5-2022

The Complexities of Guilt, Shame, Stigma, and Substance Use among a Sample of United States Substance Using Adults

Nicole A. Doyle
University of Arkansas, Fayetteville

The Complexities of Guilt, Shame, Stigma, and Substance Use among a Sample of United States Substance Using Adults

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Health, Sport and Exercise Science

by

Nicole A. Doyle
University of Central Oklahoma
Bachelor of Science in Exercise Science, 2009
University of Central Oklahoma
Master of Science in Wellness Management: Exercise Science, 2014

May 2022
University of Arkansas

This dissertation is approved for recommendation to the Graduate Council.

_____
Robert E. Davis, PhD
Dissertation Director

_____
Page Daniel Dobbs, PhD
Committee Member

_____
Wen-Juo Lo, PhD
Committee Member

_____
Bart Hammig, PhD
Committee Member

Abstract

Background: Guilt, shame, stigma, substance use (problematic/nonproblematic), and help-seeking intention, are complex interrelated constructs that have not been collectively examined in community substance using adults, with mere pieces of each construct previously studied in various populations. Guilt pertains to an action (i.e., I did something bad) whereas shame pertains to the person (i.e., I am bad). Guilt has been shown to function adaptively by prompting individuals to repair transgressive behavior where shame has been shown to function maladaptively by prompting individuals to withdraw and compound the global negative feelings of the self. Stigma of substance use is pervasive and leads individuals to feel othered, dehumanized, and less-than. This dissertation sought to examine these relationships and the potential moderating effects of shame and guilt.

Methods: Two studies were executed, one cross-sectional electronic survey-based and the other an explanatory mixed methods approach using semi-structured interviews and Grounded Theory. For both studies, participants were recruited using Prolific, a well-known sampling agency. Study 1 participants (n = 1000) were randomly selected from a pre-screened sample (n = 5000) to receive the survey and were paid 3$. The survey assessed demographic items, substance use severity (alcohol and drug use), help-seeking intention, guilt and shame proneness, along with three stigma mechanisms. For study 2, a subsample of participants (n = 18) was invited to participate based on past/present help-seeking for substance use related concerns. Participants scheduled a one-time 60-minute virtual interview and were provided study procedures and informed consent prior to the interview and were paid 40$.

Results: For study one, utilizing a multinomial logistic regression, guilt was found to significantly interact with internalized stigma; those with higher levels of guilt had decreased odds of group membership to a positive problematic alcohol or positive problematic alcohol and drug screen. The main effects of enacted- and internalized-stigma and guilt additionally significantly predicted group membership to positive problematic categories of substance use screens. For study two, a multiple regression analysis was conducted along with contextualizing the findings with participant narratives. Guilt significantly moderated the relationship between enacted stigma and help-seeking intention; among those with higher levels of guilt enacted stigma was a stronger predictor of help-seeking intention. Participant narratives echoed their experience of various stigma mechanisms, the effects of guilt, and related impacts on help-seeking intention.

Conclusions: Guilt displayed protective behavioral effects by decreased odds of positive screens for disordered substance use and adaptive impacts on help-seeking intention in the presence of stigma. While anticipated stigma or shame did not predict problematic substance use screens or help-seeking intention, the mechanisms of internalized- and enacted-stigma displayed impacts on both outcomes of disordered use and help-seeking. Implications for public health include continued examination of guilt and the potential benefits of managing baseline guilt among substance using populations as a mechanism for decreased deleterious health outcomes. Also, the need to combat stigma in its various forms is vital and continues to be of utmost importance.

Acknowledgments

I'd first like to thank my mentor, advisor, and dissertation chair, Dr. Robert Davis. I knew from the moment we first met via Skype, that our research interests aligned and that you would prove to be a vital support system to me, to what extent, I wouldn't realize until later on. I'll never forget one of the many times you said to me, "Go and progress!" as I was walking out of your office. I turned to look at you and said, "I don't know what that means!" I couldn't see it at the time, but now I understand your process. You wanted me to figure it out and be stronger for having done so. Of course, you were always there to help me (truly, you have only not been available when I've come to your office door maybe twice out of hundreds), yet you pushed me in ways I don't think either of us knew that I needed. I am forever grateful that you gave me a chance as your graduate assistant and for the many projects and publications we have accomplished. Thank you, Bob, for being the mentor I needed, when I needed it.

Next, I'd like to thank my other committee members in no particular order, Dr. Page Dobbs, Dr. Wen-Juo Lo, and Dr. Bart Hammig. Dr. Dobbs, you came to University of Arkansas at exactly the right time. Your guidance, encouragement, and open-door policy were what got me to the finish line. I'm excited for the future of my mixed methods research because of you and I thank you for the skills you imparted to me. Dr. Lo, I'm not sure how to thank you for the many emails we sent back and forth regarding my data analysis, for the meetings, and for your enthusiasm during the process. If you were ever too busy to help me, you certainly didn't show it. Dr. Hammig, thank you for being a part of my dissertation committee and for your advice and feedback. Thank you for making me question everything. I'm lucky to have had such a great team of established independent researchers to guide me and I am forever grateful.

A huge thank you goes to the HHPR Department and for the two internal grants I was awarded, totaling ~$6,000, for without this funding I would not have been able to collect data so rapidly (with the use of Prolific) and would likely have been delayed in graduating. I am also grateful to Joe Hamilton for helping me in a moment's notice whenever I had any administrative type questions and to my other colleagues here in the HHPR Department. I would agree with a friend that said, "We have some of the nicest people around in this department!", and I'm lucky to have had their encouragement.

Additionally, I would like to thank the professors that made a difference in my doctoral studies and truthfully, my life. Dr. Michelle Gray, thank you for your friendship, open-door, and encouragement. Thank you for introducing me to Dr. Kristen Jozkowski, who then graciously aided in virtual introductions with other faculty members, culminating in an introduction to Dr. Davis. Thank you to Dr. Allison Ames for the many stats lessons, office hours, and for believing I was "smart enough" (my words, not hers) to understand and conduct analyses with confidence. I am extremely lucky to have had you as a professor and incredible teacher. Thank you to Dr. Juan Bustamante for introducing me to the wonders of qualitative research. I told you after the second- or third-class period that your course was going to change my life, and it did.

Also, I am forever grateful to my participants in these studies. Without their time and participation this would not have been possible. A massive thank you is owed to Haley Gaskill as well, my research assistant. I don't think all the Starbucks gift cards in the world could make up for the time you spent helping me with validating transcripts and coding! Thank you!

Thank you to my parents and my grandmama for their support. I'm certain you thought I would just stay in school forever! Thank you to my sister, Rhiana, and my brother-in-law, Michael, for their encouragement and wit. I'm also lucky to have had such wonderful friends

support me through this; Kelly and Jeremy, Tami, Leisha, Krishen, and many others. Thank you to my dear friend, Toby Klein, for your friendship, support, humor, and for always having an ear when I needed it (and for taking me to get food or bringing me coffee when I was holed up at home writing)! Thank you to my husband Simon's family (there are too many to name) for always encouraging me, asking about my studies, and for your love. Last, but certainly not least, thank you to my family unit here– Simon for your endless love and support, and our sweet dog Gemma; for without those many walks and snuggle sessions, I would have certainly had a harder time finding my way.

Dedication

This dissertation is dedicated to my husband, Simon J. Smith. Without his love and support during this process, I am certain this would have been immensely harder, if not impossible. There were many times during these last four years that he stepped in to take care of things without even a word from me, from getting groceries to cleaning the house, and often cooking us dinner when I could barely keep my eyes open (especially these last few months). He never begrudged the tasks and never hesitated to handle things.

I remember one point early on this last and final semester that I told him, “I don’t care if we eat cheese and crackers for the next 6 months, so if you’d like something different, make it happen.” He just smiled and said, “I can do that!” I can think of many times I would come home after being on campus for 14 hours feeling slightly defeated, and he always knew how to cheer me up. About halfway through my second year in the program, I really hit a wall and wasn’t sure I could continue; I felt lost, uncertain, and I struggled. Simon never preached at me, nor did he become a cheerleader; he thoughtfully and kindly knew exactly what to say when I needed to hear it. Simon has always pushed me to be a better person both personally and professionally and has believed more in me than I think I have ever believed in myself.

I will always cherish our morning walks with Gemma – how we would both just talk and talk about our days, our struggles, and our triumphs. Simon took on a new role with his company at the start of my third year and finished his MBA six months later. To say that he is driven, is an understatement. Thank you, Simon, for always getting the coffee pot ready to go the night before, for listening to me, and for seeing me. I love you more than words and I am certain I will never be able to thank you enough for your support and never-ending encouragement, however, I am grateful I have a lifetime to try. Love you!

Table of Contents

Chapter 1: Introduction

Individuals who use substances are often looked down upon in society (Buchman & Reiner, 2009; Parcesepe & Cabassa, 2013). Substance use behavior is highly complex and often stigmatized (Kulesza et al., 2013), consisting of illicit (i.e., ecstasy, heroin) and licit drugs (i.e., alcohol, prescription drugs, caffeine). Stigma collectively refers to a set of negative societal beliefs, identities, and behaviors seen as taboo (Goffman, 1963; Link & Phelan, 2001). Substance use positively associates with psychological states such as depression and anxiety (R. Davis et al., 2020), shame (Luoma et al., 2019), guilt (Locke et al., 2013; McGaffin et al., 2013), and stigma (Batchelder et al., 2020). Importantly, stigma exacerbates the power differential whereby the stigmatized individual who used substances is dehumanized and seen as less than, compared to a whole and untainted person (Goffman, 1963). Substance use is a common phenomenon within American society. According to data from the National Center for Health Statistics in 2018, 66.3% of adults over age 18 reported past year alcohol consumption (Boersma et al., 2020). Regarding any illicit drug use, 11.7% of those aged 12 years and older report past month consumption (Boersma et al., 2020) and among Americans in 2019, 20.8% reported current tobacco use (Cornelius et al., 2020). Common reasons for substance use include societal norms (Davis et al., 2019), personal coping mechanisms (Arbeau et al., 2011; Cook et al., 2021), managing depression and anxiety (Treeby & Bruno, 2012), experimentation (Cuomo et al., 1994), and peer pressure (Monaci et al., 2013).

The stigma surrounding substance use has many layers that are engrained societally thus further complicate patterns of use and effective intervention (Janulis et al., 2013; Lekas et al., 2011). Additionally, not all substances are stigmatized equally as evidenced by research finding those who use crack and IV drugs are stigmatized most often, even by other drug users (Luoma

et al., 2007). Stigma manifests in many forms such as enacted, anticipated, and internalized, as discussed in recent works (Chaudoir et al., 2013; Earnshaw & Chaudoir, 2009; Kulesza et al., 2013). Enacted stigma can be compared to discrimination in that the stigma is projected onto someone and their behavior (Berjot & Gillet, 2011). Anticipated stigma is the expectation that stigmatizing attitudes and prejudices are forthcoming, often causing stress and anxiety in an individual (Berjot & Gillet, 2011). Internalized stigma or, 'self-stigma' is the internalization of these stigmatizing attitudes, prejudices, and behaviors over time (Batchelder, Foley, Kim, et al., 2021; Brown-Johnson et al., 2015; Earnshaw et al., 2015). These various types of stigma have been found to associate with substance use (Batchelder, Foley, Kim, et al., 2021; Earnshaw et al., 2015; Robb et al., 2018), gambling (Bilevicius et al., 2018; Gavriel-Fried & Rabayov, 2017), guilt (Dearing et al., 2005) and shame (Brown-Johnson et al., 2015; Hasson-Ohayon et al., 2012; Li et al., 2020; Matthews et al., 2017).

Stigma not only manifests towards a multitude of behaviors but also envelopes identities such as HIV status (Batchelder et al., 2020; Freeman et al., 2020; Logie, 2020) and sexual minorities (Hatzenbuehler et al., 2013), mental illness (Kanter et al., 2008), and often keeps people from seeking treatment (Czyz et al., 2013; Vogel et al., 2006). Various theoretical frameworks have been developed to better understand stigma and the mechanisms behind it regarding HIV (Earnshaw & Chaudoir, 2009; Stangl et al., 2019), cultural origins (Yang et al., 2007), population health inequities (Hatzenbuehler et al., 2013), and substance use (Smith et al., 2016). Importantly, each of these frameworks regarding stigma and related drivers highlight how sources of stigma have moved from an individualistic focus to examining how the societal components of stigma combine with the physical, emotional, and moral experience of the

stigmatized and transgressor, and ultimately how these interrelated factors impact health outcomes.

While stigma is a collective set of negative beliefs and stereotypes (Link & Phelan, 2001) shame is the belief an individual holds regarding the self as damaged or flawed, and guilt is specific to an individual's behavior (Lewis, 1971; Tangney et al., 1992). Lewis (1971) thoughtfully discussed in her seminal work on shame and guilt, that shame is focused on the self and seen as an affective state stemming outward from internal, universal attributions. Often referred to as the core emotion of self-stigma (Luoma & Platt, 2015), shame has been posited to serve as an underlying mechanism for stigma enactment (Li et al., 2020). Shame exists as 'trait shame' (i.e., shame proneness) and 'state shame' (experiential shame). Trait shame is described as undergoing frequent shame experiences, subsequently internalizing the shame, then succumbing to shame as an identity (Harper, 2011). State shame occurs as an 'in-the-moment' feeling of shame (Turner, 2014). Shame has been described as the cornerstone of addiction development (Flanagan, 2013) and much like stigma, associates with other behaviors or identities often deemed societally taboo such as eating disorders (Cavalera et al., 2016), depression (Scheff, 2001), anxiety (Fergus et al., 2010), and gambling (Bilevicius et al., 2018). Shame can facilitate adaptive social functioning such as development of social hierarchy and subsequent role formation, and as a means to induce compassion upon detection in others (Dickerson et al., 2004). However, the role of shame is often maladaptive in the context of substance misuse (Wiechelt, 2007). A potential looping effect of shame coupled with substance use and added layers of stigma often perpetuate use and inhibit individuals from seeking help (Matthews et al., 2017). Shame proneness, when present in an individual, leads the individual to live in a constant state of feeling bad 'about the self' as a whole (Lewis, 1971; Tangney, 1990).

Shame proneness also has a strong association with guilt proneness, both have similar origins, yet often function as opposing mechanisms.

As mentioned, guilt manifests in relation to negative feelings regarding an individual's specific behavior (Lewis, 1971; Tangney, 1990). Guilt, like shame, is a masterful and aversive self-conscious emotion. Lewis (1971) conversely describes guilt from shame as an affective state manifesting from internal, specific attributions. Additionally, guilt exists as 'trait guilt' (guilt proneness) and 'state guilt' (experiential guilt), following the similar definitions of the two shame measures. Guilt proneness is a personality characteristic related to the chronic experience of negative feelings regarding a personal wrongdoing (Cohen et al., 2012), conversely, state guilt refers to guilt in relation to a single wrongdoing. Moreover, guilt (often unlike shame) can serve in adaptive roles as guilt functions to motivate behavior change, repair relationships, and serves to elicit empathy when expressed publicly (Cohen et al., 2012; Vaish, 2018). Vaish (2018) discussed how guilt serves as an evolutionary mechanism by promoting teamwork in two ways, one, by motivating transgressors to repair damage caused and in doing so- two, a public display of guilt facilitates empathy and subsequent cooperation towards the malefactor.

Much discussion on the need to distinguish shame from guilt has occurred (Dearing et al., 2005; Lewis, 1971; Tangney, 1990; Tangney, Miller, et al., 1996; Tangney et al., 1992) as they are two emotions originating similarly yet often function by opposing means. Guilt associates with stigma (Dearing et al., 2005), risky behaviors (Stuewig et al., 2015), anxiety (Fergus et al., 2010), severity of mental health conditions (Kealy et al., 2020), self-forgiveness (Osei-Tutu et al., 2021), help-seeking (Treeby et al., 2018), and substance use (Locke et al., 2015; Luoma et al., 2017; McGaffin et al., 2013; Quiles et al., 2002).

Help-seeking intention plays a pivotal role in one's ability to discover effective treatment modalities and resources (Kim & Zane, 2016). The need for treatment depends on an individual's substance use behavior and level of risk of developing a substance use disorder (SUD), or if a SUD is already present (NIDA. 2019). Of importance, an individual's help-seeking intention can facilitate a positive recovery journey (Patterson et al., 2019). According to the 2015 National Survey of Drug Use and Health (NSDUH) 95.4% of people aged 12 and older who were classified as needing substance use treatment did not think they needed it (Lipari, 2016). It is important for physicians to assess an individual's substance use as part of regular medical appointments yet many physicians do not receive the necessary training regarding SUDs to do so (Neufeld et al., 2012). Physicians often encounter barriers such as time constraints, lack of training in providing brief interventions when assessing an individual's substance use, and possessing negative attitudes towards individuals who misuse substances (Palmer et al., 2019). Treatment for substance misuse is inclusive of behavioral therapy, cognitive behavioral therapy, pharmacology, family-based and multi-systemic interventions, and twelve step approaches (Deas & Thomas, 2001). Barriers to help-seeking exist in many forms including motherhood (Barnett et al., 2021), abusive partner control (Phillips et al., 2021), fear of physician judgement (Hayes et al., 2021), stigma (Adams & Volkow, 2020), and lack of resources (Ali et al., 2020).

The combination of help-seeking stigma and substance use stigma along with internalized shame of substance use, often inhibit individuals from attempting to seek help (Matthews et al., 2017; Tucker et al., 2013). Intention to seek help has been found to associate with attitudes and outcome expectations (Vogel et al., 2005). Individuals identifying as a gender and/or sexual minority who also use substances experience stigma two-fold due to their overlapping identities rooted in intersectionality, which ultimately combine and impact help-seeking intention (Benz et

al., 2019). The messaging surrounding addiction can also influence one's intention to seek treatment when comparing a message lacking self-blame to a disease-fixed message (Burnette et al., 2019). As seen, stigma and shame have an impact on help-seeking intention, which in turn can manifest into worsening substance misuse and SUDs. However, guilt, often has the opposing impact as it frequently functions adaptively, relating to motivation for behavior change. Importantly, exploring individual's personal reasons for seeking help or not seeking help in relation to substance use behavior has been done qualitatively in limited populations inclusive of college students in recovery (Iarussi, 2018), affected family members of a relative with alcohol and other drug misuse (McCann & Lubman, 2018), pregnant women with SUDs (Paris et al., 2020), and intimate partner violence survivors with opioid use disorder (Phillips et al., 2021). The extant qualitative literature on help-seeking intentions largely focuses on psychological affective disorders and symptomology (Czyz et al., 2013; Godier-McBard et al., 2021; Spence et al., 2016) thereby expressing further need to examine individual perspectives on help-seeking, barriers, and related aspects of shame, stigma, and guilt. Uncovering how these constructs play a role in substance use behavior can ultimately provide insight into assisting individuals with personalized resources.

There are limited works inclusive of studying stigma, shame, guilt, substance use severity, and help-seeking intention in individuals who use substances, with current literature merely touching on fragments of the aforementioned. Importantly, to the best of the researcher's knowledge, there are no studies that examine internalized-, enacted-, and anticipated-stigma in relation to substance use severity. Additionally, there are no studies that delve further by examining the potential moderating effect shame (proneness and state) and guilt (proneness and state) have on these three types of stigmas and substance use severity. The existent literature has

examined pieces of the previously listed study variables of shame, stigma, guilt, and substance use in clinical populations via intervention to mitigate shame of substance use (Luoma et al., 2012), college students and shame of gambling (Bilevicius et al., 2018), intersecting identities of stigma, shame, and HIV (Batchelder, Foley, Kim, et al., 2021; Batchelder et al., 2020), shame, guilt, drug and alcohol use (Dearing et al., 2005; Patock-Peckham et al., 2018), and adolescents' shame of substance use (Rahim & Patton, 2015). Dearing et al. (2005) strongly suggested shame and guilt be examined as individual constructs (Dearing et al., 2005). Shame-prone students reported use of alcohol to cope with psychological issues (Treeby & Bruno, 2012), suggesting a need to study a broader range of substances. Furthermore, in a meta-analysis by Luoma et al. (2019), he suggests potential moderators of shame and substance use need to be examined rather than the continued assessment of shame's association with substance use at an overall level, indicating a need to additionally differentiate between problematic and non-problematic users. There is an increasing need to understand guilt and shame's role in the pathway between the dimensions of stigma and substance use severity, and help-seeking intention, to better inform prevention, treatment, and SUD development. Furthermore, given the opposing functions of shame and guilt, including the two constructs in this study will likely illuminate different, yet crucial findings in how those who use substances experience these stigmatizing aspects and how this relates to substance use behavior.

Purpose

The purpose of this dissertation was multi-faceted. For study one, the purpose was to examine the relationships between internalized-, anticipated-, and enacted-stigma and substance use severity. Secondly, to cross-sectionally examine the pathway between enacted, anticipated, and internalized stigma and substance use severity among substance using adults and to identify

the potential role of shame and guilt in moderating the effects of stigma on substance use severity. The purpose for study two was similar to study one in that examining the relationship between internalized-, anticipated-, and enacted-stigma, and help-seeking intention, along with the potential moderating role of shame and guilt in this pathway. Additionally, to execute an explanatory mixed methods approach to better explore and attempt to develop a deeper understanding of the lived experiences of individuals who use substances via semi-structured interviews utilizing Grounded Theory. Specifically, the interconnectedness of stigma, guilt, shame, substance use, and potential related impacts on help-seeking intention. The following section lists the aims, research questions (RQ), and subsequent hypotheses for study one and study two.

Aims, Research Questions, and Hypotheses

Study 1

Aim 1). To examine the relationship between internalized-, anticipated-, and enacted-stigma and substance use severity (non-problematic and/or problematic alcohol and drug use).

Aim 2). To describe the relationship of internalized-, anticipated-, and enacted-stigma with guilt and shame.

Aim 3). To examine the moderating effects of shame and guilt in the relationship between internalized-, anticipated-, and enacted-stigma, and substance use severity (non-problematic and/or problematic alcohol and drug use. To determine if shame and/or guilt is predictive of substance use severity (non-problematic and/or problematic alcohol and drug use.

RQ 1). Does internalized-, anticipated-, and enacted-stigma significantly associate with substance use severity (non-problematic and/or problematic alcohol and drug use)?

RQ 2). Does internalized-, anticipated-, and enacted-stigma significantly associate with guilt and/or shame?

RQ 3). Does shame and/or guilt act as a significant moderator between internalized-, anticipated- and enacted-stigma and substance use severity (non-problematic and/or problematic alcohol and drug use)? Does shame and/or guilt significantly predict substance use severity (non-problematic and/or problematic alcohol and drug use)?

Hypothesis 1). Internalized-, anticipated-, and enacted-stigma will each significantly associate with substance use severity (non-problematic and problematic alcohol and drug use).

Hypothesis 2). Internalized-, anticipated-, and enacted-stigma will have a significant positive association with guilt and shame.

Hypothesis 3a). The relationship between internalized-, anticipated-, and enacted-stigma, and substance use severity (non-problematic and problematic alcohol and drug use) will be stronger among those with greater levels of shame. Shame will be a significant predictor of both non-problematic and problematic alcohol and drug use.

Hypothesis 3b). The relationship between internalized-, anticipated-, and enacted-stigma, and substance use severity (non-problematic and problematic alcohol and drug use) will be stronger among those with greater levels of guilt. Guilt will be a significant predictor of both non-problematic and problematic alcohol and drug use.

Study 2

Aim 1). To explore the lived experiences of those who use substances, specifically surrounding feelings of shame, guilt, internalized-, anticipated-, and enacted-stigma, and their relation to help-seeking intention.

Aim 2). To examine the relationship between internalized-, anticipated-, and enacted-stigma and help-seeking intention.

Aim 3). To examine the moderating effects of shame and guilt in the relationship between internalized-, anticipated-, and enacted-stigma, and help-seeking intention. To determine if shame and/or guilt is predictive of help-seeking intention.

RQ 1). How does the lived experience of individual substance users, regarding internalized-, anticipated-, and enacted-stigma, guilt, and shame, effect their lives (i.e., substance using behaviors and help-seeking intention)?

RQ 2). Does internalized-, anticipated-, and enacted-stigma significantly associate with help-seeking intention?

RQ 3). Does shame and/or guilt act as a significant moderator between internalized-, anticipated- and enacted-stigma, and help-seeking intention? Does shame and/or guilt significantly predict help-seeking intention?

Hypothesis 1). Shame, guilt, and internalized-, anticipated-, and enacted-stigma will be discussed as integral (perpetuating further use and inhibition of help-seeking behavior) to the substance-using community and as barriers to seeking effective treatment.

Hypothesis 2). Internalized-, anticipated-, and enacted-stigma will each significantly associate with help-seeking intention.

Hypothesis 3a). The relationship between internalized-, anticipated-, and enacted-stigma, and help-seeking intention will be stronger among those with greater levels of shame. Shame will not be a significant predictor of help-seeking intention.

Hypothesis 3b). The relationship between internalized-, anticipated-, and enacted-stigma,

and help-seeking intention will be stronger among those with greater levels of guilt. Guilt will be a significant predictor of help-seeking intention.

Variables and Operational Definitions

Independent variables (5): enacted stigma, anticipated stigma, internalized stigma, shame (negative self-evaluations (NSEs), guilt (negative behavior evaluations (NBEs).

Dependent variables (3): substance use severity (non-problematic or problematic) (**alcohol use severity** determined by the Alcohol Use Disorder Identification Test-Concise (AUDIT-C) (Bradley et al., 2007) and dichotomized to non-problematic or problematic use; **drug use severity** determined by the Drug Abuse Screening Test (DAST-10) (Skinner, 1982) and dichotomized to non-problematic or problematic use). **Help-seeking intention** determined by the General Help Seeking Questionnaire (Wilson et al., 2005); continuous variable.

Moderator variables (2): shame-proneness (NSEs) and guilt-proneness (NBEs)

Shame: "a painful emotion caused by consciousness of guilt, shortcoming, or impropriety" (Merriam-Webster, n.d.). Shame refers to global negative feelings of self (Dearing et al., 2005). "I am bad" versus "I did something bad" (Lewis, 1971).

Shame-proneness: also known as 'trait shame'- refers to an individual's experience of shame as a characteristic, rather than tied to an event or behavior (Rüsch et al., 2007).

Guilt: a feeling specific to a behavior or an action; "I did something bad" (Lewis, 1971).

Guilt-proneness: a personality characteristic related to the chronic experience of negative feelings regarding a personal wrongdoing (Cohen et al., 2012)

Stigma: collective negative societal attitudes towards a behavior or identification often deemed as taboo (i.e., HIV status, sexual minority identification, substance use. etc.) (Scheff, 1984).

Enacted Stigma: drawing from Earnshaw and Chaudoir (2009) in their development of the HIV Stigma Framework, enacted stigma relates to personal experiences of discrimination, prejudice, or being stereotyped based on a stigmatized characteristic (i.e., HIV status, sexual minority identification).

Anticipated Stigma: defined as an expectation of stigma in the form of prejudice or stereotyping and being treated differently based on a stigmatized component (Smith et al., 2016).

Internalized Stigma (i.e., self-stigma): belief or endorsement of negative societal affect to one's self (Smith et al., 2016).

Help-seeking Intention: one's personal intention to seek help for substance use in the form of treatment inclusive of either therapy, medication management, medical advice, or a combination of the aforementioned.

Substance use: refers to any amount of drug or alcohol intake and includes substances such as caffeine, tobacco, illegal drugs, prescription drugs, inhalants, and solvents (other than caffeine and tobacco for the purpose of this study).

Problematic substance use: the use of illegal drugs, and the inappropriate use of legal substances such as alcohol, over the counter (OTC) medications, or prescription medications.

Non-problematic substance use: use of substances (not illegal drugs) such as alcohol, OTC and prescription medications as doctor recommended, directed, or prescribed.

Substance use severity: often assessed with a screening tool and categories can range from low, moderate, to high, or, dichotomized as either at-risk or not at-risk, problematic use and nonproblematic use, relating to an individual's substance use behaviors.

Substance use disorder (SUD): substance use disorders occur when the recurrent use of alcohol and/or drugs causes clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work, school, or home (SAMHSA, 2020).

Chapter 2: Review of Literature

Substance Use, Correlates, and Substance Use Disorders (SUD)

The earliest traces of substance use date back to approximately 5500 BC as archaeologists have found wine residue in clay pots used by the Egyptians (Hanson et al., 2018). History also notes that around 800-1,000 after Christ (A.C.) Vikings told tales of fighting dragons when they were likely experiencing hallucinations from ingesting psilocybin (Hanson et al., 2018). Moving forward many centuries, the United States has a sordid and complex history surrounding substances, involving a multifaceted pattern of public awareness and fear, drug legislation, and subsequent laws regarding regulation and punishment. Golub and colleagues (2015) argue for the use of the terminology 'Pharmacological Revolution' instead of the metaphor 'War on Drugs', as the continued use of substances requires research into societal and cultural impacts, education on controlled behavior, and education on common drug interactions (i.e., alcohol and opioids) (Golub et al., 2015). Substance use is a common occurrence in society (Boersma et al., 2020; Cornelius et al., 2020) referring to any amount of drug or alcohol taken and includes substances such as tobacco, illegal drugs, prescription drugs, inhalants, and solvents, ranging from recreational (Davis et al., 2019; Guillot & Greenway, 2006) to problematic (Dearing et al., 2005; Treeby & Bruno, 2012). Substance use is a complicated catch-all term for use of any of the aforementioned substances ranging from non-problematic or recreational to problematic. Often inclusive of many stigmatized layers (Link et al., 1997) there are many tenets to substance use which will be examined in this literature review.

In 2015 the global estimated prevalence of heavy alcohol use in the adult population was 18.4%; 15.2% for daily tobacco smoking; and 3.8%, 0.77%, 0.37% and 0.35% for past-year cannabis, amphetamine, opioid and cocaine use, respectively (Peacock et al., 2018). In the

United States, 2018 data from the National Center for Health Statistics reports 66.3% of adults over age 18 reported past year alcohol consumption (Boersma et al., 2020). Regarding any illicit drug use, 11.7% of those aged 12 years and older report past month consumption (Boersma et al., 2020) and among Americans in 2019, 20.8% reported any current tobacco use (Cornelius et al., 2020). Of importance, SUDs are on the rise according to data from the Global Burden of Diseases, Injuries, and Risk Factors Study 2017 (GBD, 2017) with 3018 cases per 100,000 males [95% UI, 2782-3252] and 1400 cases per 100,000 females [95% UI, 1279-1524] (GBD Collaborators, 2018). Substance use, specifically abuse and dependence, has led to multiple societal burdens (GBD Collaborators, 2018). The GBD 17 discusses these burdens as negative impacts on aspects of communities' health, economy, productivity, and social mechanisms. Much of the burden of substance use is the effect of substance use on other health outcomes such as unintentional injury and heart disease. Of interest, the GBD 2017 reported higher levels of alcohol-attributable burdens in areas with low sociodemographic index quintiles, compared to higher levels of drug-attributable burdens in areas with higher sociodemographic index quintiles (GBD Collaborators, 2018) suggesting alcohol and drug use affect individuals differently and are accessible (i.e., affordable, available) to different classes in society.

Interestingly, there is no shared definition of recreational drug use that is agreed upon in the literature. Merriam-Webster defines recreational drug use as, "a drug (such as cocaine, marijuana, or methamphetamine) used without medical justification for its psychoactive effects often in the belief that occasional use of such a substance is not habit-forming or addictive" (Merriam-Webster, nd). Individuals who use substances recreationally usually present to treatment when they experience problems related to use (Siliquini et al., 2005). Nicholson et al. (2002) thoroughly discusses the negative health consequences of drug consumption are clearly

linked to the abuse of substances, not of their use. Thus, there appears to be some consensus that recreational use resides in the category of non-problematic. Regarding problematic substance use, the literature appears much clearer on the harms of use as there are a multitude of screening tools to assess for problematic use and related consequences. Many of the tools are substance-specific, such as the Alcohol Use Disorders Identification Test (AUDIT) (Babor et al., 2001) which assesses problematic alcohol use and related consequences, or, they assess overall drug use (exclusive of alcohol) such as the Drug Abuse Screening Test (DAST) (Skinner, 1982). Importantly, these screening mechanisms are not meant to substitute a physician diagnosis and are intended to assess for problematic symptomology of alcohol and or drug-related behavior. Additionally, screening measures often exist as self-report or are best when administered via oral interview format. Consequently, substance use ranges from non-problematic to problematic and can be assessed by a multitude of methods.

Overall substance use associates with coping (Cook et al., 2021; Tam et al., 2020; Todd et al., 2005), peer pressure (Monaci et al., 2013), gambling (Bilevicius et al., 2018), depression (R. E. Davis et al., 2020), anxiety (Polito & Stevenson, 2019), suicidality (Ashrafioun et al., 2017), unintentional injury (Hanson et al., 2018), shame (Wiechelt, 2007), stigma (Link et al., 1997), and guilt (Locke et al., 2015). The literature is apparent in that substance use has a relationship with emotional/psychological constructs and conditions (i.e., depression, anxiety, shame, guilt), behaviors and behavioral mechanisms (coping, peer pressure, gambling, unintentional injury, suicidality), and the multi-faceted health determinant of stigma. Cook and colleagues (2021) found that coping motives mediated the relationship between social anxiety and alcohol consequences, suggesting those with higher coping skills were able to manage their social anxiety more affectively thus experiencing fewer alcohol related consequences. Similarly,

Tam et al. (2020) examined coping strategies as a mediator between the relationship of self-esteem and non-medical prescription drug use and found that coping mediated this relationship by two mechanisms (i.e., 2 factors upon exploratory factor analysis), adaptive coping and maladaptive coping. These findings suggest diverse coping strategies mechanistically impact substance use and related consequences in the respective pathways of self-esteem and social anxiety as higher self-esteem is seen as a protective factor and the presence of social anxiety as a risk factor for substance use.

Regarding maladaptive constructs, Wiechelt (2007) discussed shame as a "sickness of the soul" in her thoughtful commentary on shame's effect on substance misuse and related problems. Given shame's oft discussed juxtaposition in the literature to guilt, the connection between shame, guilt, and addictive behaviors is logical and necessary to examine in substance using populations. Bilevicius et al. (2018) examined the effect shame had on the relationship between depression and addictive behaviors, finding those with depression not only endorse higher levels of shame, but these high shame individuals were at greater risk for problem drinking and gambling with shame mediating depression's pathway to these risky behaviors. Ultimately, shame and guilt are based on self-evaluation (Wiechelt, 2007) and the presence of depression and/or anxiety could lead to a less than optimal view of the self potentially resulting in these addictive behaviors. Conversely, Locke and colleagues (2015) reported findings of those with problematic drinking habits and daily cigarette smokers associated with higher levels of guilt than their non-using counterparts. However, regular marijuana users associated with lower levels of guilt than their non-using classmates. These findings suggest guilt varies by substance used and may not act as the buffer against risky behaviors than some findings point to. Additionally, stigma of substances varies by substance as seen in Palamar et al.'s (2012) study examining

stigma towards marijuana and heroin use finding marijuana was significantly less stigmatized than heroin (Palamar et al., 2012). These works indicate the increased importance of examining stigma, guilt, and shame in combination to better understand how these constructs affect substance use severity, consequences, and related behaviors.

Substance use, related behaviors, and correlates are complex at best. Substance use, misuse, and development of a substance use disorder (SUD) may or may not progress in a linear way (American Psychiatric Association. & American Psychiatric Association. DSM-5 Task Force., 2013). One cannot develop a SUD without first experimenting/using the substance. However, not all individuals have the same predisposition to developing a SUD, as SUD severity depends on a range of factors from genetics (Hanson et al., 2018), life experience inclusive of family of origin and trauma (Coviello et al., 2004; Wiechelt, 2007), and mental health conditions (Alterman & Cacciola, 1991; Blanco et al., 2008). Additionally, there is not a one size fits all approach when discussing SUDs, development, risk factors, and so forth. SUDs often encompass alcohol and drugs in a general sense, but there is specific terminology to use based on the problematic substance being assessed (i.e., alcohol use disorder (AUD), opioid use disorder (OUD). Identifying the specific risk factors which lead to development and subsequent maintenance of SUDs is important in tailoring prevention and intervention efforts. Also, people who use substances often practice polysubstance use (i.e., alcohol and marijuana) (Yudko & McNiece, 2014) which adds another complicated layer to substance use patterns and behavior. Importantly, approximately half of those with mental illness (i.e., depression, bipolar disorder) will also experience a SUD in the duration of their lives and vice versa (Kelly & Daley, 2013; Ross & Peselow, 2012). Reasons for such cooccurrence have pointed to common risk factors for both mental illness and SUD, mental health disorders' likelihood of potentiating SUDs, and

substance use and SUDs' ability to alter brain chemistry potentially making individuals more susceptible to mental illness (NIDA, 2018).

Substance use disorders (SUDs) cover a vast range of maladies arising from substance use. According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) the criterion for a diagnosable substance use disorder (SUD) covers 11 different facets ranging from cravings, continued use despite relationship problems, needing more of the substance due to tolerance, and development of withdrawal symptoms which can be relieved by taking more of the substance (APA DSM-5 Task Force, 2013). Additionally, clinicians can screen for severity of SUDs which is dependent on how many symptoms are identified. Two or three symptoms indicate a mild SUD, four or five symptoms indicate a moderate SUD, and six or more symptoms indicate a severe SUD (APA DSM-5 Task Force, 2013). SUDs are a continuing public health concern and an overwhelming amount of Americans report having a SUD, second only to depressive disease in terms of worldwide disability (Whiteford et al., 2015). Substance using populations are highly stigmatized (Parcesepe & Cabassa, 2013) and complex emotions often surround personal patterns of use (Luoma et al., 2017). Additionally, the spectrum of non-problematic substance use to SUD development is increasingly complicated along with the related emotional components of shame and guilt. Combine these factors with the stigmatizing elements of substance use, and the need to better understand how to target, prevent, and treat, increases indefinitely.

Importance of Screening for Substance Use Severity

It is important to screen for substance use severity for a multitude of reasons. Substance use is inclusive of many related factors in addition to drug taking. It is imperative to consider an individual's health status, socioeconomic status, and possible multiple identities (e.g., HIV

status, LGBTQ+, Race/Ethnicity, etc.) through the lens of intersectionality as this acknowledges the whole person, rather than just focusing on their substance use. Clearly, there is not a one size fits all model of SUD development and treatment and it is suggested that if a SUD is assessed and treatment begins nearer to the onset, mitigation efforts to intervene and provide behavior change resources can take place in general health care systems versus specialty treatment centers for later stage SUDs (HHS, 2016). Physicians have a prime opportunity to ask about an individual's substance use, yet often they do not due to a lack of necessary training and lack of confidence in the methods they are aware of (Neufeld et al., 2012). Physicians often encounter barriers such as time constraints, specific deficits in training on providing brief interventions when assessing an individual's substance use, and possessing negative attitudes towards substance misusers (Palmer et al., 2019). Additionally, many primary care physicians find that treating patients with alcohol- and drug-related disorders is not rewarding and exists parallel or even outside the realm of medical education and proficiency (Miller et al., 2001).

Recent works have discussed potential benefits of assessing and targeting emotional constructs such as shame and guilt in substance use treatment programs as the body of literature increases on their maladaptive and adaptive mechanisms (Luoma et al., 2012; Luoma & Platt, 2015; O'Connor et al., 1994). Luoma and colleagues (2012) examined a group-based intervention targeting shame utilizing acceptance and commitment therapy (ACT) in 28-day residential SUD patients and found those with the ACT intervention had a large reduction of shame at 4-month follow-up and reported fewer days of substance use and greater treatment attendance during the same time frame. Additionally, in Luoma and Platt's (2015) work, the authors highlight how self-compassion (another emotional construct) could be an important factor in facilitating ACT interventions aiming to mitigate shame and self-stigma as a means to facilitate effective

treatment outcomes and recovery. Importantly, O'Connor et al. (1994) examined shame proneness and guilt proneness of participants in a 12-step recovery program compared to individuals who were not chemically dependent and found that recovering SUD patients screened significantly higher in shame proneness and significantly lower in guilt proneness (O'Connor et al., 1994). These findings further highlight the need for treatment programs and interventions to assess shame and guilt proneness in substance using populations as potential mechanisms for recovery.

Origins of Stigma, Correlates, and Stigma's Role in Substance Use

As discussed in Irving Goffman's seminal work, stigma refers to a collective set of negative cultural beliefs and attitudes towards an object or behavior (Goffman, 1963) and manifests by discrimination, stereotyping, and ultimately loss of social status (Link & Phelan, 2006). Stigma's origins are thought to be cultural and moral, where the stigmatized suffer and are at risk for losing what is of value to them (i.e., equitable care, acceptance and value), and the transgressor is also at risk for losing what is of value to them (i.e., power, class, status) (Yang et al., 2007). Yang et al (2007) also notes that stigma's theoretical models have progressed from an individualistic focus towards emphasizing the societal tenets. Additionally, upon examination of the various factors that make up these societal tenets such as socioeconomic status (i.e., financial resources, knowledge, power, prestige, social connections, etc.), one can intuit how stigmatized identities/circumstances (i.e., HIV status, sexual minority group membership) can lead to a depletion of these resources and to a lesser health advantage (Hatzenbuehler et al., 2013). The field of epidemiology has long studied proximal risk factors for major diseases such as diet, blood pressure, and exercise, yet lacks examination of the broader social context that associates with these risk factors, such as the impact stigma has as an effective determinant of health (Link

& Phelan, 1995). Stigma has also been labeled as a fundamental cause of population health inequities (Hatzenbuehler et al., 2013). As previously discussed, it is important to assess these individual risk factors for disease within the awareness of intersectionality to better understand the development of illness. It is well-known in the health research literature on socioeconomic disparities that those who reside at a lower level on the social hierarchy spectrum, often have worse health outcomes and decreased life expectancy (Layte, 2012). Additionally, social hierarchy is largely dependent on the manifestation and experience of stigma, discrimination, and chronic marginalization (Dolezal & Lyons, 2017).

