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Walden University

College of Psychology and Community Services

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Rebekah Khan

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Dr. Sharon Xuereb, Committee Member, Psychology Faculty
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Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2022

Abstract

Providers' Perceptions of Chiropractic Care in Treatment of Opioid Addiction

by

Rebekah Khan

MP, Walden University 2019

MS, Life University 2018

BS, University of Maine, 2006

Dissertation Submitted in Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Forensic Psychology

Walden University

November 2022

Abstract

Fifteen hundred people in the United States die each week from opioid-related overdoses. In addition, the U.S. court system has been inundated with individuals facing legal proceedings, with opioid addiction, impacted competency, and recidivism. There has been a call for alternatives to address the crisis. The purpose of this qualitative study was to explore the perceptions of (addiction) providers regarding chiropractic treatment in the management of opioid addiction. The health belief theory was used to guide the study. Interview data were collected from six participants via Zoom or phone. Thematic analysis resulted in four emergent themes: lack of knowledge of outside practitioners' scope of practice, lack of familiarity with current research, concerns with insurance coverage of chiropractic care, a subtheme of specialization in chiropractic care, and providers' perceptions were positive with more knowledge. Findings may be used to promote positive social change through education, research, and alternatives that are more cost-effective in treating opioid addiction.

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Dedication

This dissertation is dedicated to all those who made this path a possibility. To Kianaat, Anadil, Zeerak, and Isabella, your sacrifice as my children made this possible. J, your support made it feasible. Mom, you taught me that anything was possible with a bit of elbow grease. Kelly, thank you for believing in me for almost 15 years. Erin, thank you for hours and hours of studying, crying, listening, and the roller coaster of becoming doctors together. All of you have made a significant impact in my life, and this is because of you.

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Table of Contents

Chapter 1: Introduction to the Study ... 1

Background ... 2

Problem Statement ... 4

Purpose of the Study ... 5

Research Question ... 6

Theoretical Framework ... 6

Nature of the Study ... 7

Definitions ... 8

Assumptions ... 10

Scope and Delimitations ... 10

Limitations ... 11

Significance ... 12

Summary ... 13

Chapter 2: Literature Review ... 14

Literature Search Strategy ... 14

Theoretical Foundation ... 15

History of Opioid Addiction ... 17

Chronic Pain ... 17

Opioid Treatment for Chronic Pain ... 17

History, Definition, and Chiropractic Education ... 18

Chiropractic Literature ... 18

Negative View of Chiropractic 20
Chiropractic Treatment for Opioid Addiction 22
Current Care for Opioid Addiction 24
Provider Perception 25
Drug Courts and Legal Issues 25
Summary 26
Chapter 3: Research Method 28
Research Design and Rationale 28
Phenomenon of Study 28
Research Design 29
Thematic Analysis 30
Role of the Researcher 31
Methodology 32
Participant Selection Logic 32
Sampling 32
Instrumentation 33
Participant Recruitment and Data Collection Procedures 34
Data Analysis Plan 35
Issues of Trustworthiness 36
Ethical Procedures 38
Summary 38
Chapter 4: Results 39

Setting 40

Demographics 40

Data Collection 41

Data Analysis 42

Evidence of Trustworthiness..43

Results...44

Theme 1: Lack of Knowledge of Outside Practitioners' Scope of Practice 45

Theme 2: Lack of Familiarity With Current Research 45

Theme 3: Concerns With Insurance Coverage of Chiropractic Care 46

Theme 4: Participants' Perceptions of Using Chiropractic Care for Addiction Treatment Were Positive With Access to More Knowledge 47

Summary 47

Chapter 5: Discussion, Conclusions and Recommendations 48

Interpretation of the Findings...48

Lack of Knowledge of Outside Practitioners' Scope of Practice 49

Lack of Familiarity With Current Research.. 49

Concerns With Insurance Coverage.. 50

Participants' Perceptions of Using Chiropractic Care for Addiction Treatment Were Positive With Access to More Knowledge 51

HBT 52

Limitations of the Study...53

Recommendations....55

Implications....57

Summary....58

References....59

Appendix A: Interview Protocol....73

Appendix B: Flyer....74

Chapter 1: Introduction to the Study

Twenty thousand one hundred one individuals overdosed on opioids in 201s related to prescription pain relievers attributed to opioids (American Chiropractic Association [ACA], 2019). In 2018, the Department of Defense, Veterans Health Agency, National Institutes of Health, Federal Drug Administration, and the Centers for Disease Control and Prevention created a pain task force detailing evidence-based nonpharmacologic strategies for treating pain due to the rising cost of opioid pain care and treating adverse effects (Tick et al., 2018). As of 2020, the opioid epidemic has turned into a drug overdose epidemic (American Medical Association [AMA], 2020).

