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I, Tiffany Maegley, hereby submit this original work as part of the requirements for the degree of Doctor of Philosophy in Health Education.

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Risk and Protective Factors for Addiction among Individuals in Substance Abuse Treatment

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Risk and protective factors for addiction among individuals in substance abuse treatment

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Abstract

AN ABSTRACT OF THE DISSERTATION FOR THE DOCTOR OF PHILOSOPHY DEGREE IN HEALTH PROMOTION AND EDUCATION, PRESENTED ON FEBRUARY 24, 2022 AT THE UNIVERSITY OF CINCINNATI, CINCINNATI, OH

This dissertation consists of two studies. Study one examined school, family, and individual factors in individuals that have used heroin. Study two examined perceived barriers to employment among individuals in treatment for a substance abuse disorder.

Study One Abstract

Many risk factors exist for individuals with a substance use disorder. The current study investigated for potential risk factors among heroin users focusing on family, school, and individual factors. The following research questions were addressed: 1) Do family factors influence substance use disorder? 2) Do school factors influence substance use disorder? 3) What is the extent of age of first drug use on addiction? 4) Do risk factors differ based on background characteristics? Surveys were distributed in treatment facilities in the Greater Cincinnati area. The study had 102 participants ages 18-62, mostly white (76.5%), with 50 males, 51 females, and 1 unknown gender. The study looked into multiple risk factors and found one statistically significant point of data; age of first drug use. The study found that individuals who began using drugs between the ages of 9-13 were 2.5 times more likely to use heroin than those who began drug use between 14-41. This finding shows how important early intervention is for individuals that are considering trying drugs. Researchers should look into developing programs focusing ages before the age of 13 to try to deter from drug use.

Study Two Abstract

Individuals in recovery for a substance use disorder (SUD) often find themselves with barriers to employment. Many factors can create barriers to employment such as lack of transportation, criminal records, and lack of education and training. The current study looked at barriers to employment among individuals currently in treatment for a SUD. The following research questions were addressed: 1) How many individuals were employed before entering in substance abuse treatment? 2) What is the extent of felony convictions among individuals in treatment? 3) What are the barriers to employment? 4) Do barriers differ based on background and demographic characteristics? The researchers distributed surveys to individuals in substance use treatment centers in the Greater Cincinnati Area. There were 102 participants ages 18-62, primarily white (76.5%) and almost evenly split for gender (50 males, 51 females, and 1 unknown). Before entering treatment, 39 participants had a job. The study found that individuals with a felony conviction were 10 times more likely to perceive barriers to employment. Of the barriers studied, a felony charge was the only statistically significant perceived barrier to employment. The study found no difference in gender, however, individuals who have been to treatment for a SUD prior to current treatment are 2.5 times more likely to perceive barriers to employment. Felony charges are an apparent issue in receiving employment; more research should be conducted to create better reentry programs, help employers with bias to these populations, and more diverse job availability.

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Table of Contents

Abstract.....	ii
Abstract Study One.....	ii
Abstract Study Two.....	iii
Acknowledgements.....	iv
List of Tables.....	vi
Study One: School, Family, and Individual Factors among Individuals Seeking Treatment for a Substance Use Disorder	1
Introduction.....	2
Study Purpose.....	5
Methods.....	5
Participants.....	5
Instrument.....	6
Procedures.....	6
Data Analysis.....	7
Results.....	7
Discussion.....	11
Limitations.....	12
Conclusions.....	13
References.....	14
Tables.....	19
Study Two: Perceived Barriers to Employment Among Individuals Seeking Treatment for a Substance Use Disorder	24
Introduction	25
Study Purpose	28
Methods	28
Participants	28
Instrument	28
Procedures	29
Data Analysis	30
Results.....	30
Discussion.....	32
Limitations.....	36
Conclusions	36
References	38
Tables	44

List of Tables

Study One List of Tables: School, Family, and Individual Factors among Individuals Seeking Treatment for a Substance Use Disorder

Table 1. Parent and Family Factors-Frequencies.....	19
Table 2. Ever Used Heroin Based on Family Factors.....	20
Table 3. Ever Used Heroin Based on Family and Friend Connectedness.....	21
Table 4. School Factor-Frequencies.....	22
Table 5. Ever Used Heroin Based on School Factors.....	23

Study Two List of Tables: Perceived Barriers to Employment Among Individuals Seeking Treatment for a Substance Use Disorder

Table 1. Participant Demographics.....	44
Table 2. Employment and Criminal History.....	45
Table 3. Perceived Barriers to Employment based on Background and Employment History	47
Table 4. Perceived Barriers to Employment among Individuals in Substance Abuse Treatment	49
Table 5. Perceived Barriers to Employment based on Demographic Characteristics.....	50

**Study One: School, Family, and Individual Factors among Individuals Seeking Treatment
for a Substance Use Disorder**

Introduction

In the United States (US), there is a significant problem with substance use and abuse. The 2018 National Survey on Drug Use and Health (NSDUH) indicates that 164.8 million individuals aged 12 or older used drugs in the last month. Of those individuals, 53.2 million reported using illicit drugs such as opioids and methamphetamines in the past year. The majority of drug users first began using substances before the age of 18. With 19.7 million Americans aged 12 years and older battling a drug problem in 2017 (Substance Abuse and Mental Health Services Administration, 2019).

To date, alcohol is the most used substance in the United States, with approximately 139.8 million Americans aged 12 or older using the substance within the past month 2017 (Substance Abuse and Mental Health Services Administration, 2019) . Of illicit drugs, marijuana is the most abused illicit drug. The Centers for Disease Control and Prevention (CDC) (2020) estimates that 36.5% of high school students have ever tried marijuana. Marijuana has been considered a gateway drugs, which can increase a person's chances of developing a drug problem or becoming addicted. A study by Secades-Villa et al. (2015) found that a large portion of cannabis users will advance to additional illegal substances.