In relation to stigma, one of the earliest discussions of 'identity' was iterated by Thomas Reid in 1785, in which he discussed Locke's view of personal identity as an indefinable concept, encompassing thought and relation, too simple and also too complex to be definable (Reid, 1975). Another description of identity is discussed as an evolutionary tool, functioning as personal theory, an asset, and a resource (Albert, 1998) which needed to be defined, understood, and made meaningful. Certain identities often do not fit in with societal norms as one can be tainted, set apart, othered, and stigmatized by society (Goffman, 1963). One such identity, human immunodeficiency virus (HIV), is an infection that assaults the immune system and can lead to acquired immunodeficiency syndrome (AIDS) (CDC, 2021). The stigma surrounding HIV is pervasive and prevalent in society and has been examined in at-risk populations (Earnshaw et al., 2012) and among male substance users who have sex with men (Batchelder, Foley, Kim, et al., 2021). Earnshaw and colleagues (2012) discovered that perceived HIV risk mediated the relationship between HIV stereotypes and HIV testing in a sample of individuals with a history of drug use. The authors sought to examine the mechanisms of HIV stigma and concluded that increased HIV testing could be accomplished by targeting HIV stereotypes rather

than HIV stigma in general. This concept fits with Fisher and Fisher's (1992) work relating to the impact of specific behaviors towards others (i.e., discrimination), rather than focusing on group membership (Fisher & Fisher, 1992).

Stigma has been examined and parsed into multiple tenets to better understand how these various mechanisms of stigma effect health outcomes. Unfortunately, the terminology surrounding the assorted aspects of stigma does not often align as multiple terms reference the same thing (i.e., social stigma and public stigma, courtesy stigma and associative stigma, and even enacted stigma and discrimination). In relation to substance use, important works have sought to explain these various aspects of stigma in comprehensible terms. To develop the SU-SMS, Smith et al. (2016) utilized Earnshaw and Chaudoir's (2009) research examining enacted-, anticipated-, and internalized-stigmas. Earnshaw and Chaudoir (2009) developed the HIV Stigma Framework to explore and better understand how the stigma of HIV produces a host of stigma mechanisms which ultimately lead to averse health outcomes (Earnshaw & Chaudoir, 2009). Additionally, self-stigma has been studied at length of substance users and their perceptions of themselves and their identity as a person who uses substances (Hasson-Ohayon et al., 2012; Luoma et al., 2013; Luoma & Platt, 2015; Tucker et al., 2013; Vogel et al., 2006). Kulesza and colleagues (2013) thoroughly examined the various types of stigma in relation to substance use via metanalysis and highlighted this lack of consistent terminology, lack of consistent research methodology, and lack of reported socio-demographic variables (Kulesza et al., 2013). One of the biggest criticisms of stigma research is the siloed focus on one tenet of stigma towards one aspect of an individual's identity/behavior, rather than examining multiple mechanisms of stigma towards multiple identities and behavioral aspects (Kulesza et al., 2013; Link & Phelan, 2001) further highlighting the importance of an intersectionality approach to stigma.

Stigma has been studied regarding mental illness (Hasson-Ohayon et al., 2012; Kranke et al., 2011; Link et al., 1997; Parcesepe & Cabassa, 2013; Phelan & Link, 1998; Yang et al., 2007), individual identities deemed as 'taboo' (i.e., HIV status, sexual minorities, person with a SUD) (Batchelder, Foley, Kim, et al., 2021; Benz et al., 2019; Earnshaw et al., 2019; Earnshaw et al., 2012; Scheff, 1984), and substance use (Janulis et al., 2013; Kulesza et al., 2013; Kulesza et al., 2014; Livingston et al., 2012; Luoma et al., 2013; Palamar et al., 2012). Hasson-Ohayon and peers' 2012 study assessed shame and guilt proneness in relation to insight into mental illness and self-stigma, discovering that only shame proneness mediated the relationship between insight and self-stigma. Their findings support the literature regarding shame and guilt as separate constructs that function by different mechanisms (Lewis, 1971; Tangney, Miller, et al., 1996). In a series of semi-structured interviews by Kranke and colleagues (2011) among adolescents with mental illness, the researchers noticed a relationship emerge regarding self-stigma that was not the same association as found in limited self-stigma models pertaining to adults. The adolescent self-stigma was affected by concurrent developmental life experience, whereas in adults, self-stigma most strongly related to past life experiences. These findings are intuitive given the human brain doesn't reach maturation until roughly age 25 (Hanson et al., 2018) and development is affected strongly by one's family of origin and adolescent experiences (Coviello et al., 2004). In a systematic review conducted by Parcesepe and Cabassa (2013) the authors synthesized 36 articles relating to stigma of mental illness in the United States. Importantly, they found that individuals with mental illness were often thought of as dangerous, incompetent, and shameful, and that these individuals were often on the receiving end of stigmatizing actions such as social distance (Parcesepe & Cabassa, 2013). Similar findings have been reported towards problem drug users, existent in the general public and members of the

health professions (Lloyd, 2013). Undoubtedly, the literature points out that stigma is pervasive, negatively effects individuals, exists through diverse mechanisms, and clearly effects health outcomes.

Speaking to the aforementioned criticism of stigma research, strictly stigma of substance use, there appears to be a dearth of work specifically inclusive of all stigma mechanisms as most examine only pieces of stigma's functionality. Consequently, examining the impact of internalized stigma, anticipated stigma, and enacted stigma in the literature will foreshadow the present study's purpose and highlight future directions. Batchelder et al.'s (2021) recent study examined the intersecting internalized stigma of HIV self-care practices among a sample of men who have sex with men and additionally report substance use. Utilizing semi-structured interviews to gather themes, half of the sample reported intersecting internalized stigmas had a profound impact on individual sense of self and HIV self-care behavior. Additionally, the stigma they experienced related to personal substance use had a bi-directional effect on their patterns of use and was the greatest hindrance toward managing their HIV. Multiple participants even described how anticipated stigma affected their identity and perpetuated their substance use as a means to avoid negative self-conscious emotions (e.g., shame) (Batchelder, Foley, Kim, et al., 2021). Comparatively, Benz et al. (2021) examined substance use stigma mechanisms in relation to treatment-seeking and found greater anticipated stigma significantly mediated the relationship between higher internalized stigma and increased help-seeking intention (while controlling for enacted stigma and severity of alcohol and drug use), suggesting fear of substance related stigma may function as a mechanism to motivate treatment seeking behaviors in those with internalized stigma of use (Benz et al., 2021).

Additionally, Benz and colleagues (2019) examined the stigma of substance use among gender/sexual minorities (GSM) as both are societally marginalized. In their study, individuals with a history of problematic substance use were screened for severity of use via the AUDIT (Babor et al., 2001) and the DAST (Skinner, 1982) with stigma mechanisms assessed via the SU-SMS (Smith et al., 2016). Anticipated stigma associated with help-seeking intention while enacted stigma associated with and predicted past help-seeking measures (while controlling for substance use severity with the DAST). The authors concluded that increased anticipation of substance use stigma might lead individuals to change their behavior and seek help, while enacted stigma related to the experience of targeted stigma, thus, participants sought help. Importantly, the authors suggest a need for qualitative work (e.g., interviews, focus-groups) in this population as to uncover the salient beliefs regarding the interaction of GSM and substance use stigmas and their related yet separate functions (Benz et al., 2019).

Palamar and colleagues (2012) found decreased stigma-related rejection inflicted toward marijuana use than ecstasy, opioids, amphetamines, and cocaine (Palamar et al., 2012). These findings indicate stigma varies by substance and waxes and wanes to meet societal attitudes towards drug use. Comparatively, in Janulis and colleagues' (2013) work, the authors sought to examine the mechanisms of stigma toward individuals diagnosed with SUDs. Their results highlighted the importance of familiarity with marijuana and heroin dependence as it was found to predict lower levels of perceived dangerousness, fear, and desired social distance towards individuals struggling with heroin and marijuana dependence. Additionally, the authors found that alcohol dependence did not have significant relationships with perceived dangerousness, fear, or desired social distance and they speculate this is due to the fact that alcohol use is incredibly common, less stigmatized, and the only legal substance they examined (Janulis et al.,

2013). Further, Luoma et al. (2007) found that intravenous (IV) drug users reported higher levels of perceived stigma and stigma-related rejection, than their non-injecting substance using counterparts (Luoma et al., 2007), similar to Palamar et al.'s (2012) findings regarding substance-related stigma. There are clear differences in stigma towards different classes of substances, yet mechanistically how these dimensions of stigma manifest in individuals' lives remains unclear highlighting the need for further examination.

Origins of Shame, Correlates, and Shame's Role in Substance Use

Shame is described as a global comprehensive, negative feeling about the self (Dearing et al., 2005; Lewis, 1971) and a powerful negative emotion often resulting in subsequent feelings of lowliness and defenselessness (Wicker et al., 1983). Shame can be examined via specific events (i.e., state shame) or as a personality trait/characteristic (i.e., shame proneness) (Prosek et al., 2017). Shame's existence is not clear in the literature as to how or why it exists in various levels in individuals, but there is indication that family of origin (Sidoli, 1988; Wiechelt, 2007), self-origin/concept (Schore, 1994), personality differences (Nelissen et al., 2013), and emotional development (Frąckowiak-Makowska, 2018) are at the source, and much like shame's cousin guilt, are endemic to the human condition. Sidoli (1988) discussed shame as a shadow, emergent during childhood, rising from repeated experiences of personal shortcomings, feeling inadequate yet also dependent, and attempts to make connections with the world around us. Wharton (1990) also discussed shame as a shadow, inclusive of the things we don't like about ourselves (i.e., unpleasant qualities) and the things we want to hide about ourselves so that they remain unknown (Wharton, 1990). Harper (2011) notes that shame is universal across cultures as studied by facial representations of emotions (Harper, 2011), and more frequent and intense experiences

with shame can lead to an internalization of shame, also known as shame-proneness (Cook, 1996).

Shame (much like stigma) leads to othering as one tends to feel tainted, set apart, and often dehumanized (Goffman, 1963; Scheff, 2013) and has been described as the core emotion of self-stigma (Luoma & Platt, 2015; Rüsch et al., 2014). Flanagan (2013) discussed the shame condition as a dual normative failing of the self where one sees themself as they are in the world, subsequently recognizes their own lack of self-control or agency towards their substance use, while simultaneously having shame for this and for failing to meet the societal standard for a good life (Flanagan, 2013). Nelissen et al. (2013) discussed how shame could lead one to change their behavior or repair relationships, but only when a transgression is witnessed by others. Shame does not directly affect other people, nor are they victimized by another's personal shame, for shame directly affects the individual it resides in. Also, it has been posited that shame might only lead to repair of self-image, yet only if the shameful mishap was witnessed by others. (Nelissen et al., 2013). Additionally, Scheff (1984) discussed how shame is taboo in modern society, remains invisible, and is largely ignored due to this denial and silence (Scheff, 1984). Therefore, it appears that acknowledgement of shame is largely dependent on the individual and their lived experience in the world and how they subsequently view themselves.

Shame positively associates with suicide (Cameron et al., 2020), eating disorders (Cavalera et al., 2016; Mortimer, 2019), problematic gambling (Bilevicius et al., 2018), risky sexual conduct (Stuewig et al., 2015), as an obstacle to help-seeking (Cummings & Baumann, 2021), anxiety (Fergus et al., 2010), stigma (Rai et al., 2020; Rose et al., 2017), and substance use (Dearing et al., 2005; Kulesza et al., 2014). Cameron et al. (2020) examined the shame surrounding suicidal behaviors and substance use among a Veteran population finding that acute

increases in shame associated with an increase in suicidal urges, but not for substance use. They also noted that certain risk factors for suicide also exist for substance use, such as depression, hopelessness, and wanting to escape (Cameron et al., 2020). Behaviors, experiences, and health conditions that individuals want to keep hidden due to their shame are often societally conditioned to be shameful, as Sidoli (1988) and Wharton (1990) have discussed. Eating disorders are a prime example of a shameful condition, as the plagued individual feels shame surrounding their behavior yet in order to effectively attempt recovery one often has to acknowledge this behavior time and again in treatment. Cavalera et al. (2016) examined female patients with eating disorders both in and out of clinical treatment and found that those in clinical treatment had higher shame proneness than the out of treatment group. Importantly, shame was elicited by recanting their private transgressions, yet shame is not typically addressed in treatment programs which Dolezal and Lyons (2017) discuss as a major downside to healthcare and medicine (Dolezal & Lyons, 2017).

Comparatively, Cummings and Baumann (2021) discuss how shame of disclosing past trauma to healthcare employees exists as a barrier to many patients, and the concurrent problem with clinicians not asking patients about their past trauma due to attempted avoidance of vicarious shame. By not addressing shame in healthcare settings, given its systemic roots, the ability of accurately diagnosing and effectively treating a patient is potentially limited. Dolezal and Lyons (2017) also note that the medical system was largely built upon addressing problems that are physically and physiologically assessable and that science used to regard emotion as a plausible explanation with humor. Lastly, healthcare worker stigma has its' roots tied to blame, shame, and fear of disease-specific features and this ultimately impacts individual health, disease management, and quality of life (Rai et al., 2020).

Often cyclical, clinical literature discusses shame as a factor in addiction development and progression (Wiechelt, 2007). Family of origin and subsequent trauma have been shown to prospectively dictate one's feelings about their substance use, frequently resulting in feelings of shame (Wiechelt, 2007). Shame has been described as the cornerstone of addiction development as shame can produce a sequence of adverse behavior (i.e., substance use, shame, more use to mitigate negative affect, more shame, etc.) (Flanagan, 2013). Specifically, shame of substance use associates with increased maladaptive coping mechanisms (Rahim & Patton, 2015), delay in treatment-seeking (Hernandez & Mendoza, 2011), decreased self-esteem (González-Sanguino et al., 2019), depression and anxiety (Bilevicius et al., 2018; Kulesza et al., 2013), and guilt (Dearing et al., 2005; Luoma et al., 2017; McGaffin et al., 2013). Importantly, these findings highlight the omnipresent, pernicious, and insidious nature of shame, and the importance of addressing it in public health systems. Unfortunately, shame can be difficult to assess, as are many emotional constructs (Tangney, 1996), and often remains unspoken (France et al., 2015).

Origins of Guilt, Correlates, and Guilt's Role in Substance Use

Heather Lewis described the difference in guilt from shame in that guilt refers to an action deemed as bad (i.e., "I did something bad") and shame as a personal failing (i.e., "I am bad") (Lewis, 1971). Historically, there has been confusion surrounding guilt and shame considering their differences as distinct emotions. Both emotional constructs possess elements of distress, yet one is related to personal actions and the other relates to one's sense of self (Tangney & Dearing, 2002). Additionally, Cohen et al. (2011) discussed the increased confusion regarding guilt and shame as many people use the terms interchangeably (Cohen et al., 2011), and Wolf (2010) noted the importance of viewing guilt as an emotion displayed publicly to repair relationships, and shame displayed privately via withdrawal (Wolf et al., 2010).

Comparatively, Vaish (2018) found that the experience of guilt among children motivated reparative behavior in children, and displays of guilt triggered empathy and cooperation (Vaish, 2018). Dearing and colleagues (2005) expressed concern for the need to distinguish the two emotions, finding shame-proneness was often positively correlated with problematic substance use, while guilt-proneness was inversely related to problematic substance use (Dearing et al., 2005). Similarly, Treeby and Bruno (2012) examined guilt and shame in relation to problematic alcohol use and drinking to cope with anxiety and depression symptoms and found that shame-proneness positively associated with the aforementioned behaviors while guilt-proneness was inversely related (Treeby & Bruno, 2012). Guilt and shame, while similar in origin, appear to have different self-regulatory mechanisms and serve as different behavioral motivators.

Guilt has been examined as a protective factor as it positively associates with adaptive behavior such as emotion regulation, greater empathy, and healthy interpersonal relationships (Vaish, 2018). When guilt is felt in reference to a behavior, the individual often wants to 'fix' the wrongdoing in order to maintain and repair social relationships (Tangney & Dearing, 2002). Conversely, shame often keeps individuals from learning effective coping skills (Pond, 2021), as it relates to poor emotion regulation, psychological affective difficulties, and relationship problems (Tangney & Dearing, 2002). Furthermore, McGaffin et al. (2013) examined guilt, shame, and self-forgiveness in a sample of individuals in recovery from drug and alcohol problems, and found guilt positively associated with self-forgiveness, while shame was negatively associated with self-forgiveness. Moreover, acceptance mediated the relationship between guilt and self-forgiveness, with an indirect effect on the relationship between shame and self-forgiveness (McGaffin et al., 2013). These findings foreshadow Luoma and Platt's 2015

study examining the role of self-compassion in Acceptance and Commitment Therapy (ACT) to decrease shame and self-stigma.

Cohen et al. (2012) makes several important contributions regarding guilt proneness and moral character, illuminating guilt proneness as an important character trait. Cohen's findings reveal that individuals who score high on measures of guilt make far fewer unethical business decisions, display fewer deviant behaviors, and make more economically honest choices. Additionally, their findings reveal guilt-prone employees are less prone to engage in counterproductive tactics that may harm their organization (Cohen et al., 2012). Similarly, Kealy and colleagues (2020) examined guilt and shame as mediator in the pathway between dispositional optimism and anxiety and depression symptomology and found guilt significantly mediated the relationship in the model predicting depressive symptoms, and shame significantly mediated the relationship in the model predicting anxiety symptoms. These findings further suggest the diverse mechanisms by which guilt and shame function, highlighting the need to treat both as distinct emotions.

Thus far guilt has been discussed as an adaptive mechanism by way of behavioral evaluation resulting in repair-oriented tendencies. Therefore, when examining guilt's relation to substance use, one might intuit those individuals with SUDs would have decreased guilt-proneness metrics than those without. O'Connor et al. (1994) examined guilt and shame in a sample of individuals recovering from substance use disorders and found that those in recovery, compared to those without a chemical dependence, scored significantly higher in shame-proneness and significantly lower on guilt-proneness (O'Connor et al., 1994). Comparatively, another study examined participants in recovery from SUD were also compared to non-SUD participants and were found to also have significantly higher shame-proneness scores and

significantly lower guilt-proneness scores (Meehan et al., 1996). Luoma et al. (2017) examined shame and guilt and the relation to alcohol-related problems finding shame was the strongest predictor of drinking-related problems and guilt was related to less problematic consumption (Luoma et al., 2017). These findings further suggest that guilt and shame function via opposing mechanisms in substance-using populations.

Measuring Shame and Guilt

Currently, many instruments exist to measure shame and guilt with each having strengths and weaknesses. Cohen et al. (2011) discussed the importance of examining shame and guilt in terms of public versus private transgressions by exploring negative self-evaluation and withdrawal tendencies and negative-behavior evaluations and repair-action tendencies leading to the development of the Guilt and Shame Proneness (GASP) scale which assesses negative self-evaluations (NSEs) and shame-withdrawal, along with tenets of guilt with the subscales of negative behavior evaluations (NBEs) and guilt-repair. Comparatively, (Enikolopov & Makogon, 2013) illuminated that one of the major problems with assessments of shame and guilt are the lack of scales to tease out these different components. The Internalized Shame Scale (ISS) was developed by David Cook in 1987 and is an excellent and widely acclaimed self-report measure consisting of 30-items measuring shame and self-esteem (Cook, 1987). The ISS has demonstrated acceptable validity and reliability and has been widely used in the literature in a variety of studies and populations (del Rosario & White, 2006; Luoma et al., 2017; Rybak & Brown, 1996). Unfortunately, upon further examination, the ISS is copyrighted and quite costly to utilize in research.

The Shame Inventory was developed by Shireen Rizvi in 2010 and is a self-report measure of shame-proneness and state-shame consisting of 53-items (Rizvi, 2010) and has

demonstrated acceptable reliability and validity. The Shame Inventory has also been used widely in the literature (Bilevicius et al., 2018; Dhuffar & Griffiths, 2014; Keller et al., 2015), yet due to the length of the instrument, this can often be seen as a weakness leading to survey responder fatigue. Additionally, there is the well-known Test of Self-Conscious Affect (TOSCA), the Harder Personal Feelings Questionnaire second edition (PFQ-2), and the Experiential Shame Scale (ESS). The TOSCA is a 65-item assessment and was developed by Tangney et al. in 1989 and measures a range of constructs inclusive of shame, guilt, externalization, detachment, alpha pride, and beta pride (Tangney et al., 1989). The TOSCA has been widely used in the literature assessing the 6 previously mentioned constructs in a variety of demographics (Baldwin et al., 2006; Eterović et al., 2020; Rüsch et al., 2007) and is deemed a reliable and valid measure.

The PFQ-2 is a 28-item measure of shame and guilt proneness developed in 1990 and revised in 1993 (Harder et al., 1993). The PFQ-2 is a word-association test with a list of adjectives utilized to measure shame- and guilt-proneness, and its brevity is important for research purposes, yet there has been wide criticism of its adjective checklist approach as this puts the ownness on the participant to be able to fully differentiate between shame and guilt experiences. Additionally, while referring to the metrics as shame- and guilt-proneness, the instrument actually measures state shame (i.e., shame of specific events), not shame-proneness however the PFQ-2 is utilized in clinical (Bryan et al., 2013) and non-clinical populations (Mousavi et al., 2016). The ESS is an 11-item measure demonstrating acceptable validity and reliability metrics that assesses state shame over three categories, physical phenomena, emotional phenomena, and social phenomena (Turner, 2014). The ESS limits examining shame and its mechanisms as it only measures state shame, the shame experienced ‘in-the-moment’, however, it has been used in clinical (Koulouras, 2017) and non-clinical populations (Rüsch et

al., 2007). The literature has painted a clear picture on the repair-oriented mechanisms of guilt and the withdrawal-oriented mechanisms of shame, yet many of the current assessments of shame and guilt do not effectively do so. Additionally, many of these instruments are not clear on what they are measuring (i.e., state or trait) in the constructs of guilt and shame, furthering the argument of inconsistencies in the literature with definitions, instruments, and subsequent findings.

Interventions to Mitigate Shame, Stigma, and Guilt

Shame, guilt, and stigma surrounding substance use often keep people mired in despair (Pond, 2021) in a potential looping effect of use and subsequent feelings of failure (Matthews et al., 2017). When considering ingrained emotional concepts such as shame and guilt with the added layers of stigma, it's important to examine how things concepts can be modified via intervention. Luoma et al. (2012) references acceptance and commitment therapy (ACT) in group-based interventions that work to reduce the amount of trait shame in a person, therefore increasing their likelihood to seek help/treatment, achieving some success with decreased substance use and increased treatment attendance at follow-up (Luoma et al., 2012). Importantly, by reducing shame this can lead to increased feelings of self-compassion and self-esteem, thus increasing investment in one's self (Dupasquier et al., 2020). Comparatively, Gilbert and Procter (2006) used compassionate mind training (CMT) in a sample of individuals who had high shame and self-criticism. After 12 two-hour sessions in CMT, the individuals were tested again and the authors found that depression, anxiety, self-criticism, shame, inferiority, and submissive behavior were significantly reduced. Of interest, the authors focused on increasing self-soothing ability and self-reassurance and invited the participants to collaborate with them during the

sessions. The authors suggest this aided outcomes by increasing participant buy-in and involvement (Gilbert & Procter, 2006).

Conversely, instead of directly focusing on mitigating shame, Brown (2011) suggests developing shame resilience to manage and process shame. In her 2011 curriculum, 'Connections: A 12-session psychoeducational shame resilience curriculum' she works to implement shame resiliency strategies with clients to improve their health outcomes and their lives (Brown, 2011). Additionally, Brown developed a shame resiliency theory using Grounded Theory by interviewing over 200 women and their lived experiences with shame. She noted that when women acknowledged vulnerability and awareness, this cultivated mutually empathetic relationships and confidence to speak shame aloud in order to name it and give it less power (Brown, 2006). Regarding stigma in a similar fashion, Volkow (2021) notes that interaction with person's holding stigmatized identities and hearing their stories directly can translate to powerful de-stigmatizing effects, rather than just public education campaigns (Volkow, 2021). However, Livingston (2012) notes in a review paper on interventions to mitigate SUD stigma that many of the educational campaigns which seek to decrease social stigma of substance use disorders mostly use educational factsheets modeling individuals in recovery and motivational interviewing tactics (Livingston et al., 2012) with little to no follow-up of the effectiveness of these campaigns. Unfortunately, social and structural stigma are difficult to combat, and Livingston (2012) additionally notes that a systemic approach is needed to mitigate stigma and its deleterious effects on individuals' health outcomes and quality of life.

Interestingly, Silverman (2019) conducted an intervention on adults with SUDs in a detoxification unit using songwriting to target state shame, guilt, and pride. He found that while no significant differences existed between the control group and experimental group in state

shame and guilt, the experimental group did have significantly higher pride measures. He notes that shame, guilt, and pride are important interrelated constructs for people with SUDs. Thus far, much of the literature has solely addressed shame and guilt, and this could be seen as confrontational to participants. Therefore, by employing a songwriting intervention this may promote engagement by fostering positivity, creativity, and pride where individuals feel safe to explore the other aspects of their SUDs (i.e., shame and guilt origins) (Silverman, 2019). These multiple study findings suggest an increased need to target guilt, shame, and stigma in individuals with SUDs while additionally honoring their journey from the lens of intersectionality.

Help-seeking Intention

Help-seeking intention is often discussed in terms of uncovering what barriers exist, within and outside of, individuals that inhibit them from pursuing effective treatment options. Several factors inhibit help-seeking behaviors in various populations, as the stigma surrounding seeking and receiving help is pervasive, seemingly regardless of the reason one seeks help (i.e., mental illness, SUD). Help-seeking intention associates with self-reliance (Han et al., 2018), perceived culture (Chen et al., 2016), trust in culture (Dean et al., 2018), perceived severity of the problem (Kim & Zane, 2016), self-compassion (Dschaak et al., 2021), and attitude toward treatment (Schomerus et al., 2009). Interestingly, Han et al. (2018) discussed self-reliance, high cost of services, and informal support from family and friends as critical barriers to help-seeking in a sample of university students. The authors suggest self-reliance could exist as a barrier to seeking help given the common narrative of importance surrounding being able to solve one's problems on their own. Other constructs impact help-seeking intention such as societal and cultural factors, much like the impact of social and structural stigma on individuals with SUDs.

Chen et al. (2016) and Dean et al. (2018) examined tenets of cultural impacts on mental health help-seeking intentions in university students. Chen et al. (2016), informing their studying using the Theory of Planned Behavior (Ajzen, 1991), found that perceived campus culture significantly mediated the relationship between perceived campus attitudes and help-seeking intentions. The findings suggest that the students' perception of the campus culture is an important contributor to help-seeking, regardless of the actual campus climate and should be a target for mental health education, policy, and promotion of services. Comparatively, Dean et al. (2018) found that sociocultural factors, symptom severity, and intolerance of uncertainty had a synergistic effect on willingness to seek treatment among Black students with anxiety or depression. Students who had low cultural mistrust and low perceived discrimination were more likely to be willing to seek help, especially when their intolerance of uncertainty and symptom severity were high. These study results suggest the importance of examining societal factors that impact help-seeking intention and subsequent behavioral outcomes (i.e., effective treatment and recovery).

Additionally, help-seeking intention associates with self-stigma and perceived-stigma as individuals often feel embarrassed to get help and expect others to react negatively (Barney et al., 2006). Often, the stigma associated with substance use discourages individuals from finding the resources they need (Benz et al., 2021; Benz et al., 2019; Link et al., 1997; Sirey, Bruce, Alexopoulos, Perlick, Friedman, et al., 2001) or is a reason someone quits treatment early (Sirey, Bruce, Alexopoulos, Perlick, Raue, et al., 2001). Stigma often keeps one from seeking treatment (Eisenberg et al., 2012; Gaddis et al., 2018) and is seen as a barrier to health screenings (Kulesza et al., 2013). Further, depression and anxiety are two psychological affective conditions that often co-occur with SUD. Additionally, it can be difficult to assess which came first, the psychological disorder or the SUD. The DSM-IV states that in patients with co-occurring mood

disorders and SUDs, the mood disorder is primary unless it is due to the effects of alcohol or other drug use (i.e., mood disorder was present prior to the substance use problem and/or persists during periods of abstinence) (American Psychiatric Association. & American Psychiatric Association. DSM-5 Task Force., 2013). Moreover, it can be difficult to treat patients with co-occurring mood and substance use disorders as most psychiatric medications advise against consuming additional substances while taking the prescribed medication (Pettinati et al., 2013). Fong et al. (2021) sought to develop a scale measuring medical provider stigma experiences among people who use drugs. Study findings highlighted greater levels of enacted and internalized stigma were associated with less likelihood to communicate honestly with medical providers and those with higher levels of enacted stigma were less likely to seek treatment for existent health conditions (Fong et al., 2021). These results indicate that medical provider stigma in the form of enacted stigma exists as a barrier for individuals who use substances in their help-seeking intention, likely resulting in a lack of targeted resources and keeping individuals from receiving the directed help they needed. Also, internalized stigma (e.g., likely resultant from enacted stigmatizing experiences) can affect other aspects of health as individuals might apply this to their sense of self-worth. Medical providers should exist in a space where individuals can express their needs and concerns openly, as seeking help and/or treatment is often the biggest hurdle to recovery. These study findings further highlight the work that needs to continue in lessening mental illness stigma, barriers to help-seeking, and substance use stigma.

Halter (2004) notes that individuals endorse help-seeking if the reason for seeking help (i.e., depression) is not under personal control (Halter, 2004). This suggests that if a mental illness is deemed to be one's own doing that the individual needs to solve the problem on their own (i.e., SUDs are often thought of as one's own doing). Comparatively, desiring to solve one's

own problems and lack of problem awareness were the main barriers to seeking professional help in a sample of adolescent cannabis users (Fernández-Artamendi et al., 2013). It appears that when one decides to seek help, they are often stigmatized, yet they are also stigmatized if they do not decide to seek help and attempt to solve their issues on their own. As seen in a study examining indigenous peoples' willingness to seek help, Winters et al. (2020) found that those seeking help were stigmatized either by seeking help, not seeking help, and when attempting to better their own situations with their own means (Winters & Harris, 2020). King et al. (2018) utilized the General Help-Seeking Questionnaire (GHSQ) in an intervention designed to increase help-seeking intentions in a sample of males by watching a documentary exploring traditional masculinity and mental health and found their help-seeking intentions were significantly increased in the intervention group but not the control group (King et al., 2018). Their findings suggest the importance of using a variety of methods (i.e., media-based such as a documentary) to promote help-seeking in individuals for personal and emotional problems.

Conclusion

According to the literature, the constructs of shame, guilt, stigma, and help-seeking intention are associated and have been examined with a multitude of instruments, methodologies, populations, and behavioral outcomes. However, the examination of the mechanistic pathway from enacted-, anticipated, and internalized-stigma to substance use severity through guilt and shame has not been done. Importantly, guilt and shame act as different motivators for individuals as guilt functions in adaptive ways and associates with modification of behavior (McGaffin et al., 2013), whereas shame functions in maladaptive ways (Tangney & Dearing, 2002) often associated with withdrawing (Wolf et al., 2010). Guilt, shame and stigma, separately, inhibit individuals either behaviorally or psychologically, and in combination likely serve to only

further individuals who need help from finding and receiving support. These constructs in combination are complex at best yet a thorough examination, specifically the pathway from stigma to substance use severity, is warranted, and can better inform interventions and potentially save lives. When individuals are continually hampered by antiquated societal norms, it appears to further instill the message that individuals are not worth seeking help and are destined to fulfill the societal norms (i.e., incarceration versus treatment).

There are limited works inclusive of examining stigma, shame, guilt, substance use severity, and help-seeking intention among individuals who use substances, with current literature merely touching on fragments of the aforementioned. Importantly, to the best of the researcher's knowledge, there are no studies that examine internalized-, enacted-, and anticipated-stigma in relation to substance use severity. Additionally, there are no studies that delve further by examining the potential moderating effect shame (proneness and state) and guilt (proneness and state) have on these three types of stigmas and substance use severity. The existent literature has examined pieces of the previously listed study variables of shame, stigma, guilt, and substance use in clinical populations via intervention to mitigate shame of substance use (Luoma et al., 2012), college students and shame of gambling (Bilevicius et al., 2018), intersecting identities of stigma, shame, and HIV (Batchelder, Foley, Kim, et al., 2021; Batchelder et al., 2020), shame, guilt, drug and alcohol use (Dearing et al., 2005; Patock-Peckham et al., 2018), and adolescents' shame of substance use (Rahim & Patton, 2015). Dearing et al. (2005) strongly suggested shame and guilt be examined as individual constructs (Dearing et al., 2005). Shame-prone students reported use of alcohol to cope with psychological issues (Treeby & Bruno, 2012), suggesting a need to study a broader range of substances. Furthermore, in a meta-analysis by Luoma et al. (2019), he suggests potential moderators of

shame and substance use need to be examined rather than the continued assessment of shame's association with substance use at an overall level, indicating a need to additionally differentiate between problematic and non-problematic users. There is an increasing need to understand guilt and shame's role in the pathway between the dimensions of stigma and substance use severity to better inform prevention, treatment, and SUD development. Furthermore, given the opposing functions of shame and guilt, including the two constructs in this study will likely illuminate different, yet crucial findings in how those who use substances experience these stigmatizing aspects and how this relates to substance use behavior.

To state again, the purpose of this dissertation is multi-faceted. Specifically for study 1, the purpose is to cross-sectionally examine the pathway between enacted, anticipated, and internalized stigma and substance use severity, among community substance using adults and to identify the role of guilt and shame in moderating the effects of stigma on substance use severity. The purpose for study 2 is to use an explanatory mixed methods approach to first examine the pathway between enacted, anticipated, and internalized stigma and help-seeking intention, among community substance using adults and to identify the role of guilt and shame in moderating the effects of stigma on help-seeking intention. Second, using a qualitative exploration of the lived experiences of substance using adults via semi-structured interviews utilizing Grounded Theory, regarding the interconnectedness of stigma aspects, shame, guilt, and help-seeking intention, will enrich the study via an explanatory mixed methods approach.

Chapter 3: Research Methodology

**This is a manuscript style dissertation with the current chapter detailing the research methodology for manuscript 1 (study 1), and manuscript 2 (study 2).*

Study 1: The Complexities of Guilt, Shame, and Stigma among a Sample of United States Substance Using Adults

Purpose

The purpose of study 1 was to examine the relationship between three stigma mechanisms; internalized-, anticipated-, and enacted-stigma, and substance use severity (non-problematic/problematic alcohol/drug use). Secondly, to examine the pathway between enacted, anticipated, and internalized stigma and substance use severity among US substance using adults and to identify the potential role of shame and guilt in potentially moderating the effects of stigma on substance use severity.

Research Design

The current study utilized a cross-sectional electronic survey design using a non-probability sample of United States substance using adults (self-reported past 12-month substance use). The study used a screening procedure and individuals who met the inclusion criteria were eligible for the survey phase. The study was descriptive, employed correlations to examine relationships, assessed predictions of independent variables via multinomial logistic regression while examining moderation effects by entering interaction terms, to examine the mechanisms of stigma, shame, guilt, and substance use severity.

Participants

Inclusion criteria: United States (US) dwelling individuals who self-report as a person who uses substances (other than caffeine and tobacco) over the past 12-months regardless of frequency or severity of use (problematic or non-problematic). Type of substances used could be

illicit [i.e., cocaine, Lysergic acid diethylamide (LSD), heroin] and/or licit (i.e., alcohol), misuse of prescription medicine and/or misuse of over-the-counter drugs. Individual must be at least 18 years of age or older, English speaking/reading, and have access to a computer or smart device. During the screening procedure, participants were provided a definition of prescription drug misuse stating, "Prescription drug misuse refers to use of prescription medication in a way not specifically directed by a doctor. To clarify: any use without your own prescription, for recreational purposes, taking a higher dose than prescribed, using more frequently than directed or continued use despite no longer experiencing the problem for which it was prescribed" as part of the inclusion criteria for participating in the study. Additionally, a definition of over-the-counter drug misuse was provided stating, "Over-the-counter drug misuse is any drug you can buy without a prescription (i.e., Robitussin) taken in any way other than as directed on the label."

Exclusion criteria: person who does not use substances (other than caffeine and tobacco), does not have access to a computer or smart device, under the age of 18, or non-English speaker.

Estimated sample size: In 2017 the National Survey on Drug Use and Health (NSDUH) estimated 15% of adults had a SUD and 10% of adults had an AUD (SAMHSA, 2018). Presently, 5 independent variables in logistic modeling suggests 10 cases per IV and based on the NSDUH percentages of SUD and AUD (to be combined yielding 25%), the researcher suggested a sample size of 200 participants as 25% of 200 yields 50 cases.

Measures/Instrumentation

*Please see Appendix C for the full instruments

Screening Procedures

This study determined survey phase eligibility via use of a screening procedure. This process was to effectively capture the variety of substances used and ensure all types of use and

misuse (other than or in addition to tobacco and caffeine) were included in the study sample. The screening procedure consisted of three items and began with a brief informed consent with University IRB approval information. The first item was a forced response item asking the individual to type in their Prolific ID (this ties their data to a unique identifier therefore preserving anonymity of the participant, serves as a way for the researcher to record these IDs and match data submissions to IDs, and ensures that the participant receives payment for study completion).

The second item was in matrix format and read, “Have you used any of the following substances in the past 12-months? Please check all that apply”, with all answer options listed underneath one of the following, “used in the past 12-months”, “used but not in the past 12-months”, and “never used”. Item choices consisted of 14 substances (e.g., alcohol, cannabis recreational, cannabis medical, heroin, LSD, etc.) with an additional “other” open text box.

The third and final item assessed past 12-month misuse of prescription or over the counter drug use, with definitions reading, “Prescription drug misuse refers to use of prescription medication (i.e., prescription pain relievers, prescription stimulants, etc.) in a way not specifically directed by a doctor. To clarify: any use without your own prescription, for recreational purposes, taking a higher dose than prescribed, using more frequently than directed or continued use despite no longer experiencing the problem for which it was prescribed. Over-the-counter drug misuse is any drug you can buy without a prescription (i.e., cough syrup) taken in any way other than as directed on the label.” Answer options were the same as item 1, “used in the past 12-months”, “used but not in the past 12-months”, and “never used”; item choices consisted of 4 classes of prescription medications with examples provided (e.g., prescription

opioid pain-relievers such as Vicodin, OxyContin, or others), a “misuse of other prescription medication(s)” open text box and a “misuse of over the counter drug(s)” open text box.

The screening procedure culminated with two options for free mental health resources available by phone call and text messaging. Upon seeing the free mental health resource information, the participant was directed to click a hyperlink that re-directed them back to Prolific so that their submission was complete, recorded in Qualtrics, and they were eligible to receive payment upon approval of their submission.

Survey Phase

Survey phase instruments are described in detail below. For information on study sampling, please review ‘procedures’ beginning on page 62.

Demographics

Participants were asked demographic questions regarding gender identification, age in years, race/ethnicity, household income, sexual minority group identification, highest level of education completed, employment status, current US state of residence, and marital/relationship status. These demographics have been assessed in recent works (Batchelder, Foley, Wirtz, et al., 2021; Benz et al., 2019).

Drug Abuse Screening Test (DAST-10)

The original DAST is a 28-item self-report questionnaire that assesses past 12-month drug use exclusive of alcohol and tobacco (Skinner, 1982), modeled after the Michigan Alcohol Screening Test (MAST) (Selzer, 1971). Skinner (1982) also developed 10- and 20-item versions of the DAST and both are known to have high internal consistency and correlate highly with the original 28-item version. The present study utilized the DAST-10 given the excellent psychometric properties and to shorten the electronic survey length. The DAST-10 correlates

highly with the DAST-20 (r = 0.98) and reports excellent internal consistency reliability (0.92) (Skinner, 1982). Response options are dichotomized (i.e., yes/no) with the total number of 'yes' responses summed to create a total score. All items are scored as "1" for 'yes' or "0" for 'no', except for item three which is reverse scored. Range of possible scores is from 0 to 10 with higher scores indicating greater drug use severity. For example, if a score of 0 is given, there is no indication of drug related problems reported, and as the DAST score increases this suggests a rise in level of drug problems reported. A maximum score of 10 would suggest substantial problems. Problematic substance use was operationalized using the standardized cut-off value of 3 or greater for the DAST-10, as Skinner suggests (Skinner, 1982). Example items included, "Have you ever used drugs other than those required for medical reasons?", "Do you abuse more than one drug at a time?", and "Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?".

This measure has demonstrated acceptable reliability and validity in previous research (Benz et al., 2019; Gavin et al., 1989; Staley & el-Guebaly, 1990). In a former study, Benz et al. (2019) report Cronbach's alpha for the DAST at 0.90. Gavin et al. (1989) validated the original 28-item DAST in a clinical sample of 501 drug/alcohol patients against the DSM-3 (most current edition of the DSM at the time) diagnostic criteria for substance abuse and found the diagnostic validity was high with the DAST attaining 85% accuracy in classifying patients according to DSM-III diagnosis (Gavin et al., 1989). Additionally, the DAST-10 psychometric properties and diagnostic validity was assessed in a sample of 565 patients in residential addiction centers. The authors assessed internal consistency (Cronbach's alpha $\geq$ 0.80), optimal goodness of fit for the one factor model, and Areas Under the Curve $\geq$ 0.90 (95% CI 87-93), finding the DAST-10 to be a reliable and valid tool (Villalobos-Gallegos et al., 2015). The DAST has been utilized to assess

past year drug use in a variety of samples including clinical psychiatric (Staley & el-Guebaly, 1990), burn patients (Rockne et al., 2019), college students (Taylor et al., 2008), and adolescents (Martino et al., 2000). The DAST has been developed in Japanese (Shimane et al., 2015), Turkish (Evren et al., 2014), and Spanish (Bedregal et al., 2006). Presently, the DAST-10 demonstrated acceptable internal consistency (10 items; $\alpha = 0.68$).