Forensic psychologists deal with offenders and their behaviors; long-term research shows causality between substance abuse and criminal behavior (Kraanen et al., 2012). There has been minimal access in the criminal justice system to alternative treatments for opioid addiction; the exception has been drug courts that engage in research, but this is over nine years old (Defulio et al., 2012). Berryessa and Chandler (2020) discussed the issues with defense attorneys not being comfortable advising clients on rehabilitative options due to a lack of addiction and medical knowledge. Roman et al. (2020) discussed how drug courts work and noted the lack of understanding of how drug courts achieve success, which is related to the lack of research. The research also indicated that the drug court is only successful based on the treatment model followed outside the courts (Roman et al. 2020)

Opioid addiction is a significant concern to medical doctors, mental health providers, forensic psychologists, and medical providers of addiction treatment. Medical

providers are reexamining the available care and treatment due to the stagnation and lack of current programs' progress. A look into addiction providers' perceptions in managing opioid addiction may give insight into barriers to using chiropractic modalities for addiction treatment. The current study's social implications include insight into the cost of addiction treatment, a more cohesive understanding of the barriers to treatment, and an opportunity to promote an integrative approach to drug treatment.

The opioid epidemic has played a significant role in the criminal justice system. Forensic psychologists need to understand what is current, what is successful, and what is essential to the field. The current study addressed the gap in the literature regarding alternative options for addiction treatment. I used the health belief model to explore addiction providers' perceptions regarding chiropractic care in treating opioid addiction, which may contribute to the field of forensic psychology.

Background

Dowel et al. (2016) referenced a 2014 study demonstrating evidence that there was potential for serious harm in treating pain with long-term opioid therapy. The observations included adverse events, which contained patterns of opioid use that led to impairment. Dowel et al. also noted that opioid use after surgery increased the likelihood of long-term use of opioids compared to no opioid use. The harm opioids can cause highlighted the need for an alternative treatment to opioid addiction.

In 2017, the Global Commission on Drug Policy presented a position paper explaining the increase in prescription opioids, the increase in nonmedical use, the inadequate treatment, and the move to synthetic opioids. The authors stated that more

research on effective treatments for addiction to prescription opioids was needed. The Global Commission also pointed to the root of the problem: “Closing pill mills, expelling patients suspected of drug misuse from medical care does not treat addiction, it merely offers drug traffickers a large group of new customers” (p. 10).

Patient motivation, a key in outlining outpatient treatment, consists of a 12-step program, detox, dual diagnosis treatment, group therapy, individual therapy, and medication-assisted treatment (Shankar et al., 2019) MAT is the current standard treatment protocol in conjunction with available mental health therapies in the criminal justice system (McElrath & Joseph, 2018). MAT is the use of methadone or suboxone to treat opioid addiction (National Institute on Drug Abuse [NIDA], 2015). One of the significant issues is the cost of treatment and referral base (NIDA, 2015). There are alternatives to treatments that can lower the cost of treatment.

Research indicated that alternative care and drug treatment began in 2001. A Miami-Dade, Florida drug court partnered with a residential treatment facility, including the efficacy of auriculotherapy and subluxation-based chiropractic care. The group receiving chiropractic care had a 100% retention rate in treatment. The placebo group had 75% retention. The regular treatment group had 56% retention in the program (Holder et al., 2001). Another study in New Hampshire within the all-payer claims database showed that the rate of filling an opioid prescription was 55% lower for individuals who received chiropractic care (Whedon et al., 2020). Chiropractic care costs $1,513 compared to $6,766 for medical care management of opioid addiction (Whedon, 2020).

There has been a push in medicine away from opioids and toward nonpharmacological strategies. Greene et al. (2006) called for more research to identify facilitators and barriers to developing positive relationships between medical doctors and chiropractors. The current study addressed these topics and added to the existing body of knowledge.

Problem Statement

The opioid crisis is an emerging social issue in the United States. Seven hundred thousand people have died from drug overdose; 68% of those deaths have been connected to opioid abuse (Centers for Disease Control and Prevention [CDC], 2019). Approximately 130 people die daily from opioid overdose (CDC, 2019). Because drug use is considered a crime, the emerging opioid crisis has also affected the legal system, impacting recidivism. The cost of opioid addiction to the health care system and society is well over one billion dollars (CDC, 2019). Criminal justice costs are estimated to be over five million (Birnbaum et al., 2011). One of the CDC's top goals in the initiative to fight the opioid crisis is improving prescribing interventions for insurers in the health care system (Dowel et al. 2016). The review also noted that the prescription of opioids to treat acute and chronic pain might lead to abuse of the opioid prescribed if long-term use continues. Chiropractic care could be a more logical alternative to treating opioid addiction because it adjusts only the spine (Blum et al., 2000).

There is evidence in the literature that chiropractic care could be beneficial in treating opioid addiction. The Joint Commission (as cited in Dowell et al., 2016) has added chiropractic and acupuncture to its pain management standard. In 2014, The

Institute of Medicine published an article explaining that pain management is often treated with opioids (as cited in NIH, 2014). The ACA reported that pain management was the most reported reason for outpatient visits. The military and the Veterans Administration have been researching the association between pain management and chiropractic care and have published successful models of chiropractic integration (ACA, 2019). Chiropractic treatment was part of addiction treatment for opioid addicts involved in drug court in Miami. Blum et al. (2000) found a 100% retention rate in the treatment program with chiropractic care compared to 19% in the control group that did not include chiropractic care. Brown (2010) explained the concerns and issues facing the drug courts in the criminal justice system, the lack of research and the impact of drug treatment courts, and the scant qualitative studies on effective interventions. The problem is a lack of knowledge of what the larger medical community believes, understands, or perceives regarding chiropractic care and how it could benefit the treatment of opioid addiction. There is anecdotal evidence that chiropractic care was viewed as pseudoscience (Benedetti & MacPhail, 2002). Forensic psychologists need more evidence and understanding to use current research regarding chiropractic care for opioid addiction as a tool within the courts and in practice. In the current study, I explored the perceptions of treatment providers regarding chiropractic care to understand the barriers or supports that exist in treating opioid addiction.