Substance use is a serious problem due to the immediate and long-term affects it can have on a person's health. These health issues include HIV/AIDS, Hepatitis C, injury, cancer, addiction, overdose, and death (Hall & Degenhardt, 2009). Most individuals do not consider the risks of developing a drug problem or addiction, let alone of the long-term health effects of such use.

Multiple reasons exist for using alcohol or other drugs. Common reasons include to satisfy a curiosity, peer pressure, to connect with others, or to escape from problems (Yang et al., 2009; Sloboda & Bukoski, 2006). Additionally, risk factors are characteristics or factors that increase an individual's chances of drug abuse (National Institute on Drug Abuse, 2003). There are multiple different types of risk factors including: individual/personality, peer, family, school, and community factors. Whereas risk factors can be present at any age, typically risk factors show in adolescence or earlier.

Individual or personality risk factors consist of genetics, sensation seeking, antisocial behavior, aggression, mood disorders and mental illness. Childhood attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder (ODD), conduct disorder (CD), and depression increase the risk of developing substance-related disorders (Groenman et al., 2017). Behaviors such as sensation seeking or being impulsive can put an individual at a higher risk of abusing drugs and alcohol. Sensation seeking is potentially dangerous with a combination of risky behaviors such as substance use with peer groups that may be involved in deviant behaviors (Hansen & Breivik, 2001; Piko, 2001). Adolescents who associate with peers that use substances are at a greater risk for using substances themselves (King et al., 2013; Swahn et al., 2010). Research also indicates that having friends with a favorable attitude towards substance use by thinking drugs and alcohol are fun without any other associated risks are at a greater risk for substance use (Henry, 2010).

Family risk factors include family history of addiction, substance use by parents and siblings, lack of family connectedness, poor family communication and family management problems (Cleveland et al., 2008). Family history of addiction and substance use by parents are major risk factors for substance use and abuse. Such use can result in drug use being normalized

by children or adolescents in the household. When parents or other family members use substances, adolescents may find drugs more appealing so that they can fit in with the family to bond and create a relationship (Sartor et al., 2007; Rojas et al., 2012).

The way a person feels about their family, especially at a young age, is important with respect to risky behaviors such as substance abuse. Youth need a strong family structure to feel safe, secure, and protected. However, when youth feel a strong positive connection with their family members, specifically their parents, they are less likely to use substances (Resnick et al., 1997). If there is a lack of connectedness to their parents, they may try and find connections in other, more negative ways, such as using drug or alcohol (McGraw et al., 2008; Whitlock et al., 2014).

School risk factors for substance use consist of school discipline and management of problems, lack of school stance toward student substance use, students' perception of school rules, lack of quality drug and alcohol education, lack of school connectedness, and academic failure. School discipline and management problems may lead to students not taking school seriously. When students see lack of consistency on rules and expectations against drugs and alcohol by school administration and staff they tend to question if there will actually be any consequences. Schools that lack a stance against drugs and alcohol are setting their students up for an increased risk of substance abuse (Piko & Kovacs, 2010).

Children and adolescents spend roughly 35 hours a week at school, making school connectedness a high priority and potential protective factor. When youth don't feel connected to the school, they don't want to attend on a regular basis which can set them up for long-term school failure and increase their chances of substance abuse. When children and adolescents have a strong connection with their school, they are less likely to use substances compared to

those that do not have a strong connection with their school (Resnick et al., 1997). Having a negative school experience can also increase the risk of substance use (Okulicz-Kozaryn, 2010). Without a positive connection with a school setting, students are more likely to skip school and become truant, which is a known risk factor for substance use (Henry & Thornberry, 2010). A lack of school connectedness and academic failure are linked to individuals dropping out of school which increases the risk of substance abuse (Krohn et al., 1995).

The majority of risk factors of substance use research has been conducted on adolescents with data collection such as the CDC Youth Risk Behavior Survey. While surveys like this are very important, it creates a gap in the research. When surveys are only given to adolescents to see what they are doing in the moment or in the very recent past, it gives an indication if the individual may become addicted to drugs or have a substance use problem. Many adolescents will try drugs or alcohol and never develop an addiction. One gap in the research is figuring out why someone becomes addicted to substances. This research study is looking at adults who are in treatment for a substance use disorder. The following research questions were addressed: 1) Do family factors influence substance use disorder? 2) Do school factors influence substance use disorder? 3) What is the extent of age of first drug use on addiction? 4) Do risk factors differ based on background characteristics?

Methods

Participants

Participants in this study were 18-62 year old individuals currently seeking treatment in a substance abuse treatment facility in the Greater Cincinnati area.

Instrumentation

A three-page survey was created to determine risk factors for heroin use. The questions for this study were presented in the survey as a statement followed by a 5 point Likert scale. The Likert scale options were 1= strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. The data was analyzed, and each response produced a mean and standard deviation. Additional questions used were single, direct questions about demographics and drug use. The survey had nine sections. This study focused on sections 2, 5, 7 and demographics. Section 2 asked participants to selected drugs that that they have used in their lifetime. Section five, which was a Likert scale, consisted of several questions on communication, behaviors, relationships, school activities, stance and education on drugs and alcohol, and family dynamic within the grades of 4-8. Section seven asked individuals to write in the age of which they first tried drugs. The demographics section was composed of questions regarding gender, age, race, and if they were ever diagnosed with a mental health disorder.

Procedures

All participation was voluntary. If an individual did not wish to participate or felt uncomfortable after starting the survey they could simply refuse to take or finish the survey. A 3-page survey was provided to all willing participants. The primary investigator (PI) distributed the surveys to the individuals that wanted to participate. Once the participants were finished with their survey, they were instructed to put their survey in a folder so that it kept survey answers private from the PI. The PI then took the surveys to a locked office and put the surveys in a locked cabinet. The University of Cincinnati's Institutional Review Board granted approval for the current research study.

