fareed, 2014).

Social. The social-ecological (SE) model focuses on the social components of drug addiction (Selbekk, Sagvaag, & Fauske, 2015). It describes how a person's relationship with his or her substance of choice becomes a dominant relationship. This dominant relationship begins to unfold at the expense of other social relationships such as intimate or family relationships. People rely on the connection in this dominant relationship, and it becomes a person's source of their identity. A cycle of deteriorating connections, disconnections, and intensifications and replacements precipitates as the connection of the dominant relationship with drugs becomes more prominent (Selbekk et al., 2015).

Quality of life (QOL) is an overarching concept that has both objective and subjective aspects. The objective aspect concerns social, or external, indicators whereas the subjective component refers to the personal, or internal, assessment of one's life (De Maeyer, Vanderplasschen, & Broekaert, 2009). Researchers examined the concept of quality of life among drug users and found that most lacked social inclusion and personal relationships (De Maeyer et al., 2009). Drug dependency leads to harm of the individual and their family members. Research has shown that family members of individuals with substance abuse disorders have been more likely to receive mental health diagnoses themselves (Copello, Templeton, & Powell, 2010). In addition, family members have higher health-care costs. Though it is difficult to understand the extent of effects drug dependency has on family members, there are clear negative consequences (Copello et al., 2010).

Safe Injection Sites

Prevention and interventions can encompass disease prevention, promotion of health, detection of illness, treatment, long-term care, rehabilitation, and even harm reduction techniques (U.S. Department of Health and Human Services, 2019). The opioid epidemic is so pervasive that it requires intervention across a continuum of interventions to promote positive health behavior and societal restoration. It is critical to address the opioid epidemic from this lens, given the current state of urgency in the United States caused by opioid-related deaths and the additional societal costs associated with the rise in use, abuse, and dependency.

SIS, also known as Safe Injection Facilities (SIFs), is a tertiary level harm reduction strategy taken to minimize the impact that overdose deaths will have on the general population. SIS allow injection drug users (IDUs) to use pre-obtained drugs in a hygienic and low risk environment. SIS are supervised facilities with licensed health care professionals designed to reduce public order and health problems that result from illegal injection drug use (Wright & Tompkins, 2004). Medical staff do not directly assist in the injection itself, but rather offer information on safe injection practices, supply clean injecting equipment, provide referrals to health care and addiction treatment services, and monitor clients for signs of overdose (Beletsky, Davis, Anderson, & Burris, 2008). Some SIS extend services to other social programs (i.e., housing assistance, educational programs), offer medical advice, and provide support to drug users who do not inject in order to provide a safe space for all users. Outreach, syringe access and disposal, and drug treatment programs are well-regarded for their ability to reduce overdose related deaths that are otherwise drastically increasing throughout the world (Beletsky et al., 2008).

History and Locations

SIS have operated throughout Europe since the 1980's (Stoever, 2002). However, in most discussions, the term "consumption rooms" is used to describe these use-tolerant facilities. Other terms synonymous to "consumption rooms" include supervised injection centers, drug consumption rooms, health rooms, lane-rooms, fix-rooms, and safe injecting rooms (Stoever, 2002). Since its first implementation, there have been SIS services developed in 17 Switzerland cities, 16 German cities, Danish cities, and throughout Spain.

The shift from abstinence towards harm-reduction approaches in Switzerland was first initiated during the 1980's (Stoever, 2002). The program was developed in an attempt to control the spread of infectious diseases such as HIV/AIDS and hepatitis. Goals for such programs included survival of the user, preventing irreversible damage, minimizing deaths and spread of diseases, and stabilizing users' conditions (Stoever, 2002). After implementation of these initiatives, needle sharing has decreased significantly, and the prevalence of HIV/AIDS is lower than had been feared during the 1980's. However, Hepatitis C has rapidly increased because the sharing of paraphernalia is still commonplace (Stoever, 2002).

The state of Hamburg officially installed drug consumption rooms in 1994 (Stoever, 2002). Before then, local drug services tolerated drug use in facilities such as housing projects, projects for drug-using prostitutes, and contact houses. Under German opium law, acts of drug consumption constituted a criminal offense, making the development of consumption rooms a juridical crisis. They were finally legalized by the central government in 2000 through "Betaeubungsmittelgesetz," an amendment to the German federal narcotics law (Stoever, 2002). This allowed states to issue their own regulations for operation. Currently, Hamburg, Saarland,

and North-Rhine Westfalia are the only three states in Germany to issue drug consumption regulations.

Fixelance, a combined ambulance and consumption room, became Denmark's first publicly run consumption room (Ankjærgaard et al., 2015). Fixelance was a beige 1992 Ford Transit that was parked in the courtyard of Christiansborg Palace, the Danish parliament. It had come from Germany and read "Injecting room and emergency treatment" on the side. The vehicle drew public and media attention, aiming to further establish permanent building-based consumption rooms. It was parked on Danish parliament on January 26, 2012, and on June 13, 2012 the Danish government officially approved drug consumption rooms. Thirty-five years prior, a contact center in Nørrebro city allowed drug users to inject in their basement and one of their toilet rooms. It came to an unexpected end when a social worker disclosed the practice. Similar centers also provided underground drug consumption rooms in 24-hour drop in cafes, and Copenhagen's main railway station (Ankjærgaard et al., 2015).

In 1993, more than half of overdose related deaths throughout Canada were in Vancouver, and 90% of these deaths were associated with heroin (Dooling & Rachlis, 2010). The opioid epidemic related deaths induced the formation of a task force led by the Provincial Chief Coroner, Vincent Cain. In 1994, Chief Coroner Vincent Cain and the task group produced the "Cain Report," which recommended that Vancouver explore SIS (Kerr, Mitra, Kennedy, & McNeil, 2017). Although no plans were initiated, SIS grew interest among IDUs. An unsanctioned SIS, known as the Back Alley, was run by drug users and operated in 1995 with the support of local activists. Efforts to fully establish SIS were bolstered in 2000 and 2001, with a number of public events increasing interest (Kerr et al., 2017). In 2003, Vancouver opened North America's first government sanctioned SIS known as Insite (Wood et al., 2007). Insite is funded

by a local health authority called Vancouver Coastal Health and is operated between 10:00 am and 4:00 am (Wood et al., 2006). Since the newly elected Prime Minister Justin Trudeau in 2015, a number of municipalities in Canada have begun developing plans to establish and research SIS (Kerr et al., 2017).