Purpose of the Study

The purpose of this study was to explore addiction providers' perceptions in managing opioid addiction, which may give insight into why alternatives (i.e.,

chiropractic and not an opioid prescription) are used in the initial stages of pain management. The findings may be shared with forensic psychologists working within the target population, the courts, treatment facilities, physicians, and administrators. The themes that emerged from this research may indicate recommendations for further study. Thematic analysis was used to review, code, and understand interviews of treatment providers regarding pain management and opioid addiction. The literature on the use of chiropractic care showed evidence of success in treating opioid addiction (ACA, 2019). Researching providers' perceptions will offer critical insight into the current social change initiative for combating opioid addiction (CDC, 2019).

Research Question

What are the perceptions of providers who treat opioid addiction regarding the use of chiropractic care in treating opioid addicts?

Theoretical Framework

The theoretical framework for the current study was health belief theory (HBT) (Jones et al., 2015) Kegeles (1963), and Rosenstock (1974) researched and contributed to the theory between the early 1950s to the late 1960s using Lewin's influence and with a phenomenological mindset indicating that an individual's perception of health guides their actions, now known as the HBT. This theory offered a framework for me to determine whether providers' beliefs and perceptions guided their actions in recommending chiropractic treatment. Lewin's (1951) original change theory suggested that preparation for change, making changes, and normalizing changes are the foundation for how health beliefs can influence medical providers' decisions. The providers' goals

are based on knowledge, trust, and understanding of success in their decision. Lewin's change theory is based the premise on changes needed in health care providers' perceptions and diabetic patients' perceptions of self-care. The basic premise was that the three stages of freeze, change, and refreeze could be implemented to create change in perceptions (Husain et al., 2018). Lewin's change theory paved the way for what is now known as the HBT and its six constructs: risk susceptibility, risk severity, benefits to action, barriers to action, self-efficacy, and cues to action (Husain et al., 2018).

The HBT helped me navigate practitioners' perceptions of chiropractic care concerning the risk or susceptibility of opioids and the severity of outcomes. Qualitative research addressing what chiropractic care can do to mitigate the current crisis may improve understanding and future planning of opioid treatment. If barriers to referral are perceptions, this may be critical to helping other providers create self-efficacy by changing referrals or writing fewer prescriptions. Changing treatment protocols may be best served by understanding the themes of this study.

Nature of the Study

The current study was a thematic analysis of qualitative data to understand providers' perceptions regarding chiropractic care as an alternative to opioid prescription to treat pain. Thematic analysis, developed by Braun and Clarke (2017), is accessible and flexible and allowed me, as a researcher, to identify patterns of meaning that would answer my research question. The literature provided some assumptions, and I used thematic analysis to decipher the data (see Braun & Clark, 2017).

Observation produces clarity, reliability, and predictability through interobserver agreements (Braun & Clark, 2017) of the inductive approach to thematic analysis. This inductive approach allowed me to understand codes with prevalent themes that arose, giving my participants a voice and leaving my bias out. The interviews were audio recorded based on permission and were transcribed orthographically. The thematic analysis assumes truth is spoken through language; this approach allowed me to avoid bias and focus on the participants' experience and understanding (see Braun & Clark, 2017).

One-on-one interviews with providers allowed me to identify the themes in perceptions. To mitigate confirmation bias using the inductive approach to thematic analysis, I only searched for themes after all interviews were completed. Familiarization was accomplished with the organization and transcription of interviews. Identification of themes was completed with software to avoid researcher error. The review and analysis were concise and organized. My theoretical model was built and updated with each piece of data; this allowed the data to determine themes that arose (see Braun & Clarke 2017). Thematic analysis objectives were to understand treatment providers' perceptions of the advantages and disadvantages of chiropractic care.

Definitions

Addiction: A condition of the brain with varying complexity, which presents the compulsive need to use opioids or other addicting substances (American Psychiatric Association, 2013).

Complementary and alternative medicine (CAM): Examples include acupuncture, cupping, auriculotherapy, massage, and chiropractic adjustments (Department of Health and Human Services, National Center for Complementary and Integrative Health, 2016).

Chiropractic care: There are varying definitions of this term, but the most agreed upon definition is the treatment of the musculoskeletal system in the body that includes adjusting subluxations of the spine and management of other joints (World Federation of Chiropractic, 2020).

MAT: The current protocol for medication-assisted treatment (American Association of Addiction Medicine, 2016).

Opioid: A class of drugs, including oxycodone, hydrocodone, codeine, morphine, fentanyl, and heroin, are considered pain relieving (National Institute on Drug Abuse, 2015).

Pain management: Pain management in the United States has become pharmacologic in the last 20 years, leading to a deviation in this term. Perceptions of undertreating pain have led to increased opioid prescriptions, creating a push to separate pain management in cancer or terminal disease care from other pain issues (Bernard et al., 2018).

