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## Disparities and Demographics in Urban and Rural Populations That Could Influence Substance Use Behaviors: A Quality Improvement Project

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# DISPARITIES IN SUBSTANCE MISUSE TREATMENT

Disparities and Demographics in Urban and Rural Populations That Could Influence  
Substance Use Behaviors: A Quality Improvement Project

A Scholarly Project Presented to the Faculty of the Nicole Wertheim College of Nursing  
and Health Sciences

Florida International University

In partial fulfillment of the requirements  
for the Degree of Doctor of Nursing Practice

By

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Approval Acknowledged \_\_\_\_\_ DNP Program Director Date: \_\_\_\_\_

## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

## Abstract

The rise in substance misuse behaviors and overdose rates in the United States has become a nationwide public service health concern. Though the U.S. government has recognized the severity of the issue and has made attempts to help combat this epidemic, its efforts have fallen short, largely in part to the ongoing separation of the delivery and financing of substance use treatment from the rest of the medical system in the United States (Stuart et al., 2017). The purpose of this quality improvement project was to examine disparities seen in substance use treatment in urban and rural regions in the U.S. by examining the admission rates from Recovery First Treatment Center in Davie, Florida from 2018 to 2020. A descriptive retrospective, cross-sectional design was used to conduct this project. The researcher collected a random sample of  $N=120$  counts from the Recovery First patient database, with  $n = 40$  counts per year examining the demographics of those who sought treatment from 2018 to 2020. The demographic collected were as follows: urban/rural location, gender, age, race/ethnicity, and substance use. The results revealed that alcohol was the most primarily abused substance for each year, as well as the most abused substance by all races and ethnicities. The study also showed that males sought treatment for substance use at higher rates than females; however, females had a consistent average of admissions each year. Those who were 18 to 29 years of age had the highest rate of admissions; however, those admissions from rural regions had a higher average age of 40 years and older. The results further showed that those from rural regions sought treatment less than those who reside in urban regions, while White Non- Hispanics had the highest rate of admission from both urban

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and rural regions. Nurses and healthcare providers can utilize the outcome of this study to improve rural and urban substance use behaviors.

*Keywords: substance use, addiction treatment centers, urban substance use, rural substance abuse, gender and substance abuse, race and substance use, ethnicity and substance use*

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### **DNP PROJECT REPORT**

#### **INTRODUCTION**

The abuse and misuse of substances, such as alcohol, illicit drugs, and prescription medication in the United States has become a cause of concern. Across America, “individuals, communities and health care systems are struggling to cope with substance use, misuse, and substance use disorders” (U.S. Department of Health and Human Services, 2016, p. 1). The unrelenting rise in substance use disorders and the surge in overdose deaths makes this a nationwide public health emergency. Though the U.S. government has recognized the severity of the issue and has made attempts to help combat this epidemic, its efforts have fallen short, largely in part to the ongoing separation of the delivery and financing of substance use treatment from the rest of the medical system in the United States (Stuart et al, 2017).

While substance abuse exists throughout our nation, those in lower socioeconomic areas have higher rates of abuse and misuse. The disparities that occur between urban and rural communities have shown to impact substance use, relapse, and treatment opportunities. The economic downturn in many rural communities has caused individuals to struggle financially, placing them at higher risk for depression, anxiety, polysubstance abuse and suicidal behaviors. The Centers for Disease Control and Prevention (CDC) estimates that the drug overdose death rate is higher in rural areas in comparison to urban regions, and a majority of rural residents report that opioid addiction is a serious problem in their community (Meadowcraft & Whitacre, 2020). There are also racial and ethnic disparities that are associated with substance use. The stigma of drug use, economic disadvantage, criminalization of substance use, and lack of health

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insurance present substantial barriers to treatment access that may particularly impact minorities (Mennis et al, 2019)

The frequency and severity of substance use and misuse in the U.S. continue to escalate. Nationwide, mortality rates from drug overdoses and drug-induced diseases increased 200% between 1999 and 2016 (Monnat, 2019). A study by Haider et al (2020), showed that young middle- aged adults are primarily affected by poly-substance use disorders. While the majority of government funding and attention is placed on the opioid epidemic, the use of cocaine, methamphetamine, and benzodiazepines has also increased in the last two decades. The sustained disparities in financial opportunities and lack of resources and funding has caused great despair in many Americans. According to Surgeon General Jerome Adams, “the average life expectancy in the United States decreased for the second year in a row in 2016, falling about 1.2 months, in part due to opioid overdose deaths” (Office of the Surgeon General, 2018).

The weight of addictions not only takes an emotional toll on the individual and their family members, but it also creates a financial burden. Nationally, the cost of the opioid crisis, including health care, criminal justice, lost productivity, and value of lives lost is now estimated at \$504 billion annually, representing 2.8% of GDP (Monnat, 2019). While the costs of substance use have increased dramatically over the years the number of individuals seeking care remains stable. According to Stuart et al. (2017), fewer than 20% of individuals with a drug use disorder and 10% of individuals with alcohol abuse receive treatment. This also varies by region as not all states and counties have the funding to provide services needed.

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The present study advances the research on urban-rural disparities that are seen with substance use behaviors. It will examine demographics, in regard to race, ethnicity, gender, age, substance use, and urban and rural residence. Its focus is to conclude if patterns of substance use emerge in urban and rural communities. Understanding these patterns can assist with educational tools to help healthcare providers in assessing signs and symptoms of substance use behaviors.

### **Problem Statement**

The abuse and misuse of substances in the U.S has become a national public health emergency. The disparities that exist between urban and rural communities continue to impact drug abuse behaviors. Research indicates that individuals of lower socioeconomic status living in rural areas experience higher rates of drug overdose with less access to substance abuse services. The Centers for Disease Control and Prevention (CDC) estimates that the drug overdose death rate is higher in rural areas in comparison to urban regions, and a majority of rural residents report that opioid addiction is a serious problem in their community (Meadowcraft & Whitacre, 2020). If a quality improvement project is not conducted to assess demographics and disparities in rural and urban areas, then drug overdose mortality rates will continue to rise in rural populations in the U.S.

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### **Summary of the Literature**

The purpose of this study is to assess disparities and demographic variables among individuals with substance use disorders at Recovery First Treatment Center from 2018 to 2020. The study is to determine if there is an intensification of substance use based on locality, from rural regions than those that reside in urban regions. The literature review was conducted to identify gaps in the literature related to the research problem. The literature was obtained from Public Publisher Medline (PUBMED), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Education Resource Information Center (ERIC), and ScienceDirect. The key terms included rural substance abuse, urban substance abuse, substance use disparities, and substance use treatment centers. The search was limited to full text articles within the last 5 years (2016 to present) with a total of 12 articles that discussed the topic of interest. Based on the gaps in the literature, three content areas were identified: (a) rural substance abuse, (b) urban substance use, and (c) substance use based on race/ethnicity

### **Literature Review of Rural Communities**

This content area analyzes the prevalence of substance misuse in rural communities across the U.S. The research examines how substance abuse varies from different regions in the U.S. and what substances have become most prevalent. The literature discusses the accessibility to treatment centers in these communities. It also evaluates the role that stigma plays in the prevention of seeking treatment in rural communities as well as the stigma that is seen in smaller communities.