For reliability testing, surveys will be entered into SPSS (Statistical Package for the Social Sciences Version 21.0). For parametric items, Pearson correlation coefficients will be computed. To determine test-retest reliability for nonparametric items, Kendall's tau-b correlation coefficients will be calculated.

Data Analysis

For the research study, all collected data was entered into SPSS. To describe demographic and background characteristics of the participants, descriptive statistics including frequencies, means, standard deviations, and ranges of scores were computed. MANOVA's were used to determine statistical significance for school and family factors in those who used heroin. Odds ratios were performed for age of first use, race, gender, and mental health disorders.

Results

The current study recruited 102 individuals to participate in the survey. Of those 50 were males and 51 were females and 1 left blank. The majority of the participants were Caucasian (76.5%), whereas 5.9% were African American, 4.9% were Hispanic, and 6.9% did not answer the question. The participants ranged in age from 18 to 64. A total of 54.9% of participants reported using heroin.

Family Factors and Substance Use Disorder

The current study requested participants respond to questions about substance use and their relationships with family and friends. Participants responded to questions about their emotions, support, and connections to the following statements (Table 1): "I felt emotionally close to at least one friend" (M=3.93, SD=1.202); "I feel supported" (M=3.89, SD=1.224); "I like to deal with problems on my own" (M=3.82, SD=1.178); "I felt emotionally close to at least

one family member” (M=3.80, SD=1.335); “I talk to at least one friend” (M=3.80, SD=1.192). “I wish I had more people to share my feelings with” (M=3.66, SD=1.241); “at least one parent told me they were proud of me” (M=3.57, SD=1.424); “I talk to at least one family member” (M=3.43, SD=1.352); “I do not feel comfortable sharing problems” (M=3.28, SD=1.394); “at least one parent talked about the dangers of drugs and alcohol” (M=3.01, SD=1.446).

In regards to participants that have used heroin, additional questions were analyzed to determine connections based on heroin use and family factors. Regarding participants experiences in grades 4-8, participants responded to the following statements (Table 2): “I felt emotionally close to one family member” (M=3.98, SD=1.163); “I felt emotionally close to at least one parent” (M=3.71, SD=1.391), “at least one parent told me they were proud of me” (M=3.71, SD=1.348); “at least one parent talked to me about the dangers of alcohol and drugs” (M=3.06, SD=1.406).

Concerning family and friend connectedness among individuals that used heroin, participants reported (Table 3): “I feel supported” (M=3.98, SD=1.124); “I talk to at least one friend” (M=3.89, SD=1.110); “I wish I had more people to share my feelings with” (M=3.85, SD=1.139); “I like to deal with problems on my own” (M=3.78, SD=1.192); “I talk to at least one family member” (M=3.50, SD=1.328); “I do not feel comfortable sharing my problems” (M=3.44, SD=1.269).

School Factors and Substance Use Disorder

The current study examined the influence of school on addiction by asking questions regarding attitudes towards school and teachers, communication with the teachers and classmates, involvement in school activities, attendance, and behavior. Participants responded to

the following statements (Table 4): “I had at least one best friend in school” (M=4.16, SD=1.126); “I felt comfortable talking to at least one classmate” (M=4.06, SD=1.130); “at least one teacher cared about me” (M=3.86, SD=1.158); “I attended school every day” (M=3.81, SD=1.308); “I felt supported by at least one teacher” (M=3.81, SD=1.181); “I felt comfortable talking to at least one teacher” (M=3.66, SD=1.224). Additional responses about school environment, involvement with the school, and feelings towards school were as follows: “my school had firm rules against drug and alcohol use” (M=3.63, SD=1.239); “I enjoyed going to school” (M=3.54, SD=1.368); “I was actively involved in a sport” (M=3.51, SD=1.494); “I found school work to be meaningful” (M=3.44, SD=1.313); “at least one teacher talked to me about the dangers of drugs and alcohol” (M=3.43, SD=1.352); “I was actively involved in a club” (M=3.41, SD=1.471); “I was often in trouble at school” (M=2.64, SD=1.467).

The same questions were asked as above but were cross referenced with heroin use. Questions involving attitudes, behaviors, and connectiveness towards school were as follows: I had at least one best friend in school (M=4.15, SD=1.113); I felt comfortable talking to at least one classmate (M=3.98, SD=1.114); my school had firm rules against drug and alcohol use (M=3.69, SD=1.184); I attended school every day (M=3.67, SD=1.218); I was actively involved in a sport (M=3.62, SD=1.459); at least one teacher cared about me (M=3.56, SD=1.244); I felt supported by at least one teacher (M=3.53, SD=1.245); I enjoyed going to school (M=3.51, SD=1.303); I was actively involved in a club (M=3.45, SD=1.463); I felt comfortable talking to at least one teacher (M=3.42, SD=1.212); At least one teacher talked to me about the dangers of drugs and alcohol (M=3.40, SD=1.314); I found school work to be meaningful (M=3.40, SD=1.211); and I was often in trouble at school (M=2.64, SD=1.366).

Influence of Age of First Drug Use on Substance Use Disorder

The current study inquired about the age of first drug use. Participants reported initiative drug use between the ages of 9 and 41. Responses were dichotomized based on the median split: ages 9-13 and 14-41. An odds ratio was then computed. Study findings indicated found that 67.9% (n=38) of individuals that started using drugs between the ages of 9-13 use heroin whereas began using drugs 42.5% of those first using between 14 and 41 (n=17) use heroin. The study found that individuals that tried their first drug between the ages of 9-13 were 2.8 times more likely to use heroin than those trying drugs between 14-41 (OR=2.856, CI (1.232, 6.623), p=.013).

