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Pharmacotherapy for Opioid Use Disorder in Mississippi

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PHARMACOTHERAPY FOR OPIOID USE DISORDER IN MISSISSIPPI

by

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ABSTRACT

The opioid epidemic is affecting Mississippi's young to middle-aged adult population in a profound way. Pharmacotherapy for opioid use disorder (OUD) is the gold standard treatment. Despite the FDA-approved evidence-based treatment of pharmacotherapy for OUD, rural areas often lack providers available who will initiate and provide maintenance of this life-saving medication. For this doctoral project, a 36-question survey was developed based on a preliminary literature review. The survey was disseminated to advanced practice registered nurses (APRNs) in the family and psychiatric specialties across Mississippi to assess the barriers to APRNs filling the gap in pharmacotherapy prescribing for OUD. A continuing education program was developed for the dissemination of the results of the survey, to provide education, and offer further resources on evidence-based treatment for OUD.

The PICO question investigated for this doctoral project was: Among psychiatric and family nurse practitioners in Mississippi will a survey of knowledge related to OUD treatment, perceived barriers in buprenorphine prescribing, and awareness of stigma reveal, compared to current practice, that APRNs are adequately prepared to undertake a leadership role in prescribing pharmacotherapy for OUD?

The doctoral project offered insight into the barriers to the provision of pharmacotherapy for OUD by Mississippi APRNs which guided the continuing education program developed by the researcher. Providers were not adequately prepared through graduate education to manage OUD by utilizing evidence-based pharmacotherapy treatment. Stigma amongst healthcare providers toward this population was apparent which warrants more education and immersive clinical experiences at the undergraduate

and graduate levels. Reduced practice in Mississippi could interfere with the provision of pharmacotherapy for OUD by APRNs willing to prescribe it.

Mississippi graduate nursing programs should strive toward the American Association of Colleges of Nursing's (AACN) 2018 goal, as noted in Compton and Blacher (2020), to incorporate pharmacotherapy for OUD in graduate nursing curriculums to prepare future APRNs to fill the gap in treatment provision for people with OUD. Education in undergraduate and graduate nursing programs should address the stigma associated with addiction disorders. Prolonged collaborative agreements between physicians and APRNs in Mississippi should be re-evaluated and full-practice authority for APRNs with several years of experience should be granted.

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DEDICATION

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TABLE OF CONTENTS

LIST OF ABBREVIATIONS

AACN	American Association of Colleges of Nursing
APRN	Advanced Practice Registered Nurse
BON	Board of Nursing
CARA	Comprehensive Recovery Act
CDC	Centers for Disease Control
CME	Continuing Medical Education
DATA	Drug Addiction Treatment Act
DEA	Drug Enforcement Agency
DMH	Mississippi Department of Mental Health
DNP	Doctor of Nursing Practice
DSM	Diagnostic Statistics Manual
EBP	Evidence Based Practice
FNP	Family Nurse Practitioner
MACPAC	Medicaid and CHIP Payment and Access Commission
MANP	Mississippi Association for Nurse Practitioners
MAT	Medication Assisted Treatment
OUD	Opioid Use Disorder
PA	Physician Assistant
SUPPORT	Substance Use Prevention that Promotes Opioid Recovery and Treatment

SAMHSA	Substance Abuse and Mental Health Services Administration
PCP	Primary Care Physician
PCSS	Provider Clinical Support System
PMHNP	Psychiatric Mental Health Nurse Practitioner
SBIRT	Screening, Brief Intervention, and Referral to Treatment
SUD	Substance Use Disorder
VA	Veteran's Administration

CHAPTER I - INTRODUCTION

Opioid use disorder (OUD) is widely recognized as a public health threat. OUD has become a more prevalent diagnosis that is marked by a persistent use of opiates resulting in clinically significant impairment (Dydyk et al., 2020). The primary identified reason for the rise in the misuse of opioids is increased access (Hoffman et al., 2019). An increase in prescription opioid medications as well as greater purity in the manufacture of heroin, and the addition of illicit fentanyl on the market have all contributed to the development of the opioid epidemic (Hoffman et al., 2019). With an increase in mortality and morbidity associated with opioid overdose and a decrease in the average American life expectancy (Shipton et al., 2018), the opioid epidemic puts a costly burden on our economic system and welfare of society.

According to Florence et al. (2021), the economic burden related to decreased quality of life due to OUD and the loss of life as a result of fatal opioid overdose was estimated to be over a trillion dollars in 2017. Florence et al. (2021) further acknowledge that healthcare costs associated with OUD include medical expenses in the face of nonfatal overdoses as well as an increase in office visits and emergency room visits for care. Further, costs of OUD include lost productivity because of incarceration, reduction in productive hours, and premature death (Florence et al., 2021). The cost of opioid-related crime must also be accounted for in terms of increased need for police on patrol, public legal needs, correctional facilities, and property losses (Florence et al., 2021). Adequate treatment of those who already have OUD will enhance the quality of life of these citizens and mobilize them to return as productive members of society.

According to Foney and Mace (2019), access to mental health and addiction services in the United States (U.S.) is an ongoing problem despite the high demand for services. Multiple barriers contribute to the lack of access which includes poor insurance coverage, long wait times and/or limited options in terms of specialty providers, poor awareness of where to get appropriate help, and fear of being judged for seeking mental health and/or addiction treatment services (Cohen Veterans Network and National Council for Behavioral Health [CVN], 2018). Ensuring access to treatment is key to managing the opioid epidemic.

Since the Comprehensive Addiction and Recovery Act of 2016 (CARA), advance practice registered nurses (APRNs) and physician assistants (PAs) are qualified to obtain a waiver to the Controlled Substance Act so that they may prescribe pharmacotherapy for OUD within the limitations of individual state certification boards. With APRNs on the front lines of the opioid epidemic, it is imperative that APRNs be prepared with information to treat OUD using evidence-based practices (EBP). The problem of access to treatment necessitates that providers who are eligible to treat patients with OUD be made aware of resources available to prepare them to actively engage in the initiation of pharmacotherapy for OUD and manage treatment maintenance for these patients (Comprehensive Addiction and Recovery Act [CARA Act], 2016).

The Substance Use Prevention that Promotes Opioid Recovery and Treatment Act of 2018 (SUPPORT) has had a positive impact on access to pharmacotherapy for OUD. While it removes many restrictions for OUD treatment and regulates opioid medications to prevent over-prescribing practices, it does two specific things that are noteworthy to the aim of this project. SUPPORT temporarily requires coverage of pharmacotherapy for

those who have Medicaid, and it increases the number of OUD patients that providers may treat (Substance Use Prevention that Promotes Opioid Recovery and Treatment Act [SUPPORT], 2018).

New legislation as of April 2021 allows physicians, APRNs, and PAs with a drug enforcement administration (DEA) number to prescribe pharmacotherapy for up to thirty patients with OUD without obtaining a specific certification or waiver to treat with buprenorphine in the office-based setting (Office of the Secretary, Department of Health and Human Services, [HHS], 2021). The aim of this legislation is to increase the number of providers offering pharmacotherapy for OUD and to broaden access to patients who need it.

Background and Significance

The opioid epidemic is an ongoing phenomenon in the U.S. Mississippi does have a high number of opioids prescribed which contributes to the problem of the opioid epidemic locally. According to the Mississippi Bureau of Narcotics, 440 people died from overdoses in Mississippi in the year 2020 (Wood, 2021).

The opioid epidemic is impacting Mississippi's young to the middle-aged adult population most profoundly. According to the Mississippi Opioid and Heroin Data Collaborative (Mississippi Board of Pharmacy, Mississippi Bureau of Narcotics, Mississippi State Department of Health, Mississippi Department of Mental Health [MBP, 2021) the 2020 opioid treatment admissions in facilities that received some form of public funding in Mississippi were a total of 2,065. Approximately 42.4 % of the people who presented for treatment admission involving some forms of opioid abuse were

between the ages of 25 and 44 years old (MBP, 2021). Whether treatment with pharmacotherapy was offered is not readily apparent.

Multiple barriers exist that Mississippi needs to address to manage the opioid epidemic. It is known that in rural health care, sub-specialties such as mental health and substance abuse treatment, are difficult to access (Moore, 2019). In 2021, the estimated population of Mississippi was 2,949,965 people. Of this population, approximately 1,557,088 people are living in rural Mississippi (U.S. Department of Agriculture Economic Research Service [USDA ERS], 2022). Furthermore, Mississippi is estimated to have a poverty rate of 19.75%, putting Mississippi as the most impoverished state in the nation (U.S. Census Bureau, 2020) which is yet another layer to addressing the barriers that exist to treatment for OUD.

Mississippi has addressed the opioid epidemic in several ways. According to the Mississippi Department of Public Safety, Bureau of Narcotics (2019), in December 2016 a task force was initiated by Governor Phil Bryant to address the epidemic with a strategic plan. Recommendations for future legislation and regulatory measures were made by the task force to minimize the number of Mississippi citizens falling prey to heroin and opioid addiction. In May 2017 the task force introduced an educational promotion in town hall meetings across the state. In July 2018 a two-day opioid and heroin summit was held to further disseminate education on how the opioid epidemic is affecting Mississippians. Further, a grant was obtained by DMH to distribute naloxone, an opioid antagonist used to reverse opioid overdose, to 252 agencies statewide. 27 prescription drug drop boxes were also purchased by DMH thus giving patients with prescription opioids a place to safely discard these drugs that can easily be diverted and

misused. The department has plans for acquiring an additional 37 drug drop boxes to make these readily available for the safe disposal of opioids across the state (Mississippi Department of Public Safety, Bureau of Narcotics [MDPS], 2019).

Mississippi has a large rural citizenship for which provider accessibility and treatment for OUD are both lacking. Mississippi must address the lack of providers who are knowledgeable and prepared to initiate and provide maintenance pharmacotherapy to treat OUD. According to MBP Pearl River County, which is approximately 70% rural and 30% urban, there were zero naloxone administrations during the year 2020. Subsequently, there were 21 opioid-related deaths in that county during the same year (MBP, 2021). While this county did not suffer the most opioid-related deaths in Mississippi in 2020, the lack of resources is apparent with only two providers listed on the Substance Abuse and Mental Health Services Administration's buprenorphine locator (Substance Abuse and Mental Health Services Administration [SAMHSA], 2022). One dual-certified nurse practitioner and one family medical doctor are listed as available outpatient buprenorphine providers in Pearl River County (SAMHSA, 2022). It is not apparent whether maintenance treatment of OUD, the gold standard for OUD, is offered.

In contrast, MBP (2021) reports that Harrison County, which is approximately 70% urban, had over 49 deaths due to opioid overdoses in 2020. Of the 2,065 administrations of naloxone by emergency medical services in the state of Mississippi for that year, 443 of these occurred in Harrison County (MBP, 2021). In this well-populated area, there are 26 providers listed on the buprenorphine locator with 13 of the providers listed as APRNs or PAs (SAMHSA, 2022). APRNs and PAs must be associated with a

physician to practice in this reduced licensure state which, presumably, acts as a barrier to APRNs utilizing the waiver to the maximum extent.

Studies indicate that of two million Americans with OUD only about 26% receive treatment (Duncan & Reynolds, 2020). “From April 2017 to January 2019, only half of the clinicians who had met stringent federal requirements and were, therefore, eligible to prescribe buprenorphine for OUD did so” (Duncan & Reynolds, 2020, para. 3). Duncan and Reynolds (2020) go on to report that of those who did prescribe buprenorphine, most were doing so for many fewer patients than the maximum allowed. Under-utilization of this evidence-based practice (EBP) is a problem that needs to be explored at the state level with specific interventions tailored to address the barriers that are revealed.

Patients with substance use disorders (SUD) have poor access to treatment, especially in rural areas (Moore, 2019). The issue is that pharmacotherapy for OUD, also known as medication-assisted treatment (MAT), is the gold standard for treatment, yet it is not readily available due to multiple barriers (Atterman et al., 2017). MAT has been shown to reduce drug use and the risk of overdose as well as preventing ongoing risky behaviors such as criminal acts and injection use (Atterman et al., 2017). Because pharmacotherapy is the best EBP for the treatment of OUD, it is necessary to utilize this practice to the extent of current resources and expand resources to ensure patient accessibility.