Subluxation "A subluxation is a complex of functional and structural or pathological articular changes that compromise neural integrity and may influence organ system function and general health" (Watkins, 2017, p. 341).

Torque Release Technique (TRT): A chiropractic technique designed as part of a scientific study. It includes a tool with torque and specificity (Holder, 2020).

Assumptions

Assumptions for my study included participants giving honest perspectives, recent research on the current opioid epidemic, and a general understanding of alternative treatments such as chiropractic. Other assumptions included participants having developed their opinions without bias, having experience in treatment protocols, and working knowledge of current research in addiction treatment.

Scope and Delimitations

This research aimed to understand the perceptions of the people who treat opioid addiction. The focus on the perceptions of treatment providers, therapists, and psychologists/psychiatrists was intended to provide insight into barriers to including chiropractic in addiction treatment. Participant inclusion criteria were individuals who worked directly with patients dealing with pain and addiction and were directly involved in their care. I also included physicians or therapists who were directly involved in MAT management. Local courts were contacted for participants who had direct involvement in the county's drug court. This study's participants were limited to medical providers who provided addiction treatment or management: mental health rehabilitation technician/community certified, licensed social workers, licensed clinical social workers, medical doctors, therapists, physician assistants, substance abuse counselors, nurse practitioners, behavioral health nurses, and chiropractors in the direct care of pain patients. This study did not include patient perceptions.

Limitations

Limitations in this study were the lack of recent inquiry found in the literature, self-selection bias, and reader transferability. The gap in the literature was the lack of recent peer-reviewed literature on chiropractic referral for addiction treatment. Another limitation of this topic was terminology and wording. Chronic pain management has become synonymous with addiction providers. In the United States, pain management is a term associated with prescribing opioids (Tick et al., 2018). Other countries or areas may use different terms.

My background in chiropractic and treating addictions could have influenced the study. I studied and researched for three years at a chiropractic university. My understanding of chiropractic and my academic background could have introduced the possibility of bias. I used an investigative tone throughout the study and maintained objectivity by consulting with my committee. I also used a weekly video journal review to reflect on myself.

Self-selection bias was removed by choosing six participants with software after I had compiled a list of volunteers to do the interviews. Transferability was accomplished by member checking and presenting dense descriptions of participants and the interview process to enable reader judgment on transferability (Korstjens & Moser, 2018). Definitions were provided to clarify ambiguous terminology. I also widened the literature search to comparable studies and research methods to ensure dependability (see Korstjens & Moser, 2018).

Significance

Addressing the current opioid crisis that the United States is facing by investigating current policies in drug courts and what options are relevant to opioid addiction could lead to improved outcomes for the opioid-addicted population. The research findings will be shared with forensic psychologists working within the target population, the courts, treatment facilities, physicians, and administrators. The themes that emerged from this research could offer recommendations for further study. In conjunction with drug courts, forensic psychologists, social workers, treatment providers, physicians, and the CDC have struggled to find practical solutions to create a change in the opioid epidemic (Whedon et al., 2020). Investigating the current literature on how chiropractic care has impacted opioid addiction may clarify the present risks and effects.

Researching addiction providers' perceptions addressed the literature gap by adding to the limited qualitative research on the perceptions of chiropractic care to address addiction. Providers' perceptions were crucial to referring patients with addictions to alternative treatment. The literature review indicated a gap in understanding why treatment alternatives, specifically chiropractic, have not been implemented in the treatment framework. Current protocols and procedures have not been effective (Gallagher, 2013). The current study provided an in-depth exploration of providers' perceptions regarding the successes and barriers of drug addiction treatment within the scope of chiropractic care. Understanding the perceptions of those who treat addiction may give insight into how treatment can be changed and what policies are put in place. This information could explain the barriers facing opioid addicts in obtaining treatment

without medication, creating a reduction in MAT and an alternative to prescribing opioids for pain management, which is the current terminology used in treating addiction (American Psychiatric Association, 2013). This change could impact the current crisis in opioid addiction, and prior research suggested that chiropractic can reduce the need for an opioid prescription for pain (Blum et al., 2000).

Summary

In 2015 there were over 33,000 opioid-related deaths (Rzasa Lynn et al., 2018). Treating opioid addiction with medication such as suboxone or methadone trades addiction with dependency (American Psychiatric Association, 2013). Psychologists and treatment providers need options that mitigate risk. Understanding the barriers to adding alternative care such as chiropractic may give insight into the future care of addiction. The absence in the literature of qualitative research was addressed in the current study. Chapter 2 reviews the current literature, a description of the literature gap, and justifies the current study.

Chapter 2: Literature Review

The opioid epidemic has become an opioid overdose crisis costing the U.S. health care system billions of dollars (CDC, 2019). Understanding addiction treatment providers' perceptions will offer critical insight into the current social change initiative of combating opioid addiction (CDC, 2019). The lack of an integrative approach to opioid addiction affects creating a solution to the problem (Global Commission on Drug Policy, 2017). The United States is suffering the most significant crisis in opioid addiction (CDC, 2019).