Risk Factors and Background Characteristics

The study looked at the background characteristics of race, gender, and mental health disorders of the participants. The majority of the participants were white individuals (n=78) making up 76.5% of the overall sample population. Therefore, race/ethnicity was dichotomized the data into 2 categories, white and non-white to determine if there were any differences in risk factors based on race. Overall, there were 78 white participants and 17 non-white participants, while 7 participants refused to answer. A total of 55.1% (n=43) of white individuals used heroin and 58.8% (n=10) non-white individuals used heroin. The study found no significant difference for risk factors for heroin use based on race. Concerning gender, there was an even split of male (n=50) and female (n=51) participants with only one participant not answering the question. Based on gender and heroin use, 58% (n=29) of males used heroin and 51% (n=26) of females used heroin. The study found no significant difference for risk factors of heroin use based on gender. Concerning mental health status, results revealed no significant difference in heroin use based on mental health disorder diagnosis. issue. Of 102 participants, 61 reported having a

mental health disorder. Of the 61 participants, 37 (60.7%) reported using heroin whereas 45.7% (n=16) did not have a mental health disorder yet reported using heroin.

Discussion

The current study examined family factors and their influence on substance use disorders. The present study revealed no statistically significant data for family factors towards substance use disorders or heroin use. Previous research found that family connectedness can be a protective factor against the use of drugs and alcohol (Yang et al., 2013; Resnick et al., 1997; O'Donnell et al., 2021). The statements were phrased around the grades 4th-8th and our participants may have had stable connections to their family and friends during those years and different experiences earlier or later in life. Additional research should be conducted on connectedness among family and friends during different times across the lifespan and its influence on substance use disorders.

Concerning school factors, the current study found no significant differences or school factors and substance use disorders. Other research has investigated school factors and found that individuals with a higher overall connection with their school or teachers were less likely to use substances (Yang et al., 2013; Fletcher et al., 2008; Resnick et al. 1997; Aspy et al., 2012; Ethier et al., 2017). As this research focused specifically on grades 4 through 8, this may have impacted study findings. Previous research indicates that the higher-grade level a student is in, their connectedness to the school or teacher declines (Garcia-Moya et al., 2017; Weatherson et al., 2018). Additional research should investigate school connectedness across different grade levels.

The present study found that 67.9% of participants that began their drug use between the ages of 9-13, reported using heroin. Compared to 38.1% of individuals that began drug use at the

same time and didn't use heroin. Individuals that started using drugs between the ages of 9-13, were 2.5 times more likely to use heroin than individuals that started using drugs between 14-41. Limited data is available on heroin use and when individuals began using drugs. A study by Volkow et al. (2021) found that the younger youth initiate drug use, the more rapid the development of a substance use disorder. Additionally, that same study found that young adults using early were more likely to develop a heroin use disorder. This findings from the current study are extremely important as it can help further narrow in when drug education programs can be most useful. Preventing early drug use is a critical goal for professionals in prevention and intervention.

The current study examined the following background characteristics: gender, race and mental health disorders among individuals that reported using heroin. The current study found no significant relationships between heroin use and background characteristics. The participants in the study were predominately white (76.5%) which may have impacted study findings. Prior research demonstrates that heroin use is highest among non-Hispanic white individuals (Schuler et al., 2021). Additionally, gender was not significantly related to heroin use. A study by McHugh et al. (2021) found that men had higher odds of using heroin and developing heroin use disorder compared to women. In regards to mental health disorders, a study by the National Institute on Drug Abuse (2021) found that about half of individuals with a mental health disorder will also develop a substance use disorder. Additional research should be conducted on background characteristics among individuals that use heroin.

Limitations

The current study has limitations that need to be noted. The findings from this data cannot be generalized for other populations due to the lack of diversity and use of one

geographical area. The researchers also relied on participants to give honest and accurate responses. The survey contained questions that could be perceived as personal or uncomfortable and participants may not have felt comfortable answering truthfully.

Conclusion

This study found important information on initiation of drug use and development of heroin use. The study found that individuals that began drug use between the ages of 9-13 were 2.5 times more likely to use heroin than individuals that started drug use after age 13. This indicates that there is a crucial timeframe to begin drug education, awareness, and prevention. Additionally, programs can be developed to specifically examine that age range to see if any other risk factors are present to introduce a quicker intervention.

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Table 1. Parent and Family Factors- Frequencies

Items	M	SD
I felt emotionally close to at least one friend	3.93	1.202
I feel supported	3.89	1.224
I like to deal with problems on my own	3.82	1.178
I talk to at least one friend	3.80	1.192
I felt emotionally close to at least one family member	3.80	1.335
I wish I had more people to share my feelings with	3.66	1.241
At least one parent told me they were proud of me	3.57	1.424
I talk to at least one family member	3.43	1.352
I do not feel comfortable sharing problems	3.28	1.394
At least one parent talked about the dangers of drugs and alcohol	3.01	1.446

Table 2. Ever Used Heroin Based on Family Factors

Items	Heroin Use	No Heroin	<i>f</i>	<i>p</i>
	M (SD)	Use M (SD)		
			.509 ^b	.729
During the grades 4-8, I felt emotionally close to at least one parent	3.71 (1.391)	3.55 (1.452)		
During the grades 4-8, I felt emotionally close to one family member	3.98 (1.163)	3.62 (1.464)		
During the grades 4-8, at least one parent talked about the dangers of alcohol and drugs	3.06 (1.406)	3.00 (1.498)		
During the grades 4-8, at least one parent told me they were proud of me	3.71 (1.348)	3.50 (1.486)		

Table 3. Ever Used Heroin Based on Family and Friend Connectedness

Items	Heroin Use	No Heroin Use	<i>f</i>	<i>p</i>
	M (SD)	M (SD)		
I talk to at least one family member	3.50 (1.328)	3.37 (1.388)	.870 ^b	.520
I talk to at least one friend	3.89 (1.110)	3.74 (1.273)		
I like to deal with problems on my own	3.78 (1.192)	3.91 (1.151)		
I wish I had more people to share my feelings with	3.85 (1.139)	3.43 (1.328)		
I do not feel comfortable sharing my problems	3.44 (1.269)	3.11 (1.524)		
I feel supported	3.98 (1.124)	3.83 (1.322)		