There are currently no SIS operating in the United States. There is also no U.S. law that explicitly authorizes or prohibits the implementation of SIS. State legislators potentially have the authority to sanction SIS enacting their duty to protect and preserve the welfare of their citizens (Beletsky et al., 2008). Local governments and state legislators have the discretion to implement SIS and could make SIS legal under state law. However, there are at least 2 sections of the federal Controlled Substances Act that could potentially prohibit SIS from being offered. Section 844 bars the possession of drugs, creating a violation for every IDU client injecting at a safe injection facility. Similarly, Section 856 (the Crack House Statute) makes it illegal to knowingly open or manage any place using a controlled substance (Beletsky et al., 2008). Though there are reasonable legal arguments to bar SIS, some states have already shown interest in developing such programs. The Director of Communications at the San Francisco Department of Public Health, Rachel Kagan, announced in February 2018 that San Francisco will choose two facilities in which to operate SIS (Lieber, 2018). The following week, Philadelphia officials approved a similar proposition. More recently, lawmakers and advocates in Albany, NY are making a push for SIS in New York State (O'Toole, 2018). These advocates are drawing upon the limited research showing favorable outcomes of SIS.

Outcomes of SIS

SIS remains controversial. The United Nations Narcotics Control Board views the centers as a violation of international drug conventions (Wright & Tompkins, 2004). However,

contemporary research has shown evidence of the benefits SIS provide to both IDUs and the surrounding community. Both sides present considerable views, though there is supported research for the effectiveness of SIS.

Benefits. Evidence of the effectiveness of SIS has primarily come from examining North America's first SIS, Insite. Since the implementation of Insite, overdose death rates have decreased by 35% in the surrounding neighborhood (Marshall, Milloy, & Wood, 2011). Research examining the patterns of detoxification program initiation among SIS users during periods before and after the SIS's opening found a significant increase in treatment utilization. One study found a greater than 30% increase in use of detoxification programs among SIS users (Wood et al., 2007). SIS are associated with higher rates of methadone usage, and other treatment services. In addition, the increased rate of usage in detoxification program ultimately reduced the utilization of the SIS itself (Wood et al., 2007). More research has shown that SIS reduce the rate of syringe sharing, which reduces the risk for HIV/AIDS, Hepatitis, and other infectious diseases. The SIS was independently associated with reducing syringe sharing when accounting for heroin and cocaine injection (Kerr, Tyndall, Li, Montaner, & Wood, 2005). Similarly, there has been an overall increase in safe injection practices throughout the community, with no significant difference in relapse rates (Kerr et al., 2006). Overall, research conducted on the effectiveness of SIS have shown benefits across the board.

Studies examining the cost-benefit and cost-effectiveness of SIS are limited but have shown potential economic relief. Bayoumi and Zaric (2008) estimated the economic impact of Insite on factors such as survival, rates of HIV and hepatitis, and referral to methadone treatment. These researchers found that over a span of 10 years, 920 years of life were saved. In addition, there was a $14 million net savings based on the assumption of decrease syringe sharing. When

factoring health effects and safe injection practices, there was a $20 million overall net savings and 1,070 increases in years of life. When considering all three benefits, there was a net savings of more than $18 million and 1,175 life years gained (Bayoumi & Zaric, 2008). Subsequent research has supported this cost savings analysis. In 2006, the lifetime cost of a new HIV case was up to $200,000 in United States' currency. On average, Insite prevented 35 cases of HIV and up to three deaths each year. This ranges from about $2.85 to $8.55 million cost savings and $26,000 to $79,000 cost-effectiveness (Andresen & Boyd, 2010). However, more recent research has found that there is less economic return when you begin increasing the number of SIS. Beyond the third SIS, there is not the same economic return, but it is still cost-effective (Jozaghi, Reid, & Andresen, 2013). In sum, establishing SIS has been shown to be cost-effective and provide overall economic relief.

Controversy. SIS have been long controversial amongst community stakeholders (i.e., business owners, residents, legislators, politicians, law enforcement). Arguments against SIS include the belief that it will enable drug users to continue using drugs, it will promote the sale of drugs and increase crime, and the general morality of allowing drug users to actively inject (Strike et al., 2014). Though numerous studies have provided evidence on the effectiveness of SIS, researchers have speculated a persistent dissonance between science and public perceptions. Ritter and Lancaster (2013) reported a disconnect between research and public opinion. It was found that media coverage rarely reported research findings when addressing alcohol and drug policies (Ritter & Lancaster, 2013). Media coverage greatly influences public opinion, and the nature of coverage may play a role in community stakeholders' perceptions of SIS. Though implementation, regardless of public opinion, may have benefits in increasing supportiveness. A study examining changes in public opinion during and after opening between 2003 and 2009

found that there was an increase in number of Ontarians who supported Insite after implementation (Strike et al., 2014).

Public opinion is an important factor to consider in policy making, even though there are reported disconnects between science and societal views. Strike and colleagues (2015) identified potential reasons for the ambivalence towards SIS among community stakeholders in Canadian cities. They found seven underlying reasons for ambivalence: lack of personal knowledge of evidence about SIS; concern that SIS goals are too narrow and need to be located within a comprehensive response to drug use; uncertainty that the community drug problem is large enough; the need to know more about the so-called "right" places to locate SIS to avoid damaging communities or businesses; worry that a SIS will renew problems that existed; concern that resources for drug use prevention and treatment will be diverted; and concern that SIS implementation must include evaluation and community consultation, and explicit commitment to discontinue a SIS in the event of adverse outcomes (Strike et al., 2015). When considering the opening of a SIS, legislators should make a continuous effort to consult community members.

The Current Study

As noted, opioid use causes significant health consequences, morbidity, and mortality. The devastating statistics on the opioid crisis draw attention to the need for initiatives directed to prevent and minimize the impact of the epidemic. Without continuous efforts, death rates will continue to rise. Though research has provided support for the effectiveness of SIS as a harm reduction strategy, public opinion still presents controversy. There is no existing literature on the public opinion of SIS amongst a United States population. States such as California, New York, and Pennsylvania have expressed interest in the implementation of SIS and introduced policies to begin that process (Lieber, 2018; O'Toole, 2018), though there is no general knowledge of the

perceptions United States community members have regarding their implementation. Moreover, there is a considerable lack of research analyzing community variables and their relationship to level of SIS supportiveness. It is pivotal to consider public opinion as an important factor in policy-making, and to have a general understanding of factors that contribute to opinions on SIS implementation. This study sought to fill this gap in the literature.

The primary purpose of this study was to explore how New York constituents view the implementation of a SIS in their community. The research sought to answer two questions: 1) What is the perception of SIS among New York constituents? and 2) Are demographics and knowledge and attitudes about drug users and drug use related to support of SIS?

Method

This non-experimental quantitative survey aimed at assessing the opinion of the public on SIS. More specifically, this study sought to determine whether and to what extent a relationship exists between individual demographics, knowledge and attitudes about drug users and drug use, and supportiveness of SIS.