Alcohol Use Disorder Identification Test-Concise (AUDIT-C)

The AUDIT-C consists of 3-items and is a brief alcohol screening instrument that reliably identifies persons who are hazardous drinkers or have active alcohol use disorders (including alcohol abuse or dependence) (Bush et al., 1998). The AUDIT-C is a modified version of the 10-item AUDIT instrument (J.B. et al., 1993) . The original AUDIT was developed by the World Health Organization (WHO) to assess hazardous alcohol use and examines three domains of use (alcohol intake, potential dependence on alcohol, and experience of alcohol-related harm) (J.B. et al., 1993). The AUDIT-C has 3 questions and is scored on a scale of 0-12. Each item has 5 answer choices valued from 0 to 4 points (different response options for each of the 3 questions, scoring is the same). In men, a score of 4 or more suggests hazardous drinking or active alcohol use disorders. In women, a score of 3 or more suggests the same. Presently, the variable was operationalized as 4 or greater for those identifying as male and other, and operationalized as 3 or greater for those identifying as female. The authors note that generally, the higher the score, the more likely it is that a person's drinking is affecting his or her safety (Bush et al., 1998). An example item from the AUDIT-C is, "How often did you have a drink containing alcohol in the past year?". Bush et al. (1998) examined the AUDIT-C psychometric and diagnostic validity among general medical clinic patients and discovered that for detecting heavy drinking the AUDIT-C had a higher Area Under Receiver Operating Characteristic Curve (AUROC) than the

full AUDIT (0.891 vs 0.881; $p = .03$), and the AUDIT-C and the full AUDIT both performed similarly for detecting heavy drinking and/or active abuse or dependence (0.880 vs 0.881) (Bush et al., 1998). Bradley and colleagues (2007) reported AUROCS for the AUDIT-C at 0.94 (0.91, 0.96) and 0.90 (0.87, 0.93) in men and women, respectively ($p = 0.04$) and maximized sensitivity and specificity were ≥4 in men (sensitivity 0.86, specificity 0.89) and ≥3 in women (sensitivity 0.73, specificity 0.91) (Bradley et al., 2007). Since the development of the AUDIT in 1989 it has been utilized to assess hazardous drinking in a variety of populations including college students (DeMartini & Carey, 2012; Hardy et al., 2021), clinical populations (Pradeep et al., 2015), veterans (Funderburk et al., 2014), and the general population (Lundin et al., 2015). The AUDIT has been translated into 40 languages including Russian (Bunova et al., 2021), Polish (Klimkiewicz et al., 2021), and validated against a Portuguese hazardous alcohol screening tool (Rodrigues et al., 2021). In this study, the AUDIT-C had acceptable internal consistency (3 items; $\alpha = 0.76$).

Substance Use Questionnaire

The substance use items assessed past 12-months substance use and frequency in a matrix style format. These items were taken from the author's prior published work assessing substance use and frequency of use in a sample of college students (with slight modification) (R. E. Davis et al., 2020). Items assessed use of the following: cocaine, crack, LSD, ketamine, recreational and medical cannabis, MDMA/ecstasy, methamphetamines, heroin, fentanyl, PCP, psilocybin, DMT, other (text box), and misuse of over-the-counter drugs and the following prescription drugs: opioids, stimulants, tranquilizers, sedatives, and a prescription other item (text box). For prescription drugs, participants were provided examples of common drugs from each prescription drug category (i.e., prescription tranquilizing medication such as Xanax, Klonopin,

Valium). Additionally, to mitigate confusion of assessment of 'misuse' of these substances, participants were reminded of the following definition, "Prescription drug misuse refers to use of prescription medication in a way not specifically directed by a doctor. To clarify: any use without your own prescription, for recreational purposes, taking a higher dose than prescribed, using more frequently than directed or continued use despite no longer experiencing the problem for which it was prescribed." Also, a definition of over-the-counter drug misuse was provided stating, "Over-the-counter drug misuse is any drug you can buy without a prescription (i.e., Robitussin) taken in any way other than as directed on the label." Example items included, "On how many occasions in the past 12-months have you used cocaine?", or, "On how many occasions in the past 12-months have you misused prescription tranquilizing medications?", with response options on a 7-point Likert-type coded as 1 to 7, 1 "never", 2 "1-2 occasions", 3 "3-5 occasions", 4 "6-9 occasions", 5 "10-19 occasions", 6 "20-39 occasions", and 7 "40 or more occasions". The substance use variables (19 total items in the substance use matrix) were examined independently with higher scores indicating greater level of frequency of use/misuse, and each substance variable was dichotomized by 'yes' to past 12-month usage and 'no' to past 12-month usage. Additionally, the illegal drug variables (i.e., heroin, LSD, etc.), misuse of prescription drugs (prescription opioid pain-relievers, etc.), and misuse of over-the-counter drugs were dichotomized in the same way as the aforementioned.

Drug of Choice

Drug of choice was collected using 1 item, "What is your drug of choice? Please select the drug below that you prefer. If you do not have a drug of choice, please select 'N/A'. I understand there may be more than one, or perhaps there are two that are equal choices. Think about this for a moment and pick which drug you would prefer the most." There were twenty

response options ranging from ‘N/A’ to ‘Misuse of prescription tranquilizing medications’, with an additional 3 open text fields to capture ‘Misuse of other prescription medications’, ‘Other’, and ‘Misuse of over-the-counter drugs’.

Substance Use Stigma Mechanisms Scale (SU-SMS)

The SU-SMS is informed by the Stigma Framework (Earnshaw & Chaudoir, 2009) and consists of eighteen items that differentiate between enacted, anticipated, and internalized stigma (Smith et al., 2016). All responses are given on a 5-point Likert scale, with each subscale containing different response options. For enacted stigma 1 “never”, 2 “not often”, 3 “somewhat often”, 4 “often”, and 5 “very often”; for anticipated stigma, 1 “very unlikely”, 2 “unlikely”, 3 “neither unlikely nor likely”, 4 “likely”, and 5 “very likely”; for internalized stigma 1 “strongly disagree”, 2 “disagree”, 3 “neither disagree nor agree”, 4 “agree”, and 5 “strongly agree”; with higher scores indicating greater endorsement of substance use stigma. Enacted (6 items) (i.e., “Family members have thought I cannot be trusted”), anticipated (6 items) (i.e., “Healthcare workers will give me poor care”), and internalized (6 items) (i.e., “I feel ashamed of having used alcohol and/or drugs”) stigma scale scores are developed by averaging the responses chosen for each of the three stigma mechanisms (subscales). Stigma source sub-scales can be created for Enacted and Anticipated stigma by taking the average responses given for the healthcare worker (3 items) (i.e., “Healthcare workers have not listened to my concerns”) and family members (3 items) (i.e., “Family members have treated me differently”) items, respectively. The authors found this measure to demonstrate acceptable reliability and validity (Smith et al., 2016). Benz et al. (2019) reported an acceptable Cronbach’s alpha for enacted stigma (0.91), anticipated stigma (0.92), and internalized stigma (0.92). Additionally, the SU-SMS was adapted in Turkish, and deemed valid and reliable in a sample of Turkish participants with SUDs, reporting Cronbach’s

alpha (.83) and test-retest correlation (.752, $p < .001$) (Can Gür et al., 2020). In the current study, each of the three subscales of the SU-SMS demonstrated excellent internal consistency, enacted-stigma (6 items; $\alpha = 0.90$), internalized-stigma (6 items; $\alpha = 0.91$), and anticipated-stigma (6 items; $\alpha = 0.94$).

Guilt and Shame Proneness (GASP)

The GASP measures individual differences in the susceptibility to experience guilt and shame through a variety of personal transgressions, has established validity and reliability (Cohen et al., 2011), and was based on the Test of Self-Conscious Affect (TOSCA; (Tangney & Dearing, 2002). The GASP contains 2 guilt subscales that measure negative behavior-evaluations (NBEs; 4 items) and repair action tendencies (guilt-repair; 4 items) following private transgressions and 2 shame subscales that assess negative self-evaluations (NSEs; 4 items) and withdrawal action tendencies (shame-withdraw; 4 items) following publicly exposed transgressions. The current study only used the two subscales consisting of NBEs and NSEs as the guilt- and shame-proneness moderator variables, respectively. The authors of the GASP repeatedly discuss and reference these two variables as trait characteristics (Cohen et al., 2011) and they have been used in other studies as guilt proneness and shame proneness variable (Alabèrnia-Segura et al., 2022). The GASP items are arranged on a 7-point Likert-type scale (1 – 7) with the corresponding response options of ‘very unlikely, ‘unlikely’, ‘slightly unlikely’ ‘about 50% likely’, ‘slightly likely’, ‘likely’, and ‘very likely’. The GASP is scored by averaging the four items in each subscale as follows: Guilt–Negative-Behavior-Evaluation (NBE) 1, 9, 14, 16 (Example item, “You secretly commit a felony. What is the likelihood that you would feel remorse about breaking the law?); and Shame–Negative-Self-Evaluation (NSE) 3, 6, 10, 13 (Example item, “You make a mistake at work and find out a coworker is blamed for the error.

Later, your coworker confronts you about your mistake. What is the likelihood that you would feel like a coward?"). The authors of the GASP suggest examining the effects of each GASP subscale individually (versus including them all in a multiple regression analysis) due to potential multicollinearity problems (Cohen et al., 2011). Cohen at al. (2011) additionally described the acceptable psychometric properties of the GASP. Furthermore, the GASP has been translated into Spanish and found to be valid and reliable with confirmatory factor analysis confirming the four-factor solution (M et al., 2018). Notably, the GASP differentiates between emotional and behavioral aspects of guilt and shame whereas the TOSCA and Dimensions of Conscience Questionnaire (DCQ) (Johnson et al., 1987), as discussed by Enikolopov and Makogon (2013), do not assess these differentially and is considered a major disadvantage of each of the two scales (Enikolopov & Makogon, 2013). The guilt-proneness (4 items; $\alpha = 0.70$) and shame-proneness (4 items; $\alpha = 0.70$) subscales of the GASP exhibited acceptable internal consistency.

Past help-seeking

Past help-seeking behavior was assessed for substance use via one dichotomous item; "In the past, have you sought professional, or non-professional help for your substance use?". Response options "yes" or "no", scored as "1", or "0" (Benz et al., 2019).

Current help-seeking

Current help-seeking will be assessed for substance use via one dichotomous item slightly modified from Watanabe et al. (2012). Example item asks, "Are you currently seeking professional, or non-professional help for substance use?", with response options "yes" or "no", scored as "1", or "0" (Watanabe et al., 2012).

General Help-Seeking Questionnaire (GHSQ)

Help-seeking intention was assessed with the General Help-Seeking Questionnaire (GHSQ) (Wilson et al., 2005). The GHSQ consists of one item and uses a matrix format of 10 help-source items, items a – j, which can be adapted according to purpose and need and is quite versatile as the authors encourage this modification of help-seeking sources and populations to match the target population and problem being examined. The original GHSQ lists two example items to provide the researcher with two different scenarios, with the first assessing help-seeking intention related to personal or emotional problems and the second assessing help-seeking intention related to suicidal ideation. For this study, in line with the GHSQ guidelines, one modified-item was used to assess help-seeking intention and read, "If you were having problems related to your substance use, how likely is it that you would seek help from the following people?", (help-source items a – j will remain unchanged) with directions stating, "Please indicate your response by selecting the number that best describes your intention to seek help from each help source that is listed." Example help-sources from the matrix are, "Friend (not related to you)", "Parent", and "Doctor/GP". Response options are listed on a 7-point Likert-type scale with the odd values listed as having a corresponding meaning '1' 'Extremely Unlikely', '3' 'Unlikely', '5' 'Likely', and '7', 'Extremely Likely'. Scoring of the GHSQ sums the help-source a – j items with higher sum scores indicating greater help-seeking intention.

The authors of the GHSQ report Cronbach's alpha for the personal-emotional problems scenario at 0.70 with test-retest reliability over a three-week period being 0.86, acceptable convergent and divergent validity, and acceptable predictive and construct validity (Wilson et al., 2005). In a recent study utilizing the GHSQ for problematic substance use the authors report

Cronbach's alpha at 0.80 (Belete et al., 2019). Presently, the GHSQ demonstrated acceptable internal consistency (10 items; $\alpha = 0.57$) (Taber, 2018).

Procedures

Upon University Institutional Review Board (IRB) approval (Protocol #2110366842), the researcher utilized a sampling agency, Prolific (an online research recruitment platform based out of the United Kingdom and is similar to other research recruitment platforms such as Qualtrics and Amazon's Mechanical Turk; actively accessed between the dates of December 2021 to February 2022), to recruit and obtain a nonprobability sample of participants (for specific inclusion/exclusion criteria please reference the 'participants' section on p. 33).

Given that Prolific did not have the needed sample screeners in place (individuals can select specific criteria they identify with, for example, 'currently taking anti-depressants', 'plays video games', 'political affiliation', etc.), an electronic survey to pre-screen participants was developed in Qualtrics and distributed via Prolific to screen individuals. The screening procedure survey was randomly distributed to 5,000 individuals in their database who currently reside in the United States, and the sample of 5,000 was equally weighted between 'males' and 'females' (n = 2,500 for each). The screening procedure began with an informed consent and by clicking 'I consent to participate' the participant provided consent. Individuals were paid 15 cents to take the approximately 1-minute pre-screening survey. Prolific holds the number of places a researcher requests (e.g., 5,000) and individuals are alerted to "new studies available in Prolific", therefore, as individuals complete the survey, the number of available places for a study decreases and when it reaches 0, the study automatically closes. The screening survey culminated with two options for free mental health resources available by phone call and text messaging. Upon seeing the free mental health resource information, the participant was directed

to click a hyperlink that re-directed them back to Prolific so that their submission was complete (tied to their unique identifier), data recorded in Qualtrics, and they were eligible to receive payment upon approval of their submission. For context, the screening survey took approximately 22 hours to reach 5,000 study participants and after it was complete, the researcher examined the survey submissions for completeness, approval, and payment. Submissions that were 'timed out' yet provided complete data were approved (n = 26; paid 15 cents), submissions that were 'returned' by the participant (the participant had revoked consent, data was not obtained) were not paid (n = 50), and the pre-screener opened up another 50 slots until those were filled. All completed submissions were approved (n = 5,000).

To determine who would receive notice that the survey phase was available in Prolific, the data from the pre-screener was examined carefully. From the initial participant sample (n = 5,000), those reporting *no* substance use in the past 12-months (n = 837) were removed. Next, those reporting *only* alcohol use in the past 12-months (n = 1,928) were removed from the sample due to the overall decreased stigma related to alcohol use compared to harder drug use (e.g., cannabis, cocaine) (Sattler et al., 2017) and the researchers desire to sample substance using adults exclusive of alcohol-only use. The remainder of the study sample (n = 2,235) met the inclusion criteria to receive the survey phase. Using a random number generator in Excel, the participant IDs were placed in one column and a random number was generated in another. Upon sorting the values, a sample was obtained to receive the survey phase (n = 1,000).

Survey phase participants (n = 1,000) were notified that a new study was available to them in Prolific by using the 'custom allowlist' feature for survey dissemination. This method works well for pre-screening measures and longitudinal studies, and the use of a unique identifier preserves participant anonymity and allows for the researcher to recruit a specific sub-set of the

sample. Upon notification of this second survey, the individuals were directed to complete an online survey via the Qualtrics survey link provided to them in Prolific and before answering survey items, were instructed to read a detailed informed consent. By clicking 'I consent to participate' on the informed consent page, the participants provided consent that they were at least 18 years of age, had read the informed consent, and understood the study procedures. Survey items took approximately 10-15 minutes to complete, and participants were paid $3 for completed submissions.

The survey culminated with two options for free mental health resources available by phone call and text messaging. Upon seeing the free mental health resource information, the participant was directed to click a hyperlink that re-directed them back to Prolific so that their submission was complete (tied to their unique identifier), data were recorded in Qualtrics, and they were eligible to receive payment upon approval of their submission. For context, the survey phase took approximately 3 days (72 hours) to reach 1,000 study participants and after submissions totaled 1,000, the researcher examined the survey submissions for completeness, approval, and payment. Submissions that were 'timed out' yet provided complete data were approved (paid $3), submissions that were 'returned' by the participant (the participant had revoked consent, data was not obtained) were not paid, and all other completed submissions were approved. Thus, a nonprobability sample of US substance using adults was obtained for data analysis.

Data Analysis

Data were initially checked for completeness. Descriptive statistical analyses were used to describe the sample characteristics such as means, frequencies and percentages. Correlational

analyses (Pearson's and point biserial) were conducted to evaluate bivariate relationships among variables.

Given the outcome variable of substance use severity had four categories (i.e., no positive screen for problematic drug and alcohol use, a positive screen for problematic alcohol use, a positive screen for problematic drug use, and a positive screen for both problematic alcohol and drug use), a multinomial logistic regression model was applied to evaluate the relationships between the predictor, and outcome. Group one represented no positive screen for problematic alcohol or drug use and was used as the reference group for all iterations of the analysis ('NO_ALC_DRUG', $n = 214$), group two represented a positive screen for problematic alcohol use only ('ALC', $n = 223$), group three represented a positive screen for problematic drug use only ('DRUG', $n = 216$), and group four represented a positive screen for both problematic alcohol and drug use ('ALC_DRUG', $n = 347$). The moderation effects (Geert van den Berg, 2021) were also examined whether the regression of outcome on stigma varies as a function of guilt-proneness and shame-proneness' roles. All predictors (i.e., enacted-stigma, internalized-stigma, anticipated-stigma, shame-proneness, and guilt-proneness) were mean-centered before creating interaction terms to eliminate the source of potential computational difficulty as well as the non-essential multicollinearity (Aiken & West, 1991).

As recommended by Hosmer et al. (2013), the first step was to conduct a series of univariable logistic regression models for each independent variable using a significance level (i.e., alpha) as 0.25 as a screening criterion for initial variable selection. With all identified potential predictors from the first step, a multivariable model was conducted. At this stage, predictors that did not contribute to the model uniquely (i.e., based on the traditional alpha level at 0.05) would be eliminated. The third step included addition of the interaction terms among the

variables in the model. Again, the interaction terms would be excluded from the model based on both practical and statistical considerations (i.e., *p*-value > .05).

All data management and descriptive statistics were conducted using SPSS Statistics version 28 (IBM, 2017). The multinomial logistic regression analysis was conducted using SAS version 9.4 (SAS Institute, 2013).

Threats to Internal/External Validity

The instrumentation utilized has established criteria in previous studies for face-, construct-, content-, and internal-validity, however, the present study experienced limitations commonly seen in cross-sectional data collection. The author aimed for $\alpha = 0.70$ for acceptable internal consistency of items (Cronbach et al., 1972). Selection bias may be present given participants being recruited via Prolific, as individuals who participated in the study were already members of an online marketplace used for research. Also, incentivizing participants could have led to a bias in the data and subsequent findings as those completing the survey measures may only do so based on the incentive. Additionally, even though Prolific uses attention checks and diligently flags responses that may appear as an outlier or false (based on time to completion of survey, other algorithms, etc.) satisficing is another potential internal threat to the study.

Regarding external validity, results of this study may not be generalizable to other populations due to many factors such as selection bias, Hawthorne effect, environment in which survey is completed, and aptitude-treatment. Results may not be generalizable to other groups of individuals who use substances based on regional differences in demographics, lived experiences, and varied legislative and political landscapes.

Assumptions

The researcher assumed that the participants read and comprehend the informed consent inclusive of study definitions before completing the questionnaire. It was assumed that participants answered the items honestly, thoughtfully, and took the appropriate amount of time (e.g., did not rapidly respond, pick answers that did not apply to them, or take the survey merely for the incentive). Additionally, it was assumed that the test instruments were reliable and valid.

Limitations

The participants were incentivized to participate thus there is a chance that their characteristics do not accurately represent the traits of the greater population of people who use substances. Also, the nature of the survey data is self-report which could lead to recall bias and social desirability bias. The questions are also highly sensitive and could lead to dishonest or inaccurate answers even with steps taken to promote participant anonymity. The length of the survey may lead to respondent fatigue and survey dropout. There is a lack of research inclusive of stigma, shame, guilt, and substance use severity, therefore this could inhibit interpretation of study findings as they are likely ungeneralizable.

Delimitations

Several delimitations for the current study exist inclusive of the research questions, aims, and hypotheses. The measured variables of guilt, shame, mechanisms of stigma, and severity of substance use are included within the boundaries of the study. The choice to sample those in the community who self-report use of substances was made to gather critical data on the study variables, as those who are age 18 or older may have different experience of guilt, shame, stigma, and substance use compared to younger populations. The chosen statistical analyses are included as delimiters as well, these include the descriptive analyses, correlational analyses, and

multinomial logistic regression to test for moderation and predictive nature of the independent variables. These analyses are chosen to draw specific inferences from the study data in relation to the research questions.

Study 2: An Explanatory Mixed Methods Analysis of Guilt, Shame and Stigma and Impacts on Help-Seeking Intention among a Sample of US Substance Using Adults

Purpose

The purpose of study two is multi-faceted. First, to examine the relationship between three stigma mechanisms; internalized-, anticipated-, and enacted-stigma, and the outcome of help-seeking intention. Secondly, to examine the pathway between enacted, anticipated, and internalized stigma and help-seeking intention to identify the potential role of shame and guilt in moderating the effects of stigma on help-seeking intention. Third, to qualitatively explore the lived experiences of substance using adults via semi-structured interviews utilizing a Grounded Theory approach (as discussed by Kathy Charmaz in Chapter 20 of the SAGE Handbook of Qualitative Research) (Charmaz, 2005; Denzin & Lincoln, 2005). Fourth, to attempt to develop a deeper understanding of the survey responses by using participant narratives and lived experience by integrating the findings. The researcher aims to unearth the interconnectedness of stigma mechanisms, guilt, shame, and help-seeking intention among a sample of substance using adults who have either sought treatment/help, and those who have not sought treatment/help.

Research Design

The current study employed a sequential explanatory mixed methods design (QUANT → qual) (Creswell & Plano Clark, 2018). The first sample was recruited to participate in a cross-sectional, online survey, and then a sub-sample of the survey participants were solicited to participate in semi-structured interviews. Leaning on qualitative description (Sandelowski, 2000b), using a criterion sample of participants who self-reported substance use, individuals

voluntarily participated in semi-structured interviews. Grounded Theory was utilized as the study developed and data were collected, as outlined by Charmaz (Charmaz, 2005). Grounded Theory is an iterative approach that is both a technique of examination and a product of examination (Denzin & Lincoln, 2005), which seeks to discover the social-psychological processes at the crux of phenomena (Russell & Gregory, 2003).

Participants

The present study utilized a sub-sample of participants derived from Study 1 (survey phase) consisting of individuals that met a predetermined criterion of importance (e.g., criterion sampling) (Patton, 2014). Criterion sampling has been deemed useful in previous qualitative works (Sandelowski, 2000a) as the cases are often information rich and provide a compliment to quantitative data (Patton, 2014). For the present study, ten individuals who had reported 'yes' to past or present help-seeking for substance related reasons (n = 206), and ten individuals who reported 'no' to past or present help-seeking (n = 837), were invited to participate in the semi-structured interviews. Given the pre-determined amount of funding to spend, twenty slots were available for interviews. For the interview sample criterion, participants were at least 18 years of age and self-reported substance use (per the survey phase of study one's inclusion criteria). Previous qualitative studies regarding tenets of substance use have utilized smaller samples [n = 12, SUD stigma sources, (Earnshaw et al., 2013)], [n = 15, reasons for use in comorbid SUD and mental health patients, (Healey et al., 2009)], and [n = 31, family members of problematic substance users, (McCann et al., 2017).

The present study proposed a sample of (n = 20) for adequate saturation of themes. Upon completion of the interviews, there were two missed appointments (i.e., participant did not show for their interview time) culminating in a final sample of eighteen completed semi-structured

interviews. Participants were paid $40 dollars for a one-time, 60-minute interview conducted virtually.

Inclusion criteria: self-report as a person who uses substances (Study one explicitly address inclusion criteria for survey eligibility, thus, sample generation from Study one will maintain the same set of criteria). Additionally, participants either had reported 'yes' to help-seeking behavior, or had reported 'no', were 18 years of age or older, English speaking, and had access to a computer or smart phone (inclusive of a webcam and an internet connection).

Exclusion criteria: person who does not use substances, does not have access to a computer or smart phone with a web camera, under the age of 18, or non-English speaker.

Measures/Instrumentation

Quantitative Measures

During the quantitative phase of the study, participants were asked to complete an online survey that inquired about their demographic information, substance use behaviors and severity screening (non-problematic and problematic alcohol and drug use), guilt and shame proneness, perceived stigma, and help-seeking intention.

Demographics

Participants were asked demographic questions regarding gender identification, age in years, race/ethnicity, household income, sexual minority group identification, highest level of education completed, employment status, current US state of residence, and marital/relationship status.

Substance Use Questionnaire

The substance use items assessed past 12-month substance use and frequency in a matrix style format. These items were taken from the author's prior published work assessing substance

use and frequency of use in a sample of college students (with slight modification) (Davis et al., 2020). Items assessed use of the following: cocaine, crack, LSD, ketamine, recreational and medical cannabis, MDMA/ecstasy, methamphetamines, heroin, fentanyl, PCP, psilocybin, DMT, other (text box), and misuse of over-the-counter drugs and the following prescription drugs: opioids, stimulants, tranquilizers, sedatives, and a prescription other item (text box). For prescription drugs, participants were provided examples of common drugs from each prescription drug category (i.e., prescription tranquilizing medication such as Xanax, Klonopin, Valium). Additionally, to mitigate confusion of assessment of 'misuse' of these substances, participants were reminded of the following definition, "Prescription drug misuse refers to use of prescription medication in a way not specifically directed by a doctor. To clarify: any use without your own prescription, for recreational purposes, taking a higher dose than prescribed, using more frequently than directed or continued use despite no longer experiencing the problem for which it was prescribed." Also, a definition of over-the-counter drug misuse was provided stating, "Over-the-counter drug misuse is any drug you can buy without a prescription (i.e., Robitussin) taken in any way other than as directed on the label." Example items included, "On how many occasions in the past 12-months have you used cocaine?", or, "On how many occasions in the past 12-months have you misused prescription tranquilizing medications?", with response options on a 7-point Likert-type coded as 1 to 7, 1 "never", 2 "1-2 occasions", 3 "3-5 occasions", 4 "6-9 occasions", 5 "10-19 occasions", 6 "20-39 occasions", and 7 "40 or more occasions". The substance use variables (19 total items in the substance use matrix) were examined independently with higher scores indicating greater level of frequency of use/misuse, and each substance variable was dichotomized by 'yes' to past 12-month usage and 'no' to past 12-month usage. Additionally, the illegal drug variables (i.e., heroin, LSD, etc.), misuse of

prescription drugs (prescription opioid pain-relievers, etc.), and misuse of over-the-counter drugs were dichotomized in the same way as the aforementioned. One other item assessed the participants 'drug of choice,' and they were instructed to choose from a list of responses or select 'N/A'.

Substance Use Severity Measures

Drug Abuse Screening Test (DAST-10)

The DAST-10 was utilized to assess substance use severity (other than or in addition to alcohol, tobacco, or caffeine) given the excellent psychometric properties and to shorten the electronic survey length. The DAST-10 correlates highly with the DAST-20 (r = 0.98) and reports excellent internal consistency reliability (0.92) (Skinner, 1982). Response options are dichotomized (i.e., yes/no) with the total number of 'yes' responses summed to create a total score. All items are scored as "1" for 'yes' or "0" for 'no', except for item three which is reverse scored. Range of possible scores is from 0 to 10 with higher scores indicating greater drug use severity. Problematic substance use was operationalized using the standardized cut-off value of 3 or greater for the DAST-10, as Skinner suggests (Skinner, 1982). This measure has demonstrated acceptable reliability and validity in previous research (Benz et al., 2019; Gavin et al., 1989; Staley & el-Guebaly, 1990). In this study, the DAST-10 had good internal consistency (10 items; $\alpha = 0.68$).

Alcohol Use Disorder Identification Test-Concise (AUDIT-C)

The AUDIT-C consists of 3-items and is a brief alcohol screening instrument that reliably identifies persons who are hazardous drinkers or have active alcohol use disorders (including alcohol abuse or dependence) (Bush et al., 1998). Scored on a scale of 0-12, each item has 5 answer choices valued from 0 to 4 points (different response options for each of the 3 questions,

scoring is the same) with higher scores indicating increased problematic drinking. A sum score for the three items was calculated. In men, a score of 4 or more suggests hazardous drinking or active alcohol use disorders. In women, a score of 3 or more suggests the same. Presently, the variable was operationalized as 4 or greater for those identifying as male and gender variant and operationalized as 3 or greater for those identifying as female. In this study, the AUDIT-C had acceptable internal consistency (3 items; $\alpha = 0.76$).

Substance Use Stigma Mechanisms Scale (SU-SMS)

The SU-SMS is informed by the Stigma Framework (Earnshaw & Chaudoir, 2009) and consists of eighteen items that differentiate between enacted, anticipated, and internalized stigma (Smith et al., 2016). All responses are given on a 5-point Likert scale, with each subscale containing different response options. For enacted stigma 1 “never”, 2 “not often”, 3 “somewhat often”, 4 “often”, and 5 “very often”; for anticipated stigma, 1 “very unlikely”, 2 “unlikely”, 3 “neither unlikely nor likely”, 4 “likely”, and 5 “very likely”; for internalized stigma 1 “strongly disagree”, 2 “disagree”, 3 “neither disagree nor agree”, 4 “agree”, and 5 “strongly agree”; with higher scores indicating greater endorsement of substance use stigma. Stigma scale scores are developed by averaging the responses chosen for each of the three stigma mechanisms. The authors found this measure to demonstrate acceptable reliability and validity (Smith et al., 2016). Benz et al. (2019) reported an acceptable Cronbach’s alpha for enacted stigma (0.91), anticipated stigma (0.92), and internalized stigma (0.92). In the current study, each of the three subscales of the SU-SMS demonstrated excellent internal consistency, enacted-stigma (6 items; $\alpha = 0.90$), internalized-stigma (6 items; $\alpha = 0.91$), and anticipated-stigma (6 items; $\alpha = 0.94$).

Guilt and Shame Proneness (GASP)

The GASP measures individual differences in the susceptibility to experience guilt and shame through a variety of personal transgressions via four subscales and has established validity and reliability (Cohen et al., 2011). Presently, this study only used the subscales consisting of negative behavior-evaluations (NBEs; 4 items) and negative self-evaluations (NSEs; 4 items) as the guilt- and shame-proneness moderator variables, respectively. The authors of the GASP repeatedly discuss and reference these two variables as trait characteristics (proneness) (Cohen et al., 2011). The GASP items are arranged on a 7-point Likert-type scale (1 – 7) with response options ranging from 'very unlikely', to 'very likely' and is scored by averaging the four items in each subscale. The guilt-proneness (4 items; $\alpha = 0.70$) and shame-proneness (4 items; $\alpha = 0.70$) subscales of the GASP exhibited acceptable internal consistency.

General Help-Seeking Questionnaire (GHSQ)

Help-seeking intention was assessed with the General Help-Seeking Questionnaire (GHSQ) (Wilson et al., 2005). The GHSQ consists of one item and uses a matrix format of 10 help-source items, items a – j, which can be adapted according to purpose and need and is quite versatile as the authors encourage this modification of help-seeking sources and populations to match the target population and problem being examined. For this study, in line with the GHSQ guidelines, one modified-item was used to assess help-seeking intention and asked, "If you were having problems related to your substance use, how likely is it that you would seek help from the following people?", (help-source items a – j will remain unchanged) with directions stating, "Please indicate your response by selecting the number that best describes your intention to seek help from each help source that is listed." Example help-sources from the matrix are, "Friend (not related to you)", "Parent", and "Doctor/GP". Response options are listed on a 7-point

Likert-type scale with the odd values listed as having a corresponding meaning ‘1’ ‘Extremely Unlikely’, ‘3’ ‘Unlikely’, ‘5’ ‘Likely’, and ‘7’, ‘Extremely Likely’. Scoring of the GHSQ sums the help-source a – j items with higher sum scores indicating greater help-seeking intention. In a recent study utilizing the GHSQ for problematic substance use the authors report Cronbach’s alpha at 0.80 (Belete et al., 2019). Presently, the GHSQ demonstrated low but acceptable internal consistency (10 items; $\alpha = 0.57$) (Taber, 2018)

Past help-seeking

Past help-seeking behavior was assessed for substance use via one dichotomous item; “In the past, have you sought professional, or non-professional help for your substance use?”. Response options “yes” or “no”, scored as “1”, or “0” (Benz et al., 2019).

Current help-seeking

Current help-seeking will be assessed for substance use via one dichotomous item slightly modified from Watanabe et al. (2012). Example item asks, “Are you currently seeking professional, or non-professional help for substance use?”, with response options “yes” or “no”, scored as “1”, or “0” (Watanabe et al., 2012).

Qualitative Measures

Semi-structured Interview Guide

The semi-structured interview guide drew from the Stigma Framework (Smith et al., 2016) developed from the HIV Stigma Framework (Earnshaw & Chaudoir, 2009), and the Health Stigma Discrimination Framework (Stangl et al., 2019), along with recent qualitative works in the addiction sciences (Batchelder, Foley, Kim, et al., 2021; Matthews et al., 2017) and qualitative research methods’ suggestions (Neale, 2005). The semi-structured interview guide asked questions pertaining to personal identity, substance use behavior/patterns/history,

relationships, and emotional constructs such as shame, guilt, and mechanisms of stigma. For example, “How would you describe yourself to someone who didn’t know you and couldn’t see you?”, “Do you think about yourself as a person who uses substances?”, and “Have you experienced discrimination because of your substance use?”, “If so, can you describe that experience to me?”. The guide was iterative in nature as the researcher conducted interviews and reviewed the transcripts for coding and themes. The questions (see Appendix B) flexed slightly as information was gathered and saturation of themes began to occur. The richness of the data became contextualized as the interviews progressed.

Procedures

Participants were recruited by taking a sub-sample from the survey phase of Study 1, using the same sampling agency, Prolific, to anonymously connect with the participants. To protect participant anonymity, the Prolific ID (which is a unique identifier connected to the individual) of participants who qualified for participation in the interviews was copied into a ‘custom allowlist’ for study recruitment. Two identical studies were developed in Prolific for this data collection; one being for participants who had reported ‘yes’ to past or present help-seeking related to substance use (n = 206), and the second for participants who had reported ‘no’ to past or present help-seeking related to substance use (n = 837). This way, the two groups of participants were kept separate for ease of study launch and tracking participant sign-up. These individuals were alerted to a ‘new study available in Prolific’ and upon clicking on the study and reading the informed consent, participants were able to select a time using a calendar scheduling service to complete a one-time, 60-minute interview using a virtual meeting platform. Interviews were conducted virtually for several reasons. First, the COVID-19 pandemic has severely limited face-to-face interaction for safety reasons, second, due to geographical reasons (i.e., participant

lives in California), third, virtual meeting platforms' transcription of virtual calls and meetings works impeccably well with only minor edits needing to be made, and fourth, scheduling of remote interviews is much easier than determining a physical location and time that functions for both researcher and participant. For reference, from initial study launch in Prolific to filling available interview time slots (n = 20) took less than two hours.

Once interviews had been scheduled, participants received a reminder email the morning of their interview including a copy of the informed consent. Anonymous messaging is another service provided by Prolific for ease of transparent communication between researchers and participant. Participants were additionally informed in advance of the interview that they may choose to participate in the interview with web camera off if desired, that the interview would be recorded and only an audio file would be downloaded, that they may stop the interview at any time and/or choose to skip any questions asked, and that their information would be de-identified for final write-up and dissemination purposes. At interview outset, participant's Prolific ID was verified by having the participant copy their ID into the platform chat box, participants were verbally read informed consent details, reminded of study procedures (including the need to record the interview), and subsequently asked to give verbal consent to be interviewed. Upon verbal consent to be interviewed, the researcher double checked that the interview was being recorded and then began the participant interview. Upon interview completion each participant was anonymously messaged via Prolific free mental health and substance related resources available in the United States with call-in or text options. Additionally, participants were immediately paid $40 in Prolific for their time spent (participants were instructed at interview outset that they would be compensated even if they chose to stop the interview at any time point and/or skip questions; however, no participant requested to stop or skip any questions).

Data Analysis

Semi-structured Interview Question Path

Each participant (n = 18) completed a one-time 60-minute virtual interview conducted by a trained qualitative interviewer. At interview outset, participants provided verbal consent to be interviewed. The semi-structured interview guide drew from the Stigma Framework (Smith et al., 2016) developed from the HIV Stigma Framework (Earnshaw & Chaudoir, 2009), and the Health Stigma Discrimination Framework (Stangl et al., 2019), along with recent qualitative works in the addiction sciences (Batchelder et al., 2021; Matthews et al., 2017) and qualitative research methods' suggestions (Neale, 2005). The semi-structured interview guide asked questions pertaining to substance use behavior/patterns/history, relationships, and emotional constructs such as shame, guilt, and mechanisms of stigma.

Quantitative data analysis

Analyses were conducted using SPSS Statistics version 28 (IBM, 2017) with all alpha levels set a priori at $p < 0.05$. Data was initially checked for completeness. Descriptive statistical analyses were conducted to describe the sample characteristics such as means, frequencies and percentages. Correlational analyses (Pearson's and point biserial) were conducted to determine bivariate relationships between enacted-stigma, anticipated-stigma, internalized-stigma, shame and guilt, demographic variables, anxiety, depression, help-seeking intention, and the substance use severity variables of problematic and non-problematic alcohol use, and problematic and non-problematic drug use. Independent samples t-tests were conducted to examine mean differences between those who had ever sought help for substance related concerns (n = 206, 20.6%) and those who had never sought help for substance related concerns (n = 794, 79.4%) for the GHSQ, enacted stigma, anticipated stigma, internalized stigma, guilt, shame, total DAST-10 scores, and

total AUDIT-C scores. The total DAST-10 and total AUDIT-C scores were used rather than the dichotomized version of the variable to calculate mean differences. Levene's test for homogeneity of variance was violated for enacted stigma, anticipated stigma, internalized stigma, total DAST-10 scores, and total AUDIT-C scores, thus, a Mann-Whitney test was carried out.

Next, a multiple regression model was developed and conducted to determine the role the independent variables (enacted-stigma, anticipated-stigma, internalized-stigma, shame, and guilt) have on the dependent variable of help-seeking intention and a moderation analysis (Geert van den Berg, 2021) was simultaneously conducted to determine guilt and shame's role in potentially moderating the relationship between the stigma mechanisms and help-seeking intention. To do this an exploratory multiple regression analysis was conducted where the model included all individual predictor variables and interaction terms. Before creating interaction variables, they were first mean centered to avoid issues with multicollinearity, then multiplied into interaction predictor variables (enacted-stigma*guilt, enacted-stigma*shame, anticipated-stigma*guilt, anticipated-stigma*shame, internalized-stigma*guilt, and internalized-stigma*shame).

Qualitative data analysis

Upon completion of the interviews (n = 18), all recordings were transcribed verbatim, and two trained researchers validated the transcripts with their corresponding audio recording, both produced by the virtual meeting platform. Two trained coders conducted an initial analysis of the data in NVivo 11 (NVivo, 2015) (see Chapter 4, manuscript 2, Table 1 for codebook). Intercoder reliability between the coders had a kappa value (κ) range of 0.28 – 1 due to two transcripts with low agreement consisting of few coded responses. Inconsistencies between codes were reviewed until consensus was met. Next, three individuals (NAD, HG, PDD) performed a

thematic analysis of the final coded responses by examining each code for emergent themes. Finally, participant quotes representing the identified themes were independently identified by each of these three individuals.

Mixed methods analysis

The use of a sequential explanatory mixed methods (QUANT → qual) design allowed us to explore deeper understanding of the survey data. Importantly, the findings from the quantitative survey (QUANT, capitalized to indicate priority) were contextualized and explained through the interview responses (qual). Integration of findings is key in mixed methods works and transparency in the approach is vital for quality of public health inferences (O'Cathain et al., 2008). Co-methodological integration occurred as the interviews were conducted less than two weeks post-survey completion and only basic descriptive statistics had been analyzed at that point. Importantly, both survey and interview participation were voluntary. Also, the survey instruments, namely the GASP (Cohen et al., 2011) and SUSMS (Smith et al., 2016), were expanded upon when developing the semi-structured interview guide thus further integrating the two methodologies. As the interviews progressed, preliminary information from the QUANT findings was shared with participants (e.g., prevalence of problematic alcohol and drug use; drug of choice) to further prompt their responses. Findings from the QUANT and qual segments were first analyzed separately. Then the interview data was analyzed juxtaposing the QUANT findings to better explain the results. Tables and joint displays were developed to establish the integration of both methodologies (Creswell & Plano Clark, 2018) (see Chapter 4, manuscript 2).

In addition to this inductive approach, Earnshaw's HIV Stigma Framework (Earnshaw & Chaudoir, 2009) as discussed by Smith and colleagues (2016) as 'The Stigma Framework', was utilized in order to structure the thematic analysis process and illuminate those themes that link

directly to the 3 types of stigma, enacted-, internalized-, and anticipated- (Earnshaw & Chaudoir, 2009; Smith et al., 2016). Importantly, the Stigma Framework, as discussed by Smith et al. (2016) in their development of the SU-SMS, highlights mechanistically the process by which stigma attributes manifest in individuals as stigma mechanisms and how these mechanisms impact outcomes. These 3 aspects of stigma ultimately relate to physical, psychological, and behavioral health outcomes, and are important to assess separately and interdependently. Additionally, Stangl et al. (2019) developed the Health Stigma and Discrimination Framework to better examine similarities and differences in stigma processes across a variety of health conditions (Stangl et al., 2019). This framework illuminates the need to examine the many facets and sources of stigma and how this factors ultimately effect health outcomes. Earnshaw (HIV Stigma Framework, Earnshaw & Chaudoir, 2009) collaborated with Stangl (among others) to aid in the development of the Health Stigma and Discrimination Framework, therefore the combination of the abovementioned frameworks complemented the semi-structured interview guide and subsequent data analysis.

Threats to Internal/External Validity

One of the arguments against qualitative research is also what makes qualitative research incredibly rich in its ability to contextualize the human experience. Importantly, qualitative works need transparency and systematicity (Meyrick, 2006) to ensure rigor and quality. However, in terms of internal and external validity qualitative research does not succumb to the same metrics as quantitative works (Sandelowski et al., 2009) as the two methods are merely different understandings of the data. Golafshani (2003) discussed reliability in qualitative research in terms of ‘credibility’, ‘neutrality’, ‘confirmability’, ‘consistency’, ‘dependability’, ‘applicability’ and ‘transferability’ as qualitative work aims to understand information instead of

providing causal claims (Golafshani, 2003). Validity is subsequently discussed in terms of trustworthiness and establishing confidence in the study findings (Golafshani, 2003). Thus, the researcher attempted to limit these threats by restricting bias throughout the study process and by fostering an environment of trustworthiness with the participants and their individual narratives, culminating in appropriate interpretation of findings. Additionally, validation of study transcripts occurred with the assistance of a substance use and mental health (SUMH) lab intern and emergent themes were discussed with a dissertation committee member and SUMH lab colleague to limit bias of narrative interpretations.