According to one study done by Jones and McCance-Katz (2018), 4,225 clinicians in a sample that included medical doctors, APRNs, and PAs, “the percentage of clinicians prescribing buprenorphine at or near the patient limit in the past month was 13.1% overall” (p. 473). Furthermore, approximately 41% to 47% of

those prescriptions were in urban settings as opposed to a lower percentage of approximately 22% to 27% prescribed in the rural settings that were sampled (Jones & McCance-Katz, 2018). Medical schools and nursing schools do not necessarily devote education toward the achievement of understanding drug addiction and treatment. However, the Drug Addiction Treatment Act (DATA) 2000 waiver provides training on prescribing buprenorphine for OUD (Aaron, 2019). "From 2016 to 2019 the number of waivered clinicians per 100,000 population in rural areas increased by 111 percent. NPs and PAs accounted for more than half of this increase and were the first waivered clinicians in 285 rural counties with 5.7 million residents" (Barnett et al., 2019, p. 2048). Most waivered APRNs are providing care in urban areas (Moore, 2019); rural areas continue without access to treatment.

One of the barriers to address is the lack of providers in rural areas that remain unaware of their eligibility to prescribe, are unable to prescribe, or are unwilling to prescribe pharmacotherapy initiation and maintenance for OUD. APRNs and PAs have led the way in the opioid epidemic by becoming waivered to provide pharmacotherapy. For APRNs to continue to fill the gap in care, it is necessary for graduate nursing programs to teach the skill of prescribing pharmacotherapy for OUD.

The PICO question formulated from the problem identified is as follows: (P) Among psychiatric and family nurse practitioners in Mississippi (I) will a survey of knowledge related to OUD treatment, perceived barriers in buprenorphine prescribing, and awareness of stigma reveal (C) compared to current practice (O) that APRNs are adequately prepared to undertake a leadership role in prescribing pharmacotherapy for OUD in Mississippi?

A survey of family nurse practitioners (FNPs) and psychiatric mental health nurse practitioners (PMHNPs) in Mississippi was done to address knowledge of OUD, EBP for treatment, and interest pertaining to prescribing treatment for patients with OUD. An inquiry was done to assess whether APRNs in Mississippi were aware of the new legislation allowing APRNs to prescribe buprenorphine pharmacotherapy for OUD for up to 30 patients without earning the certification previously required. For the purposes of this doctoral project, a continuing education program that took into consideration the specific needs identified from the survey responses. Lastly, information was provided about the Provider's Clinical Support System (PCSS) in the continuing education program, so that providers can access information and support related to prescribing pharmacotherapy which includes the free training to become waivered to provide MAT.

The outcomes of the survey include that APRNs in Mississippi identified lack of education in preparation for prescribing OUD pharmacotherapy. Knowledge of stigma, both internal bias and identification of external bias, was revealed. The survey offered insight into the barriers to the prescription of pharmacotherapy for OUD in Mississippi which guided the continuing education program development. The hope is that the continuing education program geared toward the needs of Mississippi APRNs will increase the number of APRNs, across specialties, who apply for the waiver to expand patient accessibility to pharmacotherapy in their practices. Another outcome that is hoped for is that those who already have the waiver increase patient load to the maximum capacity allowable through the waiver.

Lastly, it was one aim of this doctoral project for Mississippi educational institutions of nursing to incorporate a standard educational practice to incorporate SUD

training. OUD pathophysiology and treatment guidelines, taught at the undergraduate, graduate, and doctoral levels of training for nurses, would be of great benefit to APRN's on the frontlines of the opioid epidemic. Exposure to patients with OUD at all levels of training, such as nursing students having clinical placements in harm reduction programs, would greatly lessen the stigma associated with OUD and other SUDs.

The doctoral project is linked to the proposed intervention in this way: APRNs who are on the front lines of the opioid epidemic, FNPs in rural health primary care clinics, and PMHNPs, may not be aware of the strong evidence-based treatment of OUD with pharmacotherapy. The problem of access to treatment necessitates that providers who have a DEA number treat patients with OUD pharmacotherapy as they encounter them in practice. To do so, they must be made aware of resources to expand their knowledge so they can safely engage in the treatment and ongoing management of this disorder given new federal legislation that expands eligibility.

Sources of data used to evaluate the doctoral project outcomes included national and state collaborative projects. SAMHSA's buprenorphine provider database (SAMHSA, 2022) was used as one source of data to determine current providers of pharmacotherapy for OUD. Mississippi Board of Nursing (BON) was used as a source of data on family and psychiatric APRNs currently holding licensure in Mississippi.

Needs Assessment

Research is needed on the knowledge base of Mississippi primary care, acute care, emergency medicine, and rural healthcare providers on OUD and evidence-based treatment. Primary care venues are on the front lines of the opioid epidemic (Bachuber et al., 2016), therefore it is important that pharmacotherapy be prescribed in

such a setting, especially in rural areas, where limited mental health and substance abuse treatment resources are accessible. It is also important to determine the current practices of MAT wavered providers in Mississippi to discern what barriers exist to prescribing MAT. A concern that must be addressed is whether there are enough physicians with a DEA number willing to work with APRNs so that APRNs can effectively treat OUD patients with pharmacotherapy.

Furthermore, the knowledge base of staff who encounter emergency room patients with opioid overdoses is certainly a critical area to target. Education of emergency department staff on OUD and the efficacy of pharmacotherapy is imperative as these patients may experience high levels of stigma associated with their SUD in an environment where they may be seen repeatedly. The foundational issues that arise include the need for education about OUD and a need for access to treatment. While there is a need for more availability of pharmacotherapy initiation, appropriate referrals for ongoing maintenance are also a necessary part of this gold standard of treatment.

Education on multiple fronts is a key component of conquering the opioid epidemic. Key areas of education include community education on the danger of opioid use, education of patients with OUD on evidence-based treatments, and education of potential prescribers of MAT on the efficacy of MAT. Taking that a step further, some degree of standardization of the delivery of buprenorphine for the treatment of OUD also needs to be addressed (Mississippi Department of Health [MDH], 2019). Despite an increase in those who prescribe buprenorphine, many are not prescribing for long-term maintenance as is needed to ensure the availability of appropriate evidence-based addiction treatment (MDH, 2019). Standardization requires more research on how

long MAT should be continued and, in general, studies are showing individualized treatment for long-term and life-long maintenance is needed (O'Neil, 2014).

Synthesis of Evidence

Search

The aim of the literature search was to identify barriers to access MAT treatment for OUD. All studies, including gray literature such as unpublished manuscripts and conference presentations, were eligible for inclusion. Multiple computerized databases using *Seymour Information* resulted in numerous articles. *Medline, Ebsco Host,* and *CINAHL* were also utilized independently of *Seymour Information*. *Seymour Information* resulted in 64,905 results for the term, opioid use disorder, and 115,661 results for the term, medication-assisted treatment. Combining terms resulted in 12,376 results. The search was narrowed to 2017-2021 resulting in 8,998 results with the added qualifier of including only articles. The qualifier yielded 7,222 results. Adding the terms nursing and access yielded 1,137 results. Removing the term pain from the subject list and refining the search again to the phrase, substance abuse treatment articles, led to 331 results.

Seymour Information was utilized to search barriers to buprenorphine prescribing. The search was narrowed refining the subject to buprenorphine, between the years 2017 and 2021 with 62 results. Substantial literature suggested that barriers to access the gold standard treatment perpetuate the opioid crisis in the U.S. Specifically, research findings suggested that prescribing restrictions, addiction treatment being regarded as a specialty care practice, financial barriers, stigma of SUD, and bias toward the use of MAT contribute to the limited accessibility that remains.

Other sources were sought independently of the systematic search of the literature. State and federal resources were utilized to determine the extent of the problem of opioid use in Mississippi and on a national level. Additionally, references from articles found in the literature review were scanned for useful information.

The literature regarding barriers to access pharmacotherapy for patients with OUD was explored in articles from interdisciplinary fields in nursing and medicine spanning five years, from 2017 to 2021, using key words that included: buprenorphine, medication-assisted treatment (MAT), prescribing, barriers, access, opioid use disorder (OUD). The specific aims were to determine what barriers associated with MAT for OUD were represented in the literature, (b) to assess what the literature addresses to overcome the barriers identified, and (c) to extrapolate identified needs in the literature.

Definition of Key Terms

Opioid use disorder (OUD) is defined in the Diagnostic and Statistics Manual (DSM V) (American Psychiatric Association [APA], 2013) as repeated use of opiates resulting in the clinical impairment of functioning in multiple domains. The criteria continue to identify eleven symptoms of which a person manifests at least two within the last 12-month period. The symptoms include increasing the dosage of opioids or taking them longer than prescribed, having an ongoing desire to stop or control use without success, spending a significant amount of time trying to obtain or recover from opiates, having cravings for opiates, and/or using the drug interferes with the fulfillment of responsibilities at work, school, or home. Continued opioid use regardless of the ongoing problems in one's social life for which opiate use is the cause, giving up or not engaging as often in social, recreational, or occupational activities because of opiate use, using

opioids in physically harmful situations, using opioids even though one has the knowledge that they are contributing to physical or psychological problems, opioid tolerance, and/or opioid withdrawal (APA, 2013).

Substance use disorder (SUD) is defined by the DSM V (APA, 2013) diagnostic criteria to encompass ten individual classes of drugs. Alcohol; caffeine; cannabis; hallucinogens (phencyclidine or similarly acting arl-cyclohexylamines; and other hallucinogens); inhalants; opioids; sedatives, hypnotics, or anxiolytics; stimulants (amphetamine-type substances, cocaine, and other stimulants); tobacco and other unknown substances are listed as separate classes of drugs (APA, 2013). Therefore, SUD includes the diagnosis of OUD.

Medication-assisted treatment (MAT) is defined by SAMHSA (2022) as the use of medication and behavioral interventions to treat SUDs. MAT includes methadone in opioid treatment programs and buprenorphine/naltrexone in outpatient settings. (SAMHSA, 2022.) This term is utilized when used in the context of an article that adheres to the use of this term; otherwise, the term pharmacotherapy will be used.

Pharmacotherapy is a more accurate term used to identify the use of medications in the treatment of SUD. According to Robinson and Adinoff (2018), the utilization of the term MAT is inherently confusing because it gives the message that pharmacotherapy is ancillary rather than first-line treatment for OUD. This mixed message reinforces archaic ideation and stigma in opposition to OUD pharmacotherapy (Robinson & Adinoff, 2018). For this reason, the preferred term to describe medication that is prescribed in the treatment of OUD is pharmacotherapy.

Evidence-based practice (EBP) is an approach to treatment utilizing the best evidence for practice. Three benchmark domains are utilized to evaluate evidence: quality, quantity, and consistency (Tymkow, 2021). The presence of high-quality evidence indicates the lack of bias present as a result of errors in the selection, measurement, or internal validity. Quantity, as it relates to evidence, refers to the actual number of relevant and related studies, total sample sizes across studies, size of the treatment groups, and relative risk. Consistency points to the recurrence of similar findings across multiple studies that have statistical significance (Tymkow, 2021).

Advanced practice registered nurses (APRN) as defined by the American Nurses Association (n.d.) includes nurse practitioners, nurse anesthetists, nurse midwives, and clinical nurse specialists; all of which have an advanced degree of a master's level or doctorate level education. The role of APRNs is to diagnose and treat illness, promote patient health at various levels and stages of development, and engage in continuous education to ensure offering well-informed treatment at the individual and community level (American, Nurse's Association [ANA], n.d.).

OUD and Pharmacotherapy

OUD is a widely recognized public health threat in the United States. The National Center for Drug Abuse Statistics [NCDAS] (2019) notes that fentanyl was a factor in over 50% of overdose deaths in the U.S. in 2020. NDCAS (2019) also noted that the overdose deaths since 2020 have increased by 26.8% to more than 88,000 deaths with a disproportionate effect on working adults between ages 25-54 who have families that rely on them. Mississippi Prescription Monitoring Program data for 2020 notes that there were 443 overdose deaths and 2,065 naloxone administrations for that year. Patients

seeking OUD treatment in federal programs alone in Mississippi during the quarters one through three of the year 2020 amounted to 2,196 patient admissions (Mississippi Board of Pharmacy, Mississippi Bureau of Narcotics, Mississippi State Department of Health, Mississippi Department of Mental Health, &The University of Southern Mississippi [MBP], 2020).

The Mortality and Morbidity Weekly Report notes that overdose deaths were approximately 12 times higher in 2019 than in 2013 for mortalities associated with synthetic opioid overdose (Mattson et al., 2021). Over 36,000 people overdosed and died using synthetic opioids in 2019 (Mattson et al., 2021). Furthermore, NCDAS (2019) notes that in Mississippi opioids are prescribed in the case of an estimated 55.8% of all overdose deaths and just over 41% of deaths involving synthetic opioids such as fentanyl.