Procedure

For this study, constituents of New York State were recruited from nine regions of the state: Region 1: Long Island (Nassau and Suffolk counties), Region 2: New York City (Brooklyn/Kings County, Bronx/Bronx County, Manhattan/New York County, Queens/Queens County and Staten Island/Richmond County), Region 3: Lower Hudson Valley (Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester counties), Region 4: Capital Region/Northern Catskills (Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie counties), Region 5: Eastern Adirondacks/Lake Champlain (Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington

counties), Region 6: Western Adirondacks/Eastern Lake Ontario (Herkimer, Jefferson, Lewis, Oneida and St. Lawrence counties), Region 7: Central New York (Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga and Tompkins counties), Region 8: Western Finger Lakes (Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne and Yates counties), and Region 9: Western New York (Allegany, Chautauqua, Cattaraugus, Erie, Niagara and Wyoming counties) (DEC, n.d.). Sampling did not take place in each region; rather, any individual who reported residing in one of these regions during the process of data collection was eligible for participation. A priori power analysis was conducted using a conventional alpha level of .05 and recommended power of .80 to determine the minimum sample size required for the analysis to detect medium-sized effects; a total number of 114 participants was required.

Participants were recruited using both in person and online convenience sampling. Convenience sampling is a method of sampling where participants are selected based on their availability to participate and how easy/convenient it is to access them (Privitera, 2016). Free local events and public spaces throughout the Greater Capital Region were utilized for the in-person recruitment portion of the study. The primary areas for recruitment were free family-friendly events held by the Troy Business Improvement District (BID), Albany BID, Schenectady BID and Saratoga BID between June and August of 2018 (e.g., Troy night out, Troy river fest, a taste of Albany, and Schenectady green market). Because so few participants approached at these events agreed to participate, online recruitment was also used. Online participants were recruited through a variety of social media sites (e.g., Facebook, Twitter, LinkedIn, Craigslist, and Reddit). More specifically, an informational paragraph outlining the purpose and intention of the study was posted to a variety of aforementioned social media sites.

The paragraph contained a link that brought participants directly to SurveyMonkey which is how the online survey was administered.

Prior to data collection for both in-person and online recruitment, participants were asked to sign an informed consent form notifying them about the study's purpose and that they have the option to withdraw their participation at any point during the study with no consequences (See Appendix A). For those participants who were recruited online, the informed consent form was immediately available upon clicking the link via the social media post. Once informed consent was attained, participants were provided with the survey to complete. The survey comprised three measures and a brief informational paragraph on SIS. Immediately following the in-person survey completion, data were safely secured in an envelope; online participant data was stored via SurveyMonkey. Participants who completed the survey had the option of providing their email address to be entered in a raffle for a $50 gift card to Amazon (See Appendix F). Both the informed consent and email forms were collected separately from the participant data to ensure that no identifiable information was able to be linked to individual responses.

The American Psychological Association (APA) Ethical Principles of Psychologists and Code of Conduct was followed during the process of this study, as were the ethical principles outlined in the Belmont Report. In addition, the study was approved by The Sage Colleges Institutional Review Board (IRB).

Participants

As noted, study participants were recruited in-person (n = 5) through family friendly events and online (n = 116) via a variety of social media sites. All participants were residents of New York State at the time of data recruitment. A total of 121 constituents were included in the sample.

Participants' ages ranged from 19 to 70 years, with an average age of 31.65 years (*SD* = 11.58). Almost half of the participants resided within the Capital Region/Northern Catskills (47.93%); the remaining participants resided in Long Island (4.13%), NYC (6.61%), the Lower Hudson Valley (5.79%), the Eastern Adirondacks (8.26%), Central NY (3.31%), Western Finger lakes (2.48%), and Western NY (7.44%). No participants resided in the Western Adirondacks. The remaining participants (14.05%) failed to report the region they were from. More than half of the participants identified as Female (68.60%), and the remaining participants identified as either Male (14.88%), Non-Binary (2.48%), or preferred not to say (14.05%). The majority (59.50%) of the participants were partnered with the remaining being single (27.27%); 13.22% failed to report their relationship status. Most of the participants did not have children (56.20%), with 30.58% stating they do; 13.22% neglected to answer this item. Almost all participants (72.72%) identified as White, 5.79% identified as Hispanic/Latino, 4.13% as Multiracial, 3.31% as Asian/Pacific Islander Adirondacks and the remaining participants (14.05%) failed to report their race/ethnicity. Similarly, almost all participants spoke only English (85.95%) in their household with 5.78% speaking Spanish, 2.49% as "other" (e.g., ASL [.83%], Bengali [.83%], and German [.83%]); 5.78% of the participants failed to report their language. Household income varied greatly, as 17.36% reported earning up to $25,999, 17.36% earning between $26,000 and $51,999, 16.53% earning between $52,000 and $74,999, 24.79% earning more than $75,000, and 23.96% declining to say. Religion also varied with 28.93% of participants identifying as Christian/Catholic, 23.14% identifying as No Religion, 13.22% identifying as Christian Non-Catholic, 4.96% identifying as Jewish, 1.65% identifying as Muslim, 2.49% as "other" including Buddhism, Pagan, and Secular Spiritual and the remaining participants (25.62%) neglected to report this item. For political affiliation, 52.07% of participants identified as Liberal and 33.06%

of participants identified as Not Liberal; 14.88% of the participants failed to report their political affiliation. Only 5.79% of the participants stated they had a High School Education or less, with 80.16% stating they had more than a High School Education and the remaining participants (14.05%) did not report their educational level. Most of the participants were employed (61.98%); 24.79% were unemployed and 13.22% of the participants neglected to report their employment status. A complete breakdown of participant demographics is presented in Table 1 (Appendix G).

Measures

A survey research design was used to solicit demographics, as well as attitudes, beliefs, and opinions about drugs and drug use, and supportiveness of SIS using three different measurement tools: The Knowledge, Attitudes, and Beliefs (KAB) measure, the SIS measure, and a demographics questionnaire. A brief informational paragraph on the definition, procedure, and history of SIS was provided to ensure that all survey participants had a general knowledge and understanding of SIS. The informational paragraph was provided in between administration of the KAB and SIS measures.

Demographics questionnaire. Thirteen items were developed to collect information on participants' county of residence, gender, age, relationship status, parental status, race and ethnicity, income, primary language, religion, political affiliation, education level, and employment status. Due to a lack of variability some measures were dichotomized for ease of analysis. The demographics questionnaire can be found in Appendix C.