Assumptions

It is assumed that the participants answered the questions to the best of their ability, truthfully, and cogently. Another assumption is the individuals did not participate solely due to the incentive. Qualitative research at its epitome maintains inductive reasoning as information is gathered from study participants and is used to generate broader themes among narratives (Walters, 2001). Given the iterative nature of Grounded Theory and the dynamic nature of the research process, it was assumed that the research questions would flex or change slightly as themes begin to emerge. The researcher did not approach this process to prove a self-fulfilling prophecy, but to lean on inductive reasoning and learn from the participants' lived experiences in attempt to make meaning of each individual's journey.

Delimitations

Study procedures, participant selection criterion, proposed semi-structured interview questions, quantitative analysis, qualitative analysis, mixed methods analysis and integration strategy, final synthesis and write-up, and dissemination are all delimiters of the current study.

Limitations

Given the sensitive nature of the interviews, participants may have omitted certain responses due to feeling uncomfortable, exposed, or simply chose to falsify their responses. Unfortunately, this could not be managed due to the nature of interviewing. Additionally, the study findings will not likely be generalizable to other populations, even similar populations of individual's reporting substance use, given the varied and diverse lived experiences of individuals. Qualitative works often ensure ecological validity with the cost of ungeneralizable findings (Neale, 2005). Given the iterative nature of Grounded Theory, the data collection and subsequent emergent themes are likely irreplicable in other study populations. The inherent risk of misinterpreting participant narratives highlighted the importance of minimizing researcher bias throughout the interviews and subsequent generation of themes.

Conclusion

The need to examine the combined mechanisms of stigma on substance use severity and help-seeking intention is not well established in the literature, thus this dissertation sought to examine these relationships. Additionally, examining shame and guilt's specific role in moderating the relationship between these stigma mechanisms and substance use severity, and these stigma mechanisms and help-seeking intention had not been done. Importantly, this dissertation methodology aimed to generate essential contextual findings regarding individuals who use substances. Second, the study findings aid in examining potential barriers individuals may have regarding help-seeking and further future study investigations in populations who use substances by uncovering existent modifiable risk factors for intervention purposes. Third, these findings seek to illuminate the importance of assessing shame and guilt in populations who use substances given the potential maladaptive and adaptive nature of the constructs. Finally,

continued examination of stigma, shame, and guilt, and the potential impacts on individual substance use behaviors can better inform interventions and provide improved resources for those who seek help and importantly, uncovering why individuals may not seek help or perceive a need to do so.

Chapter 4:

Manuscript for Study 1: The Complexities of Guilt, Shame, and Stigma among a Sample of United States Substance Using Adults

In preparation for *Journal of Studies on Alcohol and Drugs*

Nicole A. Doyle, MS[1*]

[1]Substance Use and Mental Health Laboratory, Department of Health, Human Performance and Recreation, University of Arkansas, Fayetteville, AR, USA

***Corresponding Author:**

Nicole A. Doyle, MS
nadoyle@uark.edu

Abstract

Objective: Guilt, shame, stigma, and substance use are complex constructs that have not been collectively examined among US substance using adults. The mechanisms by which stigma impacts substance use severity have not been examined, nor have the potential moderating effects of shame and guilt in that pathway.

Method: A cross-sectional electronic survey-based study was conducted among a non-probability sample of self-report US substance using adults with the use of Prolific for participant data collection. A screening procedure (n = 5, 000; paid 15 cents) was used to pre-screen individuals for receipt of the survey phase (n = 1,000; paid 3$). Survey phase eligibility required individuals to report some form of past 12-month substance use (e.g., alcohol, cannabis, misuse of prescription medication). Survey items assessed substance use, enacted-, anticipated-, and internalized stigma, guilt and shame proneness, and demographics.

Results: A multinomial logistic regression was used to examine the role of guilt, shame, and three stigma mechanisms (including six interaction terms) in the outcome of four groups; NO_ALC_DRUG (reference category), ALC, DRUG, ALC_DRUG. Internalized stigma, enacted stigma, guilt, and the interaction of guilt*internalized stigma were significant for various group prediction. Among those with higher levels of guilt, internalized stigma predicted decreased membership in ALC and ALC_DRUG categories. Thus, confirming the hypothesis of guilt's protective effects on problematic alcohol or substance use.

Conclusions: Guilt buffers the relationship between internalized stigma and problematic substance use. Future research need examine how to effectively manage individual guilt among populations who use substances given these adaptive properties.

Keywords: guilt, shame, substance use, multinomial logistic regression

Introduction

Substance use is a common phenomenon within American society. According to data from the National Center for Health Statistics in 2018, 66.3% of adults over age 18 reported past year alcohol consumption (Boersma et al., 2020). Regarding any illicit drug use, 11.7% of those aged 12 years and older report past month consumption (Boersma et al., 2020) and among Americans in 2019, 20.8% reported current tobacco use (Cornelius et al., 2020). Disordered substance use is on the rise according to data from the Global Burden of Diseases, Injuries, and Risk Factors 2017 Study (GBD, 2017) (GBD Collaborators, 2018) and an overwhelming amount of Americans reporting having a substance use disorder (SUD), second only to depression in terms of worldwide infirmary (Whiteford et al., 2015). Common motives for substance use include conformity to perceived societal norms (Davis et al., 2019), personal coping mechanisms (Arbeau et al., 2011; Cook et al., 2021), managing depression and anxiety (Treeby & Bruno, 2012), experimentation (Cuomo et al., 1994), and peer pressure (Monaci et al., 2013).

Importantly, substance use positively associates with deleterious psychological states such as depression and anxiety (Davis et al., 2020), unintentional injury (Hanson et al., 2018), shame (Wiechelt, 2007), stigma (Link et al., 1997), and guilt (Locke et al., 2015). Multiple societal burdens associate with substance dependance such as negative impacts on community health, economic costs, lost productivity, and social mechanisms (GBD Collaborators, 2018). According to a range of systematic review findings discussed by Degenhardt and Hall (2012), across the lifespan substance use is associated with increased risk for infectious disease (e.g., HIV), chronic disease (e.g., cirrhosis), suicide, and violence (Degenhardt & Hall, 2012). Additionally, individuals who use substances are often looked down upon in society (Buchman

& Reiner, 2009; Parcesepe & Cabassa, 2013) and often stigmatized, having a detrimental effect on psychological functioning (Kulesza et al., 2013).

Stigma collectively refers to a set of negative societal beliefs, identities, and behaviors seen as taboo (Goffman, 1963; Link & Phelan, 2001) and has been labeled as a fundamental cause of population health inequities (Hatzenbuehler et al., 2013). Stigma negatively impacts mental illness (Hasson-Ohayon et al., 2012) and individuals with a SUD (Batchelder, Foley, Wirtz, et al., 2021), with members of the general public and health professions holding these stigmatizing views especially towards individuals with problematic substance use behavior (Lloyd, 2013). Stigma has been found to be a deterrent to managing HIV and even as a catalyst to perpetuate substance use behaviors (Batchelder, Foley, Wirtz, et al., 2021). Notably, stigma associates with help-seeking as individuals often feel embarrassed to get help due to expectations that others will react negatively (Barney et al., 2006) and can be discouraging for individuals to find resources for help (Gaddis et al., 2018). Alarmingly, data from the National Center for Drug Abuse Statistics (NCDAS) in 2018 reported that roughly 19 million people aged 12 and above needed substance related treatment, yet a mere 392,000 received help (NCDAS, 2022).

Stigma of substance use, particularly disordered use, is understudied as noted by Corrigan and colleagues (Corrigan et al., 2017). Given the deleterious outcomes associated with disordered use such as deathly overdose ("Drug Overdose Death Data | Drug Overdose | CDC Injury Center," 2018), extreme suicidal ideation and cognitive impairment (Ayala et al., 2017), this is problematic in terms of prevention from a public health standpoint. A large criticism of stigma research as noted by Kulesza and colleagues (Kulesza et al., 2013) is the siloed focus on the role of one tenet of stigma (e.g. self-stigma) rather than examining multiple mechanisms of stigma among the numerous identities individuals possess. Thus, further highlighting the

importance of an intersectionality approach to stigma research as discussed by Earnshaw and colleagues (Earnshaw, 2020).

The need for research to shift towards understanding how stigma mechanistically affects individuals who struggle with disordered substance use has become increasingly important, considering that the dynamic nature of substance use stigma is subjective to societal processes. To further complicate matters, stigma is not equitable across substances, as studied by Luoma and colleagues (2017) who found that those who use crack and intravenous (IV) drugs were stigmatized to a greater extent, even among other individuals who use substances (Luoma et al., 2007). Certain factors have been shown to moderate the relationship between stigma and various deleterious outcomes in the context of substance use. Internalized stigma of substance use moderated the relationship between internalized HIV stigma and depression (Earnshaw et al., 2015), and social support was found to moderate the relationship between anxiety, stigma, and intention to use illicit drugs (Mo et al., 2020). Also, avoidance was found to moderate the relationship between internalized HIV stigma and problematic alcohol use (Regenauer et al., 2022).

Importantly, the literature appears to be lacking on examination of psychological traits such as shame and guilt in the context of stigma and substance use. Notably, to the best of our knowledge, shame and guilt have not been examined as potential moderators between stigma mechanisms and substance use severity. Luoma and colleagues (2019) noted the mixed results of shame as a precursor and outcome of substance use (Luoma et al., 2019), while guilt has often associated with more adaptive behavioral actions (Patock-Peckham et al., 2018).

The purpose of this study was to examine the relationship between three stigma mechanisms; internalized-, anticipated-, and enacted-stigma, and substance use severity (non-

problematic/problematic alcohol/drug use). Secondly, to examine potential moderating effects of shame and guilt on the relationships between enacted, anticipated, and internalized stigma and substance use severity among US substance using adults.

Methods

Research Design

The current study utilized a cross-sectional electronic survey design using a nonprobability sample of United States substance using adults. The study used screening procedure to identify individuals who met the eligibility criteria for the survey phase. The sample was generated by use of the sampling agency, Prolific, to recruit and obtain participants.

Participants

Participants (n = 1,000) were age 18 or older Unites States dwelling individuals who self-reported substance use in the past 12-months (other than or in addition to caffeine or tobacco), and/or self-reported misuse of prescription drugs, and/or self-reported misuse of over-the-counter drugs. Participants were able to speak and read English and had access to a computer or smart device to engage in use of the Prolific research platform.

Procedure

Approval for the present study was obtained from the University's Institutional Review Board in fall of 2021 (IRB #2110366842). Participants were recruited and obtained using the sampling agency, Prolific. Prolific is an online marketplace researchers often use for participant data collection (Palan & Schitter, 2018). A screening procedure was employed where individuals (n = 5,000) were paid 15 cents to complete a 1-2 minute, three-item screener to determine survey phase eligibility. Inclusion criteria for the survey phase required individuals to report some form of past 12-month substance use (other than caffeine or tobacco). Past 12-month substance use

was inclusive of illicit or licit drugs, misuse of prescription drugs, and misuse of over-the-counter drugs. Definitions were provided for misuse of prescription and over the counter drugs. Of those meeting inclusion criteria for the survey phase (n = 2,235), a total of 1,000 participants provided complete data and were paid $3.

Screening Procedure Measures

The first item forced respondents to provide their Prolific ID which is a unique identifier participants use to preserve anonymity of responses. The second item was in matrix format and assessed past 12-month substance use by asking, "Have you used any of the following substances in the past 12-months? Please check all that apply." Choices consisted of 14 substances (e.g., alcohol, cannabis recreational, heroin, LSD, etc.) with an additional "other" open text field. The third and final item assessed past 12-month misuse of prescription or over the counter drug use, with definitions for each provided for clarity, by asking the same question as item 2. Choices consisted of four classes of prescription medications (e.g., prescription opioid pain-relievers such as Vicodin, OxyContin, or others), a "misuse of other prescription medication(s)" open text field and a "misuse of over-the-counter drug(s)" open text field.

Survey Phase Measures

Demographics

Participants were asked demographic questions regarding gender identification, age in years, race/ethnicity, household income, sexual minority group identification, highest level of education completed, employment status, current US state of residence, and marital/relationship status.

Substance Use Severity Measures

Drug Abuse Screening Test (DAST-10)

The DAST-10 was utilized to assess substance use severity (other than alcohol, tobacco, or caffeine) given the excellent psychometric properties and to shorten the electronic survey length (Skinner, 1982). Response options are dichotomized (i.e., yes/no) with the total number of 'yes' responses summed to create a total score. All items are scored as "1" for 'yes' or "0" for 'no', except for item three which is reverse scored. Range of possible scores is from 0 to 10 with higher scores indicating greater drug use severity. Problematic substance use was operationalized using the standardized cut-off value of 3 or greater for the DAST-10, as Skinner suggests (Skinner, 1982). In this study, the DAST-10 had acceptable internal consistency (10 items; $\alpha = 0.68$).

Alcohol Use Disorder Identification Test-Concise (AUDIT-C)

The AUDIT-C consists of 3-items and is a brief alcohol screening instrument that reliably identifies persons who are hazardous drinkers or have active alcohol use disorders (including alcohol abuse or dependence) (Bush et al., 1998). Scored on a scale of 0-12, each item has 5 answer choices valued from 0 to 4 points (different response options for each of the 3 questions, scoring is the same) with higher scores indicating increased problematic drinking. A sum score for the three items was calculated. In men, a score of 4 or more suggests hazardous drinking or active alcohol use disorders. In women, a score of 3 or more suggests the same. Presently, the variable was operationalized as 4 or greater for those identifying as male and gender-variant and operationalized as 3 or greater for those identifying as female, to indicate problematic alcohol use. In this study, the AUDIT-C had acceptable internal consistency (3 items; $\alpha = 0.76$).

Substance Use Questionnaire

The substance use items assessed past 12-month substance use in a matrix style format. These items were taken from the author's prior published work assessing substance use and

frequency of use in a sample of college students (with slight modification) (Davis et al., 2020). Items assessed use of the following: cocaine, crack, LSD, ketamine, recreational and medical cannabis, MDMA/ecstasy, methamphetamines, heroin, fentanyl, PCP, psilocybin, DMT, and misuse of over-the-counter drugs and the following classes of prescription medication: opioids, stimulants, tranquilizers, sedatives. For prescription drugs, participants were provided examples of common drugs from each prescription drug category (i.e., prescription tranquilizing medication such as Xanax, Klonopin, and Valium). Additionally, to mitigate confusion of assessment of 'misuse' of these substances, participants were reminded of the following definition, "Prescription drug misuse refers to use of prescription medication in a way not specifically directed by a doctor. To clarify: any use without your own prescription, for recreational purposes, taking a higher dose than prescribed, using more frequently than directed or continued use despite no longer experiencing the problem for which it was prescribed." Also, a definition of over-the-counter drug misuse was provided stating, "Over-the-counter drug misuse is any drug you can buy without a prescription (i.e., Robitussin) taken in any way other than as directed on the label." An example item read, "On how many occasions in the past 12-months have you used cocaine?", with response options on a 7-point Likert-type coded as 1 – 7, "Never" – "40 or more occasions". Each substance's frequency of use was examined independently with higher scores indicating greater level of frequency of use/misuse. Presently, each substance variable was dichotomized by 'yes' to past 12-month usage and 'no' to past 12-month usage.

Substance Use Stigma Mechanisms Scale (SU-SMS)

The SU-SMS is informed by the Stigma Framework (Earnshaw & Chaudoir, 2009) and consists of eighteen items that differentiate between enacted, anticipated, and internalized stigma

(Smith et al., 2016). All responses are given on a 5-point Likert scale, with each subscale containing different response options. Enacted stigma 1 – 5, "Never" – "Very Often"; anticipated stigma, 1 – 5, "Very Unlikely" – "Very Likely"; and internalized stigma 1 – 5, "Strongly Disagree" – "Strongly Agree"; with higher scores indicating greater endorsement of substance use stigma. Stigma scale scores are developed by averaging the responses chosen for each of the three stigma mechanisms. The authors found this measure to demonstrate acceptable reliability and validity (Smith et al., 2016). Presently, each of the three subscales of the SU-SMS demonstrated excellent internal consistency; enacted-stigma (6 items; $\alpha = 0.90$), internalized-stigma (6 items; $\alpha = 0.91$), and anticipated-stigma (6 items; $\alpha = 0.94$).

Guilt and Shame Proneness (GASP)

The GASP measures individual differences in the susceptibility to experience guilt and shame through a variety of personal transgressions via four subscales and has established validity and reliability (Cohen et al., 2011). Presently, this study used two of the four subscales consisting of negative behavior-evaluations (NBEs; 4 items) and negative self-evaluations (NSEs; 4 items) as the guilt- and shame-proneness moderator variables, respectively. The authors of the GASP repeatedly discuss and reference these two variables as trait characteristics (proneness) (Cohen et al., 2011) and they have been used in other work as guilt proneness and shame proneness variables (Alabèrnia-Segura et al., 2022). The GASP items are arranged on a 7-point Likert-type scale (1 – 7) with response options ranging from 'very unlikely', to 'very likely' and is scored by averaging the four items in each subscale. Presently, the guilt-proneness (4 items; $\alpha = 0.70$) and shame-proneness (4 items; $\alpha = 0.70$) subscales of the GASP exhibited acceptable internal consistency.

Data analysis

Data were initially checked for completeness. Descriptive statistical analyses were used to describe the sample characteristics such as means, frequencies and percentages. Correlational analyses (Pearson's and point biserial) were conducted to evaluate bivariate relationships among variables.

Given the outcome variable of substance use severity had four categories (i.e., no positive screen for problematic drug and alcohol use, a positive screen for problematic alcohol use, a positive screen for problematic drug use, and a positive screen for both problematic alcohol and drug use), a multinomial logistic regression model was applied to evaluate the relationships between the predictor, and outcome. Group one represented no positive screen for problematic alcohol or drug use and was used as the reference group for all iterations of the analysis ('NO_ALC_DRUG', n = 214), group two represented a positive screen for problematic alcohol use only ('ALC', n = 223), group three represented a positive screen for problematic drug use only ('DRUG', n = 216), and group four represented a positive screen for both problematic alcohol and drug use ('ALC_DRUG', n = 347). The moderation effects (Geert van den Berg, 2021) were also examined whether the regression of outcome on stigma varies as a function of guilt-proneness and shame-proneness' roles. All predictors (i.e., enacted-stigma, internalized-stigma, anticipated-stigma, shame-proneness, and guilt-proneness) were mean-centered before creating interaction terms to eliminate the source of potential computational difficulty as well as the non-essential multicollinearity (Aiken & West, 1991).

As recommended by Hosmer et al. (2013), the first step was to conduct a series of univariable logistic regression models for each independent variable using a significance level (i.e., alpha) as 0.25 as a screening criterion for initial variable selection. With all identified

potential predictors from the first step, a multivariable model was conducted. At this stage, predictors that did not contribute to the model uniquely (i.e., based on the traditional alpha level at 0.05) would be eliminated. The third step included addition of the interaction terms among the variables in the model. Again, the interaction terms would be excluded from the model based on both practical and statistical considerations (i.e., *p*-value > 0.05).

All data management and descriptive statistics were conducted using SPSS Statistics version 28 (IBM, 2017). The multinomial logistic regression analysis was conducted using SAS version 9.4 (SAS Institute, 2013).

Results

Characterization of Participants

A geographically diverse sample of 1,000 US self-report substance using adults participated in the main data collection phase of this study, Phase 2. Participants averaged 34.72 (*SD* = 12.45) years of age and were distributed among female identifying (50.2%), male identifying (45.8%), and gender variant/non-conforming identifying (4.0%). Sixty-two percent of participants reported ‘in a relationship/marriage/partnership’, a little over half were employed full-time (54.7%) and nearly three-quarters identified as a non-sexual minority (74.8%). Importantly, the sample included individuals from 49 of the 50 US states (i.e., Hawaii, *n* = 0).

A wide array of past 12-month substance use was reported among this sample as assessed by the substance use questionnaire. Eighty-eight percent reported recreational cannabis use, followed by 29% medical cannabis use, and nearly 20% reported use of psilocybin. Roughly twenty percent of participants reported misuse of prescription opioids (20.5%), 18% reported misuse of prescription tranquilizers, and 10% reported misuse of OTC drugs. Additionally, 57% screened positive for hazardous drinking by use of the AUDIT-C, 56.3% screened positive for

problematic substance use by use of the DAST-10, and 34.7% screened positive for both the AUDIT-C and the DAST-10 (see Table 1 for full demographics and substance use information).

Insert Table 1 approximately here

Correlation between Variables

Enacted, anticipated, and internalized stigma each had a significant positive association with a problematic alcohol use screen ($r = 0.081$, $p = 0.016$; $r = 0.078$, $p = 0.019$; $r = 0.140$, $p < 0.001$), respectively, and enacted, anticipated, and internalized stigma each had a significant positive association with a problematic drug use screen ($r = 0.315$, $p < 0.001$; $r = 0.307$, $p < 0.001$; $r = 0.269$, $p < 0.001$), respectively. Additionally, a problematic alcohol use screen significantly associated with a problematic drug use screen ($r = 0.128$, $p < 0.001$). Shame had a significant negative correlation with enacted stigma ($r = -0.128$, $p < 0.001$) and anticipated stigma ($r = -0.108$, $p < 0.001$), yet had a significant positive association with internalized stigma ($r = 0.099$, $p < 0.001$). Guilt additionally had a significant negative association with enacted stigma ($r = -0.107$, $p = 0.002$), and anticipated stigma ($r = -0.110$, $p < 0.001$), yet also exhibited a significant positive association with internalized stigma ($r = -0.118$, $p < 0.001$). Of interest, shame did not have a significant association with a problematic drug ($p = 0.143$) or alcohol ($p = 0.384$) screen, but guilt exhibited a significant negative association with a problematic drug screen ($r = -0.120$, $p < 0.001$), but no significant association was present with a problematic alcohol screen ($p = 0.163$). All correlations of interest are present in Table 2.

Insert Table 2 approximately here

Multinomial Logistic Regression and Moderating Effects Analysis

In the final model with the predictors internalized-stigma, enacted-stigma, guilt, and the interaction term of internalized-stigma*guilt, the model convergence criterion was satisfied and

the likelihood ratio test for the overall model was significant (187.14, $p < 0.001$). For each category of the models, it is noted that β coefficients exhibit different values. Thus, the odds ratios of variable for each category differs. Upon examining the Type 3 Analysis of Effects, internalized stigma ($df = 3$, $\chi^2 = 41.24$, $p < 0.001$), enacted stigma ($df = 3$, $\chi^2 = 46.96$, $p < 0.001$), guilt ($df = 3$, $\chi^2 = 20.53$, $p < 0.001$) and the interaction of internalized stigma*guilt ($df = 3$, $\chi^2 = 10.51$, $p = 0.015$) were significant predictors of ALC, DRUG, and ALC_DRUG. Predictive probabilities were calculated for each of the three group comparisons among data in this sample; the probability of individuals belonging to ALC vs. NO_ALC_DRUG was 10.4%; the probability of individuals belonging to DRUG vs. NO_ALC_DRUG was 34.19%; and the probability of individuals belonging to ALC_DRUG vs. NO_ALC_DRUG was 28.46%.

Presently, the first category of the dependent variable, NO_ALC_DRUG was utilized as the reference group (group 1), or baseline category, for each comparison and the findings were interpreted accordingly. Enacted stigma was significant ($p < 0.001$) for DRUG ($\beta = 0.759$ $\chi^2 = 24.37$) and was significant ($p < 0.001$) for ALC_DRUG ($\beta = 0.529$, $\chi^2 = 12.60$). As enacted stigma increased by one unit, the multinomial log-odds for having a problematic screen for drug use relative to no screen for problematic drug or alcohol use are expected to increase by 0.759 units, and the multinomial log-odds for having a problematic screen for both alcohol and drug use relative to no screen for problematic drug or alcohol use are expected to increase by 0.529 units, while holding all other variables in the model constant.

Internalized stigma was significant ($p < 0.001$) for ALC ($\beta = 0.800$, $\chi^2 = 19.62$), DRUG ($\beta = 0.888$, $\chi^2 = 25.04$), and ALC_DRUG ($\beta = 1.078$, $\chi^2 = 40.58$). The estimated multinomial log-odds was 0.800 for having a problematic screen for alcohol use relative to no screen for problematic drug or alcohol use on the internalized stigma at the mean of the guilt

(i.e., Guilt = 0); the multinomial log-odds was 0.888 for having a problematic screen for drug use relative to no screen for problematic drug or alcohol use on the internalized stigma at the mean of the guilt; the multinomial log-odds was 1.078 for having a problematic screen for both alcohol and drug use relative to no screen for problematic drug or alcohol use on the internalized stigma at the mean of the guilt, while holding enacted stigma constant.

Guilt was significant ($p = 0.004$) for DRUG ($\beta = -0.286$, $\chi^2 = 8.36$) and significant ($p < 0.001$) for ALC_DRUG ($\beta = -0.378$, $\chi^2 = 16.58$). The multinomial log-odds was 0.286 for having a problematic screen for drug use relative to no screen for problematic drug or alcohol use on guilt at the mean of internalized stigma (i.e., internalized stigma = 0), and the multinomial log-odds was 0.378 for having a problematic screen for both alcohol and drug use relative to no screen for problematic drug or alcohol use on guilt at the mean of internalized stigma, while holding enacted stigma constant.

To evaluate the potential moderating effects as to why guilt was negatively associated with substance use severity among participants who reported higher internalized stigma, the interaction of internalized stigma*guilt was included in the model. The results indicated the interaction was significant ($p = 0.013$) for ALC ($\beta = -0.321$, $\chi^2 = 6.23$) and significant ($p = 0.013$) for ALC_DRUG ($\beta = -0.295$, $\chi^2 = 6.14$). Guilt significantly moderated the relationship between internalized stigma and a problematic alcohol use screen (ALC). Among participants with screened problematic alcohol use, the multinomial log-odds (-0.321) were significantly lower among participants with no screen for problematic alcohol and drug use. Similarly, for ALC_DRUG, the interaction of internalized stigma*guilt was observed. The estimated multinomial log-odds was -0.295 that indicated as guilt-proneness increases, the effect internalized stigma has on predicting a problematic alcohol use screen (relative to no screen for

problematic alcohol or drug use) is buffered as the multinomial log-odds are expected to decrease by 0.321 units. Additionally, guilt significantly moderated the relationship between internalized stigma and a problematic screen for both alcohol and drug use; as guilt-proneness increases, the effect internalized stigma has on predicting a problematic screen for both alcohol and drug use (relative to no screen for problematic alcohol or drug use) is buffered as the multinomial log-odds are expected to decrease by 0.295 units. Table 3 illustrates the final model for the multinomial logistic regression analysis results; Tables 4 – 6 demonstrate the estimated interaction effects from -2.0 to 2.0.

Insert Table 3 approximately here
Insert Table 4 – 6 approximately here

Discussion

The purpose of this study was to examine the relationship between internalized-, anticipated-, and enacted-stigma, and substance use severity as assessed with the DAST-10 and AUDIT-C. Secondly, to examine the potential moderating effects of shame and guilt on the relationship between enacted, anticipated, and internalized stigma and substance use severity. This study makes several important contributions for deeper understanding of the role the psychological constructs shame and guilt play in the context of stigma and substance use severity, and how stigma mechanistically impacts severity of substance use among US self-report substance using adults.

The sample was geographically diverse and evenly distributed between male (45.8%) and female (50.2%) identifying individuals. In terms of screening for problematic use, 57% of the sample screened positive for hazardous drinking according to the AUDIT-C, 56.3% screened positive for problematic substance use according to the DAST-10, and 34.7% screened positive for both. A wide variety of past 12-month substance use was reported with 88% recreational

cannabis, misuse of prescription opioids at 20.5%, and almost 20% reporting use of psilocybin (19.8%) and 12.5% use of LSD.

Internalized-, enacted-, and anticipated stigma each had a significant positive association with a problematic drug and alcohol use screen, which is consistent with the literature. Among a sample of primary care patients, internalized stigma was found to associate with substance use problems (Kulesza et al., 2017) and Brown et al. (2015) found fear of enacted stigma associated with temptation to use substances among those with SUDs (Brown et al., 2015). Surprisingly, shame had a significant negative association with enacted and anticipated stigma yet had a significant positive association with internalized stigma. These findings may point to research examining the behavioral withdrawing effects shame has been found to have (Cohen et al., 2011; Wolf et al., 2010), thus, shame proneness in individuals may cause them to retreat and not often experience enacted or anticipated stigma. Given that internalized stigma and shame are very similar constructs, this positive association is of no surprise. Guilt additionally had significant negative associations with enacted and anticipated stigma yet had a significant positive association with internalized stigma. Given the adaptive nature guilt has shown on behavioral effects (Patock-Peckham et al., 2018; Snoek et al., 2021), this could explain such a relationship. If guilt increases, adaptive behavioral strategies may be employed, thus enacted and anticipated stigma are likely to affect individuals at lower levels. Future work is needed to examine baseline levels of guilt and shame and how this could affect severity of substance use and related mechanisms of stigma.

Presently, shame did not have a significant association with either a positive problematic alcohol or drug use screen. This could potentially be due to the sample consisting of only self-report substance using adults (mean age 34.7). Thus, the effects of shame could potentially wane

over time or phase of substance use (e.g., time from SUD initiation). Collectively, SUDs associate with societal stigma (Kulesza et al., 2013; Kulesza et al., 2014; Palamar et al., 2012; Smith et al., 2016) and overall shame (Batchelder et al., 2022; Wiechelt, 2007), however, individuals who use substances problematically may not experience shame the same way as less severe users of substances, or may separate it from themselves and their use. Meehan et al. (1996) found those in recovery from SUDs had higher levels of shame than their non-disordered using peers (Meehan et al., 1996), suggesting the role identity plays in substance using populations may be larger than once thought. Guilt had a significant negative association with a positive drug screen, likely due to the adaptive nature of guilt inhibiting individuals from reaching problematic levels of use (Quiles et al., 2002), but no significant association with a positive alcohol use screen, potentially due to the decreased stigma surrounding alcohol use compared to other substances as discussed by Kulesza and colleagues (2013) and Brown (2015) (Brown, 2015; Kulesza et al., 2013) and the aforementioned adaptive nature of guilt.

Highlighting the main findings, the multinomial logistic regression found guilt to be a significant moderator in the pathway between internalized stigma and a positive screen for problematic alcohol use, and a positive screen for problematic alcohol and drug use. Thus, those with higher levels of guilt were less likely to have a positive screen for either disordered outcome. Guilt's role in substance using populations has been established as an adaptive behavioral mechanism, where individuals who have increased guilt-proneness are less likely to experience disordered substance use (Hequembourg & Dearing, 2013) and are more likely to seek help (Treeby et al., 2018). Separate from the interaction of guilt and internalized stigma, the main effects of enacted stigma, internalized stigma, and guilt predicted group membership to disordered substance use categories. Internalized stigma predicted group membership to each of

the three outcomes (positive screen for alcohol, drug, alcohol and drug), which is consistent with the deleterious associations this stigma mechanism has with problematic substance use (Batchelder, Foley, Kim, et al., 2021; Kulesza et al., 2017). Enacted stigma predicted group membership to a positive screen for disordered drug use and to disordered alcohol and drug use, which is also consistent with the damaging effects enacted stigma has among people who use substances by considering them as less capable (Khalid et al., 2020) and a decreased likelihood to seek help (Earnshaw et al., 2021; Fong et al., 2021; Luoma et al., 2007). Earnshaw et al., (2021) found that those in recovery from opioid use disorder (OUD) who had greater substance dependency experienced more enacted stigma from those whom they told about their struggles (Earnshaw et al., 2021), suggesting a need to examine causality among stigma mechanisms and disordered use.

Lastly, guilt predicted group membership to disordered use of drug, and disordered use of alcohol and drug screens. Of interest, guilt did not predict membership to a disordered alcohol use only screen, which could speak to the aforementioned decreased level of societal stigma towards alcohol use and the commonality with which the substance is used in America. When drugs entered the equation, guilt predicted both groups inclusive of disordered screens suggesting guilt's adaptive effects may be no match for the stigma surrounding drugs exclusive of alcohol.

Strengths & Limitations

The current study includes several strengths and limitations. Considering limitations, the cross-sectional research design does not allow for temporal order of associations between the study variables. The participants were incentivized to participate thus there is a chance that their characteristics do not accurately represent the traits of the greater population of people who use

substances. Also, the nature of the survey data is self-report which could lead to recall bias and social desirability bias. The questions are also highly sensitive and could lead to dishonest or inaccurate answers even with steps taken to promote participant anonymity. The length of the survey may lead to respondent fatigue and survey dropout. There is a lack of research inclusive of guilt, shame, stigma, and substance use severity, therefore this could inhibit interpretation of study findings.

Conclusion

While shame did not predict group membership in a positive screen for alcohol use, drug use, or both, the sample's makeup of self-report substance using adults could have played a role in this outcome. Consistent with the literature, guilt demonstrated protective effects on severity of substance use by decreasing probabilities of membership to problematic alcohol or problematic alcohol and drug use screens. Enacted stigma and internalized stigma were significant predictors of group membership, thus, speaking to the deleterious effects mechanisms of stigma have on severity of substance use. Future research needs to examine how management of individual guilt may lead to potentially decreased severe health outcomes. Given the adaptive tendencies guilt displayed in the present study, research needs to examine if healthy levels of baseline guilt are existent in substance using populations, and how to strategically use this construct to prevent negative health implications tied with substance use.

Conflict of Interest

The authors declare that they have no conflicts of interest.

Declaration of Funding Statement

Funding was provided internally by two internal grants sourced from the Health, Human Performance, and Recreation Department at the University of Arkansas, housed in the College of

Education and Health Professions.

Credit authorship contribution statement

All authors contributed meaningfully to this study. Committee members names are added to this manuscript upon submission for publication for their assistance in serving on the author's dissertation committee. NAD served as lead author and contributed from conceptualization to analysis and final synthesis. RED served as project manager, provided feedback on the final drafts, and assisted with funding acquisition. PDD aided in development of study design, integration of findings, and table/figure suggestions. WJL provided statistical support and interpretation of findings. BH guided study methodology, data analysis feedback, and support on the final draft.

Acknowledgements

The authors would like to acknowledge the many individuals who participated in this research study for without their time and responses this manuscript would not have been possible. Also, we would like to thank the SUMH lab for their encouragement and support in study execution.

Table 1. Descriptive statistics for study variables (N = 1,000)

Variable	*M (SD)*	*n (%)*
Demographics		
Age	34.72 (12.45)	
Gender		
Female		502 (50.2)
Male		458 (45.8)
Gender Variant		40 (4.0)
Racial minority		230 (23.0)
Sexual minority		252 (25.2)
Employee Level		
Unemployed (looking and not looking)		163 (16.3)
Part-time		189 (18.9)
Full-time		547 (54.7)
Retired or Unable to work		65 (6.5)
Homemaker		36 (3.6)
Education Level		
Some HS or GED		124 (12.4)
Some college or associate degree		367 (36.7)
Bachelor's degree		364 (36.4)
Graduate degree		145 (14.5)
Relationship status		
Single/Other		382 (38.2)
In a relationship/partnership/marriage		618 (61.8)
[a]**Substance use**		
[b]Hazardous drinking		570 (57.0)
[c]Problematic Drug Use		563 (56.3)
Cannabis Recreational		881 (88.1)
Cannabis Medical		293 (29.3)
LSD		125 (12.5)
Ketamine		40 (4.0)
Ecstasy		116 (11.6)
Methamphetamines		60 (6.0)
Heroin		25 (2.5)
Psilocybin		198 (19.8)
Fentanyl, PCP, DMT		71 (7.1)
Prescription or OTC Misuse		
Tranquilizers		181 (18.1)
Opioids		205 (20.5)
Stimulants		178 (17.8)
Sedatives		97 (9.7)
OTC drugs		100 (10.0)

[a]Substance use categories are not mutually exclusive. [b]Derived by the Alcohol Use Disorder Identification Test (AUDIT-C). [c]Derived by the Drug Abuse Screening Test (DAST-10).

Table 2. Zero-order Pearson & Point-Biserial correlation matrix of study variables

Measure	1	2	3	4	5	6	7
1. ES[a]	-	.840**	.447**	.315**	.081*	-.128**	-.107**
2. AS[b]		-	.451**	.307*	.078*	-.108**	-.110**
3. IS[c]			-	.269**	.140**	.099**	.118**
4. DAST-10[d]				-	.128**	-.046	-.120**
5. AUDIT-C[e]					-	-.029	-.047
6. Shame						-	.554**
7. Guilt							-
Mean	1.719	1.675	1.824			5.486	5.000
SD	0.885	0.852	0.905			1.153	1.319
Min	1	1	1	0	0	1	1
Max	5	5	5	10	12	7	7

[a]ES denotes enacted stigma. [b]AS denotes anticipated stigma. [c]IS denotes internalized stigma. [d]DAST-10 denotes Drug Abuse Screening Test. [e]AUDIT-C denotes Alcohol Use Disorder Identification Test-Concise **Correlations are significant at $p < 0.001$. *Correlations are significant at $p < 0.05$. Missing descriptives for DAST-10 and AUDIT-C as those are point-biserial correlations.

Table 3. Multinomial Regression Analysis Examining Internalized Stigma, Enacted Stigma, Guilt, and the Interaction of Internalized Stigma*Guilt

	NO_ALC_DRUG vs. ALC		NO_ALC_DRUG vs. DRUG		NO_ALC_DRUG vs. ALC_DRUG	
Variable	β	*p*-value	β	*p*-value	β	*p*-value
	Intercept: 0.2952		Intercept: 0.2701		Intercept: 0.7846	
IS[a]	**0.8001**	**<0.0001**	**0.8882**	**<0.0001**	**1.0777**	**<0.0001**
ES[b]	-0.1147	0.5148	**0.7586**	**<0.0001**	**0.5285**	**0.0004**
GUILT	-0.1573	0.1141	**-0.2858**	**0.0038**	**-0.3783**	**<0.0001**
IS*GUILT[c]	**-0.3211**	**0.0126**	-0.1539	0.2112	**-0.2951**	**0.0132**

Note. Interpretation is at variable mean due to mean centering. Bold indicates $p < 0.05$. β denotes coefficient. [a]IS denotes internalized stigma. [b]ES denotes enacted stigma. Reference category for each of the three groups is no positive screen for problematic alcohol or drug use. Positive screen for problematic drug use was assessed by the Drug Abuse Screening Test-10. Positive screen for problematic alcohol use was assessed by the Alcohol Use Disorder Identification Test-Concise. [c]IS*GUILT denotes the interaction of internalized stigma and guilt and is demonstrated in Tables 4 – 6.

Table 4. Estimated Odds Ratios to Demonstrate the Interaction of Internalized Stigma*Guilt; ALC compared to NO_ALC_DRUG

	IS[a]			
Guilt	**-1.0**	**0**	**1.0**	**2.0**
-2.0	0.853764	1.900278	4.229569	9.414019
-1.0	0.619341	1.378506	3.068227	6.829149
0	0.449284	1	2.225763	4.954023
1.0	0.325921	0.725423	1.614621	3.593764
2.0	0.236431	0.526239	1.171283	2.607

[a]IS denotes internalized stigma. Note: interpretation is at variable mean due to mean centering and odds ratios are demonstrated from -2.0 to 2.0

Table 5. Estimated Odds Ratios to Demonstrate the Interaction of Internalized Stigma*Guilt; DRUG compared to NO_ALC_DRUG [non-significant interaction]

	IS[a]			
Guilt	**-1.0**	**0**	**1.0**	**2.0**
-2.0	0.742153	1.803988	4.385045	10.65895
-1.0	0.552556	1.343126	3.264805	7.935926
0	0.411396	1	2.43075	5.908547
1.0	0.306297	0.744532	1.80977	4.3991
2.0	0.228048	0.554327	1.347431	3.275286

[a]IS denotes internalized stigma. Note: interpretation is at variable mean due to mean centering and odds ratios are demonstrated from -2.0 to 2.0

Table 6. Estimated Odds Ratios to Demonstrate the Interaction of Internalized Stigma*Guilt; ALC_DRUG compared to NO_ALC_DRUG

	IS[a]			
Guilt	**-1.0**	**0**	**1.0**	**2.0**
-2.0	0.614037	1.803988	5.299964	15.57084
-1.0	0.45717	1.343126	3.94599	11.59298
0	0.340377	1	2.937915	8.631342
1.0	0.253422	0.744532	2.18737	6.426307
2.0	0.188681	0.554327	1.628566	4.784588

[a]IS denotes internalized stigma. Note: interpretation is at variable mean due to mean centering and odds ratios are demonstrated from -2.0 to 2.0

Chapter 5

Manuscript for Study 2: An Explanatory Mixed Methods Analysis of Guilt, Shame and Stigma and Impacts on Help-Seeking Intention among a Sample of US Substance Using Adults

In preparation for *Journal of Mixed Methods Research*

Nicole A. Doyle, MS[1*]

[1]Substance Use and Mental Health Laboratory, Department of Health, Human Performance and Recreation, University of Arkansas, Fayetteville, AR, USA

*Corresponding author.
Nicole A. Doyle
nadoyle@uark.edu

Abstract

Introduction: Guilt, shame, stigma, and help-seeking have not been mechanistically examined in substance using populations.

Methods: A sequential explanatory mixed methods design was employed. Prolific was used to survey (quantitative phase) 1,000 US adults who self-reported some form of past 12-month substance use (M = 34.7 years of age) and a subsample (n = 18) were invited to take part in a one-time 60-minute virtual semi-structured interview (qualitative phase). Quantitative measures included substance use items, guilt and shame proneness, stigma, and help-seeking intention. Qualitative measures sought to understand participants' lived experiences by questions on previous treatment by healthcare workers and family, identity, and substance use behaviors.

Results: Guilt moderated the relationship between enacted stigma and help-seeking intention. Participant narratives echoed the effects guilt, shame, and stigma had on their lives.

Conclusions: This article contributes to the field of mixed methods research by integrating survey and interview methods providing for a deeper understanding of why some individuals who use substance seek help while others do not.