Tertiary prevention should focus on expanding evidence-based treatment of OUDs and reducing the harms of ongoing opioid use (Tsai et al., 2019). The efficacy of pharmacotherapy for OUD is well documented throughout the literature (Atterman et al., 2017; Parker et al., 2018; Vestal, 2018). Vestal (2018) notes that patients in recovery utilizing pharmacotherapy treatment for OUD are twice as likely to succeed without relapse. MAT is a wise investment for two identified reasons according to Parker et al. (2018). First, the benefits of prescribed pharmacotherapy for the treatment of OUD outweigh the expense incurred. In this way, treatment is said to meet the cost-effectiveness standard. Second, healthcare costs are lower in patients treated undergoing pharmacotherapy for OUD in comparison to those treated without. The expansion of this EBP would most definitely enhance patient outcomes which is why federal efforts target

the barrier of poor access. Limitations to access of pharmacotherapy for OUD are a major issue in the continued growth of the opioid epidemic (Jackson & Lopez, 2018; Jones, 2018; Ober et al., 2017; Parker et al, 2018; Walley et al., 2008).

Barriers to Access

Multiple barriers have been identified to explain the lack of access to EBP for OUD. Prior authorization requirements, lack of staff, and psychiatric specialty providers were indicated as barriers to the provision of pharmacotherapy for OUD by Kermack et al. (2017). Other identified barriers include prescribing restrictions (Andrilla et al., 2020; Germack, 2021; Jackson & Lopez, 2018) lack of knowledge of where to refer patients for treatment (Barnett et al., 2019; Jones, 2019; Jones & McCance-Katz, 2018; Moore, 2019), addiction treatment as a specialty care practice (Bachhuber et al., 2016; Gardenier et al., 2020; Logan et al., 2019), financial concerns (Andrilla et al., 2020; Gardeneir et al., 2020; Kermack et al., 2017; Motjabi et al., 2019), the stigma associated with SUD and MAT (Cadet & Tucker, 2019; Compton, 2020; Haffajee et al, 2020; Jones et al., 2020; Kameg & Mitchell, 2020; Madden, 2019; Poorman, 2021; Scott et al, 2020; Slawek et al., 2019), lack confidence in treating patients with OUD (Molfenter et al., 2017), and concerns about a diversion (Andrilla et al., 2020). Recommendations for healthcare education surrounding SUD are documented to enhance access to this life-saving treatment (Finnell et al., 2019; Tierney et al.,2020; Tsai et al., 2019; Webster et al., 2018).

Prescribing Restrictions

APRNs in Mississippi are required to be in collaborative agreement with a physician which restricts practice by imposing a limitation on access to treatment. Mississippi is fiftieth in the nation for physician shortage. Primary care physicians are lacking across the nation, more likely to go into more specialized practice for financial compensation. APRNs can fill the gap as primary care providers, especially in rural areas. Gardeneir et al. (2020) explain that "although NPs are now providing care in many rural areas, more than half of rural counties have no provider" (p. 174). Limitations on APRNs in reduced practice and restricted practice states influence the extent to which APRNs can improve access to healthcare in under-served areas. Full practice authority for experienced APRNs in Mississippi could offer treatment access to patients with OUD.

The prescribing of buprenorphine by APRNs and PAs would improve access if state limitations on prescribing were eliminated (Jackson & Lopez, 2018). Andrilla et al. (2020) make note that APRNs and PAs are projected to increase the number of rural patients in treatment for OUD by approximately 15.2%. Germack (2021) advocates scope of practice restrictions to be lifted for NPs to fill the treatment gap as needed.

Cos et al. (2021) discuss the evidence of policy and care barriers that contribute to the lack of access to MAT and the practice recommendations that may lead to enhanced care delivery by APRNs. It is noted, among other common barriers, that practice authority for APRNs in individual states is a barrier to healthcare service delivery of buprenorphine. Only 26 states in the United States (U.S.) allow full practice

authority. Cos et al. (2021) acknowledged that the problem of individual state restrictions on the scope of practice for APRNs is an issue that is amplified in rural settings.

According to a study done by Jones and McCance-Katz (2018), of 4,225 clinicians in a sample that included medical doctors (M.D.s), APRNs, and PAs, "the percentage of clinicians prescribing buprenorphine at or near the patient limit in the past month was 13.1% overall" (p. 473). Furthermore, 41.6%-47.2% of those prescriptions were in urban settings as opposed to a lower percentage of 22.3%-27.4% being prescribed in the rural settings sampled (Jones & McCance-Katz, 2018). "From 2016 to 2019 the number of waivered clinicians per 100,000 population in rural areas increased by 111 percent. APRNs and PAs accounted for more than half of this increase and were the first waivered clinicians in 285 rural counties with 5.7 million residents" (Barnett et al., 2019, p. 2048). Most waivered APRNs are providing care in urban areas (Moore, 2019). While there is an increase in providers of pharmacotherapy for OUD, the gap continues to widen as the number of patients with OUD increases.

The Medicaid and CHIP Payment and Access Commission (2019) contracted with IMPAQ International to look at prescribing patterns of buprenorphine by APRNs following the implementation of the Comprehensive Addiction and Recovery Act of 2016 (CARA). CARA authorizes APRNs and PAs to prescribe buprenorphine in office-based settings for the treatment of OUD. The number of buprenorphine prescriptions was shown to increase during the study period from July 2017 to July 2018 with a 12% increase noted among the Medicaid population. The patterns suggest that expanded prescribing authority for APRNs directly resulted in an increase in prescriptions for MAT (Medicaid and CHIP Payment and Access Commission [MACPAC], 2019).

In summary, limitations to practice authority for APRNs are a barrier to MAT access (Cos et al., 2021; Jackson & Lopez, 2018). While APRNs and PAs have led the way in the expansion of MAT (Barnett et al., 2019), they are limited by whether there is a physician with a DEA number that is willing to maintain a collaborative agreement, as is the requirement in reduced practice states according to the American Association of Nurse Practitioners (n.d.), such as Mississippi. The issue of stigma associated with SUDs and pharmacotherapy as a viable treatment remains one of the multiple barriers discussed later. Physicians, like APRNs, do not have standardized or required curricula incorporated into medical training, as will be explored later in this section. This lack of education on the evidence-based pharmacotherapy treatment of OUD also contributes to limited access.

Poor Knowledge of Resources for Treatment

Nineteen percent of providers in a study identified lack of patient demand as a reason why they were not treated to the maximum capacity of the DATA 2000 X waiver (Jones, 2019). Jones (2018) reports this could reflect the lack of knowledge in the community about EBP for OUD, lack of referral communication, and could be impacted by various levels of stigma.

Retention in treatment for OUD is a barrier addressed by Hoffman et al. (2019). The problem of patients transitioning from one level of care to another is a problem for patients to maintain recovery. Daily dosing is another barrier to retention that Hoffman (2019) identified. Preparations of naltrexone as an extended-release formula for monthly use as well as a monthly buprenorphine injection and implantable buprenorphine have been developed to address that issue, though, limitation to their access remains a barrier

(Hoffman et al., 2019). In a study of rural participants using MAT in New Mexico, Scorsone et al. (2020) note that patients maintained on buprenorphine described avoiding withdrawal from buprenorphine as motivation to maintain treatment although they felt conflicted about being dependent on it to maintain recovery.

Finnegan (2019) references an increase in primary care physicians who are taking on buprenorphine prescribing according to a study done on the trends in buprenorphine prescribing by physician specialty. In the study, Wen et al. (2019), using the National Ambulatory Care Medical Survey from 2006-2014, and an unweighted sample size of over 300,000 patients was reviewed. Trends suggest that buprenorphine prescribing practices increased during the period and non-psychiatric specialties were driving this trend (Wen et al., 2019).

Lack of knowledge in the community regarding whom or where patients with OUD should be referred for treatment is a barrier to access. While non-psychiatric specialties such as primary care physicians (PCPs) have increased utilization of buprenorphine prescribing practices to treat OUD (Finnegan, 2019; Wen et al., 2019), patients have a difficult time with retention in treatment. In addition to the stigma and lack of knowledge of how to adequately treat OUD (addressed later in Chapter I), another problem that patients face is a lack of continuity of care from one treatment environment to the next (Hoffman et al., 2019). Because patients maintained with buprenorphine suffer opiate withdrawal and subsequent relapse, ensuring a patient makes a successful transition from one level of care to the next with buprenorphine maintenance needs to be

Addiction Treatment as Specialty Care

While Wen et al. (2019) note that access to treatment for OUD is more accessible in settings alternative to the addiction treatment specialty than it has been in the past, much evidence points to the ongoing delegation of primary care referrals of OUD treatment to addiction specialists due to provider stigmatization of SUD (Hawk & D'Onofrio, 2018; Knudsen et al., 2011; Lister et al., 2020; Madden, 2019; Poorman, 2021; Stone et al., 2021) and lack of knowledge (Haffajee et al., 2020; Scott et al., 2020; Slawek et al., 2019) in the course of treatment. However, "the vast majority of NPs provide primary care, and many of us practice in communities that have higher rates of OUD, more numerous barriers to care, and fewer services, positioning us as a profession to have a major impact on this crisis" (Gardenier et al., 2020, p. 174).

Successful integration of addiction treatment into primary healthcare clinics has been documented by Logan et al. (2019). Comorbid medical conditions associated with OUD can be well treated with the utilization of a holistic perspective in such integrated treatment clinics. Primary care venues are on the front line of the opioid epidemic (Bachuber et al., 2016).

Rural regions lack specialty service availability such as mental health and SUD treatment providers and are geographically positioned further from treatment facilities (Scorsone et al., 2020). In a study, more rural providers indicated a lack of specialty back up and fewer mental health specialty providers as a barrier to treatment access (Andrilla et al., 2020). Integrated care utilizing telehealth could expand access to treatment of SUD as has been done with mental health, but Huskamp et al. (2018) point out that low rates of tele-SUD use are an opportunity missed.

In a comprehensive review of OUD by Dydyk et al., (2020), the authors emphasize that healthcare professionals need to take an inter-professional approach to manage patients with OUD. Emergency department providers, for example, can initiate pharmacotherapy for OUD and refer to community mental health, addiction specialists, and/or primary care practices that engage in pharmacotherapy maintenance for OUD in the community. A review of the literature on emergency department screening and interventions implemented in the setting for SUD was reported on by Hawk and D'Onofrio (2018). Among the findings for effective management of SUD screening, implementation of MAT, and appropriate referral was the issue of providers having competing priorities (Hawk & D'Onofrio, 2018).

When addiction is viewed as a specialty treatment area, primary care providers miss the opportunity to engage patients in EBP for OUD treatment where appropriate. Non-psychiatric treatment professionals have expanded to incorporate pharmacotherapy for OUD (Wen et al., 2019). However, the expansion has not yet met the demand for pharmacotherapy services. While patients with co-morbid psychiatric and SUD treatment can legitimately be viewed as a complex course of treatment that should be undertaken with the skill of a psychiatric specialist, primary care providers (Bachuber et al., 2016; Gardenier et al., 2020) and emergency department providers (Hawk & D'Onofrio, 2018) are in prime positions to implement pharmacotherapy for OUD. Primary care APRNs are at the frontlines of treatment, especially in rural areas (Bachuber et al., 2016; Gardenier et al., 2020) where access to pharmacotherapy is most needed.

Financial

Provider concerns about reimbursement present a barrier to offering MAT (Kermack et al., 2017). Patients in rural areas rely more on Medicaid which is known for low reimbursement rates. Mississippi Medicaid has not expanded, which has left patients uninsured and without the benefits offered by the federal government incentives. Expansion of Medicaid coverage has been purported to have the potential in alleviating barriers to accessing MAT in underserved areas (Mojtabi et al., 2019). Rural areas are often without specialty providers such as mental health and addiction treatment (Moore, 2019) reflecting how rural health disparities influence the availability of pharmacotherapy for OUD treatment (Jones, 2018; Vohra et al., 2020). Inequalities in the accessibility of pharmacotherapy for OUD are more pronounced in rural communities (Cos et al., 2021).

Cos et al. (2021) note the issue of reimbursement for behavioral therapy conflicts with medication management services as a concern for providers. The maintenance and upkeep that are required to provide MAT are not reimbursable services in many cases. The conflict in reimbursement and limitations to funding both acts as barriers to provider willingness to take on pharmacotherapy treatment of OUD (Cos et al., 2021).

Madras et al. (2020) note that financial barriers contribute to the limited access to care for many patients with OUD. Madras et al. (2020) recommend several strategies to remedy this problem such as the expansion of Medicaid throughout all states. All FDA-approved medications for OUD should be accessible through public and private payers. Incarcerated individuals should be able to access MAT utilizing Medicaid funds and have access to appropriate care immediately upon release (Madras et al., 2020).