KAB. The KAB was originally created by the Drug Misuse Research Division of The Health Research Board in Dublin, Ireland (Bryan, Moran, Farrell, & O'Brien, 2000), and was adapted for use in this study with permission of the Health Research Board. The original survey

instrument has 39 items which are broken into three constructs; 1) one item assessing familiarity with drugs (i.e., whether participations have heard of various drugs; e.g., cannabis, ecstasy, cocaine, heroin, LSD, revelin, and amphetamines, 2) 35 items concerning perceptions, attitudes, and beliefs about drugs and drug users, and 3) three items examining whether participants have personal knowledge of someone with a drug problem (Bryan et al., 2000). The Drug Misuse Research Division demonstrated adequate reliability and validity of the KAB Survey via a comparison of results of the KAB Survey to a 'general population survey' (GPS) that was used in 1999 (Bryan et al., 2000). For the current study, adaptations were made to reflect the language and societal formalities of the United States as well as to accurately measure the construct of opioid use, in lieu of more general drug use. Prior to administration, a total of 15 items were minimally adapted across all KAB items (e.g., questions 1, 6, 7, 12 14, 16, 17, 21, 22, 24, 29, 35, 37, 38, and 39), and 3 additional items were added (e.g., questions 40, 41, and 42). The full adapted version of the KAB can be found in Appendix B.

Familiarity with drugs. The first construct of the KAB assessed familiarity with drugs. Participants marked off whether they have heard of specific drugs, including methadone, heroin, prescription opioids, fentanyl, and tramadol. This variable was scored on a yes (1) or no (0) basis for each of these five drugs and responses were summed to produce a scale score; the higher the reported score, the more drugs the participants had heard of (M = 4.29, SD = 1.00).

Perceptions, attitudes and beliefs. The second construct assessed perceptions, attitudes, and beliefs on a seven-point Likert response scale ranging from ‘Strongly Disagree’ (1) to ‘Strongly Agree’ (7). Prior to analysis, 15 ambiguous items from the original scale were dropped to improve reliability (e.g., questions 6, 7, 12, 14, 16, 17, 21, 22, 24, 25, 29, 30, 31, 35, and 36). The decision of what items to remove was informed by factor analysis. The resulting attitudes

and beliefs scale had 20 items. Since the overall direction of the perceptions, attitudes, and beliefs statements varied across items, 7 items were reverse coded to reflect accurate scoring. The final scale was computed by summing the Likert scale items. Participants who had a higher score (highest being 245 and lowest being 35) have more negative attitudes and beliefs towards drugs and drug users (M = 124.69; SD = 31.18). Cronbach's alpha was .90.

***Knowledge of drug users*.** The final construct of the KAB measure assessed whether participants had personal knowledge of someone with a drug problem. Personally knowing someone who uses heroin, prescription opioids, fentanyl, methadone, tramadol, or has/had a drug problem was also scored on a yes (1) or no (0) basis and all items were summed to produce the scale; the higher the score, the more participants know of someone who uses a specific drug or has/had a drug problem (M = 2.77, SD = 1.72).

SIS survey. This measure was developed for this study to assess respondent opinions and supportiveness of the use and implementation of SIS. Twenty items were developed to assess perceived dangers associated with SIS, perceived benefits associated with SIS, attitudes towards policy implementation of SIS, general support for SIS, and perceived locations where SIS should/should not be developed. Sample items include "I am in favor of SIS" and "I believe SIS will reduce opioid related overdoses." The items were scored on a five-point rating scale ranging from 'Strongly Agree' (1) to 'Strongly Disagree' (5). Three items were reversed for accurate scoring to ensure all items went in the same direction (e.g., questions 11, 14, and 17). Items were summed to produce scale scores. Participants who have a higher SIS score (highest being 100 and lowest being 20; M = 48.84, SD = 18.35) have lower support for SIS. Cronbach's alpha was .96. The full SIS measure can be found in Appendix E.

This measure was formulated using the rules for writing survey items as described by Privitera (2016) to minimize measurement error. Double-barreled items, which are survey items that ask participants for one response on two statements, were avoided and respondents were required to respond to one statement at a time. Neutral and unbiased language was used to decrease the likelihood of an emotional response and perception of leading terms. To avoid problems with participant fatigue, the survey items were minimized and made as brief as possible. The SIS was drafted and piloted on 6 individuals to determine comprehension and ambiguity of terms. Any items identified as difficult to understand were modified using the comments suggested by the pilot group.

Brief Informational Paragraph. A one paragraph introduction describing the definition of SIS and an overview of the history of SIS was provided to participants in between administration of the KAB and SIS measures (see Appendix D). This was developed to ensure that all participants had general knowledge of the elements of SIS before completing the SIS Opinion Survey. The item was also drafted for the purpose of this study and piloted on 6 individuals to ascertain difficulty of comprehension. Revisions were made accordingly.

Data Analysis

Data analysis for the study included computing frequencies, descriptive statistics, and hierarchical linear regression to statistically assess the relationships between variables. Data retrieved were inputted into the IBM SPSS Statistics 25 platform for statistical analysis. All data were archived according to the guidelines set forth by the IRB.

Frequencies and Descriptive Statistics. Frequency distributions reflecting the number of times or how often a score occurs for a given variable were produced. Descriptive statistics,

including measures of central tendency and variability were computed for relevant demographic variables and scales/subscales.

Hierarchical Linear Regression. Hierarchical regression analyses were used to determine how participant demographics and knowledge, attitudes and beliefs regarding drug use predict overall supportiveness of SIS. Predictors were entered into a series of four blocks. Only demographic variables with adequate variability after being dichotomized were considered as predictors and were entered into the first three blocks of the hierarchical linear regression. In block 1, relationship status was entered as a dichotomous variable (0 = partnered; 1 = single); block 1 also included whether or not participants had children (0 = no children; 1 = have children). A dichotomous variable for employment (0 = not employed; 1 = employed) was entered in the second block. The third block included political affiliation entered as a dichotomy (0 = not liberal; 1 = liberal). The fourth block included the three components of the KAB measure that were expected to have a relationship with level of SIS supportiveness. Within this block, the following were entered as separate variables: (1) familiarity with opioid drugs, (2) attitudes and beliefs about opioid drug use and users, and (3) personal knowledge of someone who uses opioid drugs.

Results

Knowledge, Attitudes and Beliefs Survey

Aforementioned, the KAB survey was separated into three sub-scales: (1) familiarity with opioid drugs, (2) attitudes and beliefs, and (3) personal knowledge of drug users. Results indicated that a majority (52.10%) of participants have heard of the listed drugs before. Additionally, only 9.10% of participants did not personally know someone who uses drugs or has had a drug problem, albeit 11.60% failed to respond. Lastly, the mean score for the attitudes and

beliefs portion of the KAB survey was 124 (*SD* = 31), meaning that participants overall had between a slightly positive and undecided view on drugs and drug users. A slightly positive and undecided view on the attitudes and beliefs survey indicates that participants reported either disagree moderately (2), disagree slightly (3), or undecided (4) to the overall negative statements on the Likert scale. In other words, a mean score of 124 reflects that participants reported in between disagree slightly (score of 105) and undecided (score of 140). In context, participants either have a somewhat positive attitude towards drugs or are undecided as to how they should perceive drugs and drug users. A positive attitude/perception towards drugs and drug users would indicate that participants are not afraid of drug users, do not believe all drug addicts are dangerous, would not avoid someone who is a drug addict, would not be bothered with having a person who is a drug addict living near them, etc.; this suggests a degree of sympathy for drug users. An undecided attitude/perception would indicate response ambiguity and that participants are unsure of or do not know how to feel/perceive these issues.