Keywords: guilt, substance use, shame, help-seeking intention

INTRODUCTION

Substance use behavior is highly complex, often stigmatized (Kulesza et al., 2013) and exists on a spectrum from recreational to problematic (e.g., substance use disorder (SUD), alcohol use disorder (AUD). Substance use exists as a common phenomenon in the United States (US). In the US, nearly 15 million (10.6%) people age 12 and older were reported to have an alcohol use disorder (AUD) in 2018 (SAMHSA, 2019), and 19.4% of people aged 12 and older (53 million) reported that they used illegal drugs or misused prescription drugs in the past 12-months in 2018 (NCDAS, 2022). Substance use disorders (SUDs) affect over 20 million Americans (NCDAS, 2022). Despite increases in AUDs and SUDs research suggests that relatively few people seek treatment. According to the same NCDAS data, in 2018 roughly 19 million people aged 12 and over needed substance related treatment, 5% felt they needed help, and a bleak 2% sought it out (NCDAS, 2022).

Research has found that those who use substances are often looked down upon in society (Buchman & Reiner, 2009; Parcesepe & Cabassa, 2013) above and beyond other psychiatric disorders due to the public perception that SUDs carry a personal element (e.g., willpower, choice) (Yang et al., 2017). Stigma related to SUD often impacts individuals who would otherwise attempt to seek help (Abraham et al., 2021). Specifically, healthcare provider stigma has been described as a fundamental barrier for those needing treatment (Jennings et al., 2015). Stigma has been explained mechanistically as enacted stigma (e.g., discrimination), anticipated stigma (e.g., stress/anxiety of forthcoming stigmatizing actions or attitudes), and internalized stigma (e.g., stigma that becomes internalized over time in an individual) (V. A. Earnshaw et al., 2013; Smith et al., 2016). In addition to stigma, shame and guilt often pervade an individual's identity surrounding their substance use (Batchelder et al., 2022; Patock-Peckham et al., 2018;

Snoek et al., 2021). Shame (e.g., “I am bad”) and guilt (e.g., “I did something bad”) have been discussed as maladaptive and adaptive constructs, respectively (Dearing et al., 2005), as shame often leads to withdraw type behaviors (Cohen et al., 2011; Patock-Peckham et al., 2018) where guilt is indicative of taking reparative action (Treeby et al., 2018; Wolf et al., 2010). Wogen and Restrepo (2020) noted that stigma can have downstream health implications among people who use substances by increasing obstacles to treatment and health care (Wogen & Restrepo, 2020).

The complex nature of guilt, shame, and stigma, in relation to help-seeking intention has not been thoroughly examined among adults who use substances. Further, the potential moderating effects of guilt and shame between mechanisms of stigma and help-seeking intention has not been examined. Thus, the purpose of the current study was to examine the pathway from enacted, internalized, and anticipated stigma to help-seeking intention, and the potential moderating effects of guilt and shame. Given the uniqueness of these combined constructs in this sample, the use of qualitative methods were employed to aid in understanding the quantitative outcomes. Execution of this mixed methods design permitted the researchers to 1) initially collect data on these constructs and to 2) postulate meaningful explanations of the quantitative outcomes from the participants’ perspectives and lived experience.

METHODS

Research Design

The current study employed a sequential, explanatory mixed methods design (QUANT → qual) (Creswell & Plano Clark, 2018). The first sample was recruited to participate in a cross-sectional, online survey, and then a sub-sample of the survey participants were solicited to participate in semi-structured interviews.

Participants and Procedure

Approval for the present study was obtained from the [blinded for review] Institutional Review Board in fall of 2021 (IRB #2110366842). Participants were recruited for the quantitative phase and the qualitative phase of the current study using the sampling agency, Prolific. Prolific is an online marketplace often used for data collection in the behavioral and social sciences (Palan & Schitter, 2018). Prolific employs various attention checks to promote quality data collection. A screening procedure as part of a larger study was employed to identify participants for the survey-based phase of the present study. Of those reporting some form of past 12-month substance use (n = 2,235), a total of 1,000 participants provided complete data on the survey and were paid $3 (quantitative phase), additionally, 18 participants completed a 60-minute virtual semi-structured interview and were paid $40 (qualitative phase).

Quantitative measures

During the quantitative phase of the study, participants were asked to complete an online survey that inquired about their demographic information, substance use behaviors and severity screening (non-problematic and problematic alcohol and drug use), guilt and shame proneness, perceived stigma, and help-seeking intention.

Demographics

Participants were asked demographic questions regarding gender identification, age in years, race/ethnicity, household income, sexual minority group identification, highest level of education completed, employment status, current US state of residence, and marital/relationship status.

Substance Use Questionnaire

Nineteen items were used to assess past 12-month substance use. These items were slightly modified from a prior study that assessed substance use and frequency among a sample of college students (Davis et al., 2020). A diverse group of substances used was assessed including illicit, licit, and misuse of prescription medication and misuse of over the counter (OTC) drugs. To mitigate confusion of assessment of 'misuse' of these substances, participants were provided with the following definition, "Prescription drug misuse refers to use of prescription medication in a way not specifically directed by a doctor. To clarify: any use without your own prescription, for recreational purposes, taking a higher dose than prescribed, using more frequently than directed or continued use despite no longer experiencing the problem for which it was prescribed." Also, OTC drug misuse was defined for participants as, "any drug you can buy without a prescription (i.e., Robitussin) taken in any way other than as directed on the label." An example item read, "On how many occasions in the past 12-months have you used cocaine?" Responses were dichotomized into yes/no for past 12-month use. An additional item asked participants if they had a preferred substance to use, "drug of choice" and to select from an inclusive list of substances, or to select "N/A".

Substance Use Severity Measures

Drug Abuse Screening Test

The Drug Abuse Screening Test (DAST-10) was utilized to assess substance use severity (other than alcohol, tobacco, or caffeine) given that it provides strong internal consistency (0.92) (Skinner, 1982), and presently demonstrated acceptable internal consistency (10 items; $\alpha = 0.68$). Response options were dichotomized (i.e., yes/no) and scores ranged from 0 to 10 with higher scores indicating greater drug use severity. Problematic substance use was operationalized using

the standardized cut-off value of 3 or greater for the DAST-10, as Skinner suggests (Skinner, 1982).

Alcohol Use Disorder Identification Test-Concise

The Alcohol Use Disorder Identification Test-Concise (AUDIT-C) consists of 3-items and is a brief alcohol screening instrument that reliably identifies persons who are hazardous drinkers or have active alcohol use disorders (including alcohol abuse or dependence) (Bush et al., 1998). Scored on a scale of 0-12, each item has 5 answer choices valued from 0 to 4 points (different response options for each of the 3 questions, scoring is the same) with higher scores indicating increased problematic drinking. A sum score for the three items was calculated. In men, a score of 4 or more suggests hazardous drinking or active alcohol use disorders. In women, a score of 3 or more suggests the same. Presently, the variable was operationalized as 4 or greater for those identifying as male and gender variant and operationalized as 3 or greater for those identifying as female. In this study, the AUDIT-C had acceptable internal consistency (3 items; $\alpha = 0.76$).

Substance Use Stigma Mechanisms Scale

The Substance Use Stigma Mechanisms Scale (SU-SMS) is informed by the Stigma Framework (Earnshaw & Chaudoir, 2009) and consists of eighteen items that differentiate between enacted, anticipated, and internalized stigma (Smith et al., 2016). All responses were measured on a 5-point Likert scale (Never – Very Often for enacted stigma; Very Unlikely – Very Likely for anticipated stigma; and Strongly Disagree – Strongly Agree for internalized stigma); higher scores indicated greater endorsement of substance use stigma. This stigma scale was found to demonstrate acceptable reliability and validity (Benz et al., 2019; Smith et al., 2016). In the current study, each of the three subscales of the SU-SMS demonstrated excellent

internal consistency, enacted-stigma (6 items; α = 0.90), internalized-stigma (6 items; α = 0.91), and anticipated-stigma (6 items; α = 0.94).

Guilt and Shame Proneness

The Guilt and Shame Proneness (GASP) scale measures susceptibility to experience guilt and shame via four subscales and has established validity and reliability (Cohen et al., 2011). Presently, two subscales were used: negative behavior-evaluations (NBEs; 4 items) and negative self-evaluations (NSEs; 4 items), as the guilt and shame proneness variables, respectively. The GASP items are arranged on a 7-point Likert-type scale (1 – 7) with response options ranging from Very Unlikely – Very Likely and is scored by averaging the four items in each subscale. The guilt-proneness (4 items; α = 0.70) and shame-proneness (4 items; α = 0.70) subscales of the GASP exhibited acceptable internal consistency.

General Help-Seeking Questionnaire (GHSQ)

Help-seeking intention was assessed with the General Help-Seeking Questionnaire (GHSQ) (Wilson et al., 2005). The GHSQ consists of one item which asks about 10 various help-sources, which can be adapted according to purpose and need of the study. The authors of the GHSQ encourage this modification to match the target population and problem being examined. For this study, one modified-item was used to assess help-seeking intention and asked, “If you were having problems related to your substance use, how likely is it that you would seek help from the following people?”, with directions stating, “Please indicate your response by selecting the number that best describes your intention to seek help from each help source that is listed.” Example help-sources included, “Friend (not related to you)”, “Parent”, and “Doctor/GP”. Response options are listed on a 7-point Likert-type scale from Extremely Unlikely – Extremely Likely. Scoring of the GHSQ sums the help-source items with higher sum

scores indicating greater help-seeking intention (e.g., range 10 – 70). Presently, the GHSQ demonstrated low but acceptable internal consistency (10 items; $\alpha = 0.57$) (Taber, 2018).

Past help-seeking

Past help-seeking behavior was assessed for substance use via one dichotomous item, "In the past, have you sought professional, or non-professional help for your substance use?". Response options are "yes" or "no", scored as "1", or "0" (Benz et al., 2019).

Current help-seeking

Current help-seeking was assessed for substance use via one dichotomous item slightly modified from Watanabe et al. (2012), "Are you currently seeking professional, or non-professional help for your substance use?", with response options are "yes" or "no", scored as "1", or "0" (Watanabe et al., 2012).

Semi-structured Interview Question Path

Each participant ($n = 18$) completed a one-time 60-minute virtual interview conducted by a trained qualitative interviewer. At interview outset, participants provided verbal consent to be interviewed. The semi-structured interview guide drew from the Stigma Framework (Smith et al., 2016) developed from the HIV Stigma Framework (Earnshaw & Chaudoir, 2009), and the Health Stigma Discrimination Framework (Stangl et al., 2019), along with recent qualitative works in the addiction sciences (Batchelder, Foley, Kim, et al., 2021; Matthews et al., 2017) and qualitative research methods' suggestions (Neale, 2005). The semi-structured interview guide asked questions pertaining to substance use behavior/patterns/history, relationships, and emotional constructs such as shame, guilt, and mechanisms of stigma.

Quantitative data analysis

Analyses were conducted using SPSS Statistics version 28 (IBM, 2017) with all alpha levels set *a priori* at 0.05. Data were initially checked for completeness. Descriptive statistical analyses were used to describe the sample characteristics such as means, frequencies and percentages. Correlational analyses (Pearson's and point biserial) were conducted to determine bivariate relationships among variables. Independent samples *t*-tests were conducted to examine mean differences between those who had ever sought help for substance related concerns and those who had never sought help for substance related concerns for the GHSQ, enacted stigma, anticipated stigma, internalized stigma, guilt, shame, total DAST-10 scores, and total AUDIT-C scores. The total DAST-10 and total AUDIT-C scores were used rather than the dichotomized version of the variable to calculate mean differences. Levene's test was used to evaluate the homogeneity of variance assumption. When data violated this assumption, a Mann-Whitney test was used instead of independent *t*-test.

Next, a multiple regression model was used to evaluate how the dependent variable of help-seeking intention regressed on a set of the independent variables (i.e., enacted-stigma, anticipated-stigma, internalized-stigma, shame, and guilt). In addition, moderation analysis (Geert van den Berg, 2021) were examined to determine guilt and shame's role in potentially moderating the relationship between the stigma mechanisms and help-seeking intention. To do this, an exploratory multiple regression analysis was conducted where the model included all individual predictor variables and interaction terms. All predictors were first mean centered before creating interaction variables (i.e., enacted-stigma*guilt, enacted-stigma*shame, anticipated-stigma*guilt, anticipated-stigma*shame, internalized-stigma*guilt, and internalized-

stigma*shame) to eliminate the source of potential computational difficulty as well as the non-essential multicollinearity (Aiken & West, 1991).

Qualitative data analysis

Upon completion of the interviews (n = 18), all recordings were transcribed verbatim, and two trained researchers validated the transcripts with their corresponding audio recording, both produced by the virtual meeting platform. Two trained coders conducted an initial analysis of the data in NVivo 11 (NVivo, 2015) (see Table 4 for codebook). Intercoder reliability between the coders had a kappa value (κ) range of 0.28 – 1 due to two transcripts with low agreement consisting of few coded responses. Inconsistencies between codes were reviewed until consensus was met. Next, three of the authors (initials redacted for review) performed a thematic analysis of the final coded responses by examining each code for emergent themes. Finally, participant quotes representing the identified themes were independently identified by each of the three authors (See Table 1 for code book).

Insert Table 1

Mixed methods analysis

The use of a sequential explanatory mixed methods (QUANT → qual) design allowed us to explore deeper understanding of the survey data. Importantly, the findings from the quantitative survey (QUANT, capitalized to indicate priority) were contextualized and explained through the interview responses (qual). Integration of findings is key in mixed methods works and transparency in the approach is vital for quality of public health inferences (O'Cathain et al., 2008). Co-methodological integration occurred as the interviews were conducted less than two weeks post-survey completion and only basic descriptive statistics had been analyzed at that point. Importantly, both survey and interview participation were voluntary. Also, the survey

instruments, namely the GASP (Cohen et al., 2011) and SUSMS (Smith et al., 2016), were expanded upon when developing the semi-structured interview guide thus further integrating the two methodologies. As the interviews progressed, preliminary information from the QUANT findings was shared with participants (e.g., prevalence of problematic alcohol and drug use; drug of choice) to further prompt their responses. Findings from the QUANT and qual segments were first analyzed separately. Then the interview data was analyzed juxtaposing the QUANT findings to better explain the results. Tables and joint displays were developed to establish the integration of both methodologies (Creswell & Plano Clark, 2018).

Two main themes were derived from the qualitative interviews: *phase of substance use*, and *mistrust, mistreatment, and stigma*, with three sub-themes for each.

Characterization of Participants

Survey Sample. Overall, participants (n = 1,000) had a mean age of 34.72 (SD = 12.45), 50.2% identified as female, and 4.0% identified as gender non-confirming. Participants represented 49 of the 50 US states (i.e.., Hawaii, n = 0). A quarter (25.2%) of participants identified as a sexual minority, over three-quarters identified as a non-racial/ethnic minority (77%), over half were employed full-time (54.7%), and the majority reported being in a relationship (e.g., marriage, partnership, relationship (61.8%). **Mistrust, Mistreatment, and Stigma: Family and Friends.** Of those who reported being in a relationship, interview participants explained that stigma of seeking help could impact their personal relationships and support or resources can be tough to find.

> *If I go to rehab and I've been gone, I can't imagine what people would think of that. It is something you can't hide away. #10*

There was a vast array of substances used in the past-12 months with 57% screening positive for hazardous alcohol use and 56.3% screening positive for problematic drug use. **Phase of**

Substance Use: Addiction...I just want to feel normal. While addiction wasn't directly measured via the survey, substance use severity and past 12-month substance use was assessed. Over one-third (34.7%) of respondents screened positive for both hazardous alcohol use and problematic drug use. The survey respondents almost all reported using cannabis (recreational 88.1%, medical 29.3%), psilocybin (20%), cocaine (13.8%), LSD (12.5%), and Ecstasy (11.6%) (See Table 2). Interview participants described their thoughts on substance use, misuse, addiction, and related stigma.

> *I think addiction is a disease and it's stigmatized in a way that really prevents a lot of people from getting when they need to...I think to penalize, like we put people in prison, when we should be helping them... #17*

Interview Sample. The sub-sample of participants for the semi-structured interviews (*n* = 18) had a mean age of 34.2 (*SD* = 9.71), most identified as female (61.1%), and nearly one-third identified as a sexual minority (27.8%). Fifty percent were employed full-time and almost all (83.3%) reported some college or held a degree. Regarding past 12-month substance use, 61.1% screened positive for hazardous drinking and 72.2% screened positive for problematic drug use. Eighty-three percent reported recreational cannabis use and nearly one-third reported use of LSD (27.8%), Psilocybin (27.8%), and misuse of prescription tranquilizers (27.8%), with 44.4% reporting misuse of prescription opioids. With a value approaching half of the interview sample, 44.4% reported having sought any help (past or present) for substance use related concerns (see Table 1 for demographics and substance use information).

Insert Table 2

Correlation between Variables

Enacted, anticipated, and internalized stigma each had a significant positive association with a problematic alcohol use screen ($r = 0.081$, $p = 0.016$; $r = 0.078$, $p < 0.019$; $r = 0.140$, $p <$

0.001), respectively, and enacted, anticipated, and internalized stigma each had a significant positive association with a problematic drug use screen ($r = 0.315$, $p < 0.001$; $r = 0.307$, $p < 0.001$; $r = 0.269$, $p < 0.001$), respectively. Additionally, a problematic alcohol use screen significantly associated with a problematic drug use screen ($r = 0.128$, $p < 0.001$). Shame had a significant negative correlation with enacted stigma ($r = -0.128$, $p < 0.001$) and anticipated stigma ($r = -0.108$, $p < 0.001$), yet had a significant positive association with internalized stigma ($r = 0.099$, $p = 0.002$). Guilt additionally had a significant negative association with enacted stigma ($r = -0.107$, $p < 0.001$), and anticipated stigma ($r = -0.110$, $p < 0.001$), yet also exhibited a significant positive association with internalized stigma ($r = 0.118$, $p < 0.001$). **Phase of Substance Use**: **From the honeymoon to now.** Of the survey participants who screened positive for hazardous drinking (57%) and problematic drug use (56.3%), anticipated stigma had a much weaker association with hazardous drinking ($r = 0.078$, $p < 0.019$) than problematic drug use ($r = 0.307$, $p < 0.001$). Interview participants described this difference when discussing stigma of various substance use and discussed how they are viewed by society (See Table 3).

> *Tobacco and alcohol ads are everywhere. Yet, at the same time we get told you shouldn't drink that much, you shouldn't smoke that much. It's an ambivalence...something that is socially acceptable up to a point and its only certain substances. #13*

Additionally, interview participants described how stress and worry about others' perceptions as being associated with substance use and misuse, wanes over time, or eventually becomes a non-issue.

> *...if they're new in active addiction, it's brand new to them. You know, they're still in the honeymoon phase, it's still taboo and yeah, it's a lot stronger [stigma of drug use] ...I think the biggest factor in this is how long people been doing it for. # 3*

Of interest, shame did not have a significant association with a problematic drug ($p = 0.143$) or alcohol ($p = 0.384$) screen, as echoed by one participant.

> *I'd say like, I don't feel...never felt shame really about my addiction. I mean, there's been times I've been embarrassed by actions, but I've never been ashamed to be somebody that's used drugs. I think because I've been able to mostly keep my life on track. #15*

Guilt exhibited a significant negative association with a problematic drug screen (r = -0.120, p < 0.001), but no significant association was present with a problematic alcohol screen (p = 0.163). Help-seeking intention had a significant positive association with both shame (r = 0.127, p < 0.001) and guilt (r = 0.182, p < 0.001) yet the data did not support any further significant associations (see Table 2).

Insert Table 3

Mistrust, Mistreatment, and Stigma: Healthcare Providers. Two hundred and six out of 1,000 survey participants (20.6%) and 7 out of 18 participants (38.9%) from interviews reported past or present help-seeking related to substance use. However, when asked if they would seek help in the future, many expressed concerns due to previous experiences inclusive of mistrust and mistreatment of healthcare providers. Additionally, those who had ever sought help had higher enacted, internalized, and anticipated stigma, than those who had never sought help, likely impacting their choice to seek help in the future.

> *I know that there's like doctor patient confidentiality, but I don't think that always sticks, you know, even if you talk to a doctor about stuff like they can...um it'll color the care they give you. #16*

Phase of Substance Use: Life events and looking backwards. While there were no significant mean differences in guilt proneness by those who have sought help and those who have not (see Table 4); guilt was significantly associated with each stigma mechanism, a problematic drug screen indicated by the DAST-10, shame, and help-seeking intention (see Table 3). Interview participants described how life changes impacted them as a catalyst for change.

> *I need to be an example to my daughter...we're [partner] going to be super honest with her, I mean, mental health and everything, so I just hope that helps. I'm just, that's my worry for my daughter truthfully, I don't want her to be an addict so... #11*

Participants also described how the process of developing an addiction to substances isn't a goal or desired outcome of someone who uses drugs, but that the use itself exists in tandem with the desire to feel normal and live a stable life.

> *I just want to go to work, just like you, I want to take care of my kids, just like you, I want to be a mom, just like you...they don't, they don't see that, so they make us feel bad you know. For wanting to be normal. #9*

Insert Table 4

Multiple Regression and Moderating Effects Analysis

Multiple linear regression was utilized to test if the independent variables (internalized stigma, enacted stigma, anticipated stigma, shame, and guilt) and the interaction terms (enacted-stigma*guilt, enacted-stigma*shame, anticipated-stigma*guilt, anticipated-stigma*shame, internalized-stigma*guilt, and internalized-stigma*shame) were significant predictors of help-seeking intention as assessed by use of the GHSQ. The fitted regression for the overall model was significant, $F(11, 988) = 4.024$, $p < 0.001$. However, the amount of variance explained by the entered predictors was quite small, $R^2 = 0.043$, meaning 4.3% of the variance in help-seeking can be explained by the entire model. Of importance, guilt positively related to help-seeking by .974 units per unit of guilt ($\beta = 0.132$, $p < 0.001$). Additionally, the interaction term enacted stigma*guilt was significant ($\beta = 0.076$, $p = 0.017$). Upon examining the scatter plot (categorizing enacted stigma into 2 levels; low and high), enacted stigma was a stronger predictor of help-seeking intention among those with higher levels of guilt.

Mistrust, Mistreatment, and Stigma: Getting past guilt and shame [to get help]. Given guilt's enhancing effects on help-seeking (see Figure 1), interview participants echoed how guilt often impacted their lives for better, in the context of seeking help related to substance use.

> *I think, at times, I really questioned you know who I was. What I was. What I was doing. Should I have been doing what I was doing, and maybe you know I should quit, or can I go this long without, you know, doing this. Those feelings have prompted some of those issues to come out at times. You know, I would stop using because of that, especially early on. #17*

Insert Figure 1

Discussion

Our findings support previous work's understanding and examination of guilt's adaptive tendencies in the context of help-seeking for substance related behaviors (Cohen et al., 2012; Patock-Peckham et al., 2018; Treeby et al., 2018). Importantly, our findings uncover how guilt impacts the relationship between enacted stigma and help-seeking intention which has yet to be examined mechanistically. In those with higher guilt proneness enacted stigma was a stronger predictor of help-seeking intention. However, no significant difference was found in mean guilt between those who had sought help and those who had not. Alarmingly, internalized-, enacted-, and anticipated-stigma had higher averages for those who had ever sought help compared to those who had not, suggesting previous experience with treatment seeking services may be a deterrent to seeking help again in the future. Many studies echo the existent stigma that pervades the healthcare system that only serves as a barrier to those who may otherwise seek help, from doing so (Czyz et al., 2013; Garpenhag & Dahlman, 2021; Sharp et al., 2015; Sirey, Bruce, Alexopoulos, Perlick, Friedman, et al., 2001).

Use of a mixed methods analysis allowed us to better examine our sample's quantitative responses surrounding substance use, guilt, shame, help-seeking, and three stigma mechanisms,

through the lens of their own understanding. Participants consistently highlighted how problematic stigma surrounding help-seeking was and had been in their lives, and how stigma related to specific substances was societally driven. Narratives were consistent with the literature that emphasizes drivers of stigma (Stangl et al., 2019) and the deleterious health outcomes of not only putting off seeking treatment for substance related problems, but for seeking care at all due to mistrust and previous mistreatment (Earnshaw et al., 2012). Although participants reported a wide range of past 12-month substances used, narratives echoed culturally sanctioned stereotypes towards specific classes of drugs (Corrigan et al., 2017) as found by Luoma and colleagues (2007) where those who used crack and intravenous (IV) drugs were stigmatized most often, even by others who use substances (Luoma et al., 2007).

Of interest, shame did not have a significant association with a problematic drug or alcohol screen, nor was shame a predictor of help-seeking intention. Given the maladaptive nature of shame as discussed in the literature (Cummings & Baumann, 2021; Luoma et al., 2019), the latter is of no surprise. While shame has been found to be a predictor of substance use and other adverse behaviors (Bilevicius et al., 2018; Wiechelt, 2007), many studies have examined this in early phases of individual substance use (e.g., college years) (Li et al., 2020; Patock-Peckham et al., 2018). The mean age of the present study was 34.7 (SD = 12.45) which is well beyond the traditional undergraduate college years (e.g., 18-22) which likely influenced the study variables, specifically shame. The narratives echoed this as well as many participants described how shame was non-issue for them or how shame minimally impacted their behavior.

Roughly 20% of the sample reported some form of help-seeking whether past or present yet the mean GHSQ of those who had sought help compared to those who had not, was not significantly different. This could point to a multitude of factors. It is well known in the literature

that stigma associated with substance use and help-seeking is synonymous with mental health stigma's negative impact on help-seeking (Halter, 2004; Link et al., 2004; Sharp et al., 2015; Vogel et al., 2013). However, the mean age of the sample (as noted previously), could have impacted the participants' perception of stigma surrounding substance use by dulling the effects it has on younger populations. Thus, among a sample of seasoned substance using adults, help-seeking intention did not differ between those who had sought help and those who had not, as echoed in participant narratives describing their identity as separate from their substance use.

Strengths & Limitations

The present study has many strengths including use of Prolific to obtain data for the quantitative and qualitative phases in a timely manner and the ability to sample from across the US and virtually interview participants with ease. Also, use of unique anonymous identifiers allowed us to tie survey responses to interview responses while maintaining anonymity of participants. The integrated methodology additionally serves as a strength to contextualize and enrich study data. Furthermore, the study was subject to limitations. Non-random sampling and the cross-sectional nature of the survey does not allow for causal inferences, nor can the study findings be generalized to the broader substance-using population. Also, the sensitive nature of the topics assessed and asked could have led to dishonest or omitted answers.

Conclusion

Presently guilt was found to serve in an adaptive role which is consistent with the literature. While help-seeking intention did not differ between those who had sought help and those who had not, participants thoughtfully described how stigma had impacted them from previous help-seeking experiences and would drastically impact their future help-seeking intention. Each of the three stigma mechanisms' means were higher for those who had sought

help previously compared to those who had not, alluding to the pervasive stigma that negatively impacts individuals who seek help and how that may limit future attempts at help-seeking. Shame did not associate with a problematic drug or alcohol use screen but given that the sample was seasoned individuals who use substances this may suggest shame's inability to impact descriptions of their personal identity or behaviors. Future research need identify how to mitigate the effects of stigma on individuals by continued examination of various substance using populations and health outcomes. Importantly, public health has a continued crisis on hand with limited rates of help-seeking which ultimately leads to decreased life-expectancy. Substance using populations need their voices heard when policy and prevention tactics are developed, as their buy-in will be the only thing that moves the needle.

Conflict of Interest

The authors declare that they have no conflicts of interest.

Declaration of Funding Statement

Funding was provided internally by two internal grants sourced from the Health, Human Performance, and Recreation Department at the University of Arkansas, housed in the College of Education and Health Professions.

Credit authorship contribution statement

All authors contributed meaningfully to this study. Committee members names are added to this manuscript upon submission for publication for their assistance in serving on the author's dissertation committee. NAD served as lead author and contributed from conceptualization to analysis and final synthesis. RED served as project manager, provided feedback on the final drafts, and assisted with funding acquisition. PDD aided in development of study design, integration of findings, and table/figure suggestions. WJL provided statistical support and

interpretation of findings. BH guided study methodology, data analysis feedback, and support on the final draft.

Acknowledgements

The authors would like to acknowledge the many individuals who participated in this research for without their time and responses this manuscript would not have been possible. We also would like to extend immense gratitude to Haley Gaskill who served as an undergraduate research assistant on this project. Without her assistance validating transcripts, coding, active input on the thematic analysis, and otherwise, this manuscript would not have been possible.

Table 1. Codebook of Search Terms

Code	Search Terms
Shame	Shame
Guilt	Guilt
Help-Seeking	Help, treatment (look for healthcare and family), resources
Enacted Stigma	Discrimination, treated differently (look for healthcare and family), stereotype

Table 2. Descriptive statistics for Quantitative Phase (N = 1,000), and Qualitative Phase (N = 18)

Variable	*Quantitative Phase n (%)*	*Qualitative Phase n (%)*
Demographics		
Age	*M*: 34.72 *SD* (12.45)	*M*: 34.17 *SD* (9.71)
Gender		
Female	502 (50.2)	11 (61.1)
Male	458 (45.8)	5 (27.8)
Gender Variant	40 (4.0)	2 (11.1)
Racial minority	230 (23)	4 (36.0)
Sexual minority	252 (25.2)	5 (27.8)
Employee Level		
Unemployed	163 (16.3)	3 (16.7)
Part-time	189 (18.9)	2 (11.1)
Full-time	547 (54.7)	9 (50.0)
Retired/Unable to work	65 (6.5)	1 (5.6)
Homemaker	36 (3.6)	3 (16.7)
Education Level		
Some HS or GED	124 (12.4)	3 (16.7)
Associate degree or less	367 (36.7)	6 (33.3)
Bachelor's degree	364 (36.4)	6 (33.3)
Graduate degree	145 (14.5)	3 (16.7)
Relationship status		
Single/Other	382 (38.2)	8 (44.4)
In a relationship	618 (61.8)	10 (55.6)
[a]**Substance use**		
[b]Hazardous drinking	570 (57.0)	11 (61.1)
[c]Problematic Drug Use	563 (56.3)	13 (72.2)
Cannabis Recreational	881 (88.1)	15 (83.3)
Cannabis Medical	293 (29.3)	3 (16.7)
LSD	125 (12.5)	5 (27.8)
Ketamine	40 (4.0)	1 (5.6)
Ecstasy	116 (11.6)	3 (16.7)
Methamphetamines	60 (6.0)	2 (11.1)
Heroin	25 (2.5)	2 (11.1)
Psilocybin	198 (19.8)	5 (27.8)
Fentanyl, PCP, DMT	71 (7.1)	5 (27.8)
Cocaine	138 (13.8)	6 (33.3)
Prescription/OTC Misuse		
Tranquilizers	181 (18.1)	5 (27.8)
Opioids	205 (20.5)	8 (44.4)
Stimulants	178 (17.8)	2 (11.1)
Sedatives	97 (9.7)	4 (22.2)
OTC	100 (10.0)	3 (16.7)
Help-Seeking		
Past/present help-seeking	206 (20.6)	7 (38.9)

[a]Substance use categories are not mutually exclusive. [b]Derived by the Alcohol Use Disorder Identification Test (AUDIT-C). [c]Derived by the Drug Abuse Screening Test (DAST-10).

Table 3. Zero-order Pearson & Point-Biserial Correlation Matrix

Measure	1	2	3	4	5	6	7	8
1. ES[a]	-	.840**	.447**	.315**	.081*	-.128**	-.107**	-.019
2. AS[b]		-	.451**	.307**	.078*	-.108**	-.110**	-.027
3. IS[c]			-	.269**	.140**	.099**	.118**	.022
4. DAST-10[d]				-	.128**	-.046	-.120**	-.051
5. AUDIT-C[e]					-	-.029	-.047	-.005
6. Shame						-	.554**	.127**
7. Guilt							-	.182**
8. GHSQ[f]								-
Mean	1.719	1.675	1.824	3.320	4.220	5.486	5.000	34.520
SD	0.884	0.852	0.905	2.030	2.620	1.153	1.319	8.073
Min	1	1	1	0	0	1	1	10
Max	5	5	5	10	12	7	7	70

[a]ES denotes enacted stigma. **[b]**AS denotes anticipated stigma. **[c]**IS denotes internalized stigma. **[d]**DAST-10 denotes Drug Abuse Screening Test. **[e]**AUDIT-C denotes Alcohol Use Disorder Identification Test-Concise. [f] GHSQ denotes General Help-seeking Questionnaire. **Correlations are significant at $p < 0.01$. *Correlations are significant at $p < 0.05$. Descriptives for DAST-10 and AUDIT-C are given on total scores (before dichotomizing to positive/negative screen; correlations present for these variables are point-biserial).

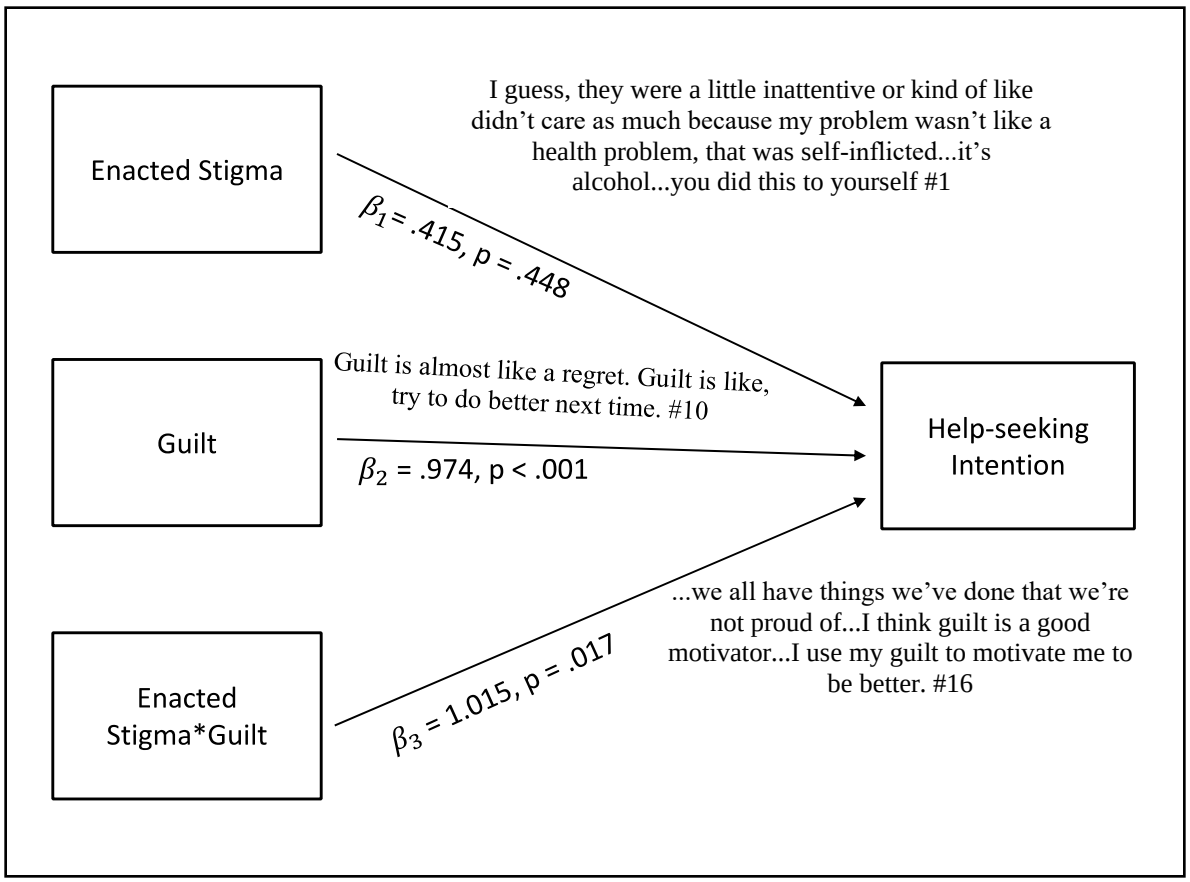

Figure 1. Multiple Regression Moderation Effects Analysis Between Enacted Stigma and Help-Seeking Intention.

Table 4. Joint Display: Mean differences between ever help-seeker and never help-seeker

Ever Help-Seeker Quantitative: *N* = 206 (20.6%) Qualitative: *N* = 7 (38.9%)	**Survey Item** Ever Mean (SD) Never Mean (SD)	*t*/*U* Value	**Never Help-Seeker** Quantitative: *N* = 794 (79.4%) Qualitative: *N* = 11 (61.1%)
...the support is out there it's just; you have to weed through a lot of minutiae and find the right stuff ... #17	**GHSQ[a]** 35.04 (8.13) 34.42 (8.06)	*t* = -.897	I think I would be able to [get help], but not from my doctor. I wouldn't want anyone like that involved. #13
I get it, this is their livelihood, this is their passion, they went to school, but you're not a God you're a doctor, you're a human just like me. #9	**ES[b]** 2.74 (.98) 1.52 (.71)	*U* = 20411.50**	Discriminated? No, because I don't share that fact and I don't tell my doctor unless I know it's directly related to some sort of treatment. #14
...I am not a fan of doctors um, I just feel like they're very, I've just been invalidated so many times and I don't trust them... #15	**AS[c]** 2.39 (.95) 1.54 (.76)	*U* = 31120.50**	Like you go to the doctor, and you have like a white doctor and you're visibly not white, it's like a 50/50 if they're gonna be like dismissive of you or rude... #4
I know how like my dad's alcoholism and drug use has impacted me emotionally...I feel bad because I know I'm just perpetuating like the same cycle which sucks...#12	**IS[d]** 2.55 (1.03) 1.68 (.81)	*U* = 33886.00**	I mean I smoke pot, but it's legal where we live now so I think that illegality, you know, that all makes a big difference, I think. #2
I have pretty regular guilt and remorse about just kind of, lost opportunities and time lost and time passing. #1	**Guilt** 4.91 (1.44) 5.02 (1.30)	*t* = .960	At this point in life there's also that guilt aspect. Where you think, I shouldn't be doing this... you're not 20 years old. #10
...I mean, even with my family yeah. Just building trust back up you know, the shame, I'm not gonna dip out and go on a bender and it's slowly coming back. #18	**Shame** 5.28 (1.14) 5.53 (1.19)	*t* = 2.53*	...it's shoveling pain and self-loathing on top of pain and self-loathing, I mean, it's [shame] the last thing I need. #16
...a lot of people don't seem, or seem to miss the fact that you know, just because I put a needle in my arm it doesn't make me that much different you know. #3	**DAST-10[e]** 5.31 (2.56) 2.93 (1.66)	*U* = 31790.50**	I choose to be responsible with it, even if I do it, if that makes sense, like me, I choose to think about what the long-term consequences will be before I do it... #5
...I didn't really identify as an alcoholic until someone recently like, I knew in the back of my mind I always was one...I just didn't think my drinking was as heavy as real alcoholics. #1	**AUDIT-C[f]** 5.68 (3.24) 3.97 (2.42)	*U* = 35001.00**	...everyone drinks, not everyone, but people have a glass of wine here and there. That's not something to be worried about. If it's every day, then maybe something you should be telling. Maybe I wouldn't tell them the truth. #6

[a]General Help-Seeking Questionnaire (range 10 – 70); [b]Enacted Stigma; [c]Anticipated Stigma, [d]Internalized Stigma, [e]Drug Abuse Severity Test-10 (range 0 – 10); [f]Alcohol Use Disorder Identification Test-Concise (range 0 – 12). ** $p < 0.001$; * $p < 0.05$

Chapter 6: Conclusion

To re-state, the purpose of this dissertation was multi-faceted. Overall, examining the psychological constructs of guilt and shame, and three stigma mechanisms, sought to uncover how these relationships impact outcomes of problematic substance use and help-seeking intention. For study one, the purpose was to examine the relationship between internalized-, anticipated-, and enacted-stigma and substance use severity. Secondly, to cross-sectionally examine the pathway between enacted, anticipated, and internalized stigma and substance use severity among substance using adults and to identify the potential role of shame and guilt in moderating the effects of stigma on substance use severity. The purpose for study two was similar to study one in that examining the relationship between internalized-, anticipated-, and enacted-stigma, and help-seeking intention, along with examining the potential moderating role of shame and guilt in this pathway. Additionally, to use an explanatory mixed methods approach to explore the lived experiences of individuals who use substances via semi-structured interviews utilizing Grounded Theory. Specifically, the interconnectedness of stigma, guilt, shame, substance use, and potential related impacts on help-seeking intention. This conclusion will highlight the main findings and is organized by each study, with subsequent original research questions, hypotheses, and connection to the existent body of literature.

Study 1: Research Questions, Findings, and Hypotheses

RQ 1). Does internalized-, anticipated-, and enacted-stigma significantly associate with substance use severity (problematic alcohol and/or drug use)?

Enacted, anticipated, and internalized stigma each had a significant positive association with a problematic alcohol use screen ($r = 0.081$, $p < 0.016$; $r = 0.078$, $p < 0.019$; $r = 0.140$, $p < 0.001$), respectively, and enacted, anticipated, and internalized stigma each had a significant

positive association with a problematic drug use screen ($r = 0.315$, $p < 0.001$; $r = 0.307$, $p < 0.001$; $r = 0.269$, $p < 0.001$), respectively.

Hypothesis 1). Internalized-, anticipated-, and enacted-stigma will each significantly associate with substance use severity (problematic alcohol and/or drug use).

Confirmation of hypothesis one is consistent with findings in the literature, internalized-, enacted-, and anticipated stigma each had a significant positive association with a problematic drug and alcohol use screen, which is consistent with the literature. Among a sample of primary care patients, internalized stigma was found to associate with substance use problems (Kulesza et al., 2017) and Brown et al. (2015) found fear of enacted stigma associated with temptation to use substances among those with SUDs (Brown et al., 2015).

RQ 2). Does internalized-, anticipated-, and enacted-stigma significantly associate with guilt and/or shame?

Shame had a significant negative correlation with enacted stigma ($r = -0.128$, $p < 0.001$) and anticipated stigma ($r = -0.108$, $p < 0.001$), yet had a significant positive association with internalized stigma ($r = 0.099$, $p < 0.001$). Guilt additionally had a significant negative association with enacted stigma ($r = -0.107$, $p < 0.002$), and anticipated stigma ($r = -0.110$, $p < 0.001$), yet also exhibited a significant positive association with internalized stigma ($r = -0.118$, $p < 0.001$).

Hypothesis 2). Internalized-, anticipated-, and enacted-stigma will have a significant positive association with guilt and shame.