Income-related impediments are a barrier for people living in rural areas that are looking for OUD treatment (Scorsone et al., 2020). Scorsone et al. (2020) also point out the issue of poor insurance coverage for people in rural areas. Knudsen et al. (2011) utilized telephone interviews with 250 administrators of publicly funded SUD treatment facilities to examine barriers to MAT initiation. Findings indicated that primary funders would not pay for the purchase of medications or lab equipment and testing. Lack of physician time was another noted barrier. Another financial-related barrier noted in this study was that patients were unable to pay for MAT without assistance (Scorsone et al., 2020).

Multiple barriers exist for specialty health care in rural settings. In a systematic review of the literature, Lister et al. (2020) examined the rural-specific barriers to MAT for OUD. Among the barriers identified in addiction treatment, accessibility-related to cost and travel were noted as a problem.

In a pilot program to increase access to MAT for patients with OUD in rural Colorado, three clinical agencies in two counties increased the number of providers of MAT in both counties (Sorrell et al., 2020). They tracked costs, community-level barriers, and facilitators of success in monthly reports. Barriers that interfered with the sustainability of the program included issues of reimbursement for MAT (Sorrell et al., 2020).

Stein et al. (2015) reviewed the number of buprenorphine-waiver physicians/100,000 county residents between 2008-2011. Using multivariate regression, they predicted the number of waivered physicians/100,000 residents in a county as a function of county characteristics, state policies, and efforts to promote MAT. The

calculation reveals for the year 2011, 43% of US counties had no waivered physicians. Increased Medicaid funding was one of the factors that contributed to more buprenorphine-waivered physicians.

Reimbursement for pharmacotherapy was noted as a barrier to access pharmacotherapy for OUD in multiple studies (Kermack et al., 2017; Knudsen et al., 2011; Lister et al., 2020; Madras et al., 2020; Scorsone et al., 2020; Sorrell et al., 2020). Expansion of Medicaid, as suggested by Motjabi et al. (2019) and Stein et al. (2015), would alleviate some of the financial restrictions associated with reimbursement for OUD pharmacotherapy. Cos et al. (2021) note the conflict in billing services that require a resolution so that both behavioral therapy and pharmacotherapy can be issued to patients with OUD who are seeking EBP addiction treatment.

Stigma

According to Bachhuber et al. (2016), SUD is now recognized as a chronic condition and OUD pharmacotherapy treatment is a mainstay with behavioral therapy as an adjunctive treatment in recovery. Poorman (2021) identifies that "a larger barrier to treatment expansion is cultural: physicians and institutions fail to treat substance use disorder as the chronic disease they are" (p. 1783). This is representative of the stigma associated with SUD.

In a study of physician attitudes on treatment for OUD, 77.6% of respondents recognize OUD as a chronic medical condition like diabetes mellitus, and less than 13% defined the patient with OUD as having some inherent failing of willpower or being of less moral character. Over 90% recognized that patients with OUD can be stabilized and live quality lives with appropriate treatment. Despite the understanding and acceptance

that OUD is a treatable chronic condition, this biologic model does not curtail the stigma associated with the disease nor does it entice more providers to engage in its treatment (Stone et al., 2021). When providers observe their patients' relapse on multiple occasions, "a phenomenon exacerbated by ineffective non-medication OUD treatment approaches may reinforce a sense that all OUD treatment is ineffective" (Stone et al., 2021, p. 5).

Intervention stigma was addressed by Madden (2019) as a barrier to treatment among patients with OUD. Despite the efficacy of MAT among academics, the addiction treatment community is not all-embracing this EBP. The stigma associated with the use of medication as part of treatment for OUD is viewed as taking one drug to cope with the loss of another. Madden (2019) points out that both patients taking MAT and providers prescribing MAT, alike, experience bias from other healthcare professionals (nurses, physicians, social workers), and the general public; all those in the addiction community that embrace an abstinence-only point of view to SUD treatment deny the benefit of pharmacotherapy as a treatment for OUD. Scorsone et al. (2020), too, identify a stigma among healthcare professionals related to MAT initiation. Lack of education across care settings on OUD treatment promotes the ongoing bias that permeates various healthcare specialties (Scorsone et al., 2020).

One of the themes that demonstrates ignorance of the pharmacology of heroin and methadone is that MAT is simply substituting one drug for another without understanding the risk for relapse associated with the abstinence approach (Woods & Joseph, 2017). Reflection on the studies of Drs. Dole, Nyswander, and Kreek were discussed in an article authored by Woods and Joseph (2017) which explains how the utilization of methadone and buprenorphine have changed treatment for OUD. Woods and Joseph

(2018) acknowledge that there is an abounding misperception that MAT is a substitution of one drug for another which promotes prejudice against its use. Medication stigma, as noted in an article by Seppala (2013), and the attitude of abstinence as a treatment for OUD interferes with the acquisition of a successful long-term recovery. Patients with OUD are vulnerable after detox and are at higher risk of death from an accidental overdose due to reduced tolerance (Seppala, 2013).

In a study using random-intercept modeling to identify factors linked to buprenorphine treatment use over two years, Evans et al. (2019) report that 789 individuals participated in this multi-site randomized clinical trial of buprenorphine compared to methadone. Evans et al. (2019) found that the acceptability of MAT influenced whether patients utilized it when it was readily available. A mere 9.3% to11.2% of participants chose to use MAT. Individuals who perceived buprenorphine use to be acceptable were more likely to choose MAT while those who perceived it to be unacceptable chose an abstinence-based recovery (Evans et al., 2019).

Some people may experience more prejudice than others. Stigmatization around the use of MAT as a legitimate form of treatment for OUD is felt more among patients with a comorbid diagnosis of psychiatric disorder, HIV/AIDS, or if the patient is a minority (Cadet & Tucker, 2019). Further barriers addressed by Cadet and Tucker (2019) include financial concerns, poor confidence among providers interested in treating patients with OUD, and lack of resources due to regulatory bodies. The continuing nursing education article proceeds to describe how to combine medication and behavioral therapy with shared decision-making with the patient seeking treatment for OUD (Cadet & Tucker, 2019).

Cos et al. (2021) acknowledge that provider perceptions impact the access patients have to MAT. The stigma associated with SUD as a condition permeates the medical community which results in poor utilization of person-centered care and negatively affects patient outcomes (Cos et al., 2021). In a study of 250 administrators of publicly funded SUD programs, Knudsen et al. (2011) made note that for about a third of the responders, barriers to lack of implementation of MAT could be attributed to the inconsistency of MAT treatment with the SUD facility's treatment philosophy and/or the belief that there are better alternatives for the treatment of SUD than MAT provides.

Scorsone et al. (2020) identify a stigma among healthcare professionals related to MAT initiation. Lack of education across care settings on OUD treatment promotes the ongoing bias that permeates various healthcare specialties. The therapeutic relationship that exists between provider and patient can have a profound effect on how patients with OUD experience bias and whether they access treatment (Scorsone et al., 2020).

The idea that negative attitudes among healthcare providers toward people who need treatment for SUD influence patient treatment are also noted by Jackman et al. (2020). To test the impact of an educational strategy on the attitudes of nursing staff toward patients with SUD, a 22 item was developed to assess the nursing attitudes of patients before an eight-hour educational workshop followed by a posttest and 30-day follow-up (Jackman et al., 2020). The results indicated a significant increase in positive attitudes posttest and sustained through the 30-day follow-up (Jackman et al., 2020).

In a systematic review of the literature, Lister et al. (2020), examined the rural-specific barriers to MAT for OUD. Among the barriers identified, negative attitudes toward MAT were pervasive among providers in rural areas, and the perception of MAT

was viewed as unsatisfactory for rural patients by providers (Lister et al., 2020). In a pilot program to increase access to MAT for patients with OUD in rural Colorado, three clinical agencies in two counties increased the number of providers of MAT in both counties (Sorrell et al., 2020). They tracked costs, community-level barriers, and facilitators of success in monthly reports. Barriers that interfered with the sustainability of the program included issues of stigma and coordination with hospitals (Sorrell et al., 2020).

A review of the literature on emergency department screening and interventions implemented in the setting for SUD was reported on by Hawk and D'Onofrio (2018). Findings suggest that stigma interferes with the effective management of SUD screening and appropriate referral for patients to seek treatment. Bias further impacts the lack of implementation of MAT in the emergency department setting as well (Hawk & D'Onofrio, 2018).

Dumenco et al. (2019) performed a qualitative analysis after providing a panel experience to inter-professional students. The aim was to assess the nursing, pharmacy, and social work students' perceptions of patients with OUD based on the authors' hypothesis that interaction with patients with OUD early in training would promote a more positive perception. Findings note that 70% of students' perceptions changed positively (Dumenco et al., 2019).

A qualitative analysis of nursing students' experiences and attitudes towards patients with OUD was conducted by Lewis and Jarvis (2019). Eleven nursing students from a public university in New England participated in semi-structured interviews on the

topic. Emerging themes included witnessing discrimination in SUD treatment and care as well as acknowledging stigma and bias (Lewis & Jarvis, 2019).

Madras et al. (2020) note that healthcare professionals often have stigmatizing attitudes toward both medications to treat OUD and the condition of OUD itself. The therapeutic relationship that exists between provider and patient can have a profound effect on how patients with OUD experience bias and access treatment (Scorsone et al., 2020). Stigma is an important factor to manage if primary care providers and emergency department providers are to knowledgeably initiate treatment for OUD and, in the case of primary care, successfully maintain recovering OUD patients in the outpatient setting.

Webinars were utilized by Cos et al. (2021) in a consortium to explore healthcare stigma directed toward SUD as a condition. Findings among those that attended revealed numerous assumptions about patients seeking care. Among the attendees, those who had training rotations that included SUD treatment with harm reduction (HR)-focused programs employed less use of stigma toward patients with SUD (Cos et al., 2021). The strategy suggested by Madras et al. (2020) to impact SUD stigma advises targeted campaigns for healthcare providers initiated by the Centers for Disease Control and Prevention (CDC).

Healthcare professionals have been documented to have stigmatizing behaviors and attitudes toward patients with SUD (Cos et al., 2021; Dumenco et al., 2019; Hawk & D'Onofrio, 2018; Jackman et al., 2020; Lewis & Jarvis, 2019; Lister et al., 2020; Madras et al., 2020; Scorsone et al., 2020; Sorrell et al., 2020). The influence that providers have on patients' willingness to utilize pharmacotherapy in the treatment of OUD is negatively impacted in the presence of bias (Cos et al., 2021; Madras et al., 2020; Scorsone et al.,

2020). Provider stigma interferes with access to pharmacotherapy in rural settings (Lister et al., 2020) and emergency department screening, implementation of MAT, and referral provision (Hawk & D'Onofrio, 2018). In SUD programs, the issue of adhering to abstinence-only standards of treatment for OUD, as is noted in the Knudsen (2011) study, sets patients up for failure in their recovery and puts them at a higher risk of accidental overdose with relapse (Seppala, 2013).

In summary, stigma is a major barrier to accessing treatment because providers fail to recognize OUD as the chronic disorder that it is (Poorman, 2021) and employ an abstinence-only treatment strategy for OUD without paying heed to the groundbreaking treatment options of methadone and buprenorphine for OUD (Woods & Joseph, 2017). When providers utilize ineffective non-medication approaches to treat OUD and fail, this perpetuates the myth that OUD treatment is just not effective (Stone et al., 2021). Stigma toward OUD and toward the medications used to treat it are pervasive in the medical community, especially among those that adhere to the abstinence-only motto (Madden, 2019).

Lack of Provide Education

Compton and Blacher (2020) acknowledge that the American Association of Colleges of Nursing (AACN, 2018) set a future goal of having nursing schools include opioid use education in the curriculum for upcoming nurses. Education and training of primary care providers would be of benefit to alleviate the issue of treatment access (Lee et al., 2015). Physicians identify a lack of knowledge regarding EBP initiation (Haffajee et al, 2020; Scott et al, 2020; Slawek et al., 2019) and a lack of confidence in managing patients with OUD as barriers to offering treatment (Molfenter et al., 2017).

APRNs and PAs identified their most common concern about prescribing buprenorphine for OUD treatment was the issue of diversion (Andrilla et al., 2020). An educational intervention to expand the knowledge of MAT among VA providers resulted in the incorporation of MAT as an option for eligible patients in VA facilities (Jones et al., 2020). Kameg and Mitchell (2020) utilized marketing to offer a three-part series on opioid use management and surveys were disseminated for feedback. Barriers to buprenorphine prescribing identified in the Kameg and Mitchell (2020) study were categorized into regulatory factors, patient-specific factors, and provider-specific factors. Undergraduate, graduate and continuing education programs for medical and nursing professionals have been recommended (Tsai et al., 2019).