Safe Injection Site Survey

Results indicated that the mean score for the SIS survey was 48 (*SD* = 18) meaning that participants had between a slightly agreeable and undecided view of SIS. Since having a higher score (highest being 100) on the SIS survey indicates lower support for SIS, the mean score of 48 conveys that participants reported in between agree (score of 40) and undecided (score of 60) on the Likert scale. That is, participants are either undecided about or do not know whether they should support SIS or agree with the implementation of SIS.

Hierarchical Linear Regression

As previously noted, a hierarchical linear regression was used to determine how participants' demographics, and knowledge, attitudes and beliefs regarding drug use predict

overall supportiveness of SIS. Relationship status, having children, being employed, and political affiliation were entered into the first three blocks of the hierarchical linear regression as follows: (1) Relationship Status and Having Children, (2) Employment Status, and (3) Political Affiliation. The fourth block contained the KAB which was entered as three separate variables: (a) Attitudes and Beliefs about opioid drug use, (b) Personal knowledge of someone with an opioid drug problem, and (c) Familiarity with opioid drugs.

Taken together, relationship status, having children, employment, political affiliation, attitudes and beliefs about opioid drug use, personal knowledge of someone with an opioid drug problem and knowledge of drugs accounted for 69.5% of the variance in level of supportiveness for SIS. In Model 1, neither relationship status, as defined by whether a participant was single or partnered, nor having a child were found to be a significant predictor of level of SIS support; these variables together only accounted for 8.00% of the variance in SIS supportiveness. In Model 2, employment accounted for an additional 6.00% of the variance in SIS support; participants who were employed were found to have less support for SIS ($\beta = .485$, $p < .05$). In Model 3, participants who reported being more liberal had higher support for SIS; political affiliation accounted for an additional 30.00% of the variance in support for SIS ($\beta = -1.126$, $p < .001$). When political affiliation was included in Model 3, employment was no longer found to be significant, despite its significance in the previous block; this reflects a strong correlation between political affiliation and level of SIS supportiveness. The addition of Model 4 added 26.00% to the variance explained in SIS support. Participants who had overall negative attitudes and beliefs towards opioid drugs were found to be less supportive of SIS ($\beta = .582$, $p < .001$), and those who had knowledge of opioid drugs were also found to have less support for SIS ($\beta = .233$, $p < .001$). Having personal knowledge of someone who uses an opioid drug was not found

to be significant in predicting SIS support. Results of the hierarchical regression models are presented in Table 2 (Appendix H).

Discussion

This study is the first to examine community perceptions of SIS amongst a U.S. population. This study sought to answer two questions: 1) what is the perception of SIS among New York constituents? and 2) are demographics and knowledge and attitudes about drug use related to support of SIS? This study provides evidence that the overall perception of SIS is largely undecided and specific demographics, familiarity with opioid drug use, and attitudes and beliefs about drugs are related to level of SIS supportiveness. Research has shown that those who are at greatest risk for having a heroin addiction include non-Hispanic whites, males, and those who are 18 to 25 years old; this study's participants mainly account for non-Hispanic whites (72%), and those who are 18 to 25 years old (38%) (CDC, 2017). Having participants that reflect most of the identified affected population for one category of users is useful in gaining insight into the consensus of drug perceptions and support of SIS; however, the majority of the participants identified as female and do not represent the disproportionate impact of drug usage among men.

In relation to knowledge, attitudes and beliefs (KAB) of opioid drugs, it was found that a majority (52%) of participants have heard of opioid drugs before; only 9.10% did not know someone who uses opioid drugs, and participants overall had between a slightly positive and undecided view on drugs and drug users. This suggests a degree of sympathy towards drug use and drug users since having a positive attitude would mean participants are not afraid of drug users, do not believe all drug addicts are dangerous, would not avoid someone who is a drug addict, would not be bothered by having a person who is a drug addict living near them, etc.

Participants having an undecided attitude/perception indicates response ambiguity and that participants are unsure of or do not know how to feel/perceive these issues. Thus, participants either have a somewhat positive attitude towards drugs or are undecided as to how they should perceive drug use and drug users.

These findings indicate that although many constituents have knowledge about different opioid drugs and have known someone who uses these drugs, they generally do not have a clear opinion on opioid issues or their beliefs surrounding the morality and ethics of opioid use. It is not surprising that approximately 90% of participants have known someone who uses an opioid, since more than 130 Americans die a day from opioid overdoses (NIDA, 2019). The opioid epidemic has risen to a national spotlight in more recent years, drawing attention to the need for short- and long-term harm reduction policies and practices, which may give reason to the undecided view towards drugs and drug users. Additionally, the national spotlight given towards the opioid epidemic may account for 52% of participants' familiarity with opioid drugs. This gives support to research concluding that media coverage greatly influences public opinion (Ritter & Lancaster, 2013).

Analysis of the SIS opinion survey found that participants overall had between a slightly agreeable and undecided view of SIS. Again, this means that participants are either undecided on supporting SIS or agree with supporting the implementation of SIS. This finding is similar to the findings of the KAB survey in that participants generally reported having a somewhat positive or undecided perception on drugs and drug users. The hierarchical linear regression used to predict overall supportiveness of SIS, found a significant relationship between employment, political affiliation, attitudes and beliefs towards drugs and drug users, and knowledge of opioid drugs. It was found that participants who were employed had less support for SIS, participants who are

more liberal were more likely to support SIS, those with negative attitudes and beliefs towards drugs and drug users had lower support for SIS and those who had heard of opioid drugs had lower supportiveness for SIS. Participants who were employed may have less support for SIS due to the belief that SIS will promote the sale of drugs and increase crime in their location of residence. It is not surprising that participants who reported being more liberal were more likely to support SIS owning to their political belief that government should take action to reduce existing social problems (Khan Academy, n.d.). Similarly, it is not unanticipated that participants with negative attitudes and beliefs towards drugs and drug users would have lower support for SIS; if you fear drug users in your neighborhood and agree that you would avoid someone who uses drugs, it is likely that you would not support the implementation of a SIS in your location of residence. Lastly, the reasoning for why those who have familiarity with opioid drugs have lower SIS support may be correlated to having knowledge of the significant adverse effects of drugs; if you are familiar with opioid drugs you may also be familiar with the health consequences, decreasing your support for a facility that allows injection drug users to inject opioids.