Riggs et al. (2018) conducted a retrospective cross-sectional design summarizing existing literature on the opioid epidemic in rural U.S. communities to help guide

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intervention efforts. The data was obtained from the U.S. Centers for Disease Control and Prevention's Wide-Ranging Online Data for Epidemiologic Research (WONDER) and multiple cause-of-death (MCD) files from 1999–2016. The results showed that there is substantial diversity across rural America. The rural opioid-related mortality rates were highest throughout central Appalachia, New England, New Mexico, and Utah and lowest in the south and upper Great Plains.

Cochran et al (2016) performed a pilot project to describe and compare patterns of opioid misuse between urban and rural pharmacies. They used questionnaires from a mixed methods design study and had 333 participants. The research found that participants in rural settings had poorer overall health, higher pain levels, lower education, and a higher rate of unemployment compared to patients who accessed urban pharmacies. Moreover, substance use treatment in rural communities is more often initiated through a referral from the criminal justice system than through individuals actively seeking care for themselves.

Ezell et al (2021) looked at how rural areas have lower or condensed populations that can increase the risk of being stigmatized leading to increased isolation and failure to seek treatment. The study was a mixed-methods research design that contained 52 participants of “professional stakeholders” i.e., professionals from local law enforcement, courts, healthcare organizations, emergency management services, and faith-based and social services organizations. The interviews addressed perspectives around nonmedical drug use and treatment/harm reduction. The results showed that those in law-enforcement and front-line works had a high rate of stigmatizing substance abuse users. The

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limitations to this study were that its sample was primarily from White non-Hispanic communities with little ethnic or racial diversity.

Lister et al. (2020) conducted a systematic review of existing literature using PsycINFO, Web of Science, and PubMed databases in January 2018. The articles included in the study involved rural samples or urban/rural comparisons with a focus on outpatient medication treatment for opioid use disorder. The articles were all conducted in the U.S. to any healthcare disparities. The researchers categorized both client and provider barriers in regard to availability, accessibility and acceptability. Eighteen articles met criteria for the review with 11 focused on client barriers, three on provider barriers, and four on client and provider barriers. The research showed the most consistent barrier for clients in rural areas was travel time, given the lack of accessibility in their location. They found that the largest barrier for providers is lack of qualified personnel and lack of consultation with other specialists. The limitations seen in the study were small sample selection and were unable to find a single study identifying or reporting acceptability barriers from the rural consumers' perspective due to rural residents experiencing high rates of stigma about substance misuse behaviors.

### **Literature Review of Urban Communities**

This content area analyzes the prevalence of substance misuse in urban communities across the U.S. This section of the review focuses on how urban areas have experienced substance use behaviors. It examines the rate of overdoses that have been seen in recent years with the rise in substance use behaviors. The focus of the literature is determining what barriers exist in both preventing as well as treating those at high risk for substance use behaviors.

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Stewart et al (2017) collected data from CDC WONDER on poisoning deaths from 2000-2014 in 44 U.S counties. The researcher performed a cross- sectional analysis to examine death rates during those years and found that drug poisoning deaths increased 227% between 2000 and 2014. They found that White Non-Hispanic populations are impacted the most overall by drug poisoning deaths involving heroin. The research also found that urban residents were more likely to misuse prescription opioids than individuals living in rural locations. Though poison death rates varied among rural and urban communities, they both shared the continual increase in opioid misuse. The limitations to the study were that drug poisoning rates may be underestimated due to the professional judgment of the medical examiner and the expertise may vary widely across jurisdictions.

Mack et al. (2017) sought to understand the differences in illicit drug use, illicit drug use disorders, and overall drug overdose deaths in metropolitan and nonmetropolitan areas. This was a retrospective cross-sectional cohort design from 2003–2014. The data was collected from the National Survey of Drug Use and Health (NSDUH) and from the National Vital Statistics System Mortality (NVSS-M). The study showed that the prevalence of illicit drugs was highest for the large metropolitan areas compared with small metropolitan or nonmetropolitan areas throughout the study period. However, while it showed the rate of use to be higher in larger metropolitan areas, it also showed the rates of overdose was higher in rural communities. The purpose of the study was to help public health professionals to identify, monitor, and prioritize responses for those that were seeking substance use treatment. The limitations faced consisted of the self-responding survey which can lead to bias. The study also excluded those who were suffering from

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homelessness and overdose deaths, which are likely underestimated because lengthy investigations are often required to include a toxicology assessment.

Lin and Knudsen (2019) conducted a cross sectional analysis from July 2014 to January 2017 with a sample of  $N = 1,174$ . The study looked at the prescribing practice of physicians who have the ability to prescribe buprenorphine in urban and rural locations. The results showed that among buprenorphine prescribers surveyed, 11.2% ( $n = 132$ ) practiced in nonmetropolitan/rural areas, 32.5% ( $n = 382$ ) in small metropolitan areas, and 56.2% ( $n = 660$ ) in large metropolitan areas. The article also noted that urban regions have a wider range of therapists, psychiatrists, and overall better mental health services. This is important given that high-quality buprenorphine treatment includes regular visits throughout long-term or maintenance treatment. They also noted that across the United States, as of 2017, 56% of rural counties still did not have a single buprenorphine prescriber. The lack of providers can contribute to the increases in overdose rates in rural regions. The limitations were the reliability of physicians' self-reporting and sampling size.

### **Literature Review of Race/Ethnicity**

This content area highlights how substance abuse behaviors differ among race and ethnicity. The research focuses on the prevalence of substance use among different ethnicities. The literature examines how socioeconomic factors can contribute to substance use behaviors. The literature also evaluates drug mortality rates based on race/ethnicity throughout the U.S.



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Zapolski et al. (2016) analyzed the frequency of cocaine/crack use during a 1-year period at a residential drug treatment center. The study was a quantitative descriptive analysis that based its research on 270 African American subjects who were residing at the treatment center for cocaine/crack misuse. The study showed that African Americans are nine times more likely to become cocaine dependent within 24 months of initiating cocaine use than non-Hispanic White recent-onset users. The researchers also looked at the three most prominent risk factors that can contribute to an increase in cocaine misuse. The risk factors included frequency of baseline use, child trauma (physical, sexual, or emotional), and stress reactivity. The prevalence of use in African Americans also leads to higher cocaine/crack overdose rates than those of other races and ethnicities. The limitations of the study are small sample sizes as well as childhood abuse data being collected without reference to a specific time period of abuse, which may be an important factor to consider.

Monnet (2019) study focused on how socioeconomics has impacted opioid misuse and overdose deaths on non-Hispanic Whites. This was a retrospective cross-sectional analysis that looked at 3047 counties in 49 U.S states from 2000 to 2002 and then again from 2014 to 2016. The researchers determined that economic distress, family distress, population loss, and opioid supply factors are all associated with higher rates of drug mortalities. They also determined that economic factors were a stronger predictor of mortality rates in rural areas, while opioid supply factors were more strongly associated with drug mortality rates in urban areas. The research showed that drug mortality rates vary significantly by geography and are disproportionately clustered among places characterized by higher prevalence of socioeconomic distress, disadvantaged labor

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markets, and greater access to opioids. While rural areas have been hit the hardest by economic distress, the researcher did show that, on average, non-Hispanic White drug mortality rates in 2014 -2016 had increased highest in large metro counties. The limitations in the study are the misclassification of the death certificate as well as “rural-urban boundary blurring,” meaning that individuals frequently experience rural and urban worlds.