Table 4. School Factor-Frequencies

Items	M	SD
I had at least one best friend in school	4.16	1.126
I felt comfortable talk to at least one classmate	4.06	1.13
At least one teacher cared about me	3.86	1.158
I felt supported by at least one teacher	3.81	1.181
I attended school everyday	3.81	1.308
I felt comfortable talking to at least one teacher	3.66	1.224
My school has firm rules against drug and alcohol use	3.63	1.239
I enjoyed going to school	3.54	1.368
I was actively involved in a sport	3.51	1.494
I found school work to be meaningful	3.44	1.313
At least one teacher talked to me about the dangers of drugs and alcohol	3.43	1.352
I was actively involved in a club	3.41	1.471
I was often in trouble at school	2.64	1.467

Table 5. Ever Used Heroin Based on School Factors

Items	Heroin Use	No Heroin Use	<i>f</i>	<i>p</i>
	M (SD)	M (SD)		
			1.501 ^b	.134
I enjoyed going to school	3.51 (1.303)	3.63 (1.431)		
I attended school everyday	3.67 (1.218)	4.02 (1.354)		
I found school to be meaningful	3.40 (1.211)	3.42 (1.435)		
I was often in trouble at school	2.64 (1.366)	2.63 (1.589)		
I felt comfortable talking to at least one teacher	3.42 (1.212)	3.91 (1.192)		
I feel supported by at least one teacher	3.53 (1.245)	4.14 (1.014)		
At least one teacher cared about me	3.56 (1.244)	4.21 (.940)		
At least one teacher talked to me about the dangers of drugs and alcohol	3.40 (1.314)	3.44 (1.436)		
My school had firm rules against drug and alcohol use	3.69 (1.184)	3.56 (1.333)		
I felt comfortable talking to at least one classmate	3.98 (1.114)	4.14 (1.167)		
I had at least one best friend at school	4.15 (1.113)	4.19 (1.160)		
I was actively involved in a club	3.45 (1.463)	3.42 (1.500)		
I was actively involved in a sport	3.62 (1.459)	3.47 (1.548)		

**Study Two: Perceived Barriers to Employment Among Individuals Seeking Treatment for
a Substance Use Disorder**

Introduction

Substance use continues to be a problem in the United States with an estimated 164.8 million people aged 12 or older currently using a substance in the past month in 2018 (Substance Abuse and Mental Health Services Administration [SAMHSA], 2019). Additionally, 53.2 million Americans aged 12 or older have used illicit drugs in the past year. Concerning addiction, 20.3 million Americans aged 12 or older have a substance use disorder of alcohol or an illicit drug in the past year. Approximately, 21.2 million people aged 12 or older need treatment for a substance use disorder. In 2017, based on the Treatment Episode Data Set (TEDS) conducted by SAMHSA there were approximately 1.9 million admissions into a treatment facility in the United States (SAMHSA, 2018).

When it comes to treatment, there are many different options. Individuals with a substance use disorder are able to choose from inpatient and outpatient treatment; while some treatment plans suggest both. Long term residential treatment is typically in a non-hospital setting and lasts anywhere from 6 to 12 months depending on the program. Short term residential treatment is usually 6 to 12 weeks and can be followed by outpatient treatment. There are many different outpatient therapies, including Intensive Outpatient Programs (IOPs). IOPs require a specific amount of hours each week for treatment while allowing the participant to remain in their home. Research has shown that this can help individuals better adjust to community living (Center for Substance Abuse Treatment, 2005).

Whereas there are multiple options for treatment, access to treatment can be difficult. Many barriers exist and include lack of treatment facilities or access to beds, geographical issues, cost of treatment, and acceptability, or fear of being stigmatized for needing treatment (Jackson, & Shannon, 2012; Choi et al., 2014). While 19.9 million adults needed treatment in 2016, only

2.1 million received it. Merely 10% of those in need were able to access specialty treatment (Park-Lee et al., 2018). Based on the 2018 National Survey of Substance Abuse Treatment Services (N-SSATS) conducted by SAMHSA, there are approximately 14,809 treatment facilities in the United States. Of those, only 11% are government run facilities, a more affordable treatment option (SAMHSA, 2019). The cost of treatment can vary based on the type of treatment, location, and length. Affordability is quite a barrier when an individual is already struggling with addiction and potentially employment (Sexton et al., 2008). Also, with unstable employment, the individual is less likely to carry health insurance that could potentially cover the high costs of treatment. Of uninsured individuals, it is estimated that 5 million of those are living with a substance use disorder (Ali et. al, 2015).

Unemployment is also a major issue when a person has a substance use disorder (McCoy et al., 2007; Wong & Silverman, 2007). Most often, when a person is under the influence, they are less likely to stay obligated to their commitments, such as employment. This can lead to absenteeism, tardiness, communication issues, or showing up intoxicated which can be harmful to others as well (Wiebe et al., 1995). Behaviors such as these may increase the likelihood an individual is terminated from employment.

Many different barriers can make it difficult for individuals who are in recovery from an addiction to receive employment. These barriers include lack of education or technical skills, training, poor job history, low levels of social skills in a workplace, stigmatization, or criminal charges (Sigurdsson et al., 2012; Deren & Randell, 1990; Dunlap et al., 2007; Shepard & Reif, 2004; Zanis et al., 1994). Education can play a vital role in employment outcomes. Individuals are twice as likely to receive employment if they have a high school diploma (Zabkiewicz & Schmidt, 2007). In addition, job specific skills such as using heavy lifting equipment on a

construction site, clinical skills to work in the medical field, or even basic computer skills for office work are often a barrier to better jobs. Research has shown that having a vocational skill or training improves self-esteem and for those with a substance use disorder are more likely to abstain from drugs and alcohol (Kim, 2014). While most individuals exiting treatment facilities are more than capable to acquire these skills and trainings, that is one more stressor added to sustaining sobriety. In addition to the hard skills employers are also looking for employees who have “soft skills” as well. Soft skills are typically behaviors such as attendance, solid work history, interviewing skills, communication skills with coworkers and superiors, and appropriate dress and grooming.