As previously noted, media coverage greatly influences public opinion; research has found a disconnect between research findings and public opinion. It was found that media coverage rarely reported research findings when addressing alcohol and drug policies (Ritter & Lancaster, 2013). The lack of coverage on research findings when addressing drugs and alcohol may account for why participants who have heard of opioid drugs before are less supportive of SIS. Similarly, not reporting on the research findings surrounding SIS can explain the overall undecided opinion on support for SIS. It is not surprising that political affiliation was a significant predictor of level of SIS supportiveness seeing as SIS has long been a controversial

issue. Public opinion is an important factor to consider in policy making, even though there are reported disconnects between science and societal views. Lack of personal knowledge of evidence about SIS was found to be one of seven underlying reasons for SIS ambivalence (Strike et al., 2015). Since the idea of implementation for SIS is relatively new within the United States, lack of knowledge surrounding SIS might give reason to the undecided opinion. Although this study did provide participants with an informational paragraph on SIS, the paragraph was brief and did not include research analyzing its effectiveness. When considering the opening of a SIS, legislators should make a continuous effort to educate and consult community members. Additionally, researchers should make a continuous effort to report and articulate SIS findings to the general population.

This research study provides beneficial information to legislators and political stakeholders. Though it was found that participants have an undecided opinion towards SIS implementation, regardless of public opinion, implementing a SIS may have benefits in increasing supportiveness. A study examining changes in public opinion during and after opening between 2003 and 2009 found that there was an increase in number of Ontarians who supported Insite after implementation (Strike et al., 2014). This increase in supportiveness may occur if implemented within the United States as constituents become better informed and are able to see results; legislators should take this into consideration when deciding about administration of a SIS. It is recommended that future research examine constituent opinions before and after implementation if it should occur. Furthermore, state law regarding the legality of implementation requires further examination. Currently there is no U.S. law that explicitly authorizes or prohibits the implementation of SIS. State legislators potentially have the authority to sanction SIS enacting their duty to protect and preserve the welfare of their citizens (Beletsky

et al., 2008). While SIS continue to rise in discussion as an opioid epidemic intervention, political debate surrounding federal versus state law will become the forefront of implementation controversy.

The United States Health and Human Services (HHS) outlined a 5-point strategy to combat the opioid epidemic; (1) better addiction prevention, treatment, and recovery services, (2) better data, (3) better pain management, (4) better targeting of overdose reversing drugs, and (5) better research (HHS, 2019). This study provides support for SIS within three out of the five outlined strategies; better addiction prevention, treatment, and recovery services, better data, and better research. The HHS's strategy for better prevention, treatment and recovery services includes funding primarily for addiction treatment and excludes funding for an overdose prevention intervention, such as a SIS. In 2017, over $800 million was given in grants to support these efforts. Although research on the cost effectiveness of SIS are limited, it shows promising economic relief. When considering survival rates of HIV and hepatitis, and referral to methadone treatment, there was a net savings of more than $18 million and 1,175 life years gained (Bayoumi & Zaric, 2008). SIS could potentially reduce the amount of money spent towards supporting treatment, prevention, and recovery efforts. HHC is supporting rapid response public health data and research in "real-time" to analyze what is occurring nationally and at the state level. SIS has become controversial in real time throughout the country as a response to reducing opioid related deaths. Cities such as San Francisco, Philadelphia, and Albany have made moves to implement SIS in their areas using the limited research available (Lieber, 2018; O'Toole, 2018). This study is the first study assessing community perceptions within the United States and provides real time data and research to inform political stakeholders. While our nation continues

to research interventions to reduce opioid overdose deaths, SIS ought to be considered as a cost-effective intervention.

The current study findings must be considered in light of the study limitations. The convenient sampling method of recruitment may restrict the diversity of participant responses; this may account for the lack of diversity in participant race and ethnicity. Second, there was a considerable amount of missing data within responses of the measures which is more common with online surveys. Future research may want to consider shortening the survey length or conducting a qualitative analysis examining reasons for or against SIS supportiveness. In addition, the knowledge of drugs portion of the KAB survey does not fully assess participants' understanding of the drugs, just whether they have heard of the drugs before. The extent to which the participant has heard of the drug before does not necessarily mean they have an understanding of the drug and its effects. Furthermore, the lack of prior literature on the topic specific to a U.S. population hinders the investigation of variables that may present as more significant predictors than the variables chosen in this study. Future research is needed to expand on the variables found significant in this study to further examine their relationships with level of SIS supportiveness.

It is important to note that the original method of recruitment for the study had to be revised; the original recruitment method was solely in-person with a written survey instrument. After approximately three months of in-person recruitment, it was determined that the amount of responses needed to show significance in the study would not be reached. The research design was amended to include online recruitment via SurveyMonkey. This proved to be a more effective recruitment method and resulted in gaining the recommended 114 responses required for analysis; the study was able to retrieve 121 responses.

There is an emerging consensus of literature that gives evidence to the benefits of SIS. The success of SIS implementation is dependent not only on the funding available to provide services but also on the solidarity of community members. Future research should further assess United States public opinion on the implementation of SIS. This may include changes in opinion overtime as SIS are implemented and the ways in which key stakeholders can be represented when considering changes in policy. Results may be especially relevant to legislators and lobbyists in successfully representing their constituents.

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Appendix A

INFORMED CONSENT FORM

You are being asked to participate in a research project about support for Safe Injection Sites.

This research is being conducted by: Dr. Marisa Beeble (Primary Principle Investigator), Dr. Tameka Gillum (Principle Investigator), Dr. Nancy Beshara (Principle Investigator), and Kathleen Giarratano (Student Investigator)

What is the purpose of this study?
The purpose of this study is to gain a better understanding on the perceptions of drug use and Safe Injection Sites among adult constituents of the Greater Capital Region.

What does this involve?
You will first be asked to complete a survey regarding your opinion on drug use, which is followed by several demographic questions. You will complete an additional survey assessing your overall opinion of Safe Injection Sites. It should take you 10 to 15 minutes to complete this study. Your participation in this study is completely voluntary. Should you elect to discontinue participation, any information already collected will be discarded. There is no penalty or loss of benefit for choosing not to participate. After completion, you have the option of providing contact information to be considered to win a $50 Amazon gift card.

How will the information you provide be protected?
Your identity will be kept confidential to the extent provided by law. This consent form will be kept separately from any data you provide, and paper surveys will be kept in a locked file cabinet separate from consent documents. Data entered electronically will be password protected. Your name will not be used in any report or publication. If provided, your contact information will not be used for any purposes other than compensation and will be kept separately from your responses.

What are the risks and benefits to participation?
There are no physical risks to this study. A potential benefit of participating in the study is to be able to give your voice on a large political issue that may be used to reform federal and state policies.