Mennis et al (2019) investigated disparities in outpatient substance use treatment centers in regard to race and ethnicity. The research looked at the differences in substance use behaviors as well as duration of time spent in treatment by different races and ethnicities. The research was collected from the national 2014 Treatment Episode Database-Discharge (TEDS-D) data set. This data is compiled by the U.S. federal government from state-level substance use agencies, particularly from those that receive government funding. The data collection contained information on 1,379, 813 discharges. However after excluding those with multiple discharges, those that were in a non-intensive program, and those that were transferred to other facilities and only those that were 18 years and older, the research contained 190,166 subjects. The research used moderated fixed effects logistic regression models to assess differential effect of length of stay on treatment completion among Blacks, Hispanics, and Whites. The research showed that Whites have the highest completion rate and Blacks have the lowest, staying less than 90 days, which can be attributed to the barriers that many minorities face accessing treatment. The study discussed the socioeconomic barriers that are seen in minorities that may cause them to enter programs later and with a greater disorder severity, which would require a greater time in treatment to achieve treatment goals. The limitations of this

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study were as follows: the data included only those that were discharged from the first treatment episode and did not account for those who were in intensive out-patient programs. It also did not take into account those who followed up with the MAT program, which has been found to promote continued sobriety for those that suffer from opioid misuse.

Grooms and Ortega (2022) conducted a retrospective cross-sectional study looking at racial, ethnic, or gender differences in treatment outcomes that exist within age groups. The data was collected from 1992 to 2017 from the Treatment Episode Data Set–Admissions (TEDS-A), made accessible by the Substance Abuse and Mental Health Service Administration (SAMHSA). The researchers' main focus was admission rates for those individuals that were 50 years of age or older. The research showed that in 1992, substance use treatment admissions over 50 years of age accounted for 6.5% (102,705) of total admissions and by 2017, the same age group accounted for 17% (333,728) of treatment admissions. The study also showed that from 1999 until 2017, drug overdose deaths were up 300%, and 40% of those individuals were 45 years of age or older. They also noted that the female overdose death rate due to opioid abuse had increased 400% from 1999 to 2010 compared to men at 237%. Women have also shown to be less likely to complete treatment programs in all age categories compared to men. This was also the case with Blacks and Hispanics being less likely to complete treatment in all age groups compared to non-Hispanic Whites. The limitations of the study included that the observation represents a single admission or a single discharge, and the researchers were unable to link each admission/discharge to a specific individual. They also had to use 50

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years of age as the cutoff because TEDS-D did not specify categories beyond 50 years of age.

### **Significance**

The research conducted was significant to the discipline of nursing. It had implications for nursing practice and nursing research as well as health policy.

#### ***Significance to Nursing Practice***

Nurses are in the perfect position to be able to detect possible substance use or misuse behaviors in their patients. They are first contact in healthcare settings, obtaining individuals' health history and assessment. Nurses spend more time with patients than physicians, and they maintain medication management, placing them in a position to recognize substance tolerance as well as medication-seeking behaviors. They are also the ones that provide support, understanding, and compassion to their patients. Nurses build rapport with their patients and are an asset in helping those that are struggling with substance misuse behaviors. They can help to provide understanding and information to those who are interested in seeking assistance. The challenge seen in nursing is being able to remove the stigma of addiction that exists in healthcare. This study will help provide an understanding of the complexity surrounding substance abuse and the healthcare system.

#### ***Significance to Nursing Research***

The study will help to provide insight into why substance use or misuse has been on a steady incline for many years and the disparities that exist. This study will support existing research on the disparities that exist for those seeking treatment for addiction services. It will examine the psychosocial factors that may increase vulnerability to

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substance use or misuse behaviors. It will also look at gaps in previous research on the pattern of substance use in rural and urban communities. This project could encourage nurses to conduct a more thorough assessment into the barriers clients may face in gaining access to substance abuse resources.

### *Significance of Healthcare Policy*

The study can influence healthcare policy by shifting focus to preventative care when discussing addiction. The research will help to distinguish what demographic of individuals are at highest risk for substance misuse behaviors and help to set forth policy that focuses on prevention. This quality improvement project may also help nurses and healthcare providers to improve healthcare policies in addiction treatment centers by understanding the barriers that exist for those in rural regions who have substance abuse behaviors.

### **Purpose**

The purpose of this quality improvement project was to advance the research on urban and rural disparities that are seen with substance use behaviors. It examined demographics regarding, location, age, substance misuse, gender and race/ethnicity.

### **PICO Questions**

1. Do individuals in rural regions have higher substance use disorders than those in urban regions at Recovery First Treatment Center in Davie, Florida from 2018 to 2020?
2. Do females have higher substance use than men at Recovery First Treatment Center in Davie, Florida from 2018 to 2020?

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3. Do younger individuals, ages 18 to 49 years, have higher substance use than older individuals, ages 50 years and older, at Recovery First Treatment Center in Davie, Florida from 2018 to 2020?
4. Do non-Hispanic Whites in rural regions have higher substance use than other ethnic groups in urban regions at Recovery First Treatment Center in Davie, Florida from 2018 to 2020?

### **Definition of Terms**

#### ***Age***

Age was referred to the years of an individual's life that was seeking treatment for a substance use disorder at Recovery First Treatment Center from 2018 to 2020. Age also represented demographic data. Age was grouped as follows: (a) 18 years to 44 years and (b) 45 years and older.

#### ***Gender***

Gender was referred to as the sex of the individual who had a substance use disorder and was seeking treatment at Recovery First Treatment Center from 2018 to 2020. Gender was represented as demographic data. Gender was categorized as follows: (a) male and (b) female.

#### ***Race/Ethnicity***

Race/ethnicity is referred to as the ethnic background of those who sought treatment at Recovery First Treatment center between 2018 and 2020. The race/ethnicities that were of focus in this study were as follows: (a) Black, (b) Hispanic, (c) White – Non-Hispanic, and (d) Native American.

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### ***Primary Substance Use Disorder***

Primary substance use disorder is defined as the substances that the subjects were misusing that caused them to seek treatment at Recovery First Treatment Center between 2018 to 2020. The substances of focus in this study were: (a) Alcohol, (b) Methamphetamine, (c) Cocaine, (d) Opiates, and (e) Sedatives

### ***Urban Population***

According to the US Census Bureau (Chapter 12 the Urban and Rural Classification), an urban area (UA) is defined as a continuously built-up area with a population of 50,000 or more. It comprises one or more places, the adjacent densely settled surrounding area consisting of other places and nonplace territory.

### ***Rural Population***

According to the US Census Bureau (Chapter 12 the Urban and Rural Classification), a rural area is any territory, population, and housing units that the Census Bureau does not classify as urban. A rural area is any incorporated place with fewer than 2,500 inhabitants that is located outside of a UA.

### **Conceptual Underpinning**

The study followed the positivism research philosophy. Kankam's (2019) research stated that the positivist paradigm was developed as a truth-seeking paradigm during the latter part of the 19th century by Auguste Comte's with the premises of looking into the process of gathering data, observing regularities, and extracting laws. According to Konge and Artino (2020), the study of positivism generally focuses on identifying explanatory associations or causal relationships through quantitative approaches. Alharahsheh and Pius (2020) related positivism with the importance of what is given in

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general, with a strict focus to consider pure data as well as facts without being influenced by interpretation of bias of humans.