Madras et al. (2020) note that healthcare providers often lack the training to prescribe MAT for OUD. The strategy suggested indicates that credentialing agencies for physicians, PAs, and APRNs should require these clinicians to undergo training in screening, diagnosis, and treatment of OUD (Madras et al., 2020).

Knudsen et al. (2011) in a study interviewing 250 administrators of publicly funded SUD programs note key barriers to the lack of adoption of pharmacotherapy for OUD. One such barrier was the lack of access to medical personnel who had specific expertise in providing MAT. About a third of the responders noted that adequate information about how to implement MAT was not received by the program (Knudsen et al., 2011).

In a comprehensive review of MAT for OUD, the National Academies of Sciences, Engineering, and Medicine, Health and Medicine Division of the Board of Health on Health Sciences Policy (2018) notes barriers to MAT implementation.

Addiction content was added to the university curriculum at Yale throughout medical training. Addressing the stigma associated with SUD that is prevalent among medical providers is an important aspect of medical training. Correcting the use of stigmatized language associated with SUD and its treatment in necessary early in medical school. Education and training directed toward medical providers would enhance the engagement of medical students in the effort to combat the opioid crisis. (National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Board of Health on Health Sciences Policy [NASEM], 2018).

A review of the literature on emergency department screening and interventions implemented in the setting for SUD was reported on by Hawk and D'Onofrio (2018). Among the findings for effective management of SUD screening, implementation of MAT, and appropriate referral was the issue of inadequate training in providing treatment for addiction (Hawk & D'Onofrio, 2018). Inadequate training for emergency department providers needs to be addressed as it is a frequent point of access to care for patients most in need of pharmacotherapy.

A qualitative analysis of nursing students' experiences and attitudes towards patients with OUD was conducted by Lewis and Jarvis (2019). Eleven nursing students from a public university in New England participated in semi-structured interviews on the topic. Themes included ethical concerns, gaining comfort with time, and gaining experience through active engagement instead of avoiding the necessary subject of addiction with the patient (Lewis & Jarvis, 2019).

Lack of provider education regarding SUD and treatment, specifically for OUD, was noted in multiple studies to act as a barrier to patient access to pharmacotherapy

(Haffajee et al, 2020; Hawk & D'Onofrio, 2018; Madras et al., 2020; Scott et al, 2020; Slawek et al., 2019). Lack of confidence in initiating pharmacotherapy for OUD, in the maintenance of treatment (Knudsen et al., 2011) presents limitations to access. Furthermore, lack of experience in openly discussing addiction (Lewis & Jarvis, 2019) offers another explanation for the reasoning that providers do not prescribe pharmacotherapy.

Educational interventions have shown to be of benefit (Kameg & Mitchell, 2020) when utilized in organizations such as the VA where pharmacotherapy (Jones et al., 2020) is now an option for patients. Educational interventions are beneficial when incorporated into the university curriculum (NASEM, 2018). It is the goal of AACN to have nursing programs at all levels incorporate SUD and OUD treatment in curricula across the U.S. (Compton & Blacher, 2020), and is recommended by other sources (NASEM, 2018; Tsai et al., 2019).

Nursing Education

Training in medical, nursing, and pharmacy education on OUD and MAT has been limited but is gradually being incorporated into the education of health professionals (O'Neil, 2014). Nursing was one of the first health professions to acknowledge that education on substance use is lacking (Tierney et al., 2020). Specific SUD competencies tailored to nursing practice such as Project Mainstream published by the Association for Medical Education and Research can be used by APRNs in public health and generalist practice to effectively employ screening, brief intervention, and referral to treatment which is collectively known as SBIRT (Tierney et al., 2020). The American Academy of Nursing supports that nurses across specialties and settings can and should lead the

practice by identifying and screening patients for potential SUD, being able to treat them appropriately, and/or referring them for treatment when necessary (Finnell, et al., 2019).

According to Webster et al. (2018), there are a multitude of studies about OUD treatment that represent the impact that continued medical education (CME) has on provider practice. In one such study, McCalmont and colleagues (2018) demonstrate that provider confidence regarding prescribing for pain management improved with higher hours of recent CME on the subject. Early educational interventions have the potential to positively impact future OUD treatment. (Webster et al., 2018).

Finnell et al. (2019) noted that the cultivation of nurse leadership requires screening, brief intervention, and referral to treatment (SBIRT) to be integrated into undergraduate, graduate, and postgraduate levels of training. Early educational interventions among professionals have the potential to positively impact future OUD treatment (Webster et al., 2018). Integration of information about the treatment of SUD is necessary for the education of physicians and nurses. (Knudsen et al., 2011). Education for those in the nursing field is needed on a larger scale to positively impact the bias and stigma that nurses have toward patients with SUD (Jackman et al., 2020).

Educational modules are discussed in the paragraphs that follow. The educational modules were implemented in two separate studies with positive results. First, in a study conducted to address OUD management among APRNs, 670 providers viewed webinars created for the purpose of disseminating information on OUD and the necessity for more providers to obtain the waiver to prescribe buprenorphine as MAT. 32.5% completed three- or six-month follow-up surveys. 18% reported obtaining the waiver within that

period and 5.1% reported they were in the process of completing the waiver (Kameg & Mitchell, 2020).

A similar study was done as a quality improvement project with the Veteran's Health Administration to empower PMHNPs to broaden treatment to veterans with OUD. Of eleven PMHNPs surveyed to determine the need for education amongst providers to the VA population with OUD, three had the waiver, three pursued and successfully acquired the waiver, and ten were reported to have a plan to obtain the waiver by the following year. The quality improvement project led to an initiative with the department to trial buprenorphine treatment amongst VA patients presenting with OUD (Jones et al., 2020).

The result in both scenarios suggests that education about the process for providers to obtain the waiver to prescribe buprenorphine can be influential to close the remaining treatment gap. It is my goal to address the needs that exist locally with a similar survey, education, and follow-up to promote MAT access to the vulnerable populations of rural Mississippi. Barriers other than a lack of knowledge of the waiver were more readily apparent with this doctoral project.

Identified Needs

Mississippi provider practices are difficult to ascertain utilizing the public access university database. Information from SAMHSA or the Mississippi Board of Nursing might prove more useful. Documentation through the Mississippi Heroin and Opiate Task Force does not indicate that data is being analyzed regarding providers and their buprenorphine prescribing practices.

Shipton et al. (2018), note that ongoing research is needed to advance the development and production of effective alternatives for chronic non-cancer pain. Access to prescription opioids is thought to have a significant influence on the development of the opioid crisis (Hoffman et al., 2019). The U.S. federal government has put restrictions and further recommendations on opioid prescribing practices to curtail their use.

Scorsone et al. (2020) acknowledge that MAT is widely available at a national level but is utilized less frequently in rural areas. The factors underlying the limited use rate in rural areas are not well understood (Scorsone et al., 2020). Though, stigma (Lister et al., 2020; Sorrell et al., 2020) and reimbursement issues (Scorsone et al., 2020; Sorrell, et al., 2020) have been identified in the reviewed research for this project as contributing to the disparity.

Knudsen et al. (2011) note that additional research is needed to understand why some programs with medical personnel still do not offer MAT for SUD. Findings noted earlier might include the adherence of SUD programs to an abstinence-only approach (Madras et al., 2020) and ignorance of the benefits of pharmacotherapy as an EBP (Seppala, 2013; Woods & Joseph, 2017). The stigmatization of OUD and its treatment is now well documented (Cadet & Tucker, 2019; Lister et al., 2020; Madras et al., 2020; Scorsone et al., 2020).

Seppala (2013) promotes the utilization of partnerships between primary care providers and outpatient addiction treatment providers. The partnership could enhance the engagement of patients in MAT treatment. Seppala (2013) identifies a need to study individualized treatment efforts for patients with OUD (Seppala, 2013).

The literature reviewed identifies multiple barriers to access to pharmacotherapy for OUD. Two main problems identified and associated with the development of this project are the lack of providers, especially in rural areas, and the stigma associated with OUD and its treatment. The reasons for the lack of providers vary. Common barriers for providers to prescribe pharmacotherapy include lack of knowledge of OUD treatment or unwillingness to prescribe OUD because addiction treatment is considered specialty care. Concerns about reimbursement and stigma around SUD and treatment are documented in the literature review. Early education about SUD among healthcare providers with emphasis on the efficacy of MAT as EBP is documented as an important step in bridging the gap in services to treat patients with OUD (Finnell et al., 2019; Tierney et al., 2020; Webster et al., 2018).

Rationale

Theoretical Framework

The concepts and theoretical frameworks that are drawn upon for this project include cognitive learning theory, humanistic (person-centered) psychology and learning theory, harm reduction theory, and ethical nursing considerations. Each conceptual lens amplifies the importance of the APRN's acquisition of the appropriate knowledge while having an unbiased mindset to appropriately implement pharmacotherapy for OUD. The theories are reviewed independently and then considered collaboratively.

Cognitive Learning Theory. The basis for cognitive learning theory, originally developed by Jean Piaget in the mid-1930s, focuses on the fact that information received is internalized and processed by the learner using mental facilities such as thinking, reasoning, and perceiving. According to this theory, the material to be learned should be

clear and organized to ensure certainty for the learner as to the importance of the content to be learned. For retention purposes, the learner should be able to relate new knowledge to prior experiences. The incorporation of new knowledge provides more meaning when the learner can utilize it in a familiar context. It is the cognitive learning theory that purports that through the independent insights of the individual learner, reorganization of perceptions and thoughts to affect one's behavior takes place. (Butts & Rich, 2017).

Humanistic Learning Theory. Butts and Rich (2017) explain that the humanistic learning theory in psychology focuses on the importance of the role of emotions in learning with an emphasis on people as unique individuals with personal experiences that influence their development. This theory necessitates growth and development in relation to one's own human experiences. Stigma results when society takes on a mechanistic and detached view of individuals who are viewed as different such as people with mental illness or substance abuse problems. (Butts & Rich, 2017). Person-centered treatment is being integrated more frequently into healthcare settings. The emphasis on person-centered treatment lies in the foundation of humanistic psychology. The feelings of a person, not just thoughts, are an important aspect of learning that requires an acknowledgment of human potential and personal growth to take place. Butts and Rich (2017) define the central theme of humanistic learning theory to be the nurturing context that is fostered to facilitate education, therapy, and healing. (Butts & Rich, 2017)

Harm Reduction Theory. The goals of harm reduction are to reduce the adverse effects of negative health behaviors without demanding abstinence or relinquishing the problematic health behavior entirely. Harm reduction focuses on the problem while actively engaging the participation of the patient. A value-neutral view of drug use and

the patient that participates in the behavior is central to this theory. Harm reduction is a pragmatic response to SUDs such as OUD. Pharmacotherapy for OUD is not restricted to being labeled as a method for harm reduction, it is a viable evidence-based treatment option. The harm reduction theoretical foundation is a necessary component of the efficacy of pharmacotherapy for OUD (Hawk et al., 2017).

Ethical Considerations. The ethical responsibilities in advanced practice nursing are a necessary component of the theoretical framework of this doctoral project. The provision of medication for the chronic condition of OUD, in conjunction with other health strategies and interventions that include counseling and simple contact with health services, offers an improvement in quality of life (Aceijas, 2012). Physical, mental health, and social conditions for patients improve dramatically with the use of this EBP and should be accessible through primary care services. FNPs as well as specialists in psychiatry should be able to knowledgeably prescribe MAT and manage the treatment of patients requiring this evidence-based treatment. The ethical considerations associated with advanced nursing practice include the importance of providing quality, unbiased care and adhering to ethical principles to promote autonomy, nonmaleficence, beneficence, and justice (Aceijas, 2012).

Autonomy is supporting patients to make informed choices. By offering evidence-based treatment solutions in an unbiased manner, the APRN is adhering to the principle of autonomy. In doing so, the provider-patient relationship develops to assume a collaborative approach to patient care, sharing the burden of addiction but with defined responsibilities. The patients are entirely capable and have the right to determine how to

proceed to manage their addiction (Aceijas, 2012) which includes a maintenance program that continues as long as it is necessary to achieve a quality of life.

Nonmaleficence is the APRN's responsibility to do no harm. The knowledgeable APRN can reasonably assess that abstinence-only treatment often sets patients up for failure. While abstinence may be an option for those with mild or short-lived addiction, studies indicate that patients with OUD fail multiple times and may never achieve long-term sobriety utilizing the abstinence approach (Seppala, 2013). Utilization of pharmacotherapy for OUD has been demonstrated to have the long-term achievement of recovery in patients while they stay engaged in treatment (Seppala, 2013; Woods & Joseph, 2017). To withhold the option of medication is harmful to a patient with chronic illness. For APRNs not having the ability to provide this life-saving treatment due to lack of education, lack of collaborative physician support, or due to the stigma associated with treating SUDs is an ethical dilemma that needs to be addressed.