The Department of Health and Human Services, the Department of Defense, the National Institutes of Health, the Centers for Disease Control and Prevention, and the Food and Drug Administration have published studies that established the United States' crisis with opioid addiction. Foundational research in chiropractic, CAM research, and the Academic Consortium for Integrative Medicine and Health showed compelling evidence that alternative care and chiropractic treatment could decrease the use of opioids and save millions of dollars each year in treatment.

This chapter includes an in-depth review of the chiropractic and the history and treatment of opioid addiction. I also reveal the recent literature about the pros and cons of chiropractic care. Further information on current treatment protocols and what research is lacking is also discussed.

Literature Search Strategy

I used Walden University, Life University, Harvard University, and University of Maine library systems to find articles relevant to my research on providers' perceptions

regarding opioid addiction and chiropractic. I used PubMed and ProQuest databases. Studies dated outside of 2016–2022 were used to understand the literature's history and the gap. Key terms used included *opioid addiction*, *chiropractic care*, *CAM*, *MAT*, *pain management*, *perceptions of addiction providers*, and *TRT*. Scholarly data from mental health, medicine, and the field of psychology were included to provide a foundation and history of treatment.

Theoretical Foundation

The theoretical framework for the current study was the health belief model (HBM). Rosenstock (1974) said, "any activity undertaken by a person who believes himself to be healthy for preventing disease or detecting disease in an asymptomatic stage" (p. 354). Lewin (1951) argued that an individual's perception of health guides their actions, now known as HBT. Interviewing providers with the HBM framework helped me determine whether providers' beliefs and perceptions regarding chiropractic care guide their efforts in recommending treatment in addiction treatment. Lewin's original change theory suggested that preparation for change, making changes, and normalizing changes are the foundation for how health beliefs can influence medical providers' decisions. Providers' goals are based on knowledge, trust, and understanding of success in their decision.

In 1951, Lewin's change theory clarified the changes needed in health care providers' and diabetic patients' perceptions of self-care. The basic premise was that the three stages of freeze, change, and refreeze could be implemented to create change in perceptions (Husain et al., 2018). Change theory paved the way for what is now known as

the HBM and its six constructs: risk susceptibility, risk severity, benefits to action, barriers to action, self-efficacy, and cues to action (Husain et al., 2018).

Using the HBM for the current study set the foundation for my research to understand practitioners' perceptions rather than patients' perceptions, which is what it was developed for (see Husain et al., 2018). Understanding outcomes that address the opioid epidemic and having up-to-date qualitative research that explains the barriers to referring chiropractic care and what chiropractic care may mitigate the current crisis. This research may create a dialogue between providers if nothing else. If barriers to action are perceptions, it may be necessary to help other providers create self-efficacy by changing referrals or writing fewer prescriptions. Changing treatment protocols may be best done by understanding the themes of this study.

Greene et al. (2006) used survey instruments and descriptive statistics to summarize survey responses. The researchers concluded that future research needed to identify barriers to relationships with primary care. My exhaustive search of databases with dates 2016–2022 and keywords *health belief theory (model)* and *qualitative* yielded 317 articles. Of these articles, seven dealt with the inquiry of the belief model, and 290 dealt with patient perception, not provider perception. The remainder of the articles addressed HBM as integration or how HBM was used in a longitudinal study. I used the HBM to understand provider perceptions of susceptibility, benefits, severity, self-efficacy of the provider, cues to action, and barriers.

History of Opioid Addiction

Chronic Pain

Chronic pain has a long history of ambiguity, has a range of labels, and does not have a usual or specific etiology. Raffaelli and Arnaudo (2017) argued that pain, although considered a biologically protective tool, can have a long-term effect on life quality. The International Association for the Study of Pain started classifying pain and chronic pain, but the definition is still debated today (Raffaelli & Arnaudo, 2017). Raffaelli and Arnaudo also stated that chronic pain's most recognized definition is "that pain which persists past the normal time of healing" (p. 2004). The CDC (2016) guideline for prescribing opioids for chronic pain was intended to guide primary care providers and classify chronic pain. Chronic pain is "defined as pain that lasts longer than the usual course of an acute injury or disease or the pain that recurs for months or years" (Raffaelli & Arnaudo, 2017, p. 2004). The CDC guideline was designed to help adult patients with chronic pain not classified as palliative care. The CDC used evidence of clinical trials from observational studies in its guidelines. The CDC noted the limited number of studies and the limitations of each review on opioid use in chronic pain situations. Dangers and risks were highlighted in the use of opioids in chronic pain long term. The cost and the adverse effect of using opioids long-term in pain management have become pervasive (Tick et al., 2018).

Opioid Treatment for Chronic Pain

In the 1800s, Friedrich Seturner extracted morphine from opium. Morphine was used to treat specific pain issues until the 20th century (Rosenblum et al., 2008).

According to Rosenblum et al. (2008), opioids for acute pain situations are the standard of care worldwide. The long-term use of opioids for chronic pain is up for debate and research. Chou et al. (2020) argued that the data available are lacking for the use of chronic pain management: “Although buprenorphine is likely safer than full agonists, a review of the literature indicates a lack of compelling data supporting its long-term analgesic benefits for patients with chronic pain” (p. 293). NIDA (2020) described addiction as “a chronic, neurobiological disease produced by repeated exposure to an addictive drug and characterized by loss of control over drug use” (p. 9). Addiction treatment has led to multiple controversies in treating chronic pain with opiates.