This quality improvement project followed a positivism philosophy because it offers advanced nurse practitioners the opportunity to gain understanding of quantitative research and how that may be applied to everyday practice. A descriptive retrospective cross-sectional design was conducted to examine the disparities that exist in substance abuse treatment. The data collected and analyzed was selected randomly in counts from individuals who sought substance use treatment at Recovery First from 2018 to 2020. The research will be looking at the demographics—i.e., urban/rural location, gender, age, race/ethnicity and substance use of those who sought treatment from 2018 to 2020.



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### DNP PROJECT REPORT

#### METHODOLOGY

This study collected data from Recovery First Treatment Center in Davie, Florida. The data were randomly selected in counts by a database at the treatment center. Forty counts were randomly selected for each year: 2018, 2019, and 2020. The data collected examined the subjects' demographics—i.e., age, gender, race/ethnicity, substance use, and urban/rural location. The inclusion criteria are all clients who attended Recovery First Treatment Center between 2018 through 2020, including detox program, residential program, Intensive Outpatient Program, and Partial Hepatization Program

#### **Study Design**

A quantitative research approach was used to conduct this quality improvement project. The specific designs used in this quality improvement project were as follows: descriptive, retrospective, and cross-sectional. These design studies are described in the proceeding section.

#### ***Descriptive Design***

The research aims to accurately and systematically describe a population, situation or phenomenon. According to Siedlecki (2020), descriptive studies look at the characteristics of a population and identify problems that exist within a unit. It can be used to investigate a number of different variables. Descriptive research aims to accurately portray the characteristics of a particular group or situation; this type of research describes social events, social structure and social situations (Akhtar, 2016). This researcher used a descriptive design to describe the types of substance behaviors as

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well as the age, race/ethnicity, and gender of those who sought treatment at Recovery First from 2018 through 2020.

### ***Retrospective Design***

This design examines a phenomenon that currently exists and determines how it is linked to a phenomenon that occurred in the past, so the outcome of interest has already occurred. Its focus is to take the dependent variable to see if it correlates with previous independent variables. The information on the variable being studied is usually obtained from medical records (Talari & Goyal, 2020).). Since this research design is most typically composed of previous medical records, it has helped shape many clinical practices (Talari & Goyal, 2020). This research used a retrospective design to collect de-identified existing data from individuals who sought treatment at Recovery First from 2018 through 2020.

### ***Cross-Sectional Design***

A cross-sectional design describes the relationship of a phenomena at a fixed point in time. This form of research design is the most relevant design when assessing the prevalence of disease, attitudes, and knowledge among patients and health personnel (Kesmodel, 2018). This researcher used this design to examine substance use patterns for the 2018, 2019, and 2020 at Recovery First Treatment Center.

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### **PICO Clinical Questions**

1. Do individuals in rural regions have higher substance use disorders than those in urban regions at Recovery First Treatment Center in Davie, Florida from 2018 to 2020?
2. Do females have higher substance use than men at Recovery First Treatment Center in Davie, Florida from 2018 to 2020?
3. Do younger individuals, ages 18 to 49 years, have higher substance use than older individuals, ages 50 years and older, at Recovery First Treatment Center in Davie, Florida from 2018 to 2020?
4. Do non-Hispanic Whites in rural regions have higher substance use than other ethnic groups in urban regions at Recovery First Treatment Center in Davie, Florida from 2018 to 2020?

### **Setting**

This project was conducted at Recovery First Treatment Center in Davie, Florida. The facility provides an in-patient detox program that contains 20 beds, large dayroom, dining area, gym, and three group rooms. It also has a residential facility that consists of nine apartments and can hold up to 28 clients. The residential facility also contains a fitness center, courtyard, and three group rooms. They also have Partial Hospitalization Program (PHP) and Intensive Out-Patient Program (IOP) that clients can come to from 8am to 5pm daily or 3 days a week for group and individual therapy.

## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

### **Sample**

The estimated sample size for this project was  $N = 120$  subjects. The subjects were collected in counts randomly with  $n = 40$  for each year from 2018 to 2020 at Recovery First Treatment Center in Davie, Florida.

### **Inclusion Criteria**

The subjects must have been a patient treated at Recovery First from 2018 to 2020. They also must have a primary substance use diagnosis and have a known age, gender, reside in an urban or rural location and race/ethnicity.

### **Exclusion Criteria**

Any individual who did not attend Recovery First in Davie, Florida from 2018 to 2020 was excluded from the study.

### **Measures/Instruments**

De-identified data were collected in counts from Recovery First Treatment Center in Davie, Florida. The data were randomly selected in counts using the Recovery First patient database. The researcher randomly selected 40 counts from each year: 2018, 2019, and 2020. The data collected examined the subjects' demographics: (a) urban/rural location, (b) gender (male or female), (c) age (18 years to 29 years, 30 years to 39 years, 40 years to 49 years, 50 years to 59 years, or 60+ years), (d) race/ethnicity, and (e) substance use. Data were examined using SPSS version 25.0 and Microsoft Excel.

## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

### **Data Collection Procedures**

Upon IRB approval, this researcher will obtain permission from the director of the Recovery First Treatment Center to have access to their patient database. Once permission is obtained this researcher will start collecting data randomly in counts. The data collected will examine the demographics of those who sought treatment at Recovery First from 2018 to 2020. The demographics studied were, substance use, urban/rural location, age, gender and race/ethnicity.

### **Data Analysis**

Descriptive analysis was utilized to summarize past data through the process of data entry, data coding, and data cleaning (i.e., in SPSS software program). This researcher collected de-identified data using a research developed demographic instrument. Microsoft Excel assisted with statistical tests to describe the sample and examine the data to determine normal distribution of the variables. Means (*M*) median (*Mdn*) and standard deviation (*S*) were part of the descriptive analysis used for female substance use in rural areas. Frequency was used to examine all other categorical and ratio variables.

### **Protection of Human Subjects**

De-identified data were collected, protecting the information of patients at Recovery First in Davie, Florida from 2018 to 2020. The researcher obtained approval from the Institutional Review Board (IRB) from Florida International University (FIU) before conducting this quality improvement project to ensure research ethics and protection of human subjects. This investigator also completed the CITI ethics certification for the protection of human subjects in social and behavioral research. There

## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

was no inherent risk to participants. The data collected was stored in a password protected computer that only this researcher had access to. The data was randomly collected in counts with no private information identifiers. The data collected will help to support existing research and gain knowledge on the disparities between rural and urban regions regarding substance misuse behaviors.

## **DNP PROJECT REPORT**

### **RESULTS**

The purpose of this quality improvement project was to advance the research on urban and rural disparities that are seen with substance use behaviors. It examined the demographics regarding urban/rural location, substance misuse, gender, age and race/ethnicity from those who sought treatment at Recovery First Treatment Center in Davie, Florida from 2018 to 2020. The increase in substance abuse and overdose rates have been steadily increasing in the United States over the years and has created a burden on healthcare resources, families, and the economy. The research will help to support existing research on the disparities that exist regarding access to substance use treatment assistance.