In 2018, there were 1,654,282 arrests for drug violations, with roughly 86% for possession of a drug and 14% for manufacturing or trafficking of substances (United States Department of Justice, 2019). Drug offenses typically carry two types of charges, a misdemeanor or a felony. Misdemeanors are charges that are less offensive than a felony charge. While all criminal charges are negative, a felony charge can affect a person more than a misdemeanor. Each state determines misdemeanors and felonies differently. Some factors that play a role in the decision of the charge is the type of drug, amount of the substance, or drug trafficking or an intent to sell. In addition to these, if other criminal acts were committed, such as, harming someone, it could result in a higher offense.

Criminal charges can be a major barrier to employment, specifically felony charges. Many job applications ask if you have ever been convicted of a crime and if so, explain the circumstances. Research from former inmates shows that 60 to 75 percent remain unemployed within the first year of release (Travis, 2005; Petersilia, 2003). Individuals in recovery that have stable, enjoyable employment and receive higher pay are more likely to abstain from substances

(French et al., 1990; Benda et al, 2005; Laub & Sampson, 2003; Schnepel, 2016; Uggen & Staff, 2004; Yang, 2017). Employment may be an important factor to maintaining a sober lifestyle. Although some states now have initiatives like “ban the box”, which eliminates the felony question on applications, are great to help in these situations, not all states have adopted this practice (Avery, 2019).

Some research exists regarding barriers to employment and substance use. However, additional research is needed to examine employment barriers among individuals currently seeking substance abuse treatment. Therefore, the purpose of this study is to investigate barriers to employment for individuals currently in a substance treatment facility. The following research questions were addressed: 1) How many individuals were employed before entering in substance abuse treatment? 2) What is the extent of felony convictions among individuals in treatment? 3) What are the barriers to employment? 4) Do barriers differ based on background and demographic characteristics?

Methods

Participants

Participants in this study were individuals seeking treatment for a substance abuse issue in a treatment facility in the Greater Cincinnati area. A total of 102 individuals participated in the study. Individuals ranged in age from 18-62 years old. All participation was voluntary.

Instrumentation

A three-page survey was created to determine barriers to employment due to substance abuse. This study focused on the following sections: 3, 4, 7 & 9. Section three consisted of 10 questions about previous treatment, employment, arrest history, felony convictions, and

employment certifications. Section four asked individuals to check if they ever had the following as a barrier to employment: felony charge, no high school diploma, skipping work due to addiction, lack of job training, and no transportation to and from work. Section seven asked age of first drug use, if parents used substances in the home, experienced any type of abuse, if treatment was sought for abuse, and if attended religious institutions as a child. Section nine is demographics asking the individuals sex, age, number of people living in the household, race/ethnicity, and if they were ever diagnosed with a mental health disorder.

Procedure

The current study was approved by the Institutional Review Board (IRB) at the University of Cincinnati and the dissertation committee. The researcher established validity of the survey by consulting a panel of experts. Each member reviewed the survey and suggested any changes. Once a final copy was complete a test-retest was performed to check reliability.

The primary investigator started data collection by explaining the study purpose and that all information was anonymous and confidential. It was also explained that participation was voluntary, they could quit at any time, and that by completing the survey they were consenting to participate in the study.

Each individual was given an information sheet that explained the purpose, where data was kept, that all data was anonymous and confidential, and contact information of the principal investigator if any questions were to arise. The time required to take the survey was 5-10 minutes.

The survey was passed out in a group meeting at the treatment center. Individuals were told not to put their name or any identifiers on the survey. Participants were instructed when

finished to place the survey face down in an envelope at the front of the room. Once everyone completed the survey, the envelope was sealed. After data collection was complete, the primary investigator counted the surveys before putting them in a lock cabinet.

Data Analysis

For this study all data collected was entered into SPSS (Statistical Package for the Social Sciences Version 21.0). When describing demographic and background information collected from the participants, descriptive statistics such as standard deviations, means, frequencies, and ranges of scores were computed. A series of Analysis of Variance (ANOVA) were calculated to examine whether barriers differed based on demographic and background characteristics.

Results

Demographics

This study had 102 participants total. Of participants, 50 were male, 51 were female, and one refused to answer (Table 1). Concerning race/ethnicity, 76.5% (n=78) were Caucasian, whereas only 5.9% (n=6) were African American, 5.9% (n=6) Hispanic, 4.9% (n=5) multiracial, and 6.9% (n=7) didn't respond. The ages of the participants ranged from 18 to 64. Eighty percent (n=82) of participants had been arrested and 58.8% (n=60) had been arrested 5 times or more (Table 2). Only 6 participants had tried to get arrested to receive treatment for their substance use disorder. Of the 102 participants, 39 had a job before entering treatment. Of those, only 43% were working full time positions. Only 27 participants reported having an employment certification.

Extent of Felony Conviction

Of the 102 participants of the study, 80.4% have been arrested and over half (58.8%) have been arrested 5 times or more. Individuals that have ever been arrested were approximately 8 times more likely to perceive barriers to employment than individuals without an arrest record (Table 3). Sixty percent (60.8%) of individuals had been convicted of a felony and 46.1% reported that their conviction kept them from receiving employment. This study found that individuals with a felony charge were 10 times more likely to have barriers to employment than individuals without felony convictions.