Surprisingly, shame had a significant negative association with enacted and anticipated stigma yet had a significant positive association with internalized stigma. These findings may point to research examining the behavioral withdrawing effects shame has been found to have

(Cohen et al., 2011; Wolf et al., 2010), thus, shame proneness in individuals may cause them to retreat and not often experience enacted or anticipated stigma. Given that internalized stigma and shame are very similar constructs, this positive association is of no surprise. Guilt additionally had significant negative associations with enacted and anticipated stigma yet had a significant positive association with internalized stigma. Given the adaptive nature guilt has shown on behavioral effects (Patock-Peckham et al., 2018; Snoek et al., 2021), this could explain such a relationship. If guilt increases, adaptive behavioral strategies may be employed, thus enacted and anticipated stigma are likely to affect individuals at lower levels. Future work is needed to examine baseline levels of guilt and shame and how this could affect severity of substance use and related mechanisms of stigma.

RQ 3). Does shame and/or guilt act as a significant moderator between internalized-, anticipated and enacted-stigma and substance use severity (non-problematic and/or problematic alcohol and drug use)? Does shame and/or guilt significantly predict substance use severity (non problematic and/or problematic alcohol and drug use)?

Internalized stigma ($df = 3$, $\chi^2 = 41.24$, $p < 0.001$), enacted stigma ($df = 3$, $\chi^2 = 46.96$, $p < 0.001$), guilt ($df = 3$, $\chi^2 = 20.53$, $p < 0.001$) and the interaction of internalized stigma*guilt ($df = 3$, $\chi^2 = 10.51$, $p = 0.015$) were significant predictors of ALC, DRUG, and ALC_DRUG. The first category of the dependent variable, NO_ALC_DRUG was utilized as the reference group (group 1), or baseline category, for each comparison and the findings were interpreted accordingly. Upon examination of the Analysis of Maximum Likelihood Estimates, internalized stigma was significant ($p < 0.001$) for ALC ($\beta = 0.800$, $\chi^2 = 19.62$), DRUG ($\beta = 0.888$, $\chi^2 = 25.04$), and ALC_DRUG ($\beta = 1.078$, $\chi^2 = 40.58$). As internalized stigma increased by one unit, the multinomial log-odds for having a problematic screen for alcohol use relative to no screen for

problematic drug or alcohol use are expected to increase by 0.800 units; the multinomial log-odds for having a problematic screen for drug use relative to no screen for problematic drug or alcohol use are expected to increase by 0.888 units; and, the multinomial log-odds for having a problematic screen for both alcohol and drug use relative to no screen for problematic drug or alcohol use are expected to increase by 1.078 units, while holding all other variables in the model constant.

Enacted stigma was significant ($p < 0.001$) for DRUG ($\beta = 0.759$ $\chi^2 = 24.37$) and was significant ($p < 0.001$) for ALC_DRUG ($\beta = 0.529$, $\chi^2 = 12.60$). As enacted stigma increased by one unit, the multinomial log-odds for having a problematic screen for drug use relative to no screen for problematic drug or alcohol use are expected to increase by 0.759 units, and the multinomial log-odds for having a problematic screen for both alcohol and drug use relative to no screen for problematic drug or alcohol use are expected to increase by 0.529 units, while holding all other variables in the model constant.

Guilt was significant ($p = 0.004$) for DRUG ($\beta = -0.286$, $\chi^2 = 8.36$) and significant ($p < 0.001$) for ALC_DRUG ($\beta = -0.378$, $\chi^2 = 16.58$). As guilt increased by one unit, the multinomial log-odds for having a problematic screen for drug use relative to no screen for problematic drug or alcohol use are expected to decrease by 0.286 units, and the multinomial log-odds for having a problematic screen for both alcohol and drug use relative to no screen for problematic drug or alcohol use are expected to decrease by 0.378 units, while holding all other variables in the model constant.

Finally, the interaction term of internalized stigma*guilt was significant ($p = 0.013$) for ALC ($\beta = -0.321$, $\chi^2 = 6.23$) and significant ($p = 0.013$) for ALC_DRUG ($\beta = -0.295$, $\chi^2 = 6.14$). Guilt significantly moderated the relationship between internalized stigma and a problematic

alcohol use screen; as guilt-proneness increases, the effect internalized stigma has on predicting a problematic alcohol use screen (relative to no screen for problematic alcohol or drug use) is buffered as the multinomial log-odds are expected to decrease by 0.321 units. Additionally, guilt significantly moderated the relationship between internalized stigma and a problematic screen for both alcohol and drug use; as guilt-proneness increases, the effect internalized stigma has on predicting a problematic screen for both alcohol and drug use (relative to no screen for problematic alcohol or drug use) is buffered as the multinomial log-odds are expected to decrease by 0.295 units. Shame did not significantly predict disordered substance use membership and is discussed in the hypothesis section below.

Hypothesis 3a). The relationship between internalized-, anticipated-, and enacted-stigma, and substance use severity (non-problematic and problematic alcohol and drug use) will be stronger among those with greater levels of shame. Shame will be a significant predictor of both non-problematic and problematic alcohol and drug use.

The findings on shame in the literature are much less consistent than guilt. While guilt is often found displaying protective or adaptive effects (Patock-Peckham et al., 2018; Treeby et al., 2018; Vaish, 2018) , shame displays mixed results (Bilevicius et al., 2018; Cameron et al., 2020; Luoma et al., 2019). Patock-Peckham et al. (2018) found that individuals higher in shame proneness used more alcohol use and had increased negative outcomes, while those with higher guilt proneness drank less alcohol and had fewer adverse outcomes. Treeby et al. (2018) found guilt displayed increased protective behavioral tactics during periods of active alcohol use, while shame was unrelated. Vaish (2018) examined the pro-social function of guilt as an evolutionary mechanism in child development and found guilt to motivate reparative action and additionally served to appease and elicit empathy from the affronted when displayed publicly. Conversely,

shame, while often examined separately and in tandem from guilt, the findings are mixed. Shame is related to urges for suicide but not substance use (Cameron et al., 2020), and other adverse behavior such as gambling (Bilevicius et al., 2018) and eating disorders (Cavalera et al., 2016). Dearing et al. (2005) found in three separate studies that shame generally associated with substance use problems, but guilt was inversely related (Dearing et al., 2005). Snoek et al. (Snoek et al., 2021) discussed the need to move beyond the common view that guilt and shame function via opposing means, as this does a disservice to treatment. They encourage the need to shift towards a more productive approach regarding these emotions, such as highlighting how these emotions can either be destructive or constructive, depending on how an individual manages them. This is consistent with an adaptive signal towards shame found in Dickerson et al. (2004) work on shame functioning as an adaptive social function by the promotion of social roles and compassion inducing when seen in others (Dickerson et al., 2004).

Thus, the mixed findings on shame could explain why shame did not significantly predict disordered use among this sample. While shame associated with the three stigma mechanisms and guilt, it did not significantly associate with a positive screen for alcohol or substance use, however, the sample's makeup of self-report substance using adults (mean age 34.7). Thus, the effects of shame could potentially wane over time or phase of substance use (e.g., time from initiation of substance use to SUD). Collectively, SUDs associate with societal stigma (Kulesza et al., 2013; Kulesza et al., 2014; Palamar et al., 2012; Smith et al., 2016) and overall shame (Batchelder et al., 2022; Wiechelt, 2007), however, individuals who use substances problematically may not experience shame the same way as less severe users of substances do, or they may separate it from their identity and use. Meehan et al. (1996) found those in recovery from SUDs had higher levels of shame than their non-disordered using peers (Meehan et al.,

1996), suggesting the role identity plays in substance using populations may be larger than once thought. Shame may be expressed and associated differently during distinctive phases of life. For example, in Singer and colleagues (2008) work they found that older adults when compared to college students described their self-defining memories in much more positive language and integrative to their life. In contrast, Tangney and colleagues (1996) examined shame and guilt across the lifespan among children, adolescents, college students, and adults and found shame related to maladaptive responses to anger across all groups, but guilt related to adaptive anger handling strategies (Tangney, Wagner, et al., 1996). Future work needs to continue to examine and parse out the nuances of shame, specifically in the context of disordered substance use, across the lifespan and in longitudinal studies, as the findings are mixed.

Hypothesis 3b). The relationship between internalized-, anticipated-, and enacted-stigma, and substance use severity (non-problematic and problematic alcohol and drug use) will be stronger among those with greater levels of guilt. Guilt will be a significant predictor of both non-problematic and problematic alcohol and drug use.

Highlighting the main findings, the multinomial logistic regression found guilt to be a significant moderator in the pathway between internalized stigma and a positive screen for problematic alcohol use, and a positive screen for problematic alcohol and drug use. Thus, those with higher levels of guilt were less likely to have a positive screen for either disordered outcome. Guilt's role in substance using populations has been established as an adaptive behavioral mechanism, where individuals who have increased guilt-proneness are less likely to experience disordered substance use (Hequembourg & Dearing, 2013) and are more likely to seek help (Treeby et al., 2018). Separate from the interaction of guilt and internalized stigma, the main effects of enacted stigma, internalized stigma, and guilt predicted group membership to

disordered substance use categories. Internalized stigma predicted group membership to three of the outcome groups (positive screen for alcohol use, positive screen for drug use, and a positive screen for both alcohol and drug use) with no positive screen for alcohol and drug use as the reference group, which is consistent with the deleterious associations this stigma mechanism has with problematic substance use (Batchelder, Foley, Kim, et al., 2021; Kulesza et al., 2017).

Enacted stigma predicted group membership to a positive screen for disordered drug use and to disordered alcohol and drug use, which is also consistent with the damaging effects enacted stigma has among people who use substances by considering them as less capable (Khalid et al., 2020) and a decreased likelihood to seek help ((Earnshaw et al., 2021; Fong et al., 2021; Luoma et al., 2007). Earnshaw et al., (2021) found that those in recovery from opioid use disorder (OUD) who had greater substance dependency experienced more enacted stigma from those whom they told about their struggles (Earnshaw et al., 2021), suggesting a need to examine causality among stigma mechanisms and disordered use.

Lastly, guilt predicted group membership to a positive screen for disordered use of drugs, and a positive screen for disordered use of alcohol and drug screens. Of interest, guilt did not predict membership to a disordered alcohol use only screen, which could speak to the aforementioned decreased level of societal stigma towards alcohol use and the commonality with which the substance is used in America. When drugs entered the equation, guilt predicted both groups inclusive of disordered screens suggesting guilt's adaptive effects may be no match for the stigma surrounding substances other than alcohol.

Study 2: Research Questions, Findings, and Hypotheses

RQ 1). How does the lived experience of individual substance users, regarding internalized-, anticipated-, and enacted-stigma, guilt, and shame, effect their lives (i.e., substance using behaviors and help-seeking intention)?

Hypothesis 1). Shame, guilt, and internalized-, anticipated-, and enacted-stigma will be discussed as integral (perpetuating further use and inhibition of help-seeking behavior) to the substance-using community and as barriers to seeking effective treatment.

This original research question and hypothesis was developed based on the initial purely qualitative design study two was going to execute. Thus, the interviews would and did provide context to the question and hypothesis in a more exploratory manner. However, with the use of an explanatory mixed methods approach, participant narratives were held alongside the quantitative findings to integrate meaning and develop a deeper understanding of the survey findings. The aforementioned constructs in the research question were all discussed as integral to substance use behaviors, identity, and drivers of poor self-care. Guilt was discussed mostly in adaptive language, while shame was not. Use of a mixed methods analysis allowed us to better examine our sample's quantitative responses surrounding substance use, guilt, shame, help-seeking, and three stigma mechanisms, through the lens of their own understanding.

RQ 2). Does internalized-, anticipated-, and enacted-stigma significantly associate with help-seeking intention?

Internalized-, enacted-, nor anticipated-stigma displayed a significant association with help-seeking intention among this sample of substance using adults. Help-seeking intention had a significant positive association with both shame ($r = 0.127$, $p < 0.001$) and guilt ($r = 0.182$, $p <$

0.001) yet the data did not support any further significant associations between help-seeking intention and study variables.

Hypothesis 2). Internalized-, anticipated-, and enacted-stigma will each significantly associate with help-seeking intention.

Participants consistently highlighted how problematic stigma surrounding help-seeking was and had been in their lives, and how stigma related to specific substances was societally driven. Narratives were consistent with the literature that emphasizes drivers of stigma (Stangl et al., 2019) and the deleterious health outcomes of not only putting off seeking treatment for substance related problems, but for seeking care at all due to mistrust and previous mistreatment (Earnshaw et al., 2012).

RQ 3). Does shame and/or guilt act as a significant moderator between internalized-, anticipated-and enacted-stigma, and help-seeking intention? Does shame and/or guilt significantly predict help-seeking intention?

Multiple linear regression was utilized to test if the independent variables (internalized stigma, enacted stigma, anticipated stigma, shame, and guilt) and the interaction terms (enacted-stigma*guilt, enacted-stigma*shame, anticipated-stigma*guilt, anticipated-stigma*shame, internalized-stigma*guilt, and internalized-stigma*shame) were significant predictors of help-seeking intention as assessed by use of the GHSQ. The fitted regression for the overall model was significant, $F(11, 988) = 4.024$, $p < 0.001$. However, the amount of variance explained by the entered predictors was quite small, $R^2 = 0.043$, meaning 4.3% of the variance in help-seeking can be explained by the entire model. Of importance, guilt positively related to help-seeking; on average, individuals increased help-seeking by .974 units per unit of guilt ($\beta = 0.132$, $p < 0.001$). Additionally, the interaction term enacted stigma*guilt was significant ($\beta = 0.076$, $p = 0.017$).

Upon examining the scatter plot (categorizing enacted stigma into 2 levels; low and high), enacted stigma was a stronger predictor of help-seeking intention among those with higher levels of guilt.

Hypothesis 3a). The relationship between internalized-, anticipated-, and enacted-stigma, and help-seeking intention will be stronger among those with greater levels of shame. Shame will not be a significant predictor of help-seeking intention.

Hypothesis 3b). The relationship between internalized-, anticipated-, and enacted-stigma, and help-seeking intention will be stronger among those with greater levels of guilt. Guilt will be a significant predictor of help-seeking intention.

Importantly, study findings uncover how guilt impacts the relationship between enacted stigma and help-seeking intention which has yet to be examined mechanistically. In those with higher guilt proneness enacted stigma was a stronger predictor of help-seeking intention. However, no significant difference was found in mean guilt between those who had sought help and those who had not. Alarmingly, internalized-, enacted-, and anticipated-stigma had higher averages for those who had ever sought help compared to those who had not, suggesting previous experience with treatment seeking services may be a deterrent to seeking help again in the future. Many studies echo the existent stigma that pervades the healthcare system that only serves as a barrier to those who may otherwise seek help, from doing so (Czyz et al., 2013; Garpenhag & Dahlman, 2021; Sharp et al., 2015; Sirey, Bruce, Alexopoulos, Perlick, Friedman, et al., 2001)

Of interest, shame did not have a significant association with a problematic drug or alcohol screen, nor was shame a predictor of help-seeking intention. Given the maladaptive nature of shame as discussed in the literature (Cummings & Baumann, 2021; Luoma et al.,

2019), the latter is of no surprise. While shame has been found to be a predictor of substance use and other adverse behaviors (Bilevicius et al., 2018; Wiechelt, 2007), many studies have examined this in early phases of individual substance use (e.g., college years) (Li et al., 2020; Patock-Peckham et al., 2018). The mean age of the present study was 34.7 (*SD* = 12.45) which is well beyond the traditional undergraduate college years (e.g., 18-22) which likely influenced the study variables, specifically shame. The narratives echoes this as well as many participants described how shame was non-issue for them or how shame minimally impacted their behavior.

The examination of mean differences among study variables between those who had ever sought help compared to those who had never sought help arose as a secondary question as the study findings were integrated. Given the outcome was help-seeking intention, this was deemed acceptable by the researcher and her committee and was considered an important question to analyze and answer. Roughly 20% of the sample reported some form of help-seeking whether past or present yet the mean GHSQ of those who had sought help compared to those who had not, was not significantly different. This could point to a multitude of factors. It is well known in the literature that stigma associated with substance use and help-seeking is synonymous with mental health stigma's negative impact on help-seeking (Halter, 2004; Link et al., 2004; Sharp et al., 2015; Vogel et al., 2013). However, the mean age of the sample (as noted previously), could have impacted the participants' perception of stigma surrounding substance use by dulling the effects it has on younger populations. Thus, among a sample of substance using adults, help-seeking intention did not differ between those who had sought help and those who had not, as echoed in participant narratives describing their identity as separate from their substance use.

However, there were significant mean differences between the ever help-seekers and never help-seekers in enacted stigma, anticipated stigma, internalized stigma, shame, and total

DAST-10 and total AUDIT-C scores. The total score of the former two instruments was used given the sample mean was generated versus a dichotomous outcome of problematic yes/no. Importantly, those who had sought help had higher means of each of the three stigma mechanisms, which further points to the stigma in healthcare and treatment settings (Earnshaw & Quinn, 2012; Garpenhag & Dahlman, 2021; Khalid et al., 2020; Smith et al., 2016). Also, those who had sought help had higher mean total DAST-10 and AUDIT-C scores. Given that individuals often seek help when substance use and related behaviors interfere with their lives at problematic levels, this mean difference is of no surprise. Of interest, those who had sought help had lower mean shame when compared to those who had not sought help. Thus, confounding the findings yet again about whether shame is maladaptive or adaptive.

While shame did not predict group membership in a positive screen for alcohol use, drug use, or both, the sample's makeup of self-report substance using adults could have played a role in this outcome. Additionally, shame did not associate with problematic screens for alcohol or drug use Consistent with the literature, guilt demonstrated protective effects on severity of substance use by decreasing probabilities of membership to problematic alcohol or problematic alcohol and drug use screens and was found to serve in an adaptive role in terms of increased guilt led to increased help-seeking intention. Enacted stigma and internalized stigma were significant predictors of group membership, thus, speaking to the deleterious effects mechanisms of stigma have on severity of substance use. Each of the three stigma mechanisms' means were higher for those who had sought help previously compared to those who had not, alluding to the pervasive stigma that negatively impacts individuals who seek help and how that may limit future attempts at help-seeking. While help-seeking intention did not differ between those who had sought help and those who had not, participants thoughtfully described how

stigma had impacted them from previous help-seeking experiences and would drastically impact their future help-seeking intention.

Future research needs to examine how management of individual guilt may lead to potentially decreased severe health outcomes. Given the adaptive tendencies guilt displayed in the present study, research needs to examine if levels of baseline guilt are existent in substance using populations, and how to strategically use this construct to prevent negative health implications tied with substance use. Future research need identify how to mitigate the effects of stigma on individuals by continued examination of various substance using populations and health outcomes. Importantly, public health has a continued crisis on hand with limited rates of help-seeking which ultimately leads to decreased life-expectancy. Substance using populations need their voices heard when policy and prevention tactics are developed, as their buy-in will be the only thing that moves the needle.

References

Abraham, S., Fritz, A., Bieber, C., & Rodriguez-Flores, M. (2021). The Concept of Stigma Related to Substance Use. *International Journal of Science and Research Methodology*, *20*(2), 13.

Adams, J. M., & Volkow, N. D. (2020). Ethical Imperatives to Overcome Stigma Against People With Substance Use Disorders. *AMA J Ethics*, *22*(1), E702-708. https://doi.org/10.1001/amajethics.2020.702

Aiken, L.S., & West, S.G. (1991). *Multiple regression: Testing and interpreting interactions.* Sage Publications, Inc.

Ajzen, I. (1991). The theory of planned behavior. . *Organizational behavior and human decision processes*, *50*, 32.

Alabèrnia-Segura, M., Feixas, G., & Gallardo-Pujol, D. (2022). Guilt and Shame Proneness Scale Adaptation and Psychometric Properties in Spanish Population. *Psychological Test Adaptation and Development* . https://doi.org/https://doi.org/10.1027/2698-1866/a000019

Albert, S. (1998). The Definition and Metadefinition of Identity In P. C. Godfrey & D. Whetten (Eds.), *Identity in organizations: Building theory through conversations* (Vol. 1, pp. 1-17). SAGE.

Ali, M. M., Nye, E., & West, K. (2020). Substance Use Disorder Treatment, Perceived Need for Treatment, and Barriers to Treatment Among Parenting Women With Substance Use Disorder in US Rural Counties. *J Rural Health*. https://doi.org/10.1111/jrh.12488

Alterman, A. I., & Cacciola, J. S. (1991). The antisocial personality disorder diagnosis in substance abusers: problems and issues. *J Nerv Ment Dis*, *179*(7), 401-409. https://doi.org/10.1097/00005053-199107000-00003

American Psychiatric Association., & American Psychiatric Association. DSM-5 Task Force. (2013). *Diagnostic and statistical manual of mental disorders : DSM-5* (Fifth edition. ed.). American Psychiatric Association.

Arbeau, K. J., Kuiken, D., & Wild, T. C. (2011). Drinking to enhance and to cope: a daily process study of motive specificity. *Addict Behav*, *36*(12), 1174-1183. https://doi.org/10.1016/j.addbeh.2011.07.020

Ashrafioun, L., Bishop, T. M., Conner, K. R., & Pigeon, W. R. (2017). Frequency of prescription opioid misuse and suicidal ideation, planning, and attempts. *Journal of Psychiatric Research*, *92*, 1-7. https://doi.org/10.1016/j.jpsychires.2017.03.011

Ayala, E. E., Roseman, D., Winseman, J. S., & Mason, H. R. C. (2017). Prevalence, perceptions, and consequences of substance use in medical students. *Medical education online*, *22*(1), 1392824-1392824. https://doi.org/10.1080/10872981.2017.1392824

Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monteiro, M. G. (2001). *The Alcohol Use Disorders Identification Test (AUDIT): guidelines for use in primary care . Screening and brief intervention for alcohol problems in primary care*(WHO/MSD/MSB/01.6a).

Baldwin, K. M., Baldwin, J. R., & Ewald, T. (2006). The relationship among shame, guilt, and self-efficacy. *Am J Psychother*, *60*(1), 1-21. https://doi.org/10.1176/appi.psychotherapy.2006.60.1.1

Barnett, E. R., Knight, E., Herman, R. J., Amarakaran, K., & Jankowski, M. K. (2021). Difficult binds: A systematic review of facilitators and barriers to treatment among mothers with substance use disorders. *J Subst Abuse Treat*, *126*, 108341. https://doi.org/10.1016/j.jsat.2021.108341

Barney, L. J., Griffiths, K. M., Jorm, A. F., & Christensen, H. (2006). Stigma about depression and its impact on help-seeking intentions. *Aust N Z J Psychiatry*, *40*(1), 51-54. https://doi.org/10.1080/j.1440-1614.2006.01741.x

Batchelder, A. W., Foley, J. D., Kim, J., Thiim, A., Kelly, J., Mayer, K., & O'Cleirigh, C. (2021). Intersecting internalized stigmas and HIV self-care among men who have sex with men and who use substances. *Soc Sci Med*, *275*, 113824. https://doi.org/10.1016/j.socscimed.2021.113824

Batchelder, A. W., Foley, J. D., Wirtz, M. R., Mayer, K., & O'Cleirigh, C. (2021). Substance Use Stigma, Avoidance Coping, and Missed HIV Appointments Among MSM Who Use Substances. *AIDS Behav*, *25*(5), 1454-1463. https://doi.org/10.1007/s10461-020-02982-3

Batchelder, A. W., Glynn, T. R., Moskowitz, J. T., Neilands, T. B., Dilworth, S., Rodriguez, S. L., & Carrico, A. W. (2022). The shame spiral of addiction: Negative self-conscious emotion and substance use. *PLoS One*, *17*(3), e0265480. https://doi.org/10.1371/journal.pone.0265480

Batchelder, A. W., Klevens, M., Fitch, C., McKetchnie, S. M., Mayer, K. H., & O'Cleirigh, C. (2020). Stigma, discrimination, and substance use among an urban sample men who have sex with men in Massachusetts. *AIDS Care*, *32*(3), 370-378. https://doi.org/10.1080/09540121.2019.1683807

Bedregal, L. E., Sobell, L. C., Sobell, M. B., & Simco, E. (2006). Psychometric characteristics of a Spanish version of the DAST-10 and the RAGS. *Addict Behav*, *31*(2), 309-319. https://doi.org/10.1016/j.addbeh.2005.05.012

Belete, H., Mekonen, T., Fekadu, W., Legas, G., & Getnet, A. (2019). Help seeking behavior for problematic substance uses in north-West Ethiopia. *Subst Abuse Treat Prev Policy*, *14*(1), 25. https://doi.org/10.1186/s13011-019-0202-9

Benz, M. B., Cabrera, K. B., Kline, N., Bishop, L. S., & Palm Reed, K. (2021). Fear of Stigma Mediates the Relationship between Internalized Stigma and Treatment-Seeking among Individuals with Substance Use Problems. *Subst Use Misuse*, *56*(6), 808-818. https://doi.org/10.1080/10826084.2021.1899224

Benz, M. B., Palm Reed, K., & Bishop, L. S. (2019). Stigma and help-seeking: The interplay of substance use and gender and sexual minority identity. *Addict Behav*, *97*, 63-69. https://doi.org/10.1016/j.addbeh.2019.05.023

Berjot, S., & Gillet, N. (2011). Stress and coping with discrimination and stigmatization. *Front Psychol*, *2*, 33. https://doi.org/10.3389/fpsyg.2011.00033

Bilevicius, E., Single, A., Bristow, L. A., Foot, M., Ellery, M., Keough, M. T., & Johnson, E. A. (2018). Shame mediates the relationship between depression and addictive behaviours. *Addict Behav*, *82*, 94-100. https://doi.org/10.1016/j.addbeh.2018.02.023

Blanco, C., Okuda, M., Wright, C., Hasin, D. S., Grant, B. F., Liu, S.-M., & Olfson, M. (2008). Mental health of college students and their non-college-attending peers: results from the National Epidemiologic Study on Alcohol and Related Conditions. *Archives of general psychiatry*, *65*(12), 1429.

Boersma, P., Villarroel, M. A., & Vahratian, A. (2020). Heavy Drinking Among U.S. Adults, 2018. *NCHS Data Brief*(374), 1-8.

Bradley, K. A., DeBenedetti, A. F., Volk, R. J., Williams, E. C., Frank, D., & Kivlahan, D. R. (2007). AUDIT-C as a brief screen for alcohol misuse in primary care. *Alcohol Clin Exp Res*, *31*(7), 1208-1217. https://doi.org/10.1111/j.1530-0277.2007.00403.x

Brown, B. (2006). Shame resilience theory: A grounded theory study on women and shame. . *Families in Society*, *81*, 9.

Brown, S., Kramer, K., Lewno, B., Dumas, L., Sacchetti, G., & Powell, E. (2015). Correlates of Self-Stigma among Individuals with Substance Use Problems [Article]. *International Journal of Mental Health and Addiction*, *13*(6), 687-698. https://doi.org/10.1007/s11469-015-9559-9

Brown, S. A. (2015). Stigma towards Marijuana Users and Heroin Users. *J Psychoactive Drugs*, *47*(3), 213-220. https://doi.org/10.1080/02791072.2015.1056891

Brown-Johnson, C. G., Cataldo, J. K., Orozco, N., Lisha, N. E., Hickman, N. J., & Prochaska, J. J. (2015). Validity and reliability of the Internalized Stigma of Smoking Inventory: An exploration of shame, isolation, and discrimination in smokers with mental health diagnoses. *Am J Addict*, *24*(5), 410-418. https://doi.org/10.1111/ajad.12215

Bryan, C., Ray-Sannerud, B., Morrow, C., & Etienne, N. (2013). Guilt is more strongly associated with suicidal ideation among mili- tary personnel with direct combat exposure. *J Affect Disord*, *148*, 4.

Buchman, D., & Reiner, P. B. (2009). Stigma and addiction: being and becoming. *Am J Bioeth*, *9*(9), 18-19. https://doi.org/10.1080/15265160903090066

Bunova, A., Neufeld, M., Ferreira-Borges, C., Bryun, E., Fadeeva, E., Gil, A., & Rehm, J. (2021). The Russian translations of the Alcohol Use Disorders Identification Test

(AUDIT): A document analysis and discussion of implementation challenges. *The International Journal of Alcohol and Drug Research*, *9*, 9.

Burnette, J. L., Forsyth, R. B., Desmarais, S. L., & Hoyt, C. L. (2019). MINDSETS OF ADDICTION: IMPLICATIONS FOR TREATMENT INTENTIONS. *Journal of Social and Clinical Psychology*, *38*, 27.

Bush, K., Kivlahan, D. R., McDonell, M. B., Fihn, S. D., & Bradley, K. A. (1998). The AUDIT alcohol consumption questions (AUDIT-C): an effective brief screening test for problem drinking. Ambulatory Care Quality Improvement Project (ACQUIP). Alcohol Use Disorders Identification Test. *Arch Intern Med*, *158*(16), 1789-1795. https://doi.org/10.1001/archinte.158.16.1789

Cameron, A. Y., Shea, M. T., & Randall, A. B. (2020). Acute Shame Predicts Urges for Suicide but not for Substance Use in a Veteran Population. *Suicide Life Threat Behav*, *50*(1), 292-299. https://doi.org/10.1111/sltb.12588

Can Gür, G., Tanriverdi, D., Ariti, M., & Özgün Öztürk, F. (2020). The Adaptation of the Substance Use Stigma Mechanism Scale (SU-SMS) Into Turkish: A Validity and Reliability Study. *J Am Psychiatr Nurses Assoc*, 1078390320949927. https://doi.org/10.1177/1078390320949927

Cavalera, C., Pagnini, F., Zurloni, V., Diana, B., Realdon, O., Castelnuovo, G., . . . Molinari, E. (2016). Shame proneness and eating disorders: a comparison between clinical and non-clinical samples. *Eat Weight Disord*, *21*(4), 701-707. https://doi.org/10.1007/s40519-016-0328-y

CDC. (2021). *HIV Basics*. Retrieved August 20, 2021 from https://www.cdc.gov/hiv/basics/whatishiv.html

Charmaz, K. (2005). Grounded Theory in the 21st Century, Applications for Advancing Social Justice Studies. In N. D. Y. Lincoln (Ed.), *Sage Handbook of Qualitative Research* (3rd ed., pp. 507-537). Sage Publications.

Chaudoir, S. R., Earnshaw, V. A., & Andel, S. (2013). "Discredited" Versus "Discreditable": Understanding How Shared and Unique Stigma Mechanisms Affect Psychological and Physical Health Disparities. *Basic Appl Soc Psych*, *35*(1), 75-87. https://doi.org/10.1080/01973533.2012.746612

Chen, J. I., Romero, G. D., & Karver, M. S. (2016). The relationship of perceived campus culture to mental health help-seeking intentions. *J Couns Psychol*, *63*(6), 677-684. https://doi.org/10.1037/cou0000095

Cohen, T. R., Panter, A. T., & Turan, N. (2012). Guilt proneness and moral character. *Current Directions in Psychological Science*, *21*, 4.

Cohen, T. R., Wolf, S. T., Panter, A. T., & Insko, C. A. (2011). Introducing the GASP scale: a new measure of guilt and shame proneness. *J Pers Soc Psychol*, *100*(5), 947-966. https://doi.org/10.1037/a0022641

Collaborators, G. A. a. D. U. (2018). The global burden of disease attributable to alcohol and drug use in 195 countries and territories, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet Psychiatry*, *5*(12), 987-1012. https://doi.org/10.1016/S2215-0366(18)30337-7

Collaborators, G. D. a. I. I. a. P. (2018). Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet*, *392*(10159), 1789-1858. https://doi.org/10.1016/S0140-6736(18)32279-7

Cook, D. (1987). Measuring Shame: The Internalized Shame Scale. *Alcoholism Treatment Quarterly*, *4*(2), 197-215. https://doi.org/https://doi.org/10.1300/J020v04n02_12

Cook, D. R. (1996). Empirical studies of shame and guilt: The Internalized Shame Scale.

Cook, M. A., Newins, A. R., & Dvorak, R. D. (2021). Coping Motivated Alcohol Use: The Role of Social Anxiety and Dissociation [Article]. *Substance Use & Misuse*, *56*(2), 275-285. https://doi.org/10.1080/10826084.2020.1861630

Cornelius, M. E., Wang, T. W., Jamal, A., Loretan, C. G., & Neff, L. J. (2020). Tobacco Product Use Among Adults - United States, 2019. *MMWR Morb Mortal Wkly Rep*, *69*(46), 1736-1742. https://doi.org/10.15585/mmwr.mm6946a4

Corrigan, P., Schomerus, G., & Smelson, D. (2017). Are some of the stigmas of addictions culturally sanctioned? *Br J Psychiatry*, *210*(3), 180-181. https://doi.org/10.1192/bjp.bp.116.185421

Coviello, D. M., Alterman, A. I., Cacciola, J. S., Rutherford, M. J., & Zanis, D. A. (2004). The role of family history in addiction severity and treatment response. *J Subst Abuse Treat*, *26*(1), 303-313. https://doi.org/10.1016/s0740-5472(03)00143-0

Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.

Cronbach, L. J., Gleser, G. C., Nanda, H., & Rajaratnam, N. (1972). *The dependability of behavioral measurements: Theory for generalizability of scores and profiles.* John Wiley and Sons, Inc.

Cummings, J., & Baumann, S. L. (2021). Understanding Shame as an Obstacle: Toward a Global Perspective. *Nurs Sci Q*, *34*(2), 196-201. https://doi.org/10.1177/0894318420987186

Cuomo, M. J., Dyment, P. G., & Gammino, V. M. (1994). Increasing use of "Ecstasy" (MDMA) and other hallucinogens on a college campus. *J Am Coll Health*, *42*(6), 271-274. https://doi.org/10.1080/07448481.1994.9936359

Czyz, E. K., Horwitz, A. G., Eisenberg, D., Kramer, A., & King, C. A. (2013). Self-reported Barriers to Professional Help Seeking Among College Students at Elevated Risk for Suicide. *Journal of American College Health*, *61*(7), 398-406.

Davis, R.E., Bass, M., Ford-Wade, A., & Nahar, V. (2020). Screening for depression among a sample of US college students who engage in recreational prescription opioid misuse. *Health Promotion Perspectives*, *10*(1). https://doi.org/doi: 10.1517/hpp.2020xx

Davis, R. E., Bass, M. A., Ford, M. A., Bentley, J. P., Lee, K., & Doyle, N. A. (2019). Recreational prescription opioid misuse among college students in the USA: An application of the theory of planned behavior. *Journal of Health and SocialSciences*, *4*(3), 389-404.

Davis, R. E., Doyle, N. A., & Nahar, V. K. (2020). An Investigation of the Associations Between Drug-related Self-stigmatizing Beliefs, Depression, and Suicidal Ideation Among Collegiate Drug Users. *Journal of alcohol and drug education*, *64*(1), 52-80.

Dean, K. E., Long, A. C. J., Matthews, R. A., & Buckner, J. D. (2018). Willingness to Seek Treatment Among Black Students With Anxiety or Depression: The Synergistic Effect of Sociocultural Factors With Symptom Severity and Intolerance of Uncertainty. *Behavior Therapy*, *49*(5), 691-701.

Dearing, R. L., Stuewig, J., & Tangney, J. P. (2005). On the importance of distinguishing shame from guilt: relations to problematic alcohol and drug use. *Addict Behav*, *30*(7), 1392-1404. https://doi.org/10.1016/j.addbeh.2005.02.002

Deas, D., & Thomas, S. E. (2001). An overview of controlled studies of adolescent substance abuse treatment. *American Journal on Addictions*, *10*, 11.

Degenhardt, L., & Hall, W. (2012). Extent of illicit drug use and dependence, and their contribution to the global burden of disease. (2012). T*he Lancet* , 3*79* (9810), 55-70. *The Lancet*, *379*, 15.

del Rosario, P. M., & White, R. M. (2006). The Internalized Shame Scale: Temporal stability, internal consistency, and principal components analysis. *Personality and Individual Differences*, *41*, 95-103. https://doi.org/doi:10.1016/j.paid.2005.10.026

DeMartini, K. S., & Carey, K. B. (2012). Optimizing the use of the AUDIT for alcohol screening in college students. *Psychological Assessment*, *24*(4), 954-963. https://doi.org/10.1037/a0028519

Denzin, N. K., & Lincoln, Y. S. (2005). *The SAGE handbook of qualitative research* (Third edition. ed.). Sage Publications.

Dhuffar, M. K., & Griffiths, M. D. (2014). Understanding the role of shame and its consequences in female hypersexual behaviours: a pilot study. *J Behav Addict*, *3*(4), 231-237. https://doi.org/10.1556/JBA.3.2014.4.4

Dickerson, S. S., Gruenewald, T. L., & Kemeny, M. E. (2004). When the social self is threatened: shame, physiology, and health. *J Pers*, *72*(6), 1191-1216. https://doi.org/10.1111/j.1467-6494.2004.00295.x

Dolezal, L., & Lyons, B. (2017). Health-related shame: an affective determinant of health? *Medical humanities*, *43*, 6.

Drug Overdose Death Data | Drug Overdose | CDC Injury Center. (2018).

Dschaak, Z. A., Spiker, D. A., Berney, E. C., Miller, M. E., & Hammer, J. H. (2021). Collegian help seeking: the role of self-compassion and self-coldness. *J Ment Health*, *30*(3), 284-291. https://doi.org/10.1080/09638237.2019.1677873

Dupasquier, J. R., Kelly, A. C., Moscovitch, D. A., & Vidovic, V. (2020). Cultivating self-compassion promotes disclosure of experiences that threaten self-esteem. *Cognitive Therapy and Research*, *44*, 11.

Earnshaw, V., Smith, L., & Copenhaver, M. (2013). Drug addiction stigma in the context of methadone maintenance therapy: an investigation into understudied sources of stigma. *International journal of mental health and addiction*, *11*, 12.

Earnshaw, V. A. (2020). Stigma and substance use disorders: A clinical, research, and advocacy agenda. *Am Psychol*, *75*(9), 1300-1311. https://doi.org/10.1037/amp0000744

Earnshaw, V. A., Bogart, L. M., Menino, D., Kelly, J. F., Chaudoir, S. R., Brousseau, N., & Levy, S. (2019). Disclosure, Stigma, and Social Support among Young People Receiving Treatment for Substance Use Disorders and their Caregivers: A Qualitative Analysis. *Int J Ment Health Addict*, *17*(6), 1535-1549. https://doi.org/10.1007/s11469-018-9930-8

Earnshaw, V. A., & Chaudoir, S. R. (2009). From conceptualizing to measuring HIV stigma: a review of HIV stigma mechanism measures. *AIDS Behav*, *13*(6), 1160-1177. https://doi.org/10.1007/s10461-009-9593-3

Earnshaw, V. A., & Quinn, D. M. (2012). The impact of stigma in healthcare on people living with chronic illnesses. *J Health Psychol*, *17*(2), 157-168. https://doi.org/10.1177/1359105311414952

Earnshaw, V. A., Sepucha, K. R., Laurenceau, J. P., Subramanian, S. V., Brousseau, N. M., Chaudoir, S. R., . . . Kelly, J. F. (2021). Disclosure processes as predictors of relationship outcomes among people in recovery from opioid use disorder: A longitudinal analysis. *Drug Alcohol Depend*, *228*, 109093. https://doi.org/10.1016/j.drugalcdep.2021.109093

Earnshaw, V. A., Smith, L. R., Chaudoir, S. R., Amico, K. R., & Copenhaver, M. M. (2013). HIV stigma mechanisms and well-being among PLWH: a test of the HIV stigma framework. *AIDS Behav*, *17*(5), 1785-1795. https://doi.org/10.1007/s10461-013-0437-9

Earnshaw, V. A., Smith, L. R., Chaudoir, S. R., Lee, I. C., & Copenhaver, M. M. (2012). Stereotypes about people living with HIV: implications for perceptions of HIV risk and

testing frequency among at-risk populations. *AIDS Educ Prev*, *24*(6), 574-581. https://doi.org/10.1521/aeap.2012.24.6.574

Earnshaw, V. A., Smith, L. R., Cunningham, C. O., & Copenhaver, M. M. (2015). Intersectionality of internalized HIV stigma and internalized substance use stigma: Implications for depressive symptoms. *J Health Psychol*, *20*(8), 1083-1089. https://doi.org/10.1177/1359105313507964

Eisenberg, D., Speer, N., & Hunt, J. B. (2012). Attitudes and Beliefs About Treatment Among College Students With Untreated Mental Health Problems. *Psychiatric Services*, *63*(7), 711-713. https://doi.org/10.1176/appi.ps.201100250

Enikolopov, S. N., & Makogon, I. K. (2013). Problems with the assessment of shame and guilt. *Psychology in Russia*, *6*, 7. https://doi.org/doi:http://dx.doi.org/10.11621/pir.2013.0415

Eterović, M., Medved, V., Bilić, V., Kozarić-Kovačić, D., & Žarković, N. (2020). Poor Agreement Between Two Commonly Used Measures of Shame- and Guilt-Proneness. *J Pers Assess*, *102*(4), 499-507. https://doi.org/10.1080/00223891.2019.1585361

Evren, C., Ogel, K., Evren, B., & Bozkurt, M. (2014). Psychometric properties of the Turkish versions of the Drug Use Disorders Identification Test (DUDIT) and the Drug Abuse Screening Test (DAST-10) in the prison setting. *J Psychoactive Drugs*, *46*(2), 140-146. https://doi.org/10.1080/02791072.2014.887162

Fergus, T. A., Valentiner, D. P., McGrath, P. B., & Jencius, S. (2010). Shame- and guilt-proneness: relationships with anxiety disorder symptoms in a clinical sample. *J Anxiety Disord*, *24*(8), 811-815. https://doi.org/10.1016/j.janxdis.2010.06.002

Fernández-Artamendi, S., Fernández-Hermida, J. R., García-Fernández, G., Secades-Villa, R., & García-Rodríguez, O. (2013). Motivation for change and barriers to treatment among young cannabis users. *Eur Addict Res*, *19*(1), 29-41. https://doi.org/10.1159/000339582

Fisher, J. D., & Fisher, W. A. (1992). Changing AIDS-risk behavior. *Psychol Bull*, *111*(3), 455-474. https://doi.org/10.1037/0033-2909.111.3.455

Flanagan, O. (2013). The shame of addiction. *Front Psychiatry*, *4*, 120. https://doi.org/10.3389/fpsyt.2013.00120

Fong, C., Mateu-Gelabert, P., Ciervo, C., Eckhardt, B., Aponte-Melendez, Y., Kapadia, S., & Marks, K. (2021). Medical provider stigma experienced by people who use drugs (MPS-PWUD): Development and validation of a scale among people who currently inject drugs in New York City. *Drug Alcohol Depend*, *221*, 108589. https://doi.org/10.1016/j.drugalcdep.2021.108589

France, N. F., Mcdonald, S. H., Conroy, R. R., Byrne, E., Mallouris, C., Hodgson, I., & Larkan, F. N. (2015). "An unspoken world of unspoken things": a study identifying and exploring core beliefs underlying self-stigma among people living with HIV and AIDS in Ireland. *Swiss Med Wkly*, *145*, w14113. https://doi.org/10.4414/smw.2015.14113

Freeman, R., Gwadz, M., Wilton, L., Collins, L. M., Dorsen, C., Hawkins, R. L., . . . Cluesman, S. (2020). Understanding long-term HIV survivorship among African American/Black and Latinx persons living with HIV in the United States: a qualitative exploration through the lens of symbolic violence. *Int J Equity Health*, *19*(1), 146. https://doi.org/10.1186/s12939-020-01253-w

Frąckowiak-Makowska, S. (2018). Theoretical concepts of the development of the representation of emotions of shame in children. *HUMANITARIUM*, *42*, 12.