The data was randomly collected in counts from the Recovery First patient database and consisted of 40 counts each year from 2018, 2019, and 2020 for a total of 120 counts. The subjects were from the Recovery First in-patient detox program, residential program, intensive outpatient program, and partial hospitalization program. The research showed that the prominent substance being abused by the individuals who sought treatment during those years was alcohol (see Figure 1).

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**Figure 1**

*The Types of Substance That Were Being Abused by Those That Sought Treatment at Recovery First Treatment Center from 2018 through 2020*

**Table 1**

*Substance Distribution by Year at Recovery First Treatment Center, Davie, Florida Between 2018 to 2020 (N = 120)*

Year	Alcohol	Amphetamin e	Cocaine	Sedative	Opiates
2018	17	1	2	3	17
2019	18	0	2	0	20
2020	20	4	7	0	9

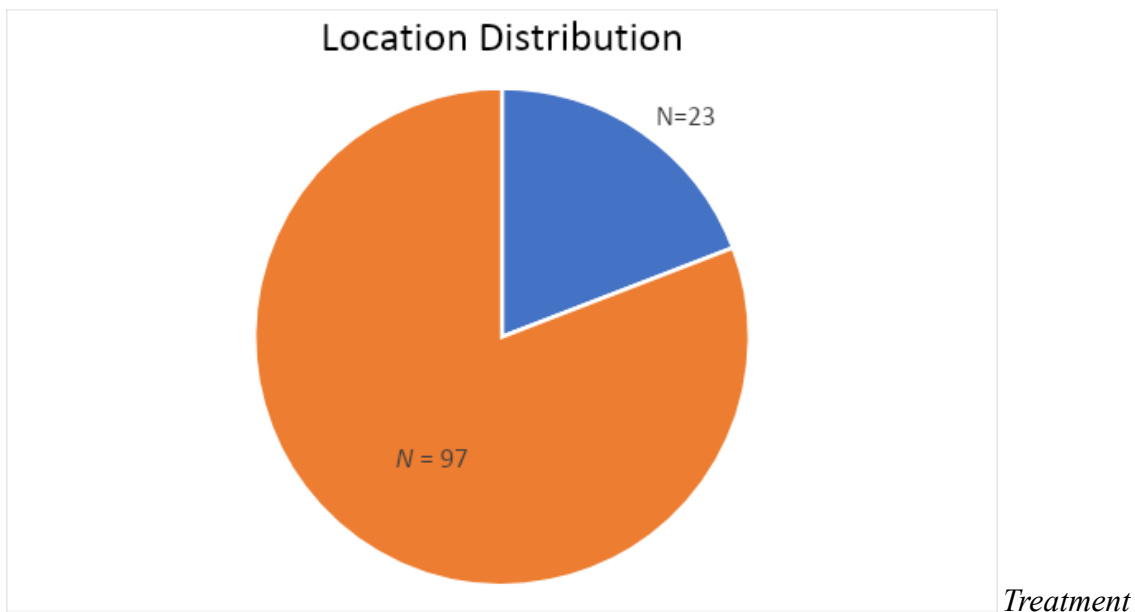
**PICO Clinical Question One**

PICO clinical question one was: Do individuals in rural regions have a higher rate of substance use disorders than those that reside in urban regions who sought treatment at Recovery First Treatment Center in Davie, Florida from 2018 to 2020? Results revealed that those from urban regions had a higher rate of admission into Recovery First from 2018 to 2020 (as portrayed in orange in Figure 2). The data showed that nearly 80% of those that sought treatment from 2018 through 2020 at Recovery First resided in urban regions of the United States. While urban residents had a higher rate of admission into Recovery First Treatment Center, there was a steady increase of individuals from rural areas from 2018 through 2020 (see Table 2). The results showed less than 5% increase in admission rates from those in rural regions from 2018 to 2019 and over 7% increase in admissions from 2019 to 2020.

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**Figure 2**

*Rural vs. Urban Distribution of Those Who Sought Treatment From Recovery First*



*Center in Davie, Florida From 2018 to 2020*



## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

**Table 2**

*The Percentage of Admissions from Urban vs. Rural Locations at Recovery First Treatment Center by Year From 2018, 2019 and 2020*

Location	2018	2019	2020
Rural	13.41%	17.50%	25.00%
Urban	86.59%	82.50%	75.00%

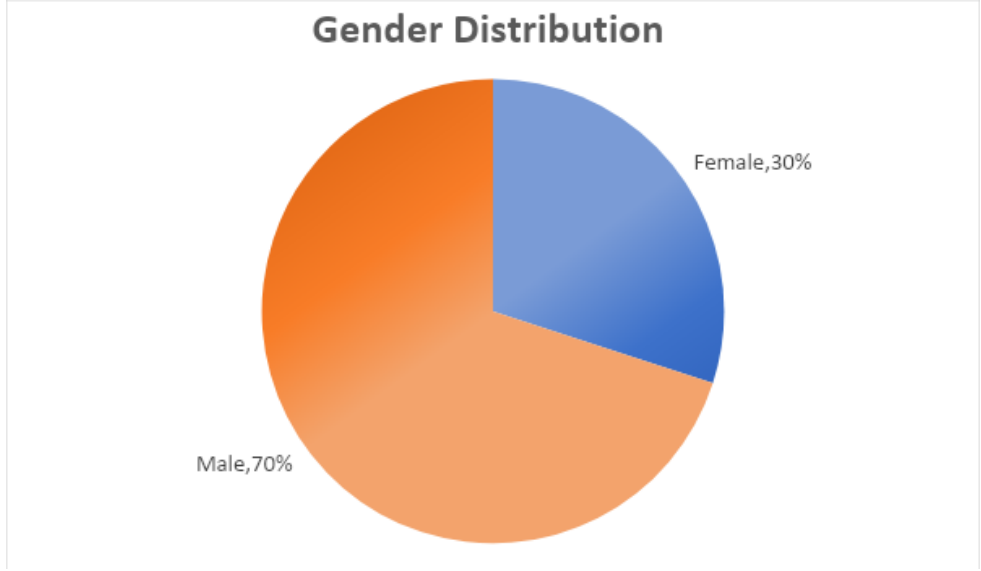
**PICO Clinical Question Two**

PICO clinical question two was: Do females have a higher rate of substance use than men at Recovery First Treatment Center in Davie, Florida from 2018 to 2020? Results revealed that men with substance abuse behaviors were more likely to seek treatment than females (see Figure 3). From the 120 subjects in the study, 84 were men that had sought treatment for substance abuse compared to 36 females from 2018 to 2020 at Recovery First. While men had higher rates of admission each year, females had a consistent rate of admission from 2018, 2019, and 2020 ( $M = 13$ ;  $Mdn = 12$ ;  $SD = 1.73$ ). As females showed a consistent rate of admission from 2018, 2019, and 2020, the rate of admission from rural regions doubled each year (see Figure 4).