Perceived Barriers to Employment

This study inquired about the following perceived barriers to employment: Felony charge, no high school diploma, skipping work due to addiction, lack of job training, and no transportation to work. The results indicated that over half of the participants (60.8%) have a felony charge (Table 2). Participants with a felony charge were 10 times more likely to perceive high barriers to employment (Table 3). Results demonstrated that lack of job training (25.5%) and no high school diploma (24.5%) were not highly perceived barriers for employment. However, 61.8% of participants reported skipping work due to addiction. In addition, slightly over half (55.9%) of participants lacked transportation to work (Table 4).

Perceived Barriers to Employment based on Demographics

Individuals that have received treatment previously, 51.6% perceived high barriers to employment (Table 3). Individuals who have been to treatment for a substance use disorder prior to the current treatment are 2.5 times more likely to perceive barriers to employment. Perceived barriers to employment did not differ based on gender. Forty-six percent of males and forty percent of females reported a perceived barrier to employment based on substance use treatment

(Table 5). Out of 102 participants, 60 reported having a mental health issue (Table 5). Of the participants with a mental health issue, 41.7% perceived high barriers to employment whereas 58.3% perceived low barriers to employment. Individuals that have ever experienced abuse were not more likely to perceive high barriers to employment. Individuals whose parents used drugs and alcohol in their home were not more likely to perceive high barriers to employment (Table 5).

Discussion

Substance use disorders carry a stigma that can make it difficult for individuals to find and obtain employment. This can continue even after an individual is in recovery. Substance Abuse and Mental Health Services Administration (2017) reported that only 24.8% of individuals with a substance use disorder were employed in 2016. Whereas a substance use disorder can be its own barrier to employment, the current study found additional barriers to employment making it even more difficult for individuals to obtain and maintain employment. The current study looked at the following barriers: felony charge, no high school diploma, skipping work due to addiction, lack of job training, and no transportation to work.

Employment Barriers due to Felony Charge

Individuals with arrest records are more likely to face barriers to employment. The current study found that 80% of the participants had been arrested and over half of the participants (58.8%) had been arrested 5 times or more. Thus, individuals with an arrest record were almost 8 times more likely to perceive barriers to employment than those with no arrest record. Felony charges greatly impact an individual's chances of obtaining employment. A study by Augustine (2019) found that 97% of their participants stated that reporting a felony on a job

application kept them from being hired. The current study found that Sixty percent of participants had been convicted of a felony whereas, 46% reported their felony charge kept them from obtaining employment.

The study also found that individuals with a felony charge were ten times more likely to experience high barriers to employment than those with no felony charges. Research demonstrates that individuals in recovery from a substance use disorder are more likely to abstain from drugs and alcohol if they have stable employment. A study by Laudet and White (2010) found that employment was the second most important priority after long-term recovery. Finding a job that pays well is also more difficult when a person has a felony charge. Many positions that do not require background checks or ask about criminal history are jobs that do not have career growth potential (Fernandes, 2020). Working in a lower paying position can bring on unwanted stress causing an individual to relapse and escape from their problems. A study by Holtyn et. al (2020) found that participants that were in an abstinence-contingent wage supplement group were significantly more likely to have negative drug tests; proving how wages and sobriety correlate. There are many reasons why employment is important to anyone's life, but with the stress of recovery from addiction it is very important to maintain structure and balance and high barriers to employment make it even more difficult.

The current study verifies the need for change in our criminal justice system and the stigma that surrounds individuals with a felony conviction. Vocational training should be utilized for an easier transition to employment after release of incarceration. This could help to decrease relapse of drugs and recidivism rates (Newtown et al., 2018).

Barriers to Employment due to Lack of Job Training and High School Diploma

Lack of education or training can hinder a person's chances of employment. Positions that do not require a high school diploma or GED are typically low paying or minimum wage (Fernandes, 2020). This may require a person to work multiple jobs leading to stress. The current study found that a lack of a high school diploma and lack of job training were not considered a high barrier to employment. Although this study did not find these to be high barriers, other studies have found both to be barriers to employment (Rogers et al., 2011; Fernandes, 2020; Zabkiewicz & Schmidt, 2007). The results of the current study could be due to the fact that individuals may have high school diplomas and that is not an issue for employment. In addition, 27 participants responded that they have a job certification. A study conducted by Lee and Cho (2017) reported that vocational certifications had a positive influence on employment rate.

Barriers to Employment Due to Skipping Work Because of Addiction

Addiction can be debilitating on relationships and commitments to work. When a person is addicted to drugs they are more likely to skip out on prior engagements and commitments, such as work. The current study found that 61% of participants have skipped work due to their addiction. With frequent attendance issues, it is very likely that an individual will not keep their job (Fernandes, 2020). Short stays at jobs on a resume can look bad and cause issues with future employment. Some reasons for skipping work can be from drug use, withdrawal, or overdose. Opioids are extremely addictive and an individual may need to use them multiple times a day to feel "well". In addition, withdrawals are very likely if a person is not able to access drugs or is trying to stay sober for work. Overdoses are extremely common in opioid users. A study by Vivolo-Kantor et. al (2018) found that between July 2016 and September 2017 there were a total of 142,557 suspected opioid overdose emergency department visits. This accounts for a lot of time, some of which could be missed work.

Employment Barriers due to Lack of Transportation

Skipping work due to an addiction might not always be an individual's choice; they may rely on others for transportation. If an individual does not have access to steady and stable means of transportation, it can make keeping a job an additional challenge. In most city or urban areas, there are bus stops or even taxis that can take a person to and from work. However, in rural areas, those are not typical options (Sherba et al., 2018). Additionally, although a taxi may transport someone to work and back, it can be very expensive depending on where they work. Also, in any situation, paying for transportation might not be a viable option. This study indicated that over half of participants lacked transportation to work, which presents a challenge to those seeking and maintaining employment. Substance abuse treatment programs may want to include transportation services as part of any treatment program. It is clear that transportation is a barrier that needs to be addressed by prevention and intervention specialists.