Funderburk, J. S., Maisto, S. A., Wade, M. J., Kenneson, A., & Campbell, C. E. (2014). Clinical course of alcohol use in veterans following an AUDIT-C Positive Screen. *Mil Med*, *179*(11), 1198-1206. https://doi.org/10.7205/MILMED-D-14-00071

Gaddis, S. M., Ramirez, D., & Hernandez, E. L. (2018). Contextualizing public stigma: Endorsed mental health treatment stigma on college and university campuses [Article]. *Social Science & Medicine*, *197*, 183-191. https://doi.org/10.1016/j.socscimed.2017.11.029

Garpenhag, L., & Dahlman, D. (2021). Perceived healthcare stigma among patients in opioid substitution treatment: a qualitative study. *Subst Abuse Treat Prev Policy*, *16*(1), 81. https://doi.org/10.1186/s13011-021-00417-3

Gavin, D. R., Ross, H. E., & Skinner, H. A. (1989). Diagnostic validity of the drug abuse screening test in the assessment of DSM-III drug disorders. *Br J Addict*, *84*(3), 301-307. https://doi.org/10.1111/j.1360-0443.1989.tb03463.x

Gavriel-Fried, B., & Rabayov, T. (2017). Similarities and Differences between Individuals Seeking Treatment for Gambling Problems vs. Alcohol and Substance Use Problems in Relation to the Progressive Model of Self-stigma. *Front Psychol*, *8*, 957. https://doi.org/10.3389/fpsyg.2017.00957

Geert van den Berg, R. (2021). *SPSS Moderation Regression Tutorial*. https://www.spss-tutorials.com/spss-regression-with-moderation-interaction-effect/

Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: overview and pilot study of a group therapy approach. *Clin. Psychol. Psychother.*, *13*, 26.

Godier-McBard, L. R., Cable, G., Wood, A. D., & Fossey, M. (2021). Gender differences in barriers to mental healthcare for UK military veterans: a preliminary investigation. *BMJ Mil Health*. https://doi.org/10.1136/bmjmilitary-2020-001754

Goffman, E. (1963). *Stigma; notes on the management of spoiled identity*. Prentice-Hall.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The qualitative report*, *8*, 10.

Golub, A., Bennett, A. S., & Elliott, L. (2015). Beyond America's War on Drugs: Developing Public Policy to Navigate the Prevailing Pharmacological Revolution. *AIMS Public Health*, *2*(1), 142-160. https://doi.org/10.3934/publichealth.2015.1.142

González-Sanguino, C., Muñoz, M., Castellanos, M. A., Pérez-Santos, E., & Orihuela-Villameriel, T. (2019). Study of the relationship between implicit and explicit stigmas associated with mental illness. *Psychiatry Res*, *272*, 663-668. https://doi.org/10.1016/j.psychres.2018.12.172

Guillot, C., & Greenway, D. (2006). Recreational ecstasy use and depression. *J Psychopharmacol*, *20*(3), 411-416. https://doi.org/10.1177/0269881106063265

Halter, M. J. (2004). Stigma and help seeking related to depression: a study of nursing students. *J Psychosoc Nurs Ment Health Serv*, *42*(2), 42-51.

Han, J., Batterham, P. J., Calear, A. L., & Ma, J. (2018). Seeking professional help for suicidal ideation: A comparison between Chinese and Australian university students. *Psychiatry Res*, *270*, 807-814. https://doi.org/10.1016/j.psychres.2018.10.080

Hanson, G., Venturelli, P., & Fleckenstein, A. (2018). *Drugs and Society* (13th ed.). Jones & Bartlett Learning.

Harder, D. W., Rockart, L., & Cutler, L. (1993). Additional validity evidence for the Harder Personal Feelings Questionnaire-2 (PFQ2): a measure of shame and guilt proneness. *J Clin Psychol*, *49*(3), 345-348. https://doi.org/10.1002/1097-4679(199305)49:3<345::aid-jclp2270490307>3.0.co;2-y

Hardy, L., Bakou, A. E., Shuai, R., Acuff, S. F., MacKillop, J., Murphy, C. M., . . . Hogarth, L. (2021). Associations between the Brief Assessment of Alcohol Demand (BAAD) questionnaire and alcohol use disorder severity in UK samples of student and community drinkers. *Addict Behav*, *113*, 106724. https://doi.org/10.1016/j.addbeh.2020.106724

Harper, J. M. (2011). Regulating and coping with shame. In K. B. Radek Trnka, Martin Kuška (Ed.), *Reconstructing emotional spaces: From experience to regulation* (pp. 189-206). Prague College of Psychosocial Studies Press.

Hasson-Ohayon, I., Ehrlich-Ben Or, S., Vahab, K., Amiaz, R., Weiser, M., & Roe, D. (2012). Insight into mental illness and self-stigma: the mediating role of shame proneness. *Psychiatry Res*, *200*(2-3), 802-806. https://doi.org/10.1016/j.psychres.2012.07.038

Hatzenbuehler, M. L., Phelan, J. C., & Link, B. G. (2013). Stigma as a fundamental cause of population health inequalities. *Am J Public Health*, *103*(5), 813-821. https://doi.org/10.2105/AJPH.2012.301069

Hayes, B. T., Jakubowski, A., Fitzsimmons, C., Garcia, B., Ramirez, F., & Fox, A. D. (2021). "The Doctor Says You Cannot Have [Buprenorphine]" Autonomy and Use of Prescribed or Non-Prescribed Buprenorphine. *Subst Use Misuse*, *56*(8), 1137-1143. https://doi.org/10.1080/10826084.2021.1908360

Healey, C., Peters, S., Kinderman, P., McCracken, C., & Morriss, R. (2009). Reasons for substance use in dual diagnosis bipolar disorder and substance use disorders: A qualitative study. *Journal of affective disorders*, *113*, 8.

Hequembourg, A. L., & Dearing, R. L. (2013). Exploring shame, guilt, and risky substance use among sexual minority men and women. *J Homosex*, *60*(4), 615-638. https://doi.org/10.1080/00918369.2013.760365

Hernandez, V. R., & Mendoza, C. T. (2011). Shame resilience: A strategy for empowering women in treatment for substance abuse. *Journal of Social Work Practice in the Addictions*, *11*, 375-393. https://doi.org/10.1080/1533256X.2011.622193

(HHS), U. S. D. o. H. a. H. S. (2016). EARLY INTERVENTION, TREATMENT, AND MANAGEMENT OF SUBSTANCE USE DISORDERS. In *Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health Substance Abuse and Mental Health Services Administration (US); Office of the Surgeon General (US)*. . US Department of Health and Human Services (HHS).

Hosmer, D. W., Lemeshow, S., & Sturdivant, R. X. (2013). *Applied Logistic Regression* (Vol. 398). John Wiley & Sons.

Iarussi, M. (2018). The Experiences of College Students in Recovery From Substance Use Disorders [Article]. *Journal of Addictions & Offender Counseling*, *39*(1), 46-62. https://doi.org/10.1002/jaoc.12040

IBM. (2017). *IBM SPSS Statistics: Version 24* (null, Ed. Vol. null).

J.B., S., O.G., A., T.F., B., J.R., d. l. F., & M., G. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption II. *Addiction*, *88*, 13.

Janulis, P., Ferrari, J., & Fowler, P. (2013). Understanding Public Stigma Toward Substance Dependence. *Journal of Applied Social Psychology*, *43*, 1065-1072. https://doi.org/10.1111/JASP.12070

Jennings, K. S., Cheung, J. H., Britt, T. W., Goguen, K. N., Jeffirs, S. M., Peasley, A. L., & Lee, A. C. (2015). How are perceived stigma, self-stigma, and self-reliance related to treatment-seeking? A three-path model. *Psychiatric Rehabilitation Journal*, *38*(2), 109-116.

Johnson, R. C., Danko, G. P., Huang, Y. H., Park, J. Y., Johnson, S. B., & Nagoshi, C. T. (1987). Guilt, shame and adjustment in three cultures. *Personality and Individual Differences 8*, 7. https://doi.org/doi: 10.1016/0191-8869(87)90036-5

Kanter, J. W., Rusch, L. C., & Brondino, M. J. (2008). Depression self-stigma: a new measure and preliminary findings. *J Nerv Ment Dis*, *196*(9), 663-670. https://doi.org/10.1097/NMD.0b013e318183f8af

Kealy, D., Treeby, M. S., Rice, S. M., & Spidel, A. (2020). Shame and guilt as mediators between dispositional optimism and symptom severity among mental health outpatients. *Psychol Health Med*, 1-10. https://doi.org/10.1080/13548506.2020.1861313

Keller, K. H., Mollen, D., & Rosen, L. H. (2015). Spiritual maturity as a moderator of the relationship between christian fundamentalism and shame. . *Journal of Psychology and Theology*, *43*, 12.

Kelly, T. M., & Daley, D. C. (2013). Integrated treatment of substance use and psychiatric disorders. *Soc Work Public Health*, *28*(3-4), 388-406. https://doi.org/10.1080/19371918.2013.774673

Khalid, F., Jaan, A., Aslam, M. M. S., Ahmed, Z., Raheem, A., Bodla, Z. H., . . . Rehman, U. (2020). Social Stigmatization of Drug Abusers in a Developing Country: A Cross-Sectional Study. *Cureus*, *12*(9), e10661. https://doi.org/10.7759/cureus.10661

Kim, J. E., & Zane, N. (2016). Help-seeking intentions among Asian American and White American students in psychological distress: Application of the health belief model. *Cultur Divers Ethnic Minor Psychol*, *22*(3), 311-321. https://doi.org/10.1037/cdp0000056

King, K. E., Schlichthorst, M., Spittal, M. J., Phelps, A., & Pirkis, J. (2018). Can a documentary increase help-seeking intentions in men? A randomised controlled trial. *J Epidemiol Community Health*, *72*(1), 92-98. https://doi.org/10.1136/jech-2017-209502

Klimkiewicz, A., Jakubczyk, A., Mach, A., Abramowska, M., Szczypiński, J., Berent, D., . . . Wojnar, M. (2021). Psychometric properties of the polish version of the Alcohol Use Disorders Identification Test (AUDIT). *Drug Alcohol Depend*, *218*, 108427. https://doi.org/10.1016/j.drugalcdep.2020.108427

Koulouras, V. K., Z.Lepida, D.Papathanakos, G.Gouva, M. (2017). Shame feeling in the intensive care unit patient's family members. *Intensive & Critical Care Nursing*, *41*, 5. https://doi.org/https://doi.org/10.1016/j.iccn.2017.03.011

Kranke, D. A., Floersch, J., Kranke, B. O., & Munson, M. R. (2011). A qualitative investigation of self-stigma among adolescents taking psychiatric medication. *Psychiatr Serv*, *62*(8), 893-899. https://doi.org/10.1176/ps.62.8.pss6208_0893

Kulesza, M., Larimer, M. E., & Rao, D. (2013). Substance Use Related Stigma: What we Know and the Way Forward. *J Addict Behav Ther Rehabil*, *2*(2). https://doi.org/10.4172/2324-9005.1000106

Kulesza, M., Ramsey, S., Brown, R., & Larimer, M. (2014). Stigma among Individuals with Substance Use Disorders: Does it Predict Substance Use, and Does it Diminish with Treatment? *J Addict Behav Ther Rehabil*, *3*(1), 1000115. https://doi.org/10.4172/2324-9005.1000115

Kulesza, M., Watkins, K. E., Ober, A. J., Osilla, K. C., & Ewing, B. (2017). Internalized stigma as an independent risk factor for substance use problems among primary care patients:

Rationale and preliminary support. *Drug Alcohol Depend*, *180*, 52-55. https://doi.org/10.1016/j.drugalcdep.2017.08.002

Layte, R. (2012). The Association Between Income Inequality and Mental Health: Testing Status Anxiety, Social Capital, and Neo-Materialist Explanations. *European Sociological Review*, *28*(4), 13.

Lekas, H. M., Siegel, K., & Leider, J. (2011). Felt and enacted stigma among HIV/HCV-coinfected adults: the impact of stigma layering. *Qual Health Res*, *21*(9), 1205-1219. https://doi.org/10.1177/1049732311405684

Lewis, H. B. (1971). Shame and guilt in neurosis. *Psychoanal Rev*, *58*(3), 419-438.

Li, H., Zheng, L., Le, H., Zhuo, L., Wu, Q., Ma, G., & Tao, H. (2020). The Mediating Role of Internalized Stigma and Shame on the Relationship between COVID-19 Related Discrimination and Mental Health Outcomes among Back-to-School Students in Wuhan. *Int J Environ Res Public Health*, *17*(24). https://doi.org/10.3390/ijerph17249237

Link, B., & Phelan, J. (2001). Conceptualizing stigma [Article]. *Annual Review of Sociology*, *27*, 363-385. https://doi.org/10.1146/annurev.soc.27.1.363

Link, B. G., & Phelan, J. (1995). Social conditions as fundamental causes of disease. *J Health Soc Behav*, *Spec No*, 80-94.

Link, B. G., & Phelan, J. C. (2006). Stigma and its public health implications. *Lancet*, *367*(9509), 528-529. https://doi.org/10.1016/S0140-6736(06)68184-1

Link, B. G., Struening, E. L., Rahav, M., Phelan, J. C., & Nuttbrock, L. (1997). On stigma and its consequences: evidence from a longitudinal study of men with dual diagnoses of mental illness and substance abuse. *J Health Soc Behav*, *38*(2), 177-190.

Link, B. G., Yang, L. H., Phelan, J. C., & Collins, P. Y. (2004). Measuring mental illness stigma. *Schizophr Bull*, *30*(3), 511-541. https://doi.org/10.1093/oxfordjournals.schbul.a007098

Lipari, R. N., Park-Lee, E., & Van Horn, S. (2016). *America's need for and receipt of substance use treatment in 2015*.

Livingston, J. D., Milne, T., Fang, M. L., & Amari, E. (2012). The effectiveness of interventions for reducing stigma related to substance use disorders: a systematic review. *Addiction*, *107*(1), 39-50. https://doi.org/10.1111/j.1360-0443.2011.03601.x

Lloyd, C. (2013). The stigmatization of problem drug users: A narrative literature review. *Drugs: education, prevention and policy*, *20*, 10.

Locke, G. W., Shilkret, R., Everett, J. E., & Petry, N. M. (2013). Interpersonal guilt in college student pathological gamblers. *Am J Drug Alcohol Abuse*, *39*(1), 28-32. https://doi.org/10.3109/00952990.2012.694520

Locke, G. W., Shilkret, R., Everett, J. E., & Petry, N. M. (2015). Interpersonal guilt and substance use in college students. *Subst Abus*, *36*(1), 113-118. https://doi.org/10.1080/08897077.2014.885482

Logie, C. H. (2020). Lessons learned from HIV can inform our approach to COVID-19 stigma. *Journal of the International AIDS Society*, *23*(5), e25504-n/a. https://doi.org/10.1002/jia2.25504

Lundin, A., Hallgren, M., Balliu, N., & Forsell, Y. (2015). The use of alcohol use disorders identification test (AUDIT) in detecting alcohol use disorder and risk drinking in the general population: validation of AUDIT using schedules for clinical assessment in neuropsychiatry. *Alcohol Clin Exp Res*, *39*(1), 158-165. https://doi.org/10.1111/acer.12593

Luoma, J., Guinther, P., Potter, J., & Cheslock, M. (2017). Experienced-Based Versus Scenario-Based Assessments of Shame and Guilt and Their Relationship to Alcohol Consumption and Problems. *Subst Use Misuse*, *52*(13), 1692-1700. https://doi.org/10.1080/10826084.2017.1305416

Luoma, J. B., Chwyl, C., & Kaplan, J. (2019). Substance use and shame: A systematic and meta-analytic review. *Clin Psychol Rev*, *70*, 1-12. https://doi.org/10.1016/j.cpr.2019.03.002

Luoma, J. B., Kohlenberg, B. S., Hayes, S. C., & Fletcher, L. (2012). Slow and steady wins the race: a randomized clinical trial of acceptance and commitment therapy targeting shame in substance use disorders. *J Consult Clin Psychol*, *80*(1), 43-53. https://doi.org/10.1037/a0026070

Luoma, J. B., Nobles, R. H., Drake, C. E., Hayes, S. C., O'Hair, A., Fletcher, L., & Kohlenberg, B. S. (2013). Self-Stigma in Substance Abuse: Development of a New Measure. *J Psychopathol Behav Assess*, *35*(2), 223-234. https://doi.org/10.1007/s10862-012-9323-4

Luoma, J. B., & Platt, M. G. (2015). Shame, self-criticism, self-stigma, and compassion in acceptance and commitment therapy. *Current opinion in Psychology*, *2*, 97-101.

Luoma, J. B., Twohig, M. P., Waltz, T., Hayes, S. C., Roget, N., Padilla, M., & Fisher, G. (2007). An investigation of stigma in individuals receiving treatment for substance abuse. *Addict Behav*, *32*(7), 1331-1346. https://doi.org/10.1016/j.addbeh.2006.09.008

M, A.-S., G, F., & D., G.-P. (2018). Guilt and Shame Proneness Scale (GASP) Adaptation and Psychometric Properties in Spanish Population. *PSYArXiv*. https://doi.org/DOI: 10.31234/osf.io/dtm6k.

Martino, S., Grilo, C. M., & Fehon, D. C. (2000). Development of the drug abuse screening test for adolescents (DAST-A). *Addict Behav*, *25*(1), 57-70. https://doi.org/10.1016/s0306-4603(99)00030-1

Matthews, S., Dwyer, R., & Snoek, A. (2017). Stigma and Self-Stigma in Addiction. *J Bioeth Inq*, *14*(2), 275-286. https://doi.org/10.1007/s11673-017-9784-y

McCann, T. V., & Lubman, D. I. (2018). Help-seeking barriers and facilitators for affected family members of a relative with alcohol and other drug misuse: A qualitative study. *J Subst Abuse Treat, 93*, 7-14. https://doi.org/10.1016/j.jsat.2018.07.005

McCann, T. V., Lubman, D. I., Boardman, G., & Flood, M. (2017). Affected family members' experience of, and coping with, aggression and violence within the context of problematic substance use: a qualitative study. *BMC psychiatry, 17*, 10.

McGaffin, B., Lyons, G., & Deane, F. (2013). Self-Forgiveness, Shame, and Guilt in Recovery from Drug and Alcohol Problems [Article]. *Substance Abuse, 34*(4), 396-404. https://doi.org/10.1080/08897077.2013.781564

Meehan, W., O'Connor, L. E., Berry, J. W., Weiss, J., Morrison, A., & Acampora, A. (1996). Guilt, shame, and depression in clients in recovery from addiction. *J Psychoactive Drugs, 28*(2), 125-134. https://doi.org/10.1080/02791072.1996.10524385

Merriam-Webster. (nd). *Merriam-Webster.com dictionary*. Retrieved September 8 from https://www.merriam-webster.com/dictionary/recreational%20drug

Meyrick, J. (2006). What is good qualitative research? A first step towards a comprehensive approach to judging rigour/quality. *J Health Psychol, 11*(5), 799-808. https://doi.org/10.1177/1359105306066643

Miller, N. S., Sheppard, L. M., Colenda, C. C., & Magen, J. (2001). Why physicians are unprepared to treat patients who have alcohol- and drug-related disorders. *Acad Med, 76*(5), 410-418. https://doi.org/10.1097/00001888-200105000-00007

Mo, P. K. H., Chen, X., Lam, E. H. K., Li, J., Kahler, C. W., & Lau, J. T. F. (2020). The Moderating Role of Social Support on the Relationship Between Anxiety, Stigma, and Intention to Use Illicit Drugs Among HIV-Positive Men Who Have Sex with Men. *AIDS Behav, 24*(1), 55-64. https://doi.org/10.1007/s10461-019-02719-x

Monaci, M. G., Scacchi, L., Posa, M., & Trentin, R. (2013). Peer pressure and alcohol consumption among university students: The moderating effect of emotional intelligence. *BPA - Applied Psychology Bulletin (Bollettino di Psicologia Applicata), 60*(267), 17-31.

Mortimer, R. (2019). Pride Before a Fall: Shame, Diagnostic Crossover, and Eating Disorders. *J Bioeth Inq, 16*(3), 365-374. https://doi.org/10.1007/s11673-019-09923-3

Mousavi, A., Azadfalah, P., Dehghani, M., & Farahani, H. (2016). Prediction of self-destruction based on depression symptom, internalized self-criticism, shame and guilt, and differences between men and women. . *Int J Behav Sci. , 10*, 5.

NCDAS. (2022). *Drug Abuse Statistics*. National Center for Drug Abuse Statistics. Retrieved March 23, 2022 from https://drugabusestatistics.org/

Neale, J., DebbyCoombes, Lindsey. (2005). Qualitative research methods within the addictions. *Addiction, 100*, 9. https://doi.org/https://doi.org/10.1111/j.1360-0443.2005.01230.x

Nelissen, R. M., Breugelmans, S. M., & Zeelenberg, M. (2013). Reappraising the moral nature of emotions in decision making: The case of shame and guilt. . *Social and Personality Psychology Compass*, *7*, 10.

Neufeld, K. J., Alvanzo, A., King, V. L., Feldman, L., Hsu, J. H., Rastegar, D. A., . . . MacKinnon, D. F. (2012). A collaborative approach to teaching medical students how to screen, intervene, and treat substance use disorders. *Subst Abus*, *33*(3), 286-291. https://doi.org/10.1080/08897077.2011.640090

NIDA. (2018). *Comorbidity: Substance Use Disorders and Other Mental Illnesses DrugFacts.*

NIDA. 2019, J. T. A. f. D. A. D. R. f. h. w. d. g. p. d. t.-a.-d.-a. o., August 19.

NVivo. (2015). *QSR International Pty Ltd.* . In (Version 11) https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home

O'Cathain, A., Murphy, E., & Nicholl, J. (2008). The quality of mixed methods studies in health services research. *J Health Serv Res Policy*, *13*(2), 92-98. https://doi.org/10.1258/jhsrp.2007.007074

O'Connor, L. E., Berry, J. W., Inaba, D., Weiss, J., & Morrison, A. (1994). Shame, guilt, and depression in men and women in recovery from addiction. *J Subst Abuse Treat*, *11*(6), 503-510. https://doi.org/10.1016/0740-5472(94)90001-9

Osei-Tutu, A., Cowden, R. G., Kwakye-Nuako, C. O., Gadze, J., Oppong, S., & Worthington, E. L. (2021). Self-Forgiveness Among Incarcerated Individuals in Ghana: Relations With Shame- and Guilt-Proneness. *Int J Offender Ther Comp Criminol*, *65*(5), 558-570. https://doi.org/10.1177/0306624X20914496

Palamar, J. J., Kiang, M. V., & Halkitis, P. N. (2012). Predictors of stigmatization towards use of various illicit drugs among emerging adults. *J Psychoactive Drugs*, *44*(3), 243-251. https://doi.org/10.1080/02791072.2012.703510

Palan, S., & Schitter, C. (2018). Prolific.ac–A subject pool for online experiments. *Journal of Behavioral and Experimental Finance*, *17*, 5. https://doi.org/10.1016/j.jbef.2017.12.004

Palmer, A., Karakus, M., & Mark, T. (2019). Barriers Faced by Physicians in Screening for Substance Use Disorders Among Adolescents. *Psychiatr Serv*, *70*(5), 409-412. https://doi.org/10.1176/appi.ps.201800427

Parcesepe, A. M., & Cabassa, L. J. (2013). Public stigma of mental illness in the United States: a systematic literature review. *Adm Policy Ment Health*, *40*(5), 384-399. https://doi.org/10.1007/s10488-012-0430-z

Paris, R., Herriott, A. L., Maru, M., Hacking, S. E., & Sommer, A. R. (2020). Secrecy Versus Disclosure: Women with Substance Use Disorders Share Experiences in Help Seeking During Pregnancy. *Matern Child Health J*, *24*(11), 1396-1403. https://doi.org/10.1007/s10995-020-03006-1

Patock-Peckham, J. A., Canning, J. R., & Leeman, R. F. (2018). Shame is bad and guilt is good: An examination of the impaired control over drinking pathway to alcohol use and related problems. *Pers Individ Dif, 121*, 62-66. https://doi.org/10.1016/j.paid.2017.09.023

Patterson, C., Perlman, D., Moxham, L., & Burns, S. (2019). Do Help-Seeking Behaviors Influence the Recovery of People With Mental Illness? *J Psychosoc Nurs Ment Health Serv, 57*(12), 33-38. https://doi.org/10.3928/02793695-20190920-03

Patton, M. Q. (2014). *Qualitative research & evaluation methods: Integrating theory and practice* .

Peacock, A., Leung, J., Larney, S., Colledge, S., Hickman, M., Rehm, J., . . . Degenhardt, L. (2018). Global statistics on alcohol, tobacco and illicit drug use: 2017 status report. *Addiction, 113*, 21.

Pettinati, H. M., O'Brien, C. P., & Dundon, W. D. (2013). Current status of co-occurring mood and substance use disorders: a new therapeutic target. *Am J Psychiatry, 170*(1), 23-30. https://doi.org/10.1176/appi.ajp.2012.12010112

Phelan, J. C., & Link, B. G. (1998). The growing belief that people with mental illnesses are violent: the role of the dangerousness criterion for civil commitment. *Soc Psychiatry Psychiatr Epidemiol, 33 Suppl 1*, S7-12. https://doi.org/10.1007/s001270050204

Phillips, H., Lyon, E., Krans, E. E., Warshaw, C., Chang, J. C., & Pallatino, C. (2021). Barriers to help-seeking among intimate partner violence survivors with opioid use disorder. *Int Rev Psychiatry*, 1-9. https://doi.org/10.1080/09540261.2021.1898350

Polito, V., & Stevenson, R. J. (2019). A systematic study of microdosing psychedelics. *PLoS One, 14*(2). https://doi.org/10.1371/journal.pone.0211023

Pond, M. (2021). Stigma of Addiction Summit. In.

Pradeep, R. J., Dhilip, A. M., & Mysore, A. (2015). Do SADQ and AUDIT identify independent impacts of alcohol abuse - clinical and biochemical markers respectively? *Indian J Psychiatry, 57*(3), 278-283. https://doi.org/10.4103/0019-5545.166629

Prosek, E. A., Giordano, A. L., Holm, J. M., Bevly, C. M., Sender, K. M., Ramsey, Z. B., & Abernathy, M. R. (2017). experiencing shame: collegiate alcohol abuse, religiosity, and spirituality. *Journal of College Counseling, 20*(2), 126-138. https://doi.org/10.1002/jocc.12065

Quiles, Z., Kinnunen, T., & Bybee, J. (2002). Aspects of guilt and self-reported substance use in adolescence [Article]. *Journal of Drug Education*, *32*(4), 343-362. https://doi.org/10.2190/VN3D-5M0A-47BN-3Y3T

Rahim, M., & Patton, R. (2015). The association between shame and substance use in young people: a systematic review. *PeerJ, 3*, e737. https://doi.org/10.7717/peerj.737

Rai, S. S., Syurina, E. V., Peters, R. M. H., Putri, A. I., & Zweekhorst, M. B. M. (2020). Non-Communicable Diseases-Related Stigma: A Mixed-Methods Systematic Review. *Int J Environ Res Public Health*, *17*(18). https://doi.org/10.3390/ijerph17186657

Regenauer, K. S., Kleinman, M. B., Belus, J. M., Myers, B., Joska, J. A., & Magidson, J. F. (2022). Effects of intersecting internalized stigmas and avoidance on HIV and alcohol-related outcomes among people living with HIV in South Africa. *Drug Alcohol Depend*, *233*, 109364. https://doi.org/10.1016/j.drugalcdep.2022.109364

Reid, T. (1975). Of Identity. *Personal Identity*, 107-112.

Rizvi, S. L. (2010). Development and preliminary validation of a new measure to assess shame: The shame inventory. *Journal of Psychopathology and Behavioral Assessment 32*, 9. https://doi.org/https://doi.org/10.1007/s10862-009-9172-y

Robb, J., Chou, C., Johnson, L., Liao, H., & Tan, S. (2018). Mediating Effects of Social Support and Coping Between Perceived and InternalizedStigma for Substance Users [Article]. *Journal of Rehabilitation*, *84*(2), 14-21.

Rockne, W. Y., Quinn, K. C., James, G., & Cochran, A. (2019). Identification of substance use disorders in burn patients using simple diagnostic screening tools (AUDIT/DAST-10). *Burns*, *45*(5), 1182-1188. https://doi.org/10.1016/j.burns.2019.03.004

Rodrigues, R., López-Caneda, E., Almeida-Antunes, N., Sampaio, A., & Crego, A. (2021). Portuguese validation of the Alcohol Craving Questionnaire-Short Form-Revised. *PLoS One*, *16*(5), e0251733. https://doi.org/10.1371/journal.pone.0251733

Rose, S., Paul, C., Boyes, A., Kelly, B., & Roach, D. (2017). Stigma-related experiences in non-communicable respiratory diseases: A systematic review. *Chron Respir Dis*, *14*(3), 199-216. https://doi.org/10.1177/1479972316680847

Ross, S., & Peselow, E. (2012). Co-occurring psychotic and addictive disorders: neurobiology and diagnosis. *Clin Neuropharmacol*, *35*(5), 235-243. https://doi.org/10.1097/WNF.0b013e318261e193

Russell, C. K., & Gregory, D. M. (2003). Evaluation of qualitative research studies. *Evid Based Nurs*, *6*(2), 36-40. https://doi.org/10.1136/ebn.6.2.36

Rybak, C., & Brown, B. (1996). Assessment of internalized shame: validity and reliability of the internalized shame scale. *Alcoholism Treatment Quarterly*, *14*(1), 71-83. https://doi.org/https://doi.org/10.1300/J020V14N01_07

Rüsch, N., Corrigan, P. W., Bohus, M., Jacob, G. A., Brueck, R., & Lieb, K. (2007). Measuring shame and guilt by self-report questionnaires: a validation study. *Psychiatry Res*, *150*(3), 313-325. https://doi.org/10.1016/j.psychres.2006.04.018

Rüsch, N., Müller, M., Ajdacic-Gross, V., Rodgers, S., Corrigan, P. W., & Rössler, W. (2014). Shame, perceived knowledge and satisfaction associated with mental health as predictors

of attitude patterns towards help-seeking. *Epidemiol Psychiatr Sci*, *23*(2), 177-187. https://doi.org/10.1017/S204579601300036X

SAMHSA. (2019). Table 2.6B- Alcohol Use in Lifetime, Past Year, and Past Month among Persons Ages 12 or Older, by Detailed Age Category: Percentages, 2002-2019. In N. S. o. D. U. a. Health (Ed.), (pp. https://www.samhsa.gov/data/sites/default/files/reports/rpt29394/NSDUHDetailedTabs22019/NSDUHDetTabsSect29392pe22019.htm#tab29392-29396b.).

SAMHSA. (2020). *Mental Health and Substance Use Disorders*. Retrieved August 22 from

SAMHSA. (2018). *Key substance use and mental health indicators in the United States: Results from the 2017 National Survey on Drug Use and Health (HHS Publication No. SMA 18-5068, NSDUH Series H-53)*. https://www. samhsa.gov/data/

Sandelowski, M. (2000a). Combining qualitative and quantitative sampling, data collection, and analysis techniques in mixed-method studies. *Res Nurs Health*, *23*(3), 246-255. https://doi.org/10.1002/1098-240x(200006)23:3<246::aid-nur9>3.0.co;2-h

Sandelowski, M. (2000b). Whatever happened to qualitative description? *Res Nurs Health*, *23*(4), 334-340. https://doi.org/10.1002/1098-240x(200008)23:4<334::aid-nur9>3.0.co;2-g

Sandelowski, M., Voils, C. I., & Knafl, G. (2009). On Quantitizing. *J Mix Methods Res*, *3*(3), 208-222. https://doi.org/10.1177/1558689809334210

SAS Institute, I. (2013). *SAS/ACCESS® 9.4 Interface to ADABAS*. In (Version 9.4)

Sattler, S., Escande, A., Racine, E., & Göritz, A. S. (2017). Public Stigma Toward People With Drug Addiction: A Factorial Survey. *J Stud Alcohol Drugs*, *78*(3), 415-425. https://doi.org/10.15288/jsad.2017.78.415

Scheff, T. (2013). A social/emotional theory of 'mental illness'. *Int J Soc Psychiatry*, *59*(1), 87-92. https://doi.org/10.1177/0020764012445004

Scheff, T. J. (1984). The taboo on coarse emotions. *Review of Personality & Social Psychology*, *5*, 146-169.

Scheff, T. J. (2001). Shame and community: social components in depression. *Psychiatry*, *64*(3), 212-224. https://doi.org/10.1521/psyc.64.3.212.18457

Schomerus, G., Matschinger, H., & Angermeyer, M. C. (2009). Attitudes that determine willingness to seek psychiatric help for depression: a representative population survey applying the Theory of Planned Behaviour. *Psychol Med*, *39*(11), 1855-1865. https://doi.org/10.1017/S0033291709005832

Schore, A. N. (1994). *Affect regulation and the origin of the self* (null, Ed. Vol. null).

Selzer, M. L. (1971). The Michigan alcoholism screening test: the quest for a new diagnostic instrument. *Am J Psychiatry*, *127*(12), 1653-1658. https://doi.org/10.1176/ajp.127.12.1653

Sharp, M. L., Fear, N. T., Rona, R. J., Wessely, S., Greenberg, N., Jones, N., & Goodwin, L. (2015). Stigma as a barrier to seeking health care among military personnel with mental health problems. *Epidemiol Rev*, *37*, 144-162. https://doi.org/10.1093/epirev/mxu012

Shimane, T., Imamura, A., Ikeda, K., Yamamoto, M., Tsuji, M., Nagayo, Y., . . . Matsumoto, T. (2015). [Reliability and validity of the Japanese version of the DAST-20]. *Nihon Arukoru Yakubutsu Igakkai Zasshi*, *50*(6), 310-324.

Sidoli, M. (1988). Shame and the shadow. *J Anal Psychol*, *33*(2), 127-142. https://doi.org/10.1111/j.1465-5922.1988.00127.x

Siliquini, R., Morra, A., Versino, E., & Renga, G. (2005). Recreational drug consumers: who seeks treatment? *Eur J Public Health*, *15*(6), 580-586. https://doi.org/10.1093/eurpub/cki031

Silverman, M. J. (2019). Songwriting to Target State Shame, Guilt, and Pride in Adults with Substance Use Disorder on a Detoxification Unit: A Cluster-Randomized Study. *Subst Use Misuse*, *54*(8), 1345-1354. https://doi.org/10.1080/10826084.2019.1580742

Sirey, J. A., Bruce, M. L., Alexopoulos, G. S., Perlick, D. A., Friedman, S. J., & Meyers, B. S. (2001). Stigma as a barrier to recovery: Perceived stigma and patient-rated severity of illness as predictors of antidepressant drug adherence. *Psychiatr Serv*, *52*(12), 1615-1620. https://doi.org/10.1176/appi.ps.52.12.1615

Sirey, J. A., Bruce, M. L., Alexopoulos, G. S., Perlick, D. A., Raue, P., Friedman, S. J., & Meyers, B. S. (2001). Perceived stigma as a predictor of treatment discontinuation in young and older outpatients with depression. *Am J Psychiatry*, *158*(3), 479-481. https://doi.org/10.1176/appi.ajp.158.3.479

Skinner, H. A. (1982). The drug abuse screening test. *Addict Behav*, *7*(4), 363-371. https://doi.org/10.1016/0306-4603(82)90005-3

Smith, L. R., Earnshaw, V. A., Copenhaver, M. M., & Cunningham, C. O. (2016). Substance use stigma: Reliability and validity of a theory-based scale for substance-using populations. *Drug Alcohol Depend*, *162*, 34-43. https://doi.org/10.1016/j.drugalcdep.2016.02.019

Snoek, A., McGeer, V., Brandenburg, D., & Kennett, J. (2021). Managing shame and guilt in addiction: A pathway to recovery. *Addict Behav*, *120*, 106954. https://doi.org/10.1016/j.addbeh.2021.106954

Spence, R., Owens-Solari, M., & Goodyer, I. (2016). Help-seeking in emerging adults with and without a history of mental health referral: a qualitative study. *BMC Res Notes*, *9*(1), 415. https://doi.org/10.1186/s13104-016-2227-8

Staley, D., & el-Guebaly, N. (1990). Psychometric properties of the Drug Abuse Screening Test in a psychiatric patient population. *Addict Behav*, *15*(3), 257-264. https://doi.org/10.1016/0306-4603(90)90068-9

Stangl, A. L., Earnshaw, V. A., Logie, C. H., van Brakel, W., C Simbayi, L., Barré, I., & Dovidio, J. F. (2019). The Health Stigma and Discrimination Framework: a global, crosscutting framework to inform research, intervention development, and policy on health-related stigmas. *BMC Med*, *17*(1), 31. https://doi.org/10.1186/s12916-019-1271-3

Stuewig, J., Tangney, J. P., Kendall, S., Folk, J. B., Meyer, C. R., & Dearing, R. L. (2015). Children's proneness to shame and guilt predict risky and illegal behaviors in young adulthood. *Child Psychiatry Hum Dev*, *46*(2), 217-227. https://doi.org/10.1007/s10578-014-0467-1

Taber, K. (2018). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. . *Res Sci Educ*, *48*, 23. https://doi.org/https://doi.org/10.1007/s11165-016-9602-2

Tam, C. C., Benotsch, E. G., & Li, X. (2020). Self-Esteem and Non-Medical Use of Prescription Drugs among College Students: Coping as a Mediator. *Substance Use & Misuse*, 1-11. https://doi.org/10.1080/10826084.2020.173544110.

Tangney, J. P. (1990). Assessing individual differences in proneness to shame and guilt: development of the Self-Conscious Affect and Attribution Inventory. *J Pers Soc Psychol*, *59*(1), 102-111. https://doi.org/10.1037//0022-3514.59.1.102

Tangney, J. P. (1996). Conceptual and methodological issues in the assessment of shame and guilt. *Behav Res Ther*, *34*(9), 741-754. https://doi.org/10.1016/0005-7967(96)00034-4

Tangney, J. P., & Dearing, R. L. (2002). *Shame and guilt*. Guilford Press.

Tangney, J. P., Miller, R. S., Flicker, L., & Barlow, D. H. (1996). Are shame, guilt, and embarrassment distinct emotions? *J Pers Soc Psychol*, *70*(6), 1256-1269. https://doi.org/10.1037//0022-3514.70.6.1256

Tangney, J. P., Wagner, P., & Gramzow, R. (1992). Proneness to shame, proneness to guilt, and psychopathology. *J Abnorm Psychol*, *101*(3), 469-478. https://doi.org/10.1037//0021-843x.101.3.469

Tangney, J. P., Wagner, P. E., & Gramzow, R. (1989). The Test of Self-Conscious Affect (TOSCA). *Fairfax, VA: George Mason University.*

Tangney, J. P., Wagner, P. E., Hill-Barlow, D., Marschall, D. E., & Gramzow, R. (1996). Relation of shame and guilt to constructive versus destructive responses to anger across the lifespan. *J Pers Soc Psychol*, *70*(4), 797-809. https://doi.org/10.1037//0022-3514.70.4.797

Taylor, J., James, L. M., Bobadilla, L., & Reeves, M. D. (2008). Screening for disinhibited disorder cases in a college population: Performance of the SMAST, DAST, SCID-II-Q, and PDQ-4. *Psychol Assess*, *20*(4), 351-360. https://doi.org/10.1037/a0013452

Todd, M., Armeli, S., Tennen, H., Carney, M. A., Ball, S. A., Kranzler, H. R., & Affleck, G. (2005). Drinking to cope: a comparison of questionnaire and electronic diary reports. *J Stud Alcohol*, *66*(1), 121-129. https://doi.org/10.15288/jsa.2005.66.121

Treeby, M., & Bruno, R. (2012). Shame and guilt-proneness: Divergent implications for problematic alcohol use and drinking to cope with anxiety and depression symptomatology. *Personality and Individual Differences*, *53*(5), 613-617. https://doi.org/https://doi.org/10.1016/j.paid.2012.05.011

Treeby, M. S., Rice, S. M., Cocker, F., Peacock, A., & Bruno, R. (2018). Guilt-proneness is associated with the use of protective behavioral strategies during episodes of alcohol use. *Addict Behav*, *79*, 120-123. https://doi.org/10.1016/j.addbeh.2017.12.027

Tucker, J. R., Hammer, J. H., Vogel, D. L., Bitman, R. L., Wade, N. G., & Maier, E. J. (2013). Disentangling self-stigma: are mental illness and help-seeking self-stigmas different? *J Couns Psychol*, *60*(4), 520-531. https://doi.org/10.1037/a0033555

Turner, J. (2014). Researching state shame with the experiential shame scale. *The Journal of Psychology*, *148*, 24. https://doi.org/10.1080/00223980.2013.818927

Vaish, A. (2018). The prosocial functions of early social emotions: the case of guilt. *Curr Opin Psychol*, *20*, 25-29. https://doi.org/10.1016/j.copsyc.2017.08.008

Villalobos-Gallegos, L., Pérez-López, A., Mendoza-Hassey, R., Graue-Moreno, J., & Marín-Navarrete, R. (2015). Psychometric and diagnostic properties of the Drug Abuse Screening Test (DAST): Comparing the DAST-20 vs. the DAST-10. *Salud mental*, *38*, 5.