DISPARITIES IN SUBSTANCE MISUSE TREATMENT

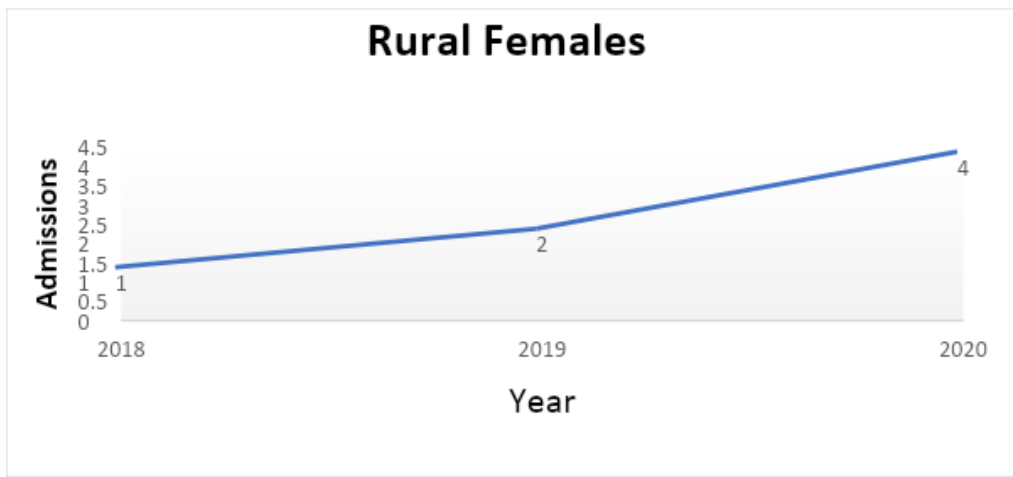
**Figure 3**

*Male and Female Distribution of Those Who Sought Treatment at Recovery First Treatment Center in Davie, Florida From 2018 to 2020*



**Figure 4**

*Female Admission From Rural Regions at Recovery First Treatment Center in Davie, Florida From 2018 to 2020*



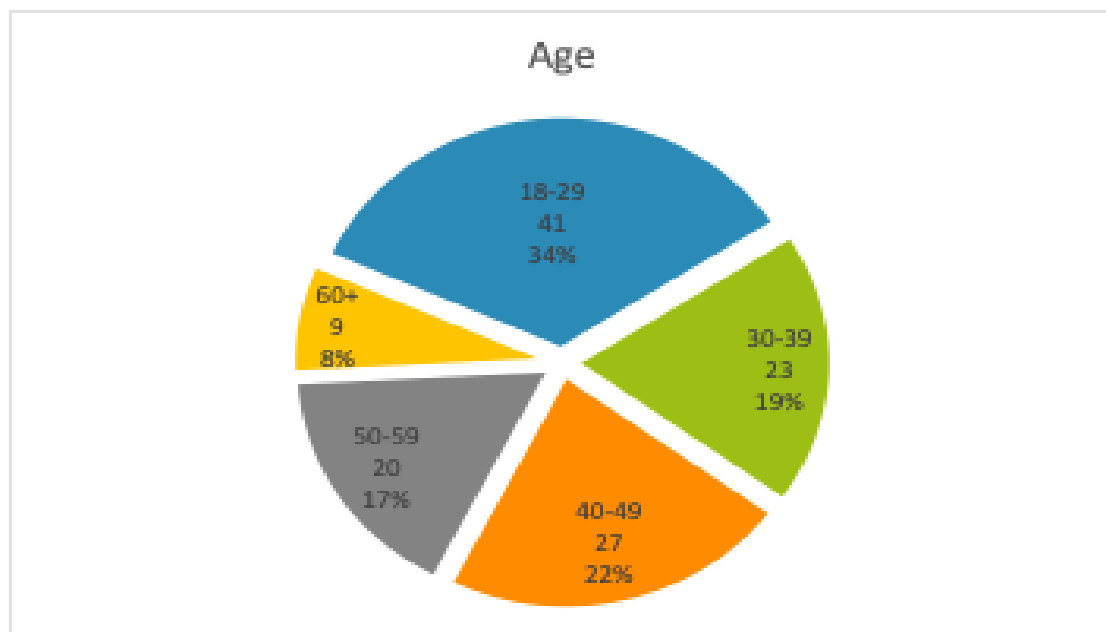
## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

**PICO Clinical Question Three**

PICO clinical question three was: Do younger individuals, ages 18 to 49 years, have higher substance use than older individuals, ages 50 years and older, at Recovery First Treatment Center in Davie, Florida from 2018 to 2020? Results showed that those ages 18 to 49 years old had a higher rate of admission for substance use behaviors than those 50 years and older into Recovery First Treatment Center from 2018 to 2020 (see Figure 5). More than 90 individuals seeking treatment for substance abuse behaviors at Recovery First were 49 years old or younger. The results also showed that those ages 18 to 29 years old had the highest rates of admission from 2018 to 2020 at Recovery First. Those that were over 60 years of age were less likely to seek assistance for substance abuse behaviors.

**Figure 5**

*Age Distribution Among Individuals who were Treated for Substance Abuse at Recovery First Treatment Center in Davie, Florida Between 2018 and 2020 (N =120)*



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The age ranges from 18 to 29 years old had the highest admission rates overall.

The data showed that those seeking treatment from rural regions had a higher age demographic with average age of 41 years old (see Table 3 and Figure 6)

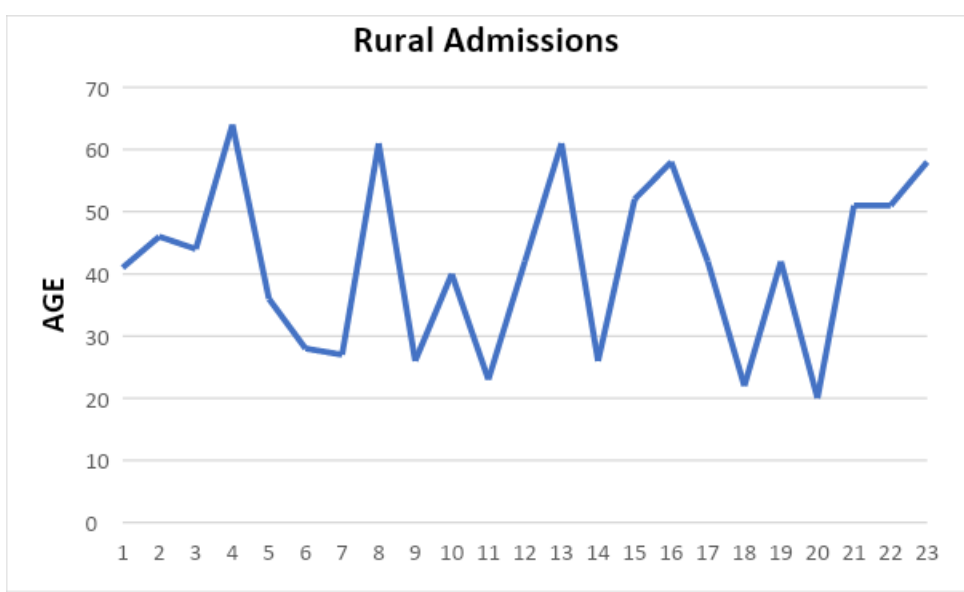
**Table 3**

*Age Distribution Among Individuals From Urban and Rural Regions who Were Treated for Substance Abuse at Recovery First Treatment Center in Davie, Florida between 2018 and 2020 (N=120)*

Location	20s	30s	40s	50s	60s
Urban	34	22	20	15	6
Rural	7	1	7	5	3

**Figure 6**

*Age Distribution Among Individuals From Rural Regions who Were Treated for Substance Abuse at Recovery First Treatment Center in Davie, Florida Between 2018 and 2020 (N=23)*