Beneficence is doing what is best and most helpful in-patient treatment. MAT engages patients in the healthcare system with which they might otherwise not be associated (Aceijas, 2012). Pharmacotherapy is the gold standard in treatment. Utilization of medicine to treat OUD has demonstrated long-term recovery allowing patients to have a sense of normalcy once more (Woods & Joseph, 2017).

Justice is the ethical principle of approaching patients equally and without bias. In treating the patient population with OUD, one must consider that the condition is chronic and alterations in the brain have resulted in a disorder that requires individualized treatment. To consider OUD with its associated stigma is an archaic dead-end paradigm that perpetuates the problem for people with a legitimate chronic illness.

Collaborative Conceptual Frameworks. The educational program proposed for this project will take into consideration the needs of the population surveyed. Expectations based on current literature are that bias and stigma associated with OUD and its treatment as well as lack of knowledge of how to treat OUD will be topics necessary to address in the educational program. The cognitive learning theory is a useful context to develop the educational program with respect to provider bias and the effect it has on patient outcomes. The humanistic perspective acknowledges the personhood associated with the OUD patient and all the individual experiences this patient has had. The APRN's responsibility is to recognize one's own biases and how they affect ethical standards of practice. By this, it is meant that when the APRN takes an unbiased perspective on a patient with the chronic illness identified as OUD, they will recognize their responsibility to educate themselves to provide evidence-based treatment utilizing the principles of autonomy, non-maleficence, beneficence, and justice.

Specific Aims. Education should be incorporated into the training of APRNs to be prepared on the front line of the opioid epidemic because a lack of education about this evidence-based treatment is one of the barriers to successfully managing it. It is well documented that neither medical schools, PA programs, nor APRN programs have a standard of education requirement for OUD treatment. Training in medical, nursing, and pharmacy education on OUD and MAT has been limited but is gradually being incorporated into the education of the health professions (O'Neil, 2014). Now that the DATA 2000 waiver is accessible to Pas and APRNs and there is new legislation allowing for all providers to treat up to 30 patients without specialized training or certification, the issue of standardized educational requirements needs to be addressed

across the disciplines. As it is now, physicians require eight hours of continuing education to obtain a MAT waiver; nurse practitioners require 24 hours. Incorporation of pharmacotherapy for OUD into the educational curriculum for APRNs at the master's and doctoral levels could be a result of the proposed doctoral project.

As was noted previously in the significance of the project, interventions that involve a web-based model to disseminate information about MAT has resulted in successfully educating and promoting the completion of waiver training for APRNs (Jones et al., 2020; Kameg & Mitchell, 2020). For this doctoral project, a survey substantiated the knowledge base and attitudes about MAT from APRNs in Mississippi. With the results of the survey, a continuing education program was tailored for content and audience as needed using provider's clinical support system (PCSS) and American Psychiatric Nurse's Association (APNA) MAT and OUD continuing education modules as well as other pertinent resources.

Doctor of Nursing Practice Essentials

Essential I: Scientific Underpinnings for Practice

It is necessary for doctoral-prepared APRNs to be able to implement working knowledge of evidence-based treatment into everyday practice (American Association of Colleges of Nursing [AACN], 2006). Utilization of science-based theories to effectively manage barriers to the implementation of pharmacotherapy for OUD is an important facet of advanced practice nursing's response to the opioid epidemic. The evolving reality is that FNPs, PMHNPs, and APRNs practicing in areas other than addiction medicine such as the ambulatory setting, inpatient hospital setting, and emergency medicine, will

encounter patients with OUD and need to have education on how to manage treatment using the best evidence-based practices.

Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking

It is the role of the doctoral-prepared APRN to be in a position of leadership to implement quality improvement at a systems level (AACN, 2006). As it pertains to this doctoral project, the results of the survey and subsequent development of an educational program act as foundational to identifying barriers specific to Mississippi's nurse practitioner population. It is the aim of this doctoral project to adequately tailor and address Mississippi APRNs' needs to better serve patients with OUD across multiple settings including, but not limited to, emergency departments, inpatient psychiatric units, family practices, and obstetrics practices.

Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice

Doctoral-prepared APRNs are expected to utilize scholarship and research to synthesize research findings for utilization in practice (AACN, 2006). Solving a problem by utilizing an integrated knowledge base is inherent to this work. This doctoral project promotes the utilization of evidence-based practices in OUD treatment by identification of the barriers to the utilization of MAT amongst Mississippi APRNs.

Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health

This doctoral project aimed to identify barriers specific to Mississippi APRNs and implemented a continuing education program tailored to the findings to positively affect the nation's health. The opioid crisis remains an ongoing problem for which providers

must be adequately prepared to participate by knowledgeably offering evidence-based treatment. This project addresses clinical prevention and population health for the improvement of the health of citizens of the U.S. (AACN, 2006).

Summary

OUD is a problem that affects Mississippi because the population is mostly rural and underserved. Evidence points to the need for education of providers to reduce the stigma of SUD and promote the utilization of pharmacotherapy for OUD with appropriate training and support. Education to reduce stigma and the promotion of pharmacotherapy is especially important considering the recent legislation that enables APRNs to prescribe buprenorphine without getting a certification. A concern remains, though, that the collaborative agreement required for APRNs to practice in Mississippi may continue to act as a barrier. A survey was used to determine the APRNs' knowledge of OUD and its evidence-based treatment, while barriers were assessed that influence the degree of engagement of Mississippi APRNs in the provision of this life-saving treatment. A continuing education module was designed and tailored to the needs that are revealed by the survey. The educational module will be published through The University of Southern Mississippi.

CHAPTER II –METHODOLOGY

Context

The project was a descriptive design for which APRNs were surveyed to determine barriers to prescribing pharmacotherapy for OUD. Nurse practitioners and physician assistants are leading the way in prescribing pharmacotherapy for OUD. However, barriers remain that interfere with meeting the need for pharmacotherapy treatment in patients with OUD. Information is lacking on specific practices for Mississippi APRNs; however, studies indicated that prescription of pharmacotherapy is lacking in rural areas (Jones & McCance-Katz, 2018). This doctoral project's aimed to gain information on what barriers exist in Mississippi that needs to be alleviated for better access to the gold standard treatment of OUD.

Intervention

The intervention involved the development of a survey for FNPs and PMHNPs in Mississippi. The results informed the development of a continuing education program guided by the responses. Stigma and lack of knowledge of OUD treatment are addressed in the continuing education program module. The module was developed with future APRN students' needs in mind, as well as to promote the inclusion of the program into university curriculums.

Intervention

While all APRNs may prescribe pharmacotherapy for OUD, it is typically a practice reserved for addiction treatment specialists. Addiction treatment in Mississippi is often FNPs, although PMHNPs often encounter patients with opioid addiction due to the comorbidity of substance abuse and mental health issues. Therefore, the population for

this doctoral project was FNPs and PMHNPs registered with the Mississippi Board of Nursing.

The sample was self-inclusive of FNPs and PMHNPs that responded to the surveys that were sent out via email communications. The University of Southern Mississippi (USM) College of Nursing and Health Professions, School of Leadership and Advanced Nursing Practice the setting for this doctoral project. The survey was developed collaboratively to assess APRN knowledge and bias pertaining to OUD. Ethical Considerations

Personal information on nurse practitioners in Mississippi was provided by the Mississippi Board of Nursing. Names, addresses, email addresses, and other personal information for these practitioners were used only for the purpose of the survey proposed. The information was maintained in a locked office and was shredded and discarded appropriately at the close of the doctoral project.

Project Timeline

The doctoral project commenced upon The University of Southern Mississippi's Institutional Review Board approval for the doctoral project (Protocol # 21-242). Mississippi Board of Nursing provided the information for APRNs in Mississippi for which surveys were sent. A follow-up email was sent at two weeks and four weeks respectively. The project was closed after the survey results were received during the four-week project.

Summary

It is essential that APRNs have education on OUD treatment as it is the gold standard for treatment, yet it is underutilized, especially in rural America. The doctoral

project ascertained information from APRNs in Mississippi as to what barriers remain specific to Mississippi APRNs' prescription of pharmacotherapy for OUD. A continuing education program was developed to be disseminated by USM and made available to future students to address evidence-based OUD treatment.

CHAPTER III -RESULTS

This chapter analyzes the results of the survey conducted to determine barriers to prescribing pharmacotherapy for OUD amongst Mississippi APRNs in family and psychiatric specialties. The frequencies from Qualtrics were analyzed to assess the need for education of APRNs on pharmacotherapy for OUD. Three hundred and two APRN respondents took part in the survey. Two-hundred-fifty-eight respondents completed the survey in its entirety. The survey included questions relating to the stigma associated with patients who have an addiction, inclusivity of opioid addiction pharmacotherapy in the educational curricula of nurse practitioners, subjective perception of competency to prescribe pharmacotherapy for OUD, and perception of reduced practice to require a physician collaborative agreement. Demographic information was also collected from the participants including gender, age, nursing education, and ethnic background.

Results-Details of the Process, Measures, and Outcomes

A survey was conducted to assess the needs of Mississippi APRNs regarding education on pharmacotherapy for OUD. Informed consent was obtained from prospective participants in the introduction to the Qualtrics survey. Mississippi Nurse's Association (MNA) supported this doctoral project research by publishing a one-time notice to its members to promote participation in the survey. Before the doctoral project began, the Mississippi Association of Nurse Practitioners (MANP) agreed to publish a notice, however, this did not occur before the end of the doctoral project. A list of all the APRNs in Mississippi was purchased by the primary investigator from the Mississippi Board of Nursing (BON) using a grant the primary investigator was awarded by the

Gamma Lambda Chapter of Sigma Theta Tau International Honor Society of Nursing through The University of Southern Mississippi.

Context

The primary investigator developed a list from the 7,141 APRNs provided in the BON documentation that was current as of November 2021. Certified registered nurse anesthetists (CRNAs) and certified nurse midwives (CNMs) were eliminated from the original email list. Due to the generality of the designation of "nurse practitioner" for the remainder of the APRNs on the list, the primary investigator was unable to discern what specialty each nurse practitioner was certified in. Therefore, an email list was developed to include all the remaining APRNs. The email to recruit doctoral project research participants was sent out to the APRNs on the developed list. Reminder emails were sent out two weeks and four weeks after the initial request for participation. The email indicated that the survey was to be completed by family and psychiatric nurse practitioners only. Several email responses were received by the primary investigator from APRNs who were interested in participating but acknowledged they were certified in specialties other than family and psychiatry. These individuals were thanked for their interest but directed not to participate in the study.

The continuing education program will be utilized to disseminate the survey results and offer education from this preliminary research. Objectives for the educational module include that participants will recognize barriers to treatment of OUD. Participants will understand the difference between OUD and opioid dependence. Participants will identify evidence-based practices for the treatment of OUD. Participants will identify resources for appropriate referrals. Participants will understand the basics of how to

initiate and maintain treatment with buprenorphine products. Lastly, participants will utilize resources for further learning.

Presentation of the Results

A 36-question survey was developed in *Qualtrics* and sent via email to 6,088 certified advanced practice nurses registered in Mississippi. Duplicate responses were prevented by utilizing *Qualtrics'* detection of ISP addresses. Of the 302 recorded responses, the response quality was 99%. No evidence was detected by *Qualtrics* of bots taking the survey.

Most respondents (74.42%) were master's prepared clinicians, 12.02% were DNP-prepared clinicians, and 8.53% had a post-master's certificate. One respondent had a Doctor of Nursing Science (DNS), six respondents had a Doctor of Philosophy (Ph.D.) and the remaining six respondents responded as "other" (which could include clinical nurse specialists). FNPs made up 80.21% of respondents and 19.79% were PMHNPs. Family practice accounted for 32.68% of the respondents while 36.58% were in practice in other specialties. The specialties included ambulatory, inpatient or outpatient psychiatric, and inpatient geriatric psych. Urgent care, pediatrics, minor medical, and school nursing environments were listed as other practice settings indicated by respondents. Prescribers of opioids made up 59.3% of respondents.

The demographics were as follows: primarily female (82.49%), with the other 15.9% being male, one respondent was transgender, one respondent identified as other, and two respondents preferred not to disclose their gender. White or European American accounted for 74.42% of the respondents, 19.77% of respondents were black or African American, two respondents were Asian, three respondents were American Indian or

Alaskan Native, two were Latino/Hispanic, three respondents identified as unknown ethnicity, and five respondents identified as other.