Vogel, D., Wade, N., & Haake, S. (2006). *Measuring the self-stigma associated with seeking psychological help. Journal of Counseling Psychology, 53, 325-337* (Vol. 53).

Vogel, D. L., Bitman, R. L., Hammer, J. H., & Wade, N. G. (2013). Is stigma internalized? The longitudinal impact of public stigma on self-stigma. *J Couns Psychol*, *60*(2), 311-316. https://doi.org/10.1037/a0031889

Vogel, D. L., Wester, S. R., Wei, M., & Boysen, G. A. (2005). The role of outcome expectations and attitudes on decisions to seek professional help. *Journal of counseling psychology*, *52*.

Volkow, N. (2021, August 9, 2021). Punishing Drug Use Heightens the Stigma of Addiction. *Nora's Blog*.

Walters, C. H. (2001). Assumptions of qualitative research methods. *Perspectives in learning , 2 (1), 14.*, *2*(14), 3.

Watanabe, N., Nishida, A., Shimodera, S., Inoue, K., Oshima, N., Sasaki, T., . . . Okazaki, Y. (2012). Help-seeking behavior among Japanese school students who self-harm: results from a self-report survey of 18,104 adolescents. *Neuropsychiatr Dis Treat, 8*, 561-569. https://doi.org/10.2147/NDT.S37543

Wharton, B. (1990). The hidden face of shame: the shadow, shame and separation. *J Anal Psychol, 35*(3), 279-299. https://doi.org/10.1111/j.1465-5922.1990.00279.x

Whiteford, H. A., Ferrari, A. J., Degenhardt, L., Feigin, V., & Vos, T. (2015). The global burden of mental, neurological and substance use disorders: an analysis from the Global Burden of Disease Study 2010. *PLoS One, 10*(2), e0116820. https://doi.org/10.1371/journal.pone.0116820

Wicker, F. W., Payne, G. C., & Morgan, R. D. (1983). Participant descriptions of guilt and shame. *Motiv Emot, 7*, 25-39. https://doi.org/https://doi.org/10.1007/BF00992963

Wiechelt, S. A. (2007). The specter of shame in substance misuse. *Subst Use Misuse, 42*(2-3), 399-409. https://doi.org/10.1080/10826080601142196

Wilson, C. J., Deane, F. P., Ciarrochi, J. V., & Rickwood, D. (2005). Measuring help seeking intentions: Properties of the General Help Seeking Questionnaire. *Canadian Journal of Counselling, 39*, 8.

Winters, E., & Harris, N. (2020). The Impact of Indigenous Identity and Treatment Seeking Intention on the Stigmatization of Substance Use. *Int J Ment Health Addiction, 18*, 12. https://doi.org/https://doi.org/10.1007/s11469-019-00162-6

Wogen, J., & Restrepo, M. T. (2020). Human Rights, Stigma, and Substance Use. *Health Hum Rights, 22*(1), 51-60.

Wolf, S. T., Cohen, T. R., Panter, A. T., & Insko, C. A. (2010). Shame proneness and guilt proneness: Toward the further understanding of reactions to public and private transgressions. *Self and Identity, 9*, 25. https://doi.org/ https://doi.org/10.1080/15298860903106843

Yang, L., Wong, L., Grivel, M., & Hasin, D. (2017). Stigma and substance use disorders: an international phenomenon. *Current opinion in psychiatry, 30*, 378-388. https://doi.org/https://dx.doi.org/10.1097%2FYCO.0000000000000351

Yang, L. H., Kleinman, A., Link, B. G., Phelan, J. C., Lee, S., & Good, B. (2007). Culture and stigma: adding moral experience to stigma theory. *Soc Sci Med, 64*(7), 1524-1535. https://doi.org/10.1016/j.socscimed.2006.11.013

Yudko, E., & McNiece, S. I. (2014). Relationship between coffee use and depression and anxiety in a population of adult polysubstance abusers. *J Addict Med, 8*(6), 438-442. https://doi.org/10.1097/ADM.0000000000000077

Appendices

Appendix A: Timeline

	JAN					FEB				MARCH				APRIL				MAY				
Week Beginning→	3	10	17	24	31	7	14	21	28	7	14	21	28	4	11	18	25	2	9	16	23	30
Data Collection																						
Quant Data Analysis/meet w/ Lo																						
Write Manuscript 1 Results																						
Outline/Write Manuscript 1																						
Qual Data Analysis																						
Polish Ch. 1-3																						
Write Manuscript 2																						
Write Overall Discussion/Conclusion																						
Polish Document																						
Document to Bob																						
Work on Bob's edits																						
Submit Document to Committee																						
Dissertation Defense																						
Committee Edits																						
Compile & Format Final Draft																						
Submit to Grad School																						
Commencement (SAT 5/14)																						

Appendix B: Instruments

Guilt and Shame Proneness Scale (GASP)

Instructions: In this questionnaire you will read about situations that people are likely to encounter in day-to-day life, followed by common reactions to those situations. As you read each scenario, try to imagine yourself in that situation. Then indicate the likelihood that you would react in the way described.

1. 2. 3. 4. 5. 6. 7.
Very Unlikely Unlikely Slightly Unlikely About 50% Likely Slightly Likely Likely Very Likely

_____ 1. After realizing you have received too much change at a store, you decide to keep it because the salesclerk doesn't notice. What is the likelihood that you would feel uncomfortable about keeping the money?
_____ 2. You are privately informed that you are the only one in your group that did not make the honor society because you skipped too many days of school. What is the likelihood that this would lead you to become more responsible about attending school?
_____ 3. You rip an article out of a journal in the library and take it with you. Your teacher discovers what you did and tells the librarian and your entire class. What is the likelihood that this would make you would feel like a bad person?
_____ 4. After making a big mistake on an important project at work in which people were depending on you, your boss criticizes you in front of your coworkers. What is the likelihood that you would feign sickness and leave work?
_____ 5. You reveal a friend's secret, though your friend never finds out. What is the likelihood that your failure to keep the secret would lead you to exert extra effort to keep secrets in the future?
_____ 6. You give a bad presentation at work. Afterwards your boss tells your coworkers it was your fault that your company lost the contract. What is the likelihood that you would feel incompetent?
_____ 7. A friend tells you that you boast a great deal. What is the likelihood that you would stop spending time with that friend?
_____ 8. Your home is very messy and unexpected guests knock on your door and invite themselves in. What is the likelihood that you would avoid the guests until they leave?
_____ 9. You secretly commit a felony. What is the likelihood that you would feel remorse about breaking the law?
_____ 10. You successfully exaggerate your damages in a lawsuit. Months later, your lies are discovered and you are charged with perjury. What is the likelihood that you would think you are a despicable human being?
_____ 11. You strongly defend a point of view in a discussion, and though nobody was aware of it, you realize that you were wrong. What is the likelihood that this would make you think more carefully before you speak?
_____ 12. You take office supplies home for personal use and are caught by your boss. What is the likelihood that this would lead you to quit your job?
_____ 13. You make a mistake at work and find out a coworker is blamed for the error. Later, your coworker confronts you about your mistake. What is the likelihood that you would feel like a coward?

_____ 14. At a coworker's housewarming party, you spill red wine on their new cream-colored carpet. You cover the stain with a chair so that nobody notices your mess. What is the likelihood that you would feel that the way you acted was pathetic?
_____ 15. While discussing a heated subject with friends, you suddenly realize you are shouting though nobody seems to notice. What is the likelihood that you would try to act more considerately toward your friends?
_____ 16. You lie to people but they never find out about it. What is the likelihood that you would feel terrible about the lies you told?

GASP SCORING: The GASP is scored by averaging the four items in each subscale.
Guilt–Negative-Behavior-Evaluation (NBE): 1, 9, 14, 16
Guilt–Repair: 2, 5, 11, 15
Shame–Negative-Self-Evaluation (NSE): 3, 6, 10, 13
Shame–Withdraw: 4, 7, 8, 12

Cohen, T. R., Wolf, S. T., Panter, A. T., & Insko, C. A. (2011). Introducing the GASP scale: a new measure of guilt and shame proneness. *J Pers Soc Psychol*, *100*(5), 947-966.

Past Treatment/Help-Seeking

*Response options are 'yes' or 'no' and scored as '1' or '0'

1. Have you ever sought professional, or non-professional help for your substance use?

Current Treatment/Help-Seeking

*Response options are 'yes' or 'no' and scored as '1' or '0'

1. Are you currently seeking professional, or non-professional help for your substance use?

The Drug Abuse Screening Test (DAST-10)

*All items have the response option of 'yes' or 'no' and are scored as either '1', or '0'.

Directions: The following questions concern information about your involvement with drugs (**NOT** alcohol or tobacco) in the past 12 months. Drug abuse refers to (1) the use of prescribed or "over-the-counter" drugs in excess of the directions, and (2) any non-medical use of drugs. The various classes of drugs may include cannabis (e.g., marijuana, hash), solvents, tranquilizers (e.g., Valium), barbiturates, cocaine, stimulants (e.g., speed), hallucinogens (e.g., LSD) or narcotics (e.g., heroin). Please carefully read each statement then decide whether your answer is YES or NO. If you have difficulty with a statement, please choose the response that is mostly right.

		YES	**NO**
1.	Have you used drugs other than those required for medical reasons?	____	____
2.	Do you abuse more than one drug at a time?		
3.	Are you always able to stop using drugs when you want to? (If never use drugs, answer 'yes').		
4.	Have you had "blackouts" or "flashbacks" as a result of drug use?		
5.	Do you ever feel bad or guilty about your drug use? If never use drugs, choose 'no.'	____	____
6.	Does your spouse (or parents) ever complain about your involvement with drugs?	____	____

7. Have you neglected your family because of your use of drugs? ____ ____
8. Have you engaged in illegal activities in order to obtain drugs? ____ ____
9. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs? ____ ____
10. Have you had medical problems as a result of your drug use (e.g., memory loss, hepatitis, convulsions, bleeding, etc.)? ____ ____

Scoring and interpretation: A score of "1" is given for each YES response, except for item #3, for which a NO response is given a score of "1."

DAST-10 Score	Degree of Problems Related to Drug Abuse	Suggested Action
0	No problems reported	None at this time
1-2	Low level	Monitor, re-asses at a later date
3-5	Moderate level	Further investigation
6-8	Substantial level	Intensive assessment
9-10	Severe level	Intensive assessment

Skinner, H. A. (1982). The Drug Abuse Screening Test. Addictive Behavior, 7(4), 363–371.

The Alcohol Use Disorders Identification Test-Concise (AUDIT-C)

*AUDIT-C is scored on a scale of 0-12. Each question has 5 answer choices valued from 0 to 4 points. In men, a score of 4 or more is considered positive (optimal for identifying hazardous drinking or active alcohol use disorders). In women, a score of 3 or more is considered positive. Generally, the higher the score, the more likely it is that a person's drinking is affecting his or her safety.

1. How often did you have a drink containing alcohol in the past year?
   'never', 'monthly or less', '2-4 times a month', '2-3 times a week', '4 or more times a week'

2. How many drinks containing alcohol did you have on a typical day when you were drinking in the past year? '1 or 2', '3 or 4', '5 or 6', '7 to 9', '10 or more'

3. How often do you have six or more drinks on one occasion in the past year?
   'never', 'less than monthly', 'monthly', 'weekly', 'daily or almost daily'

Bush K, Kivlahan DR, McDonell MB, et al (1998). The AUDIT alcohol consumption questions (AUDIT-C): an effective brief screening test for problem drinking. Ambulatory Care Quality Improvement Project (ACQUIP). Arch Intern Med. 158:1789-95.

General Help Seeking Questionnaire (GHSQ)

*Response options are listed on a 7-point Likert-type scale with the odd values listed as having a corresponding meaning '1' 'Extremely Unlikely', '3' 'Unlikely', '5' 'Likely', and '7', 'Extremely Likely'.

*Scoring of the GHSQ sums the help-source a – j items with higher sum scores indicating greater help-seeking intention.

If you were having problems related to your substance use, how likely is it that you would seek help from the following people? Please indicate your response by selecting the number that best describes your intention to seek help from each help source that is listed.

a. Intimate partner (e.g., girlfriend, boyfriend, husband, wife, de' facto)
b. Friend (not related to you)
c. Parent
d. Other relative/family member
e. Mental health professional (e.g., psychologist, social worker, counsellor)
f. Phone helpline (e.g., Lifeline)
g. Doctor/GP
h. Minister or religious leader (e.g. Priest, Rabbi, Chaplain)
i. I would not seek help from anyone
j. I would seek help from another not listed above

Wilson, C. J., Deane, F. P., Ciarrochi, J. V., & Rickwood, D. (2005). Measuring help seeking intentions: properties of the general help seeking questionnaire.

Substance Use Stigma Mechanism Scale (SU-SMS)

*All responses are given on a 5-point Likert-type scale, with higher scores indicating greater endorsement of substance use stigma. Enacted (6 items), Anticipated (6 items), Internalized (6 items) scales can be created by taking the average of the item responses given for each stigma mechanism respectively. Stigma source sub-scales can be created for Enacted and Anticipated stigma by taking the average responses given for the healthcare worker (3 items) and family members (3 items) item responses respectively.

Instructions: The following questions ask about your alcohol and/or drug use history, this includes any past or current experiences using alcohol and/or drugs. Please think about each question and circle your answer. The first group of questions asks about how people have treated you in the past because of alcohol and/or drug use history. The second group of questions asks about how people will treat you in the future because of your alcohol and/or drug use history.

ENACTED STIGMA (header can be omitted in survey)
How often have people treated you this way in the past because of your alcohol and/or drug use history? Response options: "never", "not often", "somewhat often", "often", and "very often".

1). Family members have thought that I cannot be trusted.
2). Family members have looked down on me.
3). Family members have treated me differently.
4). Healthcare workers have not listened to my concerns.
5). Healthcare workers have thought that I'm pill shopping or trying to con them into giving me prescription medications to get high or sell.
6). Healthcare workers have given me poor care.

ANTICIPATED STIGMA (header can be omitted in survey)
How likely is it that people will treat you in the following ways **in the future** because of your alcohol and/or drug use history? Response options: "very unlikely", "unlikely", "neither unlikely nor likely", "likely", and "very likely".

1). Family members will think that I cannot be trusted.
2). Family members will look down on me.
3). Family members will treat me differently.
4). Healthcare workers will not listen to my concerns.
5). Healthcare workers will think that I'm pill shopping, or trying to con them into giving me prescription medications to get high or sell.
6). Healthcare workers will give me poor care.

INTERNALIZED STIGMA (header can be omitted in survey)
How do you **feel** about your alcohol and/or drug use history? Response options: "strongly disagree", "disagree", "neither disagree nor agree", "agree", and "strongly agree".

1). Having used alcohol and/or drugs makes me feel like I'm a bad person.
2). I feel I'm not as good as others because I used alcohol and/or drugs.
3). I feel ashamed of having used alcohol and/or drugs.
4). I think less of myself because I used alcohol and/or drugs.
5). Having used alcohol and/or drugs makes me feel unclean.
6). Having used alcohol and/or drugs is disgusting to me.

Smith, L. R., Earnshaw, V. A., Copenhaver, M. M., & Cunningham, C. O. (2016). Substance use stigma: Reliability and validity of a theory-based scale for substance-using populations. *Drug and alcohol dependence*, *162*, 34-43.

Substance Use Questionnaire
*Participants will read the following clarification, "Prescription drug misuse refers to use of prescription medication in a way not specifically directed by a doctor. To clarify: any use without your own prescription, for recreational purposes, taking a higher dose than prescribed, using more frequently than directed or continued use despite no longer experiencing the problem for which it was prescribed." Additionally, "Over-the-counter drug misuse is any drug you can buy without a prescription (i.e., Robitussin) taken in any way other than as directed on the label."

*Response options on a 7-point Likert-type scale from 1 to 7, 1 "never", 2 "1-2 occasions", 3 "3-5 occasions", 4 "6-9 occasions", 5 "10-19 occasions", 6 "20-39 occasions", and 7 "40 or more occasions".

1.) On how many occasions in the past 12-months have you used any of the following:

	1	2	3	4	5	6	7
Cocaine							
Crack							
LSD/Acid							
Ketamine							
Cannabis/Marijuana							
MDMA/Ecstasy							
Methamphetamines							
Heroin							
Psilocybin/Mushrooms_____ Other:_____							

2.) On how many occasions in the past 12-months have you misused over-the-counter drugs (i.e., Tylenol, Robitussin, Motrin, Claritin, etc.)?

3.) On how many occasions in the past 12-months have you misused prescription opioid pain-relieving medications (i.e., opioids like Vicodin, OxyContin, Percocet, Darvocet, buprenorphine, morphine, hydrocodone, oxycodone, methadone, fentanyl, or other such opioids)?

4.) On how many occasions in the past 12 months have you misused prescription Stimulant medications (i.e., Adderall, Ritalin, Concerta, Dexedrine, or other such stimulants)?

5.) On how many occasions in the past 12 months have you misused prescription Sedative medications (i.e., Ambien, Lunesta, Sonata, Zaleplon, Zolpidem, or other such sedatives)?

6.) On how many occasions in the past 12 months have you misused prescription Tranquilizing medications (i.e., Xanax, Klonopin, Soma, Valium, Clonazepam, Flexeril or other such sedatives)?

7.) On how many occasions in the past 12 months have you misused any other prescription medications? _____

Semi-Structured Interview Guide – Script

Introduction:

Hello, my name is Nicole and I work with the University of Arkansas. Thank you for agreeing to take part in this discussion today about your personal substance use. I am interested in learning more about why individuals use substances, and how stigma, shame, guilt, and other aspects may impact substance use and other factors. I'm here today to learn from you. There aren't any right or wrong answers. I want to hear your point of view. I am here today to ask questions and to listen to you.

I am recording this discussion today because it is impossible for me to listen to you and take notes, and I want to make sure I don't miss anything that you say. The video recording will be destroyed, and only an audio recording will be kept. The audio recording will be used to develop a transcript of our conversation, then will be destroyed.

The developed transcript will be de-identified; this means that your name, location, and any other identifiable information about you will not be used in my report. Also, you may turn your camera off if you prefer. Is it alright if I record this interview?

Before we begin, will you please read over the consent form and type your Prolific ID in the chat box so I may verify I have the right interviewee?

VERIFY ID IN CHAT BOX

ONCE CONSENT IS READ & ID IS VERIFIED

Do you have any questions before we get started?
Are you ready to begin?

At this time, I'd like to ask that you turn your cell phone off and close your email and messaging on your computer. -I just did that on my computer to make sure I do not have any distractions pop up during our discussion.
Alright, let's begin the interview now [double check I am recording]:

Ease in questions

Can you tell me about your first experience with (insert substance here)?

Probes: What was memorable about that experience?
What did you like/not like about that first time?
What was going on in your life when you started using/drinking?
Can you tell me about your setting during this time? (i.e., alone, with friends, etc.)

Can you tell me about your current substance use?

Probes: What is it about… that you like today?
Is there anything that impacts your substance use? (i.e., life, stress, etc.)
Do you like to use substances more when you are alone, or with others, or a mix?
Can you tell me more about that?
What do you not like about drinking or using?
Along those same lines, is there anything that worries or concerns you about your substance use?

Can you tell me about how your substance use has changed since your first time that you tried it or experimented with it?

Have you ever stopped or tried to limit your use?

Probes: If yes, can you tell me more about that?
If no, do you know of anyone else who has? What happened?

How would you describe yourself to someone who didn't know you and couldn't see you?

Probes: How would you rate your physical health on a scale of 1-10?
How would you rate your mental health on a scale of 1-10?

How would your friends describe you?

How would your family describe you?

How would a doctor or other healthcare provider describe you? (Or what might they think about you?)

Has anyone ever complained about your substance use? (partner, friend, etc.)

Probes: If yes, can you tell me about this?
If no, do you know anyone that has complained about someone's substance use?
Such as a friend's partner, or a relative?

Have you ever had a problem with someone else's substance use?

Probes: If yes, can you tell me about this?
If no, why do you think some people might have a problem with another's substance use?

Shame and Guilt:

Do you think about yourself as a person who uses substances?

Probes: If yes, can you tell me about this?
If no, why do you think some people do and some don't?

Do you feel like your substance use is part of who you are?

Probes: If yes, can you tell me about this?
If no, can you tell me why you think it isn't?

What emotions do you feel when you think of or talk about your substance use?

Why do you think these emotions come up? [if none, skip]

Do you feel like you can talk about substance use with anyone important to you?
Probes: If yes, can you tell me more about this?
If no, why do you not talk about it with anyone?

Does anyone you know talk about their substance use with you?
Probes: If yes, can you tell me more about this?
If no, why do you think no one talks to you about this?

When you hear the word 'shame', what does it mean to you?

Probes: Can you describe this emotion to me?

Do you ever feel shame about your use of drugs and/or alcohol?

Probes: If yes, can you tell me more about a time that you felt shame while using or after using?
If no, do you know anyone that might feel shame about using drugs or alcohol?
If yes, can you tell me more about this.
If no, why do you think some people feel shame about using drugs or alcohol and others do not?

When you hear the word 'guilt', what does it mean to you?

Probes: Can you describe this emotion to me?

Do you ever feel guilty about using drugs and/or alcohol?

Probes: If yes, can you tell me more about a time that you felt guilty while using or after using?
Do you think guilt impacts your substance use?
What else do you think your feelings of guilt impact?

If no, do you know anyone that might feel guilty about using drugs or alcohol?
If yes, can you tell me more about this.
If no, why do you think some people feel guilty about using drugs or alcohol and others do not?

Internalized Stigma:

Does the way you think about yourself impact your behavior(s)?

Probes: For example, if you think about yourself in certain ways, this can often affect our actions.

Do you think telling someone about your substance use would affect how they treated you? In what ways?

How have your relationships with others affected how comfortable you are telling others that you use substances?

How do you view addiction and people with substance use disorders?

What do you think about the word 'addict'?

Have you ever felt like an 'addict' or an individual with a substance use disorder?

Probes: If yes, can you tell me more about this?
If no, have you ever known anyone that may have felt that way or spoke to you about their substance use that way?

What do you think of when you hear the word 'stigma'? Can you describe stigma to me?

Enacted Stigma:

Do you tell people about your substance use?

How do the people you tell react?

What types of things do you do to deal with their reactions (if they are negative)?

Have you ever felt like a stereotype?

Probes: If yes, can you tell me about this?
If no, do you know anyone that might have felt or feel this way?

Have you ever been discriminated against?

Probes: If yes, can you tell me about this?
If no, do you know anyone that has been discriminated against? Can you tell me about their experience?

Do you think that there are any stereotypes about people who use substances?

Probes: Can you tell me in detail what these stereotypes are?

Do you feel these are true? Can you tell me more about this?

What has your experience with healthcare workers been like in the past?

Do you feel as if you can generally trust healthcare providers?

Probes: If yes, can you tell me about this?
If no, can you tell me about this?

How do you think healthcare providers think of you or what might their perceptions of you be?

Probes: Do you think this affects you either in a positive way or a negative way?

Have your family/friends treated you differently because of your substance use?

Probes: If yes, can you tell me about this?
If no, can you tell me about anyone else that might have had their family treat them differently because of their substance use or related problems?

Have you ever hidden parts of your substance use because you were treated differently by others in the past and you wanted to avoid this?

Probes: If yes, can you tell me about a specific time?
If no, can you tell me about anyone else that may have done this?

Anticipated Stigma:

Do you get anxious or worry before you go to the doctor or other healthcare provider?

Probes: If yes, can you tell me about this or a time this happened?
If no, do you know of anyone who may get nervous or anxious before going to the doctor or other healthcare provider?

Have you ever delayed going to see a healthcare provider because of your substance use?

Probes: If yes, can you tell me more about this?
If no, do you know of anyone who may have done this?

Do you ever think about people you meet in the future and how they will perceive you?

Probes: If yes, can you tell me more about this?
If no, do you know of anyone who may have done this?

Has there ever been a time that you hesitated to tell someone about your substance use?

Probes: If yes, can you tell me about this?
If no, do you know anyone who may have done this?

What do you think others' attitudes are (or would be) toward you if they knew about your substance use?

Help-seeking/treatment seeking behavior:

Do you think you have ever needed help regarding your substance use?

Probes: If yes, can you tell me more about this time?
If no, do you know anyone who has ever needed help regarding their substance use?

Would you seek help if you thought you needed help?

Probes: If yes, can you tell me why?
If no, can you tell me more about why you wouldn't seek help?

What do you think about finding help or resources for substance abuse or related problems?

Probes: Do you think this is an easy process?
Do you think there are enough ways that someone could get help if they needed it?

What might help you reach out/seek help/treatment if you felt your substance use was getting in the way of your life?

What about seeking help for psychological issues such as depression and anxiety, would you seek help if you thought you needed help for this?

WRAP-UP:

I'm grateful that you took time out of your day to meet with me. You are helping me with my research, and I am so thankful! As a reminder, none of your identifying information will be used in the research report.

Is there anything else you would like to tell me today, either about anything we have discussed or something else?

Is there anything that you think I should be asking other individuals, either relating to these questions or something else?

Appendix C: Institutional Review Board Approval

To: Robert E Davis

From: Justin R Chimka, Chair IRB Expedited Review

Date: 12/08/2021

Action: Exemption Granted

Action Date: 12/08/2021

Protocol #: 2110366842

Study Title: The Complexities of Guilt, Shame, Stigma, and Substance Use Severity Among a Community Sample of Substance Using Adults

The above-referenced protocol has been determined to be exempt.

If you wish to make any modifications in the approved protocol that may affect the level of risk to your participants, you must seek approval prior to implementing those changes. All modifications must provide sufficient detail to assess the impact of the change.

If you have any questions or need any assistance from the IRB, please contact the IRB Coordinator at 109 MLKG Building, 5-2208, or irb@uark.edu.

cc: Nicole A Doyle, Investigator

Appendix D: CV

Nicole A. Doyle, MS
Doctoral Candidate
Graduate Research & Teaching Assistant
College of Education and Health Professions
Department of Health, Human Performance, and Recreation
University of Arkansas

EDUCATION

Ph.D., Health Behavior and Health Promotion May 2022
University of Arkansas, Fayetteville, Arkansas

Graduate Certificate, Educational Statistics and Research Methods May 2022
University of Arkansas, Fayetteville, Arkansas

M.S., Wellness Management: Exercise Science May 2014
University of Central Oklahoma, Edmond, Oklahoma

B.S., Kinesiology: Exercise/Fitness Management July 2009
University of Central Oklahoma, Edmond, Oklahoma

ACADEMIC APPOINTMENTS

University of Arkansas, Fayetteville, AR July 2018 – present
Health, Human Performance, and Recreation Department
Senior Graduate Assistant – Advisor: Dr. Robert Davis
Student Director, Substance Use and Mental Health Lab (SUMH)

University of Arkansas for Medical Sciences, Fayetteville, AR Spring 2020, 2021, 2022
Physical Therapy Department – Instructor

University of Central Oklahoma, Edmond, OK June 2013 – May 2014
Kinesiology & Health Studies Department – Teaching Assistant

REFEREED PUBLICATIONS

1. **Doyle, N. A**., Davis, R. E., Quadri, S. S. A., Mann, J. R., Sharma, M., Wardrop, R. M., & Nahar, V. K. (2021). Associations between Stress, Anxiety, Depression, and Emotional Intelligence among Osteopathic Medical Students. *The Journal of the American Osteopathic Association, 121*(2), 125-133.

2. Davis, R. E., **Doyle, N. A**., & Nahar, V. K. (2020). An Investigation of the Associations between Drug-Related Self-Stigmatizing Beliefs, Depression, and Suicidal Ideation among Collegiate Drug Users. *Journal of Alcohol and Drug Education, 64*(1), 52-80.

3. Davis, R. E., **Doyle, N. A.**, & Nahar, V. K. (2020). Association between prescription opioid misuse and dimensions of suicidality among college students. *Psychiatry research*, *287*, 112469. https://doi.org/10.1016/j.psychres.2019.07.002

4. Davis, R.E., Bass, M.A., Ford, A., Bentley, J.P., Lee, K., **Doyle, N.A.** (2019). Recreational prescription opioid misuse among college students in the USA: An application of the theory of planned behavior. *Journal of Health and Social Sciences.*

PUBLICATIONS IN PRESS

1. Davis, R.E., **Doyle, N.A**., Samuel, K.D., Wilkerson, A.H., & Nahar, V.K. (*In Press 2022*) The Relationship between Trait Emotional Intelligence and Harmful Alcohol Use among College Students. **In press for:** *Health Perspectives and Promotion*

PUBLICATIONS UNDER REVIEW

1. **Doyle, N.A**., Samuel, K.D., Cohen-Winans, S., Ford, M.A., Nahar, V.K., Olatunde, O. & Davis, R.E. (under review). Psycho-sociodemographic and Substance Related Correlates of Non-Suicidal Self-Injurious Behavior. Under review with *Journal of Psychopathology and Behavioral Assessment*

2. Samuel, K.D., **Doyle, N.A.,** & Davis, R.E. (under review). COVID-19 Infectiousness, Stigma and Othering: A Qualitative Exploration of College Students' Illness Experiences. Under review with *International Journal of Qualitative Studies on Health and Well-being*

PUBLICATIONS IN PREPARATION

1. Simon, K., Davis, R.E., & **Doyle, N.A.** (In prep). Assessing the Relationship between Stigma and Prescription Stimulant Misuse and Diversion Behaviors among College Students. In prep for *Journal of Alcohol and Drug Education*

2. **Doyle, N.A.**, Davis, R.E., Dobbs, P.D, Luo, W.J., & Hammig, B. The Complexities of Guilt, Shame, and Stigma among a Random Sample of United States Substance Using Adults. (In prep). In prep for *Journal of Studies on Alcohol and Drugs*

3. **Doyle, N.A.** Davis, R.E., Dobbs, P.D, Luo, W.J., & Hammig, B. Does Guilt Moderate the Pathway between Enacted Stigma and Help-Seeking Intention? An Explanatory Mixed Methods Analysis of Guilt, Shame and Stigma among a Sample of United States Substance Using Adults. (In prep). In prep for *Journal of Mixed Methods Research*

REFEREED PRESENTATIONS

APHA 2020 Annual Meeting and Expo – Virtual Conference 10/24/2020
Oral Presentation
Exploring Associations between Self-Stigma, Depression, and Suicidal Thoughts Among Drug Using College Students

GPSC Research Colloquium – Oral Presentation 4/17/2019
The Association between Prescription Opioid Misuse and Suicidality among College Students

ACSM Central States Conference Warrensburg, MO – Poster Session — October 2013
Physical Activity and Weight Status of College Students
University of Central Oklahoma, Edmond, Oklahoma

University of Central Oklahoma, Kinesiology & Health Studies Symposium — Spring 2013
Poster Presentation; Physical Activity and Weight Status of College Students
University of Central Oklahoma, Edmond, Oklahoma

INVITED ORAL PRESENTATIONS

University of Arkansas RedTalks – University of Arkansas, Fayetteville, AR — Spring 2022
Let's Talk About Addiction – speech written and prepared for the 2022
Envision Justice Conference

HHPR Student Seminar – University of Arkansas, Fayetteville, AR — Spring 2021
Exploring college students' experiences after a COVID-19 diagnosis

HHPR Student Seminar – University of Arkansas, Fayetteville, AR — Spring 2020
Emotional Intelligence Associated with Hazardous Drinking Behavior among
College Students

HHPR Student Seminar – University of Arkansas, Fayetteville, AR — Fall 2019
An Investigation of the Associations between Self-Stigmatizing Beliefs,
Depression, and Suicidal Ideation among Collegiate Drug Users

HHPR Student Seminar – University of Arkansas, Fayetteville, AR — Spring 2019
The Association between Prescription Opioid Misuse and Suicidality among
College Students

GRANT FUNDING

HHPR Departmental Faculty Grant award $6000 **(Funded)** — Fall 2021
PI: Dr. Robert Davis, Co-I: Nicole Doyle additional funding for Dissertation
'The Complexities of Shame, Guilt, Stigma, and Substance Use Severity Among a
Community Sample of Substance Using Adults'

HHPR Departmental Student Grant award $1000 **(Funded)** — Fall 2021
Funded Dissertation, 'The Complexities of Shame, Guilt, Stigma, and Substance Use
Severity Among a Community Sample of Substance Using Adults'

HHPR Departmental Student Grant award $1113 (**Funded**) — Fall 2019
PI: Dr. Robert Davis, Co-I: Nicole Doyle 'The Association of Non-Suicidal
Self-Injury and Opioid Misuse among College Students.'

HHPR Departmental Student Grant award $1000 (**Funded**) — Fall 2018
PI: Dr. Robert Davis, Co-I: Nicole Doyle 'The Association of Prescription Opioid
Misuse and Suicidality among College Students.'

P.E.O. Scholar Awards – $20,000 (**Finalist; Not Funded)** — Spring 2021

TEACHING APPOINTMENTS

University of Arkansas –

Prevention of Drug Abuse (3) credit hours – face to face	Fall 2018
Personal Health & Safety (3) credit hours – face to face	Fall 2018
Prevention of Drug Abuse (3) credit hours – online (self-directed)	Spring 2019
Prevention of Drug Abuse (3) credit hours – face to face	Fall 2019
Personal Health & Safety (3) credit hours – face to face	Fall 2019
Prevention of Drug Abuse (3) credit hours– shifted to synchronous virtual	Spring 2020
Prevention of Drug Abuse (3) credit hours– synchronous virtual	Fall 2020
Intro to Public Health (3) credit hours – synchronous virtual	Fall 2020
Prevention of Drug Abuse (3) credit hours– synchronous virtual	Spring 2021
Prevention of Drug Abuse (3) credit hours – asynchronous and face-to-face	Fall 2021
Prevention of Drug Abuse (3) credit hours – face to face	Spring 2022

University of Arkansas for Medical Sciences – Spring 2020, 2021, 2022
Health Promotion & Wellness (3 credit hours) – face to face, asynchronous, self-directed

University of Central Oklahoma – Fall 2013
Healthy Life Skills (2 credit hours) – face to face

CONFERENCES/MEETINGS ATTENDED

Online SPSS Workshop — Fall 2021
Educational Statistics and Research Methods, University of Arkansas

Online SAS Workshop — Fall 2021
Educational Statistics and Research Methods, University of Arkansas

GoToWebinar – Get Good at Statistics Without Becoming a Statistician - — Fall 2021
Karen Grace-Martin w/ The Analysis Factor

International Overdose Awareness Day 2021: Discussion with Dr. Jerome Adams, — Fall 2021
20th U.S. Surgeon General – virtual meeting

Stigma of Addiction Summit — June 2021
Presented by the National Academy of Medicine – virtual meeting

International Perspectives on Policing and Race: — Spring 2021
the US, the UK, and South Africa – virtual meeting

Research Reproducibility and Replicability, feat. Dr. Kevin Sexton – virtual meeting — Fall 2020

Pieter Kohnstam 'A Chance to Live: A Family's Journey to Freedom' — Fall 2020
Holocaust Survivor – virtual meeting

APHA 2020 Virtual Annual Conference and Expo October 24-28 — Fall 2020

CLASS- Aging and Chronic Conditions — Fall 2020
Dr. Michelle Gray of the University of Arkansas – virtual meeting

Understanding the Connection between Suicide, Opioid Misuse, and Opioid Overdose ISC Opioid Workgroup – virtual meeting	Fall 2020
2nd Annual Conference of The Science of Diet and Exercise – Fayetteville, AR	Spring 2019
National Association of Graduate and Professional Students Legislative Action Days Leadership Summit – 3-day conference in Washington, D.C.	Fall 2019
ACSM Central States Conference Warrensburg, MO	Fall 2013
American Association for Health, Physical Education, Recreation and Dance (AAHPERD) national convention	2008 & 2009

PROFESSIONAL MEMBERSHIPS

American Public Health Association (APHA)	2019 – present

AWARDS/RECOGNITIONS

Graduate Student Mentor of the Year Award– awarded by *Graduate Professional Student Congress,* University of Arkansas 2021-2022	May 2022
Journal of Osteopathic Medicine Social Determinants of Health Research Award for the article, "Associations Between Stress, Anxiety, Depression, and Emotional Intelligence Among Osteopathic Medical Students"	Fall 2021
Invitee to Kappa Kappa Gamma 4.0 Scholarship Dinner (Instructor/Professor appreciation) Guest of Peyton Jobe and Brittany Matthews -	Fall 2021
Outstanding Ph.D. Student in HHPR: Health Behavior & Health Promotion	2020-2021
College of Education & Professional Studies, Dean Brian Primack's Spotlight feature for University of Arkansas News	Fall 2020
President's Leadership Council Scholarship Award: value ~$25,000 University of Central Oklahoma, Edmond, OK	Received: 2005

CERTIFICATIONS

SafeZone Allies Training and Certificate University of Arkansas Diversity, Equity, and Inclusion	Spring 2022
Diversity, Equity, and Inclusion Program on Privilege University of Arkansas – School of Social Work	Spring 2022
Suicide safeTALK training – American Foundation for Suicide Prevention	June 2019
Educational Statistics & Research Methods Post-Graduate Certificate	December 2020

SERVICE

Manuscript reviewer for *Social Science and Medicine–Population Health* 2022
ID# SSMPH-D-22-00022

Manuscript reviewer for *Journal of American College Health* ID# JACH-2021-0700570 2022

Manuscript reviewer for *Substance Use and Misuse*, ID# LSUM-2021-0289.R1 2021

Manuscript reviewer for *Social Science and Medicine–Population Health* 2021
ID# SSMPH-D-21-00482

Manuscript reviewer for *Substance Use and Misuse*, ID# LSUM-2021-0289 2021

Abstract reviewer for the APHA 2021 Annual Meeting & Expo Spring 2021
Alcohol, Tobacco, and Other Drugs

Ph.D. Graduate Student Panel, Panelist for Graduate School Orientation Fall 2020

Member of PhD Progress Development Committee- Dr. RJ Elbin Spring 2019

Assisted Dr. Paul Calleja with development of GA onboarding materials Spring 2019
Collaboration with Global Campus re: Graduate Student podcast
'Lightning between the Bookends' on Spotify and iTunes

Vice President of Graduate-Professional Student Congress (GPSC) 2019 – 2020

Doctoral Student Ambassador for HHPR Department 2019 – 2020

United Way Campaign Ambassador - Integris PACER Fitness Center, OKC, OK 2011

Endeavor Games – Paralympic Adaptive Games – volunteer 2009, 2013
University of Central Oklahoma

Special Olympics of Oklahoma Volunteer 2006 – 2009

GRADUATE STUDENT MENTORING

Krishen Samuel (2020 – present) PhD student in Health Behavior and Health Promotion
Assisted with course planning, lab techniques, acclimation to University of Arkansas, research, and related processes.

Kayla Simon (2021 – present) Master of Public Health student
Assisted with research development, basic statistics, manuscript development, preparation for teaching PBHL 1103, lab development, writing techniques, and networking/collaborating.

Juanybeth Morales Ortega (2021) M.S. Community Health Promotion December 2021
Mentor throughout the entire master's thesis process; presentation and document development.

Oluwatoyin Olatunde (2021 – present) Doctoral student in Health Behavior & Health Promotion
Mentor with course planning, lab techniques, research methods, data analysis and much more.

Sahar Sayedy (2021) M.S. Community Health Promotion May 2021
Assisted with development of her master's thesis, presentation, and oral defense.

Andy Fields (2020) – Doctoral Student in Recreation, Education, and Sport Management
Assisted with development of Personal Health & Safety PBHL 1103 course.

Hannah Dial (2019), M.S. Community Health Promotion
Assisted with Personal Health & Safety PBHL 1103 class preparation, classroom management, departmental communication, and networking.

UNDERGRADUATE STUDENT MENTORING

Jillian Axsom (2021 – present)
Assisted with career development, goal-setting, and graduate school planning.

Eva Allen (2020 – present)
Mentored Eva through the Honors' Thesis process, specifically her literature review and development of a research question and proposal.

Haley Gaskill (2021 – present)
Dissertation research assistant. Assisted with learning the research process, goal setting, and career planning. Worked to learn the qualitative research process inclusive of transcript validation, thematic analysis and crafted profiles, manuscript preparation, mixed methods, and final synthesis and integration of methods.

Kyle Nichols (2020)
Assisted with career development, goal-setting, and graduate school planning.

Maha Amer (2020)
Assisted with developing research skills including study design, review of literature, recruitment of participants, and data collection.

Caroline Crawford (2018)
Assisted with developing research skills including subject recruitment and data collection.

MEDIA APPEARANCES

Television Interview with 4029 News 11/30/2020
Discussing SUMH Lab & timely study "COVID-19 Infectiousness, Stigma and Othering: A Qualitative Exploration of College Students' Illness Experiences"

RELEVANT WORK EXPERIENCE

Behavioral Health Coach 2015 – 2018

TrestleTree – Fayetteville, AR https://trestletree.com/

Utilized motivational interviewing and the Transtheoretical Model in assessment of and targeting client's readiness to change. Developed exercise programs, conducted medication reconciliations, consulted with pharmacist on staff, nutritionist on staff, and nurses on staff. Developed targeted strategies to aid clients in reaching their behavioral health goals from diabetes management, weight loss, to incorporating mindfulness, tobacco cessation, and much more.

Graduate Assistant Strength & Conditioning Coach 2012 – 2013
University of Central Oklahoma, Edmond, OK
Head Strength & Conditioning Coach: Jacob Black
Assisted athletes in their workouts, designed sport-specific exercise protocols inclusive of injury prevention, skill development, strength, and mindfulness. Specialized with tennis, softball, women's basketball, soccer, & rowing.

Collegiate Internship – 350 hours 2009 – 2009
Scott Sabolich Prosthetics & Research, OKC, OK
Assisted prosthetic technicians and practitioners in the entire prosthetics process, working in the lab and patient exam rooms. Completed assigned tasks independently, helping in the prosthesis construction process and patient fittings.

Undergraduate Student Assistant 2006 – 2007
University of Central Oklahoma, Edmond, OK
Kinesiology and Health Studies Department