The first line in the treatment of opioid addiction is abstinence-based treatment and group therapy. The problem with these programs is that people are still dealing with pain, so the dropout rate is high (Frail, 2019). Detoxification is extremely painful on top of why patients are being treated. In a MAT treatment program, methadone or suboxone (buprenorphine) can help with withdrawal symptoms. Maglione et al. (2018) focused on the individual’s functionality after long-term use of these drugs, specifically on aggression, working memory, and cognitive speed post-use.

History, Definition, and Chiropractic Education

Chiropractic Literature

Daniel David Palmer founded the chiropractic profession in 1895. Chiropractic was developed into a profession by his son B.J. Palmer in 1897 (ACA, 2018). National boards were established in 1963, and in 1974 the U.S. Council on Chiropractic Education was established (ACA, 2020). According to the World Federation of Chiropractic (2020),

chiropractic is the diagnostic treatment and prevention of disorders of the spine and its effects on the nervous system's function and well-being. The education required to become a Doctor of Chiropractic is as extensive as becoming a medical doctor (Coulter et al., 1998).

Total contact hours for chiropractic education are 4,826, and hours for medical education are 4,667. Coulter et al. (1998) found exceptional commonality in the required education in a descriptive study focused on three medical and three chiropractic schools. The difference in education between a chiropractor and a medical doctor is focused on the specific subject matter, neurology, and diagnosis. Chiropractic students are required to have 320 class hours in neurology and 630 class hours in diagnosis, whereas medical students are required to have 110 class hours in neurology and 325 class hours in diagnosis (Life University Curriculum PDF, 2018; Trinity School of Medicine Curriculum PDF, 2021). Chiropractic education is specific to the spine via the focus on neurology. To understand how chiropractic care can play a role in influencing the treatment of opioid addiction, one must first understand the role of neurology, dopamine, and the brain.

Literature on dopamine indicated that it is the most addictive substance related to humans (Georgiadis et al., 2006), and that individuals with low dopamine levels may be prone to reward deficiency syndrome or may be vulnerable to drug-seeking behavior, thrill-seeking behavior, and self-medication of compulsive disorders (Blum et al., 2012). To understand dopamine, one could look at the rush after pleasurable activities. Dopamine was recognized as a neurotransmitter in 1958, and in 1978 the link between

dopamine and alcoholism was established (Benes, 2001). Reward circuitry. adopted by the American Society of Addiction Medicine (2011), is now used to define addiction as a brain disorder. Low dopamine levels lead to addiction and compulsive behaviors, and in 1995 the term “reward deficiency syndrome” directly tied to the brain reward cascade and the DRD2 reward gene was linked to addiction and compulsion (Blum et al., 2000). This research was the first to link neurotransmitters and addiction.

Chiropractic literature attributed spinal cord tension to subluxation or neurologic insult (Stevenson, 1927), and too much tension contributes to dysfunction in the brain reward cascade (Breig, 1978). Holder and Shriner (2012) clarified the five addictions (gaming, sex, music, food, and drugs) and examples of compulsive behavior disorders including attention deficit hyperactivity disorder, Tourette’s, Asperger’s, autism, and dyslexia. Holder’s research also indicated that TRT, a chiropractic technique that uses a three-dimensional toggle recoil with straight, right, and left torque, can deliver a nonlinear adjustment so that the nervous system does not create a pattern of subluxations. A study in 2000, involving subluxation-based chiropractic care in a residential treatment facility developed the TRT model and integrator, the tool used in adjusting patients of addiction (Holder, 2001).

Negative View of Chiropractic

Busse et al. (2011) analyzed written comments from a survey of North American orthopedic surgeons’ attitudes on chiropractic care using thematic analysis. In the study, there was a consensus that the degree of variability of chiropractors or whether they practiced evidence-based and within the scope of practice or practiced as a primary care

physician was a litmus for most surgeons. Vertebral artery dissection and paraplegia were examples of adverse events associated with chiropractic in the study. One surgeon stated, "when chiropractors change the principle that 'all disease emanates from the spine and can be cured by manipulation' they will be more welcomed in the medical community and hospitals" (Busse et al. 2011, p. 5). The authors listed other issues noted in the surveys: training (younger having more skills than older chiropractors), ethics, and scientific basis. A few surgeons indicated that they needed more information on chiropractic. The surgeons attributed a lack of information and knowledge to why there is no clear role for chiropractors in the medical field.

The AMA commonly referred to chiropractors as quacks and creating a Committee on Quackery in 1963 to contain the chiropractic profession (AMA, 2011). In 1987, a judge found in favor of chiropractic when a group of chiropractors filed an antitrust suit against the AMA. The judge found that the AMA had engaged in an unlawful conspiracy in restraint of trade "to contain and eliminate the chiropractic profession" (Johnson & Green 2021). There is conjecture that the 11-year legal battle between the AMA and the chiropractic profession created multiple divides in thoughts and perceptions (ACA, 2015).