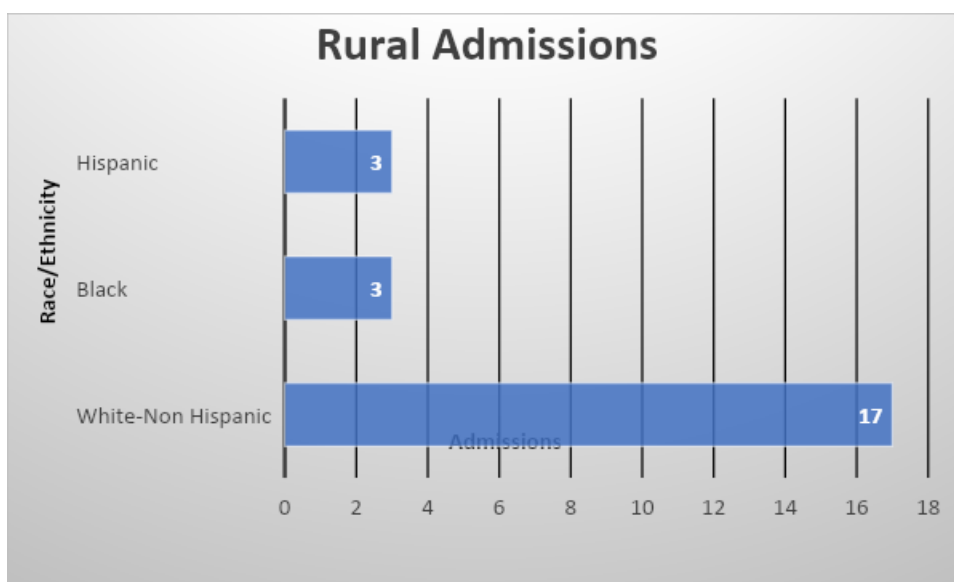
## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

**PICO Clinical Question Four**

PICO clinical question four was: Do White Non-Hispanics in rural regions have higher substance use than other ethnic groups in urban regions at Recovery First Treatment Center in Davie, Florida from 2018 to 2020? Results showed that White Non-Hispanics did have a higher rate of admission at Recovery First from 2018-2022 compared to other races and ethnicities (see Figure 7). White Non-Hispanics were over half the admissions from rural regions compared to other races and ethnicities. The data also revealed that White Non-Hispanics showed a higher rate of admission overall from both urban and rural regions than other races and ethnicities. Furthermore, the data showed that alcohol was the prominent substance abused by all races and ethnicities for those who sought treatment at Recovery First from 2018 to 2020 (see Table 4).

**Figure 7**

*The Distribution of Those Individuals From Rural Regions Based on Race and Ethnicity That Sought Treatment at Recovery First Treatment Center in Davie, Florida From 2018 to 2020 (N = 23)*



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**Table 4**

*The Distribution of Substance Abuse Based on Race and Ethnicity of Those That Sought Treatment at Recovery First Treatment Center in Davie, Florida from 2018 to 2020 (N = 120)*

Substance	Afghan	Asian	Black	Hispanic	Middle Eastern	White/Non-Hispanic
Alcohol	1		9	13	1	37
Amphetamine				1		4
Cocaine			4	3		3
Opiate		1		11		29
Sedative				1		2
Total	1	1	13	29	1	75

## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

### **DNP PROJECT REPORT**

#### **SUMMARY AND DISCUSSION**

The purpose of this quality improvement project was to advance the research on urban and rural disparities that are seen with substance use behaviors. The research examined the demographics of those individuals that sought treatment at Recovery First Treatment Center in Davie, Florida from 2018 to 2020. The demographic data that was collected and analyzed and focused on individuals, residential location, substance misuse, age, gender, and race/ethnicity. A descriptive, retrospective, cross-sectional design was used to conduct this research study. A researcher-developed demographic instrument was used for the collection of data. The data were randomly collected by counts from a patient database at a Recovery First Treatment Center. The analysis was conducted using Microsoft Excel.

The results were based on a sample of 40 counts per year at Recovery First from 2018 to 2020 for a total of  $N = 120$ . The results revealed that alcohol was the most predominantly abused substance for each year, as well as the most abused substance by all races and ethnicities. The study also showed that males sought treatment for substance use at higher rates than females; however, females had a consistent average of admissions each year. Those who were 18 to 49 years of age had the highest rate of admissions; however, those from rural regions had an average age above 40 years of age. The results also revealed that those from rural regions sought treatment less than those who reside in urban regions and that White Non-Hispanics had the highest rate of admission from both urban and rural regions. This next section will compare and contrast the findings with

## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

additional literature as well as discuss the implications for advanced nursing practice, recommendations, research limitations, and conclusion.

### **Summary of Results and Discussion**

The research was conducted at Recovery First Treatment Center in Broward County, Florida, an urban area with a diverse population and accessibility to multiple substance use treatment centers as well as mental health services and emergency services. The population in Broward County is just under 2 million individuals at 1,944, 375 (U.S Census Bureau, 2021). While non-Hispanic Whites are still the highest rate of population at 63.1%, its diverse culture is evident with over 30.1% of its population from a Hispanic or Latino background (U.S Census Bureau, 2021). Blacks or African Americans contribute to 30.2% of the population in Broward County. The median household income in 2020 was \$60,922, and roughly 11% of the population lives below the poverty line (U.S Census Bureau, 2021). While research was conducted in an urban region, disparities continue to exist in access to substance abuse treatment.

The results of this study showed that the majority of individuals who sought treatment at Recovery First resided in urban regions ( $n = 97$ ). These results are reflective of the barriers that individuals who reside in rural areas face when seeking treatment for substance abuse behaviors. Browne et al. (2016) conducted a qualitative study with 40 clients and 40 stakeholders at nine different treatment centers and revealed four perceived barriers to substance abuse treatment in rural regions which were stigma, cost, availability to services, and current technology. This supports the results of this project showing that in the 3 years from 2018 to 2020, rural clients accounted for only  $n = 23$  of the participants. Lister et al. (2020) conducted a systematic review of 15 articles focused



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on the barriers to opioid treatment centers in rural regions; they found that travel hardship is a primary barrier to seeking treatment. To support this finding, there was a quantitative research article by Kiang et al (2021) that examined data from 31,053 locations for all opioid treatment providers and 30,009 locations of buprenorphine-waivered prescribers (BPL) showing that the average drive time for rural residence is 61 minutes compared to 12 minutes for those in urban regions. While increased distance from the treatment center is seen as a barrier. Ezell et al, (2021) conducted a mixed method study with ( $n = 52$ ) participants that looked at how the loss of anonymity in rural areas can also prevent individuals from seeking treatment for substance use behaviors. These barriers discussed in the literature can contribute to the lower number of rural participants in this study.