Who should you contact if you have concerns?
This project was approved by the Sage Colleges Institutional Review Board. This makes sure that the rights of human participants are protected. If you have any complaints, please contact:
Dr. Theresa Hand, Associate Provost Phone: 518-244-2069
The Sage Colleges Email: handt@sage.edu
Troy, New York 12180

Participation is voluntary, I understand that I may at any time during the course of this study revoke my consent and withdraw from the study without any penalty. I have been given an

opportunity to read and keep a copy of this Agreement and to ask questions concerning the study. Any such questions have been answered to my full and complete satisfaction.

I, _____, having full capacity to consent, do hereby volunteer to participate in this research study

Signed: _____ Date: _____
Research participant

Appendix B

SURVEY ON DRUG-RELATED KNOWLEDGE, ATTITUDES, AND BELIEFS

1. Which of the following drugs have you heard of?
   Please write X in the box if you have heard of these drugs

Methadone	
Heroin	
Prescription Opioids (e.g. oxycodone, hydrocodone)	
Fentanyl	
Tramadol	

In the following section you will find some statements / questions about drug use and drug users. These statements may not necessarily reflect your feelings. There are no right or wrong answers to any of these statements, as people have widely different views. Please circle the number that best reflects your level of agreement or disagreement with each of the statements.

2. All illegal drugs are equally harmful to your health.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

3. Our society is too tolerant towards drug users.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

4. If you try drugs even once, you are hooked.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

5. I would see drug addicts more as criminals than victims.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

6. Most young people today would try an opioid.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

7. Drug abuse causes more problems in society than alcohol abuse.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

8. Treatment should only be given to drug addicts who intend to give up drugs for good.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

9. I would tend to avoid someone who is a drug addict.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

10. I would be nervous of someone who uses illegal drugs.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

11. Money spent on the prevention of drug use, is money well spent.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

12. The use of opioids should be against the law.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

13. Drug addicts are not given a fair chance to get along in society.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

14. Occasional use of fentanyl is not really dangerous.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

15. People who end up with a drug problem have only themselves to blame.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

16. Most young people today try out opioid prescription pills.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

17. Drugs are not really a problem to us here in this neighborhood.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

18. Treatment should be available to all drug addicts, according to their needs.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

19. Drug addicts really scare me.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

20. Tougher sentences for drug misusers is the answer to the drug problem.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

21. Most people are concerned about the drug problem in the United States.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

22. Occasional use of methadone is not really dangerous.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

23. Many drug addicts exaggerate their troubles to get sympathy.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

24. It is normal that young people will try drugs at least once.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

25. The drug problem in the United States is out of control.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

26. Medically prescribed heroin substitutes (such as methadone/physeptone) should be available to drug addicts.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

27. Almost all drug addicts are dangerous.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

28. Drug education in schools should start at primary level.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

29. Drug related crime is a major problem in the United States today.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

30. Occasional use of heroin is not really dangerous.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

31. Reports about the extent of drug usage amongst young people are exaggerated by the media.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

32. Society should provide syringes and needles free of charge to drug addicts to avoid the spread of HIV/AIDS.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

33. Drug addicts charged with petty offences should be given a choice between treatment and prison service.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree

1	2	3	4	5	6	7

34. It would bother me to live near a person who is a drug addict.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

35. Regular use of prescription opioids is just as dangerous to your health as regular use of heroin.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

36. The availability of illegal drugs poses a great threat to young people nowadays.

Strongly Disagree	Disagree Moderately	Disagree Slightly	Undecided	Agree Slightly	Agree Moderately	Strongly Agree
1	2	3	4	5	6	7

37. I personally know someone who uses heroin.

Yes	No
0	1

38. I personally know someone who uses prescription opioids.

Yes	No
0	1

39. I personally know someone who uses fentanyl.

Yes	No
0	1

40. I personally know someone who uses methadone.

Yes	No
0	1

41. I personally know someone who uses tramadol.

Yes	No
0	1

42. I personally know someone who has/had a drug problem.

Yes	No
0	1

Appendix C

DEMOGRAPHIC SURVEY

Please answer all of the following questions as they describe you.

1. What is your home zip code? _____

2. Which County of the Capital Region do you reside in? (circle one)

☐ Albany
☐ Columbia
☐ Greene
☐ Rensselaer
☐ Saratoga
☐ Schenectady
☐ Warren
☐ Washington
☐ Other_____

3. What is your gender? (circle one)

☐ Female
☐ Male
☐ Non-binary
☐ Transgender
☐ Prefer not to say
☐ Prefer to self-describe _____

4. What is your age? _____

5. What is your marital status?

☐ Married
☐ Separated
☐ Divorced
☐ Widowed
☐ Single

6. Do you have children?

☐ Yes
☐ No

7. What is your race/ethnicity? (circle one)

☐ Asian or Pacific Islander
☐ Black/African American
☐ Hispanic/Latino American
☐ Indian/Native American
☐ White/Caucasian
☐ Other _____

8. What was your total household income last year?

☐ $0-25,999
☐ $26,000-$51,999
☐ $52,000-74,999
☐ More than $75,000
☐ Don't know/decline to say

9. What languages are spoken in your home? (Mark all that apply)

☐ English
☐ Spanish
☐ Other_____

10. What Religion do you identify with? (circle one)

☐ Christian/Catholic
☐ Christian/Non-Catholic
☐ Jewish
☐ Muslim
☐ Other _____

11. What is your political affiliation?

☐ Very conservative
☐ Conservative
☐ Moderate
☐ Liberal
☐ Very liberal

12. What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.

☐ No schooling completed
☐ Nursery school to 8th grade
☐ Some high school, no diploma
☐ High school graduate, diploma or the equivalent (for example: GED)
☐ Some college credit, no degree
☐ Trade/technical/vocational training
☐ Associate degree
☐ Bachelor's degree
☐ Master's degree
☐ Doctorate degree

13. What is your current employment status?

☐ Employed full time (40 or more hours per week)
☐ Employed part time (up to 39 hours per week)
☐ Unemployed and currently looking for work
☐ Unemployed and not currently looking for work
☐ Student
☐ Retired
☐ Self-employed
☐ Unable to work

Appendix D

INFORMATIONAL SEGMENT

The following description provides a brief overview of the definition, practice, and history of Safe Injection Sites. Please read this informational segment and continue to the last portion of the study.

Supervised Injection Sites provide a legal space for injection drug users to inject pre-obtained drugs under professional supervision in a clean environment. At these sites, staff give information on safe injection practices, supply clean injecting equipment, and provide referrals to health care and addiction treatment services. Safe Injection Sites have operated in Europe since the 1980s and in 2003, North America's first site was opened in Vancouver, BC, Canada. Other facilities have been established in Australia, but no facility exists in the United States to date.

Appendix E

SAFE INJECTION SITE SURVEY

In the following section you will find some statements / questions about safe injection sites. There are no right or wrong answers to any of these statements on which people have widely different views. Please circle the number which best describes your opinion.