In 1998, Coulter et al. did a study to compare chiropractic education with medical education. In the mixed-methods study, quantitative data came from three medical schools and three chiropractic schools, and qualitative data came from site visits, interviews, and focus groups. The results of the study showed a significant difference was between didactic teaching and clinical experience. Medical students are required to have

twice the number of clinical hours as their counterparts; however, chiropractic students are required to have over 1,000 more lecture and laboratory hours than their peers. This study's limitation was the differences in education as chiropractic education emphasizes diagnosis and manipulative therapy. There is no equivalent in medical education.

Information from Life University (date) stated that their students start in the lab and practice from the first year. These practicums are considered laboratory hours instead of clinical experience. Students participate in student clinics from the beginning of their studies. Coulter et al. (1998) concluded that until chiropractic and medical students are educated together, or knowledge is shared, there will be continuing issues and that more in-depth research is needed.

Chiropractic Treatment for Opioid Addiction

In my search of the Walden Library databases with perimeters of the last 5 years and keywords *chiropractic* and *opioid addiction*, there were three articles available. One was a white paper on nonpharmacologic strategies to pain care that indicated that more research was needed to create a more comprehensive model of pain care and that chiropractic was an evidence-based option (Tick et al., 2018). The second article was a cross-sectional study of 45 Medicaid plans for nonpharmacological pain management. The third was an article written by a doctor about his sister's battle with addiction and the lack of alternatives in pain management (Weeks, 2016). Searching Life University library database produced additional research.

According to Paige, Miake-Lye, Booth (2017), "low back pain, spinal manipulative therapy was associated with modest improvement in pain and function at up

to 6 weeks with transient minor musculoskeletal harms" (pg.1458). The ACA (2019) elaborated on the issues of the opioid epidemic facing our nation. The ACA also advocates non-drug approaches such as chiropractic care in the first line of attack on pain. The National Institute of Health for Complementary and Alternative Medicine (2014) stated that chiropractors provide care on forty-four military bases and that approximately fifteen million people regularly visit a chiropractor.

In 2019, Corcoran et al. offered a systematic review and meta-analysis of the association between chiropractic use and opioid receipt among patients with spinal pain "chiropractic users have 64% lower odds of receiving opioid prescription than non-users" (pg. e141). A quantitative study by Blum et al. (2000) followed ninety-eight participants in the Exodus Treatment program referred by the Miami-Dade drug court. They found that that chiropractic adjustment five times a week over 30 days increased the program's retention rate ninety-eight out ninety-eight, whereas, in the control group, only nineteen of the ninety-eight retained in the program.

A case study by Holder and Shriner (2012), from an opioid-addicted participant of the program chiropractic care in recovery, found that there are increased retention and a decrease in relapse with the addition of chiropractic adjustment in recovery. Isaza (2017) discussed and offered commentary on the role of Chiropractors in the opioid abuse epidemic. Isaza noted multiple studies but focused on a 2010 systematic review cited from Bronfort, et.al., (2004) which concluded that manipulation of the spine is effective for chronic pain control. The author suggested that with the twenty-eight million dollars

the CDC awarded to help states fight the opioid crisis, that perhaps some should be invested in legislation for chiropractic care in the treatment of opioid addiction.

Current Care for Opioid Addiction

Shankar et al., (2019) defined substance abuse treatment as an outpatient service that requires check-in for individual and group therapy. Outpatient treatment is geared toward the patient's motivation and consists of a 12-step program, detox, dual diagnosis treatment, group therapy, individual therapy, and MAT (Shankar et al., 2019). Medication Assisted Treatment is the current or standard treatment protocol in conjunction with available mental health therapies in the criminal justice system (McElrath and Joseph, 2008). MAT is the use of Methadone or Suboxone to treat opioid addiction (NIDA, 2015).

A systematic review of MAT show weaknesses that have a substantial impact on patients. Patients who do not receive MAT, report significant effects in a decrease in criminal behavior. In several studies, MAT patients showed higher aggression, lower working memory, and decreased cognitive speed (Maglione, Raeann, Chen, Azhar, Shahidinia, Shen, et al., 2018). While MAT initial use may help detoxification and regain normal brain function, long-term use interferes with functionality (Maglione et al., 2018). Ray (2014) attributed Mental Health Court or Drug Courts that use case management and enhanced judicial supervision to monitor defendants progress through drug treatment as a successful tool in recidivism. One of the significant issues is the cost of treatment and referral base (NIDA, 2015).

Provider Perception

After an exhaustive search with several keywords and multiple databases, there is little to no literature found that offers a qualitative evaluation of opioid addiction providers' perception of using chiropractic care in opioid addiction. The lack of literature appears to be a gap. Herbeck et al., (2008) conducted a quantitative study on treatment providers' perspectives and how providers and staff feel about their specific program. The limitations of the study were that it was focused primarily on a particular facility. Santa Ana (2001) discussed the barriers to complementary and alternative medicine (CAM). The researchers suggested that Chiropractic care falls under this identification. Santa Ana alluded that the obstacles in accepting CAM are providers' conflict, the lack of research, and reimbursement issues.