This study further examined the admission rates between male and female admissions with results showing that males ( $n = 84$ ) predominantly sought treatment at Recovery First Treatment Center between 2018 and 2020 over females ( $n = 36$ ). Verplaetse et al. (2021) conducted a cross sectional analysis from 2008 to 2017 with  $n = 562,027$  using data from the National Survey on Drug Use and Health and found that males abused alcohol at a rate of 9.7% compared to women at 6.4% and also have a higher rate of being diagnosed with alcohol dependency than females. This article supports the existing data at Recovery First with a higher rate of male admissions. Marsh et al. (2018) conducted a cross-sectional study from 2007 to 2014 with a sample ( $n = 447,188$ ) that focused on heroin and prescription opioid abuse and found that men were more likely to abuse both heroin and prescription opioids than females. Furthermore, the study found that over time men increased their heroin use at an average rate of 8 per 1000 persons, compared to women who increased at an average rate of 15 per 1000

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persons. These findings may help to support that while female admissions from 2018 to 2020 remained the same each year, female admissions from rural regions doubled each year. A cross-sectional study by Ali and West (2022) from 2015 – 2017 with  $n = 720$  female participants 18 years to 44 years old found that females from rural areas have 97% lower odds of obtaining substance abuse treatment than females from urban regions and 53% of those women state it is due to lack of accessibility. This conflicts with the data from this study as females from rural regions doubled each year from 2018 – 2020.

This project also examined how age can factor into substance abuse behaviors as well as treatment assistance. Results showed that those 18 years to 29 years old had the highest rate of admission from 2018 to 2020. However, Haider et al (2020) conducted a retrospective cross-sectional study with ( $n = 171,766$ ) adults from 2015 to 2018 with a focus on opioid use disorder and found that majority of individual stated beginning use in their 20s; however, those 35 years to 49 years old had a higher rate of reporting current opioid abuse. While this study showed higher rates of admission from 18 years to 29 years, it also showed that those who sought treatment from rural areas had an average admission age older than 40 years of age, which supports Haider et al. (2020) findings. A cross sectional review conducted by Afuseh et al. (2020) on 370 articles from 1989 to 2019 focused on the risk factors that are seen in different age groups of those who struggle with substance abuse. The research found that risk factors for those 18 years to 25 years old struggle with the stress of adulthood, academics and poor parental role models. Furthermore, they concluded that family and career stress, mostly in high stress and physically demanding jobs, are high risk factors for those 26 years to 64 years old. These findings are helpful in understanding why these individuals are seeking treatment.

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The results of this project showed that non-Hispanic Whites from rural regions had a greater rate of admissions than all other races at Recovery First from 2018 to 2020 ( $n=17$ ). Monnat (2019) conducted a retrospective cross-sectional analysis that looked at ( $n = 3047$ ) counties in 49 U.S states from 2000 to 2002 and then again from 2014 to 2016 and found an increase in drug, alcohol, and suicide mortality (the so-called “deaths of despair”) among middle-age non-Hispanic Whites in rural regions. This helps support the data on the rural admission rates seen at Recovery First from 2018 to 2020. Monnat (2019) also found that overdoses and drug-induced disease for non-Hispanic Whites has increased 275% from 1999 to 2016 having the highest drug mortality rate of all major racial/ethnic groups.

The research showed that while non-Hispanic Whites have a higher rate of overall use, blacks had the highest rate of cocaine use at Recovery First. Zapolski et al. (2016) performed a quantitative descriptive analysis of  $N = 270$  subjects, showing that African Americans are nine times more likely to become cocaine dependent within 24 months of initiating cocaine use than non-Hispanic Whites and disproportionately have more fatalities due to cocaine use than any other race or ethnic group. Results also showed disparities in Hispanic admission ( $n = 29$ ), with the majority ( $n = 13$ ) seeking treatment for alcohol misuse. Foster et al (2020) conducted a longitudinal study of  $N = 1065$  participants which showed that Hispanics tend to consume higher volumes of alcohol during drinking events and have higher alcohol-related negative consequences than other races and ethnicities. The data results of this project are supported by existing research on substance behaviors from different races/ethnicities throughout the U.S. The literature also supports that all individuals living in rural regions regardless of

## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

race/ethnicity face socioeconomic and accessibility barriers to substance abuse treatment centers

### **Implications for Advanced Nursing Practice**

The research conducted helps provide understanding on the disparities seen between urban and rural regions in regard to substance misuse and the availability to treatment. It is important for Advanced Nurse Practitioners (ANP) to be aware of these disparities and the prevalence of substance misuse in the U.S. and its impact on the healthcare system. The research and results of this project can assist ANPs in developing new approaches as well as empathy for clients with substance abuse behaviors.

Furthermore, with more ANPs being empowered to practice independently, they have an opportunity to evoke real change in these regions. They have the privilege of being on the front line of patient care, making them a vital resource for policy changes. Nurse leaders and administrators could advocate for policy changes in their regions to help improve the disparities in access to proper treatment for substance abuse behaviors. Moreover, ANPs should be collaborating with politicians both on local and federal level to help improve accessibility to substance use treatment centers across the U.S.

### **Limitations of Project**

Although the present study has many strengths, the limitations are as follows:

1. The research was conducted at a single substance abuse treatment center in an urban region of the U.S. The results may not reflect data from treatment centers in other regions of the U.S.

## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

2. The sample size was small compared to the overall number of admissions at Recovery First treatment Center in Davie, Florida from 2018 to 2020. The data also did not reflect those that left against medical advice (AMA).
3. A descriptive, retrospective cross-sectional research study was unable to explain causality of variables.
4. The data focused on demographics only and did not reflect the risk factors for substance misuse behaviors

### **Recommendations**

Future research would benefit from collecting data from multiple treatment centers in both urban and rural areas on disparities in substance misuse and treatment. A qualitative research design with questionnaires could help support existing literature as to risk factors for substance misuse behaviors. The literature would also benefit in a longitudinal study from those individuals who completed treatment and the rate of sobriety post treatment completion. This can help provide knowledge on relapse triggers and return rate to treatment. In addition, research should evaluate healthcare providers' knowledge on substance misuse behaviors and the awareness of the disparities that exist in treatment.

### **Conclusion**

The results of this quality improvement project revealed that alcohol was the most abused substance by all race/ethnicities who sought treatment at Recovery First Treatment Center between 2018 and 2020. The admission rate for males was higher than females; however, female admissions from rural areas doubled each year from 2018 to 2020. Those aged 18 years to 29 years old had the highest rate of admission; however, the

## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

average age for those in rural areas was over 40 years of age. Non-Hispanic Whites had the highest rate of admission from both rural and urban regions than all other races or ethnicities. The data also showed that non-Hispanic Whites have the highest rate of opioid misuse behaviors, while blacks have the highest rate of cocaine misuse and Hispanics abuse alcohol more than any other substances. This research contributes to current research to assist in understanding disparities that exist in urban and rural substance use behaviors and treatment.

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## DISPARITIES IN SUBSTANCE MISUSE TREATMENT

**APPENDIX E: CV**

BSN in Sociology, Florida State University Tallahassee, FL	January 2000 – August 2004
Associate of Science Nursing, Ivy Tech College Clarksville, IN	August 2009 – August 2011
Mental Health Tech/Registered Nurse 2012Wellstone Regional Hospital	March 2008 – January
Charge Nurse Ft Lauderdale Hospital	February 2012 – March 2013
Bachelor of Science Nursing, Broward College Davie, FL	August 2015 – June 2016
Charge Nurse/Nurse Leader/Nurse Manager Aventura Hospital	March 2013 – Dec 2020
Psychiatric Mental Health Nurse Practitioner Florida International University	August 2018 – August 2020
PMHNP Recovery First Treatment Center	December 2020 – Current
Elevate Psychiatry	March 2021 – Current
Florida International University DNP Program	January 2021 – Current