Current practices addressed whether the APRNs prescribed opiates and used screening tools to detect OUD or opioid dependence before prescribing opiates. Ninety-two percent of respondents indicated that they had a DEA number. Ninety-one percent of respondents recognized the importance of screening for opioid addiction prior to initiating opioid treatment. Seventy-three percent indicate that they screen for opioid addiction, whether they prescribe opioids. Ninety-nine percent of respondents were familiar with the opioid crisis. Eighty-eight percent of respondents indicated that they understood opioid addiction is a problem in Mississippi. Seventy-four percent of respondents recognize that OUD is a disease.

In terms of assessing stigma, 64% of respondents believed that people with addiction definitely or probably are manipulative and 73% believed that people with addiction are definitely or probably more likely to lie to get what they want. Seventy-two percent of respondents acknowledged that there is healthcare bias toward people with addiction disorders while only 32% admitted to their own bias toward people with addiction.

Regarding the assessment of nursing education addressing the evidence-based prescription of OUD treatment in higher education programs, 37% of respondents acknowledged that they definitely or probably learned how to adequately treat OUD in school. Sixty-two percent of the respondents could not recall whether pharmacotherapy for OUD was covered in their higher education curriculum. Seventy-three percent believed they know the difference between opioid dependence and OUD.

Mixed results were found when the data were analyzed regarding the assessment of interest for Mississippi APRNs to prescribe pharmacotherapy for OUD. The legislation allows for providers to treat up to 30 patients without the DATA X waiver or additional training. Despite this change in federal policy to promote pharmacotherapy for OUD, 67% of respondents were unaware of the legislation. Twenty-one percent of respondents already currently treat OUD with pharmacotherapy. This finding was surprising to the investigator and the doctoral chair. Despite the ability to prescribe without red tape, only 28% of respondents indicate they definitely or probably want to prescribe pharmacotherapy for OUD.

Mixed results were received on the interest of APRNs getting more education through a free continuing education program addressing pharmacotherapy for OUD to promote confidence and ability to prescribe competently for up to thirty patients. Thirty-nine percent of respondents said they were probably or definitely interested. Forty-one percent of respondents indicated that they were probably or definitely not interested. Nineteen percent of respondents indicated they may be interested, but it depends on other factors.

Questions were analyzed by the primary investigator that addressed the current practices of Mississippi APRNs. Twenty-nine percent of respondents indicated that they very often or frequently encounter people in need of counseling referrals. Sixty-seven percent indicated that they refer cases of opioid abuse for counseling. Twenty percent of respondents reported that they very often or frequently encounter patients in need of pharmacotherapy for OUD. Thirty-three percent of respondents indicated they very often or frequently encounter patients who require treatment for OUD. Fifty-nine percent of

respondents indicated that they refer patients outside their practice for pharmacotherapy when required. Thirty-two percent of respondents indicated pharmacotherapy resources are often or frequently available. Forty percent indicated they are only sometimes available.

Observed Associations and Unintended Consequences

The benefits of the doctoral project include that an initial attempt was made to ascertain information on current practices of Mississippi APRNs in the prescription of pharmacotherapy for OUD. Furthermore, a benefit of this doctoral project's research is that preliminary information was gathered on potential barriers to the treatment of OUD in Mississippi. This doctoral project provided the foundation for further investigation into barriers toward the utilization of gold standard treatment for OUD.

One identified problem with the survey is the way some questions were asked. Some questions were inclusive of all respondents when they should have targeted only those that responded a certain way. Question #8 asked: Do you use a screening prior to prescribing opioids in your practice? This question surveyed all APRNs regardless of whether they prescribe opioids. The question would have elicited more information if it had only been targeted toward those who prescribe opioids. In this manner, the question would have given insight into the percentage of respondents who use screening tools before prescribing opiates.

Another survey question was worded: Is addiction a disease? The wording for this question presupposes that the APRN knows the difference between illness and disease. A better way to ask this question would have involved asking whether the respondent agrees with the definition of a disease. Once the primary investigator defines the term

disease, respondents would then either agree or disagree with the definition and, in this way, more clearly respond.

Other than the wording of some questions in the survey, a limitation of the doctoral project included the inability to obtain a good response from about 15% to 20% of APRNs. The promotion of the doctoral project by MANP to further disseminate recruitment is an identified limitation. This organization has been found to reach a different population of APRNs than MNA.

The cost of the study was $250. The grant was awarded to the primary investigator by *Sigma Theta Tau International Honor Society of Nursing* for the expense associated with procuring the list of advanced practice nurses. The list was provided by the BON.

Details of Missing Data

The survey respondents' personal, sensitive information was maintained confidentiality. Only relevant information was collected and analyzed by the primary investigator. This doctoral project produced no missing data. Survey results were downloaded and stored in a password-protected file.

Summary

In conclusion, this doctoral project was focused on ascertaining information about potential barriers to prescribing evidence-based treatment for OUD by APRNs in Mississippi. Survey results provided a variety of information about barriers to the prescription of medication for the treatment of OUD by APRNs in Mississippi. Stigma remains a problem in addiction treatment. Education of pharmacotherapy is not well covered in advanced practice nursing curricula so APRNs feel unprepared to treat OUD.

Pharmacotherapy is underutilized for patients with OUD in Mississippi. Providers are unaware that they do not have to undergo more education (i.e., DATA X waiver) to prescribe buprenorphine to up to 30 patients with OUD. Interest is low in terms of APRNs wanting to prescribe treatment for OUD in their practice. The reduced practice status of APRNs may limit the ability of these providers to prescribe evidence-based treatment for patients who require it. A continuing education program was developed based on the identified needs from the doctoral project survey results and will be available through The University of Southern Mississippi.

CHAPTER IV – DISCUSSION

Introduction

This chapter is an analysis of the results obtained from the project survey. The survey results were analyzed by the investigators. Recommendations will be given with the interpretation of the key findings from the survey. Implications for future practice will be considered and the limitations of the doctoral project will be noted. Prior to the conclusion of this chapter, dissemination of the work will be discussed.

Recommendations

The doctoral project survey offered insight into the current practices of nurse practitioners in Mississippi regarding pharmacotherapy for OUD and referral for counseling; utilization of screening tools before prescribing opiates was also explored. The doctoral project survey provided information on respondents' view of stigma in health care, the practitioners' own bias toward people with addiction, and their view of whether the collaborative agreement hinders pharmacotherapy prescription for OUD in Mississippi. Furthermore, the doctoral project survey offered information on higher education curricula inclusion of pharmacotherapy training, and nurse practitioners' perceived confidence and competency to prescribe pharmacotherapy for OUD.

Current practices associated with pharmacotherapy for OUD amongst respondents reflect the minority, 21.79%, who already prescribe pharmacotherapy for OUD. This information is limited in that we do not know whether they prescribe naltrexone, buprenorphine, or methadone. Roughly 29% of respondents expressed an interest in prescribing pharmacotherapy, but the question was not limited to only those who do not already provide pharmacotherapy. We can assume that the difference between those who

already prescribe pharmacotherapy for OUD (21.79%) and those who have the interest to prescribe (29%) results in identifying only 8% of respondents who have an interest in starting this practice. This is congruent with research findings that people in rural areas have minimal access to evidence-based treatment.

Sixty-three percent of respondents selected that they very often, frequently, or sometimes encounter people who meet the criteria for OUD. Fifty-nine percent of respondents indicate that they refer out for pharmacotherapy. We cannot assume that the remaining respondents do not refer out, because they may be the individuals that indicated that they rarely or never encounter patients with OUD. They may not recognize OUD because of a lack of screening tools despite whether they prescribe opioids. Only 32% responded that pharmacotherapy options were often or frequently available. We must take into consideration that there are occasions in which OUD may be identified, but pharmacotherapy is not an option for a lack of resources.

There is more propensity toward referrals for counseling with 67% of respondents indicating that they refer patients for counseling as it relates to misuse of opioids as compared to the 59% of respondents that refer out for pharmacotherapy for OUD. The literature generally supports pharmacotherapy with empirical scientific evidence as the gold standard of treatment. While counseling can also be utilized for maintenance, it is a substandard primary treatment. The reasons for lack of referral to pharmacotherapy for OUD that we can infer based on the literature are that 1) providers are unaware of the evidence-based treatment for OUD; 2) providers do not have access to evidence-based treatment (pharmacotherapy) for OUD but do have access to counselors; 3) providers

reject the evidence-based treatment due to associated stigma and a lack of desire to treat patients with OUD.

The results of the survey showed that APRNs identified that there is a high level of stigma in health care associated with people who have addictions. Despite recognition of stigma, there was low reported personal bias reflected in the respondents when asked whether they recognize having a bias toward people with addiction. This discrepancy could either indicate that respondents who were interested in participating in a survey on pharmacotherapy for OUD have lower rates of stigmatization towards people with addiction, or it could indicate that respondents do not recognize their stigmatizing characterizations toward people with addiction. A high degree of survey responses characterized people with addiction to be more capable of lying and manipulating to get what they want. With this information, the primary investigator recognizes that there may be respondents who were not fully aware of inherent bias toward this population.

Eighty-two percent of the respondents acknowledged that the physician with whom they had a collaborative agreement did not treat OUD with pharmacotherapy. While this overwhelming majority reflects the findings in the literature that pharmacotherapy for OUD is not readily provided in rural areas like Mississippi, respondents indicated working in various settings. Addiction medicine is considered a specialty and it would be unusual for specialties such as gastroenterology or cardiology to treat OUD. Twenty-one percent of respondents recognized that the physician with whom they had a collaborative agreement was definitely or probably willing to treat OUD with pharmacotherapy. While it appears that this small percentage reflects the lack of evidence-based treatment of OUD amongst APRNs in Mississippi, the

result must be interpreted considering the population of APRNs responding to the study. Over a third of the respondents' practice in specialties in which OUD treatment is not typically undertaken.

Eighty-eight percent of respondents believe APRNs with several years of experience should be able to practice to the full extent of their practice scope without the hindrance of a required physician collaboration. If full practice for APRNs in Mississippi was to be adopted, APRNs who are in high demand in rural areas due to the lack of physicians would be able to fill in the gaps where needed. APRNs who are interested in pharmacotherapy for OUD but are limited by the lack of physician collaborators who are willing to treat OUD with evidenced based practice would be free to do so.

Thirty-six percent of respondents could confirm that their higher education curricula covered best practices in one or more of the medications (methadone, buprenorphine, naltrexone) utilized for the treatment of OUD. This reflects the AANC's concern that pharmacotherapy for OUD is not being covered in higher education curricula which leaves APRNs with poor preparation to meet the needs of patients suffering from the opioid epidemic. Sixty-five percent of respondents indicated that they were probably or definitely not interested in prescribing treatment for OUD. The reason behind the disinterest in prescribing pharmacotherapy for OUD could be related to not having a willing collaborator, not having an interest in the population, having associated stigma towards people with addiction, not feeling competent in prescribing treatment, or other factors not explored in this doctoral project.

Implications for Future Practice

Reduced practice restricts experienced APRNs from utilizing their full scope of practice because they must rely on the credentials and interests of an available physician collaborator. If a physician is uninterested or unwilling to participate in the provision of pharmacotherapy for OUD, then the APRN who has a collaborative agreement with the physician must seek other arrangements for collaboration. Lack of physician interest can be a barrier to prescribing pharmacotherapy for OUD in Mississippi where the demand for APRNs is high due to the lack of physicians, especially specialists, in the rural areas of the state. While we acknowledge the benefit of a collaborative agreement for new APRNs with an individual of higher education or more clinical experience (an experienced APRN of the same discipline), a prolonged arrangement in which an APRN is required to maintain a physician collaborator is potentially a barrier to practice as evidenced by the results of the survey.

Higher education programs need to address pharmacotherapy for OUD in program studies across APRN disciplines to include family and psychiatric nursing specialties. Utilization of pharmacotherapy for OUD is also important in acute APRN studies. This was demonstrated with the 62.83% of APRN respondents who could not recall whether their higher education curricula covered pharmacotherapy for OUD.

The stigma associated with addictions remains a problem that should be addressed in the education of APRNs. Reflection on one's own biases should be addressed in higher education programs. This practice promotes mindfulness in the therapeutic relationship that is inherent in the nurse-patient interactions regardless of whether it is psychiatric, primary care, or acute nursing practice.

Limitations

Several limitations of this survey were identified by the investigators. The survey addressed multiple topics associated with pharmacotherapy for OUD to assess areas of needed education amongst nurse practitioners. The very nature of the purpose of the doctoral project could be considered a limitation because covering just one topic associated with pharmacotherapy could have provided more focused responses. Subsequent follow up surveys would be beneficial in each of the following areas: stigma, higher education, opiate prescribing practices, pharmacotherapy practices, and referrals for counseling. However, continued solicitation of responses with the same APRNs might inhibit further engagement and skew the results.