Employment Barriers based on Background and Demographic Characteristics

In addition to having appropriate skills to keep and receive employment, there is additional difficulty to receive employment if the employer is aware of a substance use disorder. Individuals with a substance use disorder are more likely to be stigmatized, creating a bias for employers during the hiring process and also if hired. Employers can have negative attitudes towards individuals with a former substance use disorder or fear of the employee relapsing (Baldwin et al., 2010). The current study found that individuals that had previously went to treatment for a substance use disorder were 2.5 times more likely to perceive barriers to employment. Although this study did not find that gender was a perceived barrier, other studies have found gender to be a barrier to employment (Greenfield & Grella, 2009). A study

conducted by Kim et al. (2019) found that in individuals with a substance use disorder, males were six times more likely than females to obtain employment.

This study also found that 60 participants reported having a mental health issue. This was not perceived as a high barrier to employment. Additional research should be considered to look at mental health issues in conjunction with a substance use disorder for barriers to employment. In addition, family drug use and individual abuse were not perceived as high barriers to employment.

Limitations

It is important to note the limitations of this study. The participants of the study were adults in the Greater Cincinnati area and mostly white. Therefore, it cannot be generalized for other populations. This study also relied on the honesty and accuracy of self-reported answers. In addition, participants may not have felt comfortable with answering questions due to the sensitive subject and personal questions.

Conclusion

Individuals that suffer from a substance use disorder are more likely to experience barriers to employment. This is especially true for those that have a felony charge on their criminal record or have ever been to treatment for a substance use disorder. More research is suggested to examine what actions are needed to decrease stigma and discrimination to those with a substance use disorder and a felony charge. It is also suggested that additional education and training opportunities are implemented to assist those with a substance use disorder. In addition to more education and training opportunities for individuals with substance use disorders, it is suggested that more training become available to law enforcement, judicial

systems, and law makers to help decrease the stigma and help individuals receive the best outcomes at finding employment. Creating a registry or more readily available information on local employers that hire individuals with a felony record could make the job search much easier for a person in recovery. A major barrier to employment was if a person had been in treatment for a substance use disorder before, it suggests that employer bias may be an issue and should be addressed with workplace education. By eliminating items asking about criminal charges on an application, employers are more likely to see the individual for their potential strengths at the job rather than their past. Training for employers on how to reduce bias and stigma against individuals that have a past with substance use disorder is extremely critical in reducing barriers to employment.

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Table 1. Participant Demographics

Item	<i>n</i>	%
Gender		
Female	51	50
Male	50	49
Race/Ethnicity		
Caucasian	78	76.5
African American	6	5.9
Hispanic	6	5.9
Multiracial	5	4.9

N = ; Percents refer to valid percents; Missing values excluded

Table 2. Employment and Criminal History

Item	<i>n</i>	%
Have you ever previously been to treatment for substance abuse?		
Yes	63	61.8
No	38	37.3
Before entering treatment, did you have a job?		
Yes	39	38.2
No	62	60.8
Have you ever been arrested?		
Yes	82	80.4
No	11	10.8
Number of arrests?		
1 time	7	6.9
2 times	4	3.9
3 times	8	7.8
4 times	12	11.8
5 times or more	60	58.8
Have you ever tried to get arrested (charged with a crime) in order to get into a drug treatment program?		
Yes	6	5.9
No	94	92.2
Have you ever been convicted of a felony?		
Yes	62	60.8
No	39	38.2
Has your felony conviction(s) ever prevented from obtaining employment?		
Yes	47	46.1
No	40	39.2
Do you have any employment certifications?		
Yes	27	26.5
No	72	70.6

N = Percents refer to valid percents; Missing values excluded

Table 3. Perceived Barriers to Employment based on Background and Employment History

Item	Perceived Barriers <i>M (SD)</i>	<i>F</i>	<i>p</i>
Have you ever previously been to treatment for substance abuse?			
Yes	1.70 (1.431)	8.240	.005
No	2.55 (1.410)		
Before entering treatment, did you have a job?			
Yes	2.49 (1.386)	4.786	.031
No	1.84 (1.516)		
Have you ever been arrested?			
Yes	1.00 (1.054)	8.325	.005
No	2.35 (1.424)		
Have you ever tried to get arrested (charged with a crime) in order to get into a drug treatment program?			
Yes	2.18 (1.467)	1.746	.190
No	3.00 (1.414)		
Have you ever been convicted of a felony?			
Yes	1.22 (1.031)	39.274	<.001
No	2.84 (1.357)		
Has your felony conviction(s) ever prevented from obtaining employment?			
Yes	1.53 (1.202)	28.989	<.001
No	3.02 (1.327)		
Do you have any employment certifications?			
Yes	2.43 (1.450)	3.165	.078
No	1.85 (1.379)		

Table 4. Perceived Barriers to Employment among Individuals in Substance Abuse Treatment

Barriers	<i>n</i>	%
Felony Charge	52	51
Do not have a high school diploma	25	24.5
Skip work due to addiction	63	61.8
Lack of job training	26	25.5
No transportation to work	57	55.9

N = ; Percents refer to valid percents; Missing values excluded

Table 5. Perceived Barriers to Employment based on Demographic Characteristics

Item	Perceived Barriers <i>M(SD)</i>	<i>F</i>	<i>p</i>
Gender			
Male	2.28 (1.499)	.066	.798
Female	2.20 (1.443)		
Diagnosed with a mental health problem?			
No	2.09 (1.621)	.264	.609
Yes	2.25 (1.373)		
Ever experienced abuse in your lifetime?			
No	2.07 (1.552)	.823	.367
Yes	2.36 (1.422)		
Has a parent used drugs and alcohol in the home?			
No	2.00 (1.433)	1.841	.178
Yes	2.41 (1.499)		