1. I am in favor of Safe Injection Sites.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

2. Safe Injection Sites are morally wrong.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

3. I am okay with having a Safe Injection Site in my neighborhood.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

4. Safe injection sites should not be available to drug users.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

5. I agree with safe injection sites, but I do not want them in my neighborhood.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

6. I believe safe injection sites will be a cost-effective initiative.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

7. There should be a Safe Injection Site in the greater Capital Region.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

8. I would support a Safe Injection Site if one opened in the area.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

9. I believe safe injection sites will reduce opioid related overdoses.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

10. I would support a person who wants to use a Safe Injection Site.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

11. Safe Injection Sites will enable drug users to continue abusing drugs.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

12. Safe Injection Sites will help keep my community clean.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

13. Safe Injection Sites will reduce crime in my community.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

14. I believe Safe Injection Sites will give the wrong impression to youth.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

15. Safe Injection Sites will increase entry into addiction treatment.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

16. Safe Injection Sites will reduce HIV, Hepatitis C, and other transmitted infectious diseases by decreasing syringe sharing.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

17. Safe Injection Sites will increase drug trade.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

18. Safe Injection Sites will give drug users more access to social-service and health-care networks.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

19. Safe Injection Sites will decrease drug offense arrests.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

20. The United States should allow states discretion about whether or not to implement Safe Injection Sites.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0	1	2	3	4

Appendix F

Thank you for completing this study. If you are interested in being considered to win a $50 Amazon gift card as compensation for your time, please provide your email address in the following space. Your email address will not be used for any purposes other than our gift card pool and will be kept separately from your informed consent and responses. Therefore, this form will not be connected in any way to the responses you've provided.

Email Address: _____

Phone Number: _____

I, _____, having full capacity to consent, do hereby allow the researchers to use my contact information in considering me for the Amazon gift card.

Signed: _____ Date: _____
Research participant

Appendix G
Participant Demographics

Table 1
Participant Demographics

Demographics	*n*	*%*
Region		
	58	47.93%
Eastern Adirondacks	10	8.26%
Western NY	9	7.44%
NYC	8	6.61%
Lower Hudson Valley	7	5.79%
Long Island	5	4.13%
Central NY	4	3.31%
Western Finger Lakes	3	2.48%
Western Adirondacks	0	0%
Unknown	17	14.05%
Gender*		
Female	83	68.60%
Male	18	14.88%
Non-Binary	3	2.48%
Prefer Not to Say	17	14.05%
Age*		
19-25	47	38.84%
26-32	20	16.53%
33-39	9	7.44%
40-46	13	10.74%
47-53	8	6.61%
54-60	4	3.31%
61-67	1	0.83%
68-74	1	0.83%
Unknown	18	14.88%
Relationship Status*		
Not Single	72	59.50%
Single	33	27.27%
Unknown	16	13.22%

Having Children		
No	68	56.20%
Yes	37	30.58%
Unknown	16	13.22%
Race/Ethnicity		
White	88	72.72%
Hispanic/Latino	7	5.79%
Multiracial	5	4.13%
Asian/Pacific Islander	4	3.31%
Unknown	17	14.05%
Household Income		
More than $75,000	30	24.79%
Between $52,000 and $74,999	20	16.53%
Between $26,000 and $51,999	21	17.36%
Less than $25,999	21	17.36%
Decline to say	29	23.96%
Household Language		
English	104	85.95%
Spanish	7	5.78%
ASL	1	0.83%
Bengali	1	0.83%
German	1	0.83%
Unknown	7	5.78%
Religion*		
Christian/Catholic	35	28.93%
No Religion	28	23.14%
Christian/Non-Catholic	16	13.22%
Jewish	6	4.96%
Muslim	2	1.65%
Buddhism	1	0.83%
Pagan	1	0.83%
Secular Spiritual	1	0.83%
Unknown	31	25.62%
Political Affiliation*		
Liberal	63	52.07%
Not Liberal	40	33.06%
Unknown	18	14.88%
Education		
More than High School Education	97	80.16%
High School Education or Less	7	5.79%
Unknown	17	14.05%

Employment*		
Employed	75	61.98%
Not Employed	30	24.79%
Unknown	16	13.22%

* % may not sum to 100 because of rounding error

Appendix H
Regression analysis predicting level of SIS supportiveness

Table 2

Regression analysis predicting level of SIS supportiveness

Variable	Model 1 β	Model 2 β	Model 3 β	Model 4 β	R Change
Block 1 - Relationship Status	0.287	0.167	-0.106	-0.380	**0.081**
Having Children	0.331	0.289	0.102	0.075	-
Block 2 - Employment		**0.485**	0.213	0.102	**0.056**
Block 3 - Political Affiliation			**-1.126**	**-0.435**	**0.296**
Block 4 - Attitudes and Beliefs				**0.582**	**0.263**
Knowledge of drug use				0.010	-
Familiarity with opioid drugs				**0.233**	-

Note: Total R= .695; $p < .05$. All coefficients are unstandardized; **bold** indicates that the effect is significant at $p < .001$

Kathleen Giarratano <giarrk@sage.edu>

IRB APPROVAL 695-2017-2018

Institutional Review Board Email <sageirb@sage.edu> Fri, May 25, 2018 at 3:11 PM

To: Kathleen Giarratano <giarrk@sage.edu>, Tameka Gillum <gillut@sage.edu>, Institutional Review Board Email <sageirb@sage.edu>

Your IRB project has been approved. You may begin now. A letter will follow. You must complete the study following the procedures that have been approved.

Any changes in procedures must be approved by the IRB in writing before you carry them out. Be sure you follow all procedures required at the completion of the project. Notify the IRB if you discontinue the project. Notify the IRB if any human subject issues arise during the study. If the letter of approval indicates that you must file a final report or an annual report, please do so following our instructions in our document: How to Apply for a Project Review. The form for those reports is on our website.

Good luck.

--

Francesca Durand, PhD

Chair, IRB

email: sageirb@sage.edu

Kathleen Giarratano <giarrk@sage.edu>

APPROVAL OF REVISION IRB Submission #695-2017-2018

Institutional Review Board Email <sageirb@sage.edu> Wed, Jul 18, 2018 at 9:54 AM

To: Kathleen Giarratano <giarrk@sage.edu>, Institutional Review Board Email <sageirb@sage.edu>

Good morning,

Your revisions are approved.

Francesca Durand

Chair, Sage IRB

On Tue, Jul 17, 2018 at 12:12 PM, Kathleen Giarratano <giarrk@sage.edu> wrote:

> Good Afternoon,
> Please accept the attached document as my revisions to a previously approved IRB Application. The new text in the document is in red ink. If there is anything else I will need to edit please let me know.
>
> Thank you,
> Kathleen

--

Francesca Durand, PhD

Chair, IRB

email: sageirb@sage.edu