Another limitation of the doctoral project was the number of participants. Ideally, we want to see about 15% to 20% participation. Amongst 6,088 nurse practitioners, it is undetermined as to how many of those nurse practitioners are certified in family and psychiatric specialties. We can determine that 15% to 20% of that 6,088 did not respond, though, because we would require 912 responses to meet the 15% minimum. However, all 6,088 nurse practitioners were not family or psychiatric nurse practitioners; other specialties were included amongst them. Because we were unable to identify those in the specialties we were attempting to survey, it may have been better to survey all nurse practitioners except for CNMs and CRNAs.

Lastly, a limitation of the doctoral project is that the APRNs who responded were not tracked. This might have been an advantage of the doctoral project in one respect because some APRNs may have chosen not to participate if it was tracked. From another perspective, though, if this doctoral project was able to determine which respondents had

an interest in the treatment of patients with pharmacotherapy for OUD, this investigator could follow up more strategically.

Dissemination

The dissemination of the results of this survey will be achieved through various platforms. First, the primary investigator presented findings on DNP Scholarship Day and published them in USM's digital repository, *Aquila*. Second, the results will be disseminated in the continuing education module that will be accessible through The University of Southern Mississippi.

The primary investigator will present findings associated with this survey at a national conference of the American Association for Nurse Practitioners (AANP) in the summer of 2023 and to the Sigma Theta Tau International Honor Society of Nursing. The findings will be disseminated by submission of a poster presentation for nurse practitioners across the U.S. to have access to this information. The educational module will be referenced for nurse practitioners to access as well.

Conclusion

This survey explored a range of topics associated with pharmacotherapy for OUD to assess the current practices of APRNs in Mississippi, examine stigma toward people with addiction, determine interest in prescribing pharmacotherapy for OUD, and assess whether higher education covers pharmacotherapy for OUD. APRNs are at the forefront of the opioid epidemic and should be prepared to utilize gold standard treatment for OUD, therefore, the primary purpose of the doctoral project was to assess potential barriers to utilizing evidence-based practices for the treatment of OUD amongst Mississippi APRNs. The doctoral project reflected findings in the literature regarding the

lack of provision of evidence-based practices for the treatment of OUD in rural areas. A continuing education program presented the findings of this survey and addressed the identification of OUD, screening tools to utilize in various practice settings, and initiation recommendations for buprenorphine in the outpatient clinical (primary and psychiatric) and ambulatory settings. Further, in-depth resources were provided in the educational module for the benefit of the learner. Referral practices after initiation of buprenorphine were also discussed. The purpose of the continuing education program is to target the needs of Mississippi APRNs to promote the utilization of pharmacotherapy for OUD as the gold-standard treatment. As full practice authority is obtained for Mississippi APRNs, hopefully, treatment with pharmacotherapy for OUD will become more available to those who need it.

APPENDIX A – Survey

Institutional Review Board Standard Online Informed Consent

Project Information

Title: DNP Project: Pharmacotherapy for OUD treatment in Mississippi

Principle Investigator: Amanda Whitacre; 601-315-9382; amanda.whitacre@usm.edu

Co-Principal Investigator: Dr. Marti Jordan,601-266-5527, marti.jordan@usm.edu

College: *College*: Nursing and Health Professions

School and Program: Leadership and Advanced Nursing Practice

Research Description: Purpose: The results sought for this study are to ascertain information from Advanced Practice Registered Nurses (APRNs) in the psychiatric and family nurse practice specialties in Mississippi to determine educational needs to promote best practices in pharmacotherapy for opioid use disorder (OUD). The information we are seeking relates to APRN education and understanding of OUD and evidence-based treatment for this substance use disorder. FNPs and PMHNPs will encounter patients with OUD in their practice across the ambulatory, primary care, and psychiatric settings. It is imperative that FNPs and PMHNPs recognize symptoms of OUD and are knowledgeable about evidence-based treatment. The investigator-developed survey will be used to collect information from Family Nurse Practitioners (FNPs) and Psychiatric Mental Health Nurse Practitioners (PMHNPs) in Mississippi with respect to knowledge and practice in the prescription of pharmacotherapy for OUD. The researcher will specifically look at descriptive statistics in terms of frequencies.

Description of the Doctoral Project The survey will take about ten minutes to complete. An email reminder will be sent at two weeks and four weeks to ensure maximum

participation amongst FNPs and PMHNPs in Mississippi to ascertain the best results for analysis and development of a continuing education module. The number of participants expected is approximately 115. There are no restrictions on normal activities or invasive techniques to disclose.

Benefits: As a result of participation in the study you will be made aware of and provided access to a continuing education module developed from the results of this survey that is tailored to the needs of Mississippi APRNs. Risks: There are no identified risks associated with participation in this survey.

Confidentiality: Physical data will be locked in a drawer in the researcher's office and electronic data will be password protected. The physical data will be shredded and discarded after that research is complete. Password protection will keep the results of the survey safe. The list of APRNs will be shredded and disposed of according to university policy and the results of the survey will be deleted upon completion of the analysis of the data and submission of the final project.

Alternative Procedures: No alternative to the survey is offered for this project.

Participant's Assurance: This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5125, Hattiesburg, MS, 39406-0001, 601-266-5997. Any questions about this research project should be directed to the Principal Investigator using the contact information provided above.

CONSENT TO PARTICIPATE IN RESEARCH:

I understand that participation in this project is completely voluntary, and I may withdraw at any time without penalty, prejudice, or loss of benefits. Unless described above, all personal information will be kept strictly confidential, including my name and other identifying information. All procedures to be followed and their purposes were

Q1 Consent to participate in research: By clicking the box below, I give my consent to participate in this research project. If you do not wish to participate in this doctoral project, please close your browser now.

- o Yes, I consent to participate
- o No, I do not consent to participate. Please close your browser now.

Q2 Please indicate licensure specialty by selecting all that apply.

- o Family Nurse Practitioner
- o Psychiatric Mental-Health Nurse Practitioner

Q3 Please indicate the level of nursing education by selecting the highest level that applies.

- o Master of Nursing (MSN)
- o Post-master's certificate
- o Doctor of Nursing Science (DNS)
- o Doctor of Nursing Practice (DNP)
- o Doctor of Philosophy (Ph.D.)
- o Other _____

Q4 Please indicate the type of setting in which you currently practice by selecting all that apply.

- o Ambulatory
- o Inpatient psychiatric
- o Inpatient geriatric-psychiatric
- o Outpatient psychiatric
- o Family practice
- o Other

Q5 Do you have a DEA number?

- Yes
- No

Q6 Do you prescribe opioids in your practice?

- Yes
- No

Q7 Do you believe it is important to use screening practices before initiating an opioid prescription in practice?

- Definitely important
- Probably important
- Might or might not be important
- Probably not important
- Definitely not important

Q8 Do you use a screening prior to prescribing opioids in your practice?

- Yes
- No

Q9 Are you familiar with the opioid crisis?

- Yes
- No

Q10 Do you believe opioid addiction is a problem in Mississippi?

- Definitely a problem
- Probably a problem
- Might or might not be a problem
- Probably not a problem
- Definitely not a problem

Q11 Do you believe addiction is a disease?

- Definitely is a disease
- Probably is a disease
- Might or might not be a disease
- Probably not a disease
- Definitely not a disease

Q12 Do you feel that patients with addiction are generally manipulative?

- Definitely manipulative
- Probably manipulative
- Might or might not be manipulative
- Probably are not manipulate
- Definitely are not manipulative

Q13 Do you feel that patients with addiction are more likely to lie to get what they want?

- Definitely yes
- Probably yes
- Might or might not
- Probably not
- Definitely not

Q14 Do you believe that healthcare providers show bias toward patients with addiction disorders?

- Definitely
- Probably
- Might or might not
- Probably not
- Definitely not

Q15 Do you acknowledge any personal bias toward patients who have addiction?

- Definitely
- Probably
- Might or might not
- Probably not
- Definitely not

Q16 Did your higher education nursing curriculum prepare you to manage the treatment of opioid use disorder (OUD)?

- Definitely did
- Probably did
- Might or might not
- Probably did not
- Definitely did not

Q17 Do you know the difference between OUD and opioid dependence?

- Definitely do
- Probably do
- Might or might not
- Probably do not
- Definitely do not

Q18 Do you currently use pharmacotherapy for the treatment of patients who meet the criteria for the Diagnostic and Statistic Manual (DSM) 5 diagnosis of OUD?

- Yes
- No

Q19 If you do not already prescribe pharmacotherapy for the treatment of OUD, do you have any interest in treating patients with OUD?

- Definitely yes
- Probably yes
- Might or might not
- Probably no
- Definitely no

Q20 How often do you encounter patients that need addiction treatment as it relates to abuse of opioids?

- Very often
- Frequently
- Sometimes
- Seldom
- Rarely

Q21 Do you refer patients outside your practice for abuse of opioids that utilizes pharmacotherapy such as methadone or suboxone?

- Yes
- No

Q22 How often do you encounter patients you assess to be in need of pharmacotherapy for OUD?

- Very often
- Frequently
- Sometimes

- Seldom
- Not at all

Q23 How readily available are pharmacotherapy resources (methadone treatment facility or outpatient suboxone provider) for you to refer patients who need OUD treatment?

- Pharmacotherapy resources are often available
- Pharmacotherapy resources are frequently available
- Pharmacotherapy resources are sometimes available
- Pharmacotherapy resources are seldom available
- Pharmacotherapy resources are never available

Q24 Do you refer patients outside your practice for counseling related to substance abuse that includes opioid abuse?

- Yes
- No

Q25 How often do you encounter patients you assess to need a referral for counseling related to opioid abuse?

- Very often
- Frequently
- Sometimes
- Seldom
- Not at all

Q26 Are you aware that in April 2021 new national legislation grants nurse practitioners with a DEA number the ability to prescribe pharmacotherapy for OUD, for up to 30 patients without obtaining additional certification/training or a DATA-2000 waiver?

- Yes
- No

Q27 Are you interested in prescribing suboxone in your practice now that legislation allows nurse practitioners to do so without special training?

- Definitely yes
- Probably yes
- Might or might not
- Probably not
- Definitely not

Q28 Did your education cover initiation and maintenance prescribing of methadone, buprenorphine, and/or naltrexone? Select all that apply.

- Yes, initiation and maintenance of methadone prescribing best practices
- Yes, initiation and maintenance of buprenorphine prescribing best practices
- Yes, initiation and maintenance of naltrexone prescribing best practices
- None of the above
- I do not know/I do not recall

Q29 Would you be interested in an educational module that would prepare you to earn CEUs, match you with a mentor, and educate you on initiation and maintenance prescribing best practices so that you could feel confident in identifying and competently prescribing suboxone for patients with OUD?

- Definitely interested
- Probably interested
- Maybe interest depends on other factors
- Probably not interested
- Definitely not interested

Q30 Do the physicians with whom you have a collaborative agreement treat OUD with pharmacotherapy?

- Yes
- No

Q31 Are the physicians with whom you have a collaborative agreement willing to treat patients with OUD?

- Definitely yes
- Probably yes
- I am not certain
- Probably not
- Definitely not

Q32 Should nurse practitioners with several years' experience have the autonomy to practice with full authority in Mississippi?

- Definitely yes
- Probably yes
- Might or might not
- Probably not
- Definitely not

Q33 Does the collaborative agreement with a physician limit your ability to practice advanced practice nursing to the full capacity you believe you are capable, of and to the extent you have been adequately trained?

- Definitely yes
- Probably yes
- I do not know
-
- Probably not
- Definitely not

Q34 With which gender do you most closely identify?

- Male
- Female
- Transgender
- Prefer not to say
- Other

Q35 Which of the following ethnicities best describes you?

- White or European American
- Black or African American
- American Indian or Alaskan Native
- Asian
- Native Hawaiian or Pacific Islander
- Latino/Hispanic
- Unknown
- Other

Q36 What is your age range?

- 21-30
- 31-40
- 41-50
- 51-60
- 61-70
- 71-80
- 81-90

APPENDIX B – IRB Approval Letter

Office of Research Integrity

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

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NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER:	21-242
PROJECT TITLE:	DNP Project: Pharmacotherapy for treatment of OUD in Mississippi
SCHOOL/PROGRAM	Leadership & Advanced Nursing
RESEARCHERS:	PI: Amanda Whitacre Investigators: Whitacre, Amanda~Jordan, Marti~
IRB COMMITTEE ACTION:	Approved
CATEGORY:	Expedited Category
PERIOD OF APPROVAL:	14-Dec-2021 to 13-Dec-2022

Donald Sacco, Ph.D.
Institutional Review Board Chairperson")

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