Drug Courts and Legal Issues

Brown and Brown (2010) explained the criminal justice system's drug courts' concerns and issues. The researcher examined limitations, the lack of research, and the impact of Drug Treatment Courts. Dr. Brown also noted that there are scant studies on effective interventions currently. Dowell, Haegerich, and Chou (2016), doctors employed or contracted with the CDC, offered guidelines to increase communication and have a clear, detailed understanding of how to treat pain. This article lacks the recommendation of an alternative (chiropractic) in making the guideline. This article's importance is the growing evidence that managing chronic pain is challenging and that no one pill fits all. It is heavy on recommendation, outlines the process, and reviews clinical evidence to make recommendations.

Gainey, Steen, and Engen (2005) demonstrated the difference between quantitative and qualitative research in drug court research. Qualitative analysis suggests that alternative sanctions in drug courts are complex. The quantitative data states that there may be a disadvantage to certain minority groups in offering alternative sanctions. The researchers explored the relationship between alternative sanctions and sentencing guidelines. This research has given an in-depth understanding of the limitations, complexities, and a wealth of interview questions that could be misinterpreted. It is interesting to note that negative perceptions of alternative sanctions from public defenders may impact the offender's makes regarding treatment.

Gallagher (2013) stated that the drug courts offer an alternative to incarceration for criminal offenders with a history of substance abuse. The researcher used regression analysis to predict drug court graduation outcomes. The implication for advocacy and future research is discussed. I have found no data on addiction providers' perceptions concerning chiropractic care in the criminal justice system.

Summary

Chiropractic care may be a more logical alternative to treating opioid addiction, as it uses no medication, only manipulation/adjustment. The American Chiropractic Association looks to the American College of Physicians Guidelines for treating low back pain and the Joint Commission adding chiropractic and acupuncture to its pain management standard. The military and the V.A. have been researching this link and have published successful models of Chiropractic integration. (ACA, 2019). There is a gap in research on the benefits and impact of chiropractic care on individuals involved in

the court system. In chapter three, I discussed my rationale and research design for my qualitative study.

Chapter 3: Research Method

The purpose of this study was to explore perceptions of providers in the management of opioid addiction, which may provide insight into why alternatives (i.e., chiropractic and not an opioid prescription) are used in the initial stages of pain management. The United States is suffering the largest crisis in opioid addiction; the numbers are increasing due to the pandemic and the lack of care and transition to telemedicine (CDC, 2019). Foundational research in chiropractic, CAM research, and the Academic Consortium for Integrative Medicine and Health showed convincing evidence that alternative care is useful. Using qualitative tools to understand the barriers to alternative care may be instrumental in finding answers to care barriers. This chapter includes my understanding of the literature, the reasoning for use of thematic analysis and HBT, my role as the researcher, methodology, instrumentation, recruitment, data analysis, issues of trustworthiness, and ethical considerations for the study.

Research Design and Rationale

The research question was the following: What are the perceptions of providers who treat opioid addiction regarding the use of chiropractic care in treating opioid addicts?

Phenomenon of Study

The phenomenon explored was perceptions of treatment providers, specifically medical model addiction treatment providers and how they refer patients to other providers. This research addressed the current opioid crisis and was relevant to referrals and treatment plans designed around individuals addicted to opioids (see Tick et.al.,

2018). I focused on current providers who deal with patients suffering from opioid addiction in the medical model of treatment (i.e., therapy, detox, and MAT).

The HBM focuses on how beliefs shape an individual's perceptions. I looked at providers' views on perceived susceptibility (potential harm to the patient), severity (need level of the patient), benefits (benefits of chiropractic care to the patient), barriers (what is stopping providers from referring to chiropractic), cues to action (what it would take for providers to refer or partner with chiropractic), and self-efficacy (translating the need to the patient) by identifying themes that emerged from the data analysis.

Research Design

To explore perceptions of my participants, it was important to use qualitative methodology to understand the themes that emerged from participants' perceptions of an issue (see Pietkiewicz & Smith, 2014). The purpose of my study was to understand the perceptions of treatment providers that influence their actions. Creating an exploratory method of research is important because I was not evaluating a theory; I made assumptions that were explored using HBT and thematic analysis.

My research question was exploratory in nature, and this framework dictated the methodology (see Creswell, 2014). Qualitative methodology is prudent when researching perceptions (Creswell, 2014). Quantitative methodology was not considered after the gap in the literature indicated a plethora of quantitative literature on chiropractic treatment of opioid addiction and a frequent call for qualitative understanding of barriers to treatment. The qualitative research was limited to barriers to treatment. Perceptions needed to be explored and could not be quantified (see Creswell, 2014). Although an interpretive

phenomenological analysis was considered due to its usefulness in dealing with the subjective topic of pain, perceptions of providers regarding a specific care were not subjective to understand barriers, so interpretive phenomenological analysis was not considered further. An ethnographic design was also considered and disregarded due to difference in treatment facilities as well as the specific objective of understanding the providers' perception rather than the setting of the facility (see Creswell, 2014). Quantitative research may be warranted in the future to examine the themes that emerged in this study. I chose thematic analysis because of its flexibility with research questions, sample size, and meaning making of the data, and because it allowed me to identify patterns within each interview and across all the data mined from the interviews (see Braun & Clark, 2017).

Thematic Analysis

Thematic analysis of qualitative data involves exploring patterns of meaning (Braun & Clarke, 2017). Thematic analysis is a technique of analysis rather than a methodology (Braun & Clarke, 2017). Thematic analysis has two important roles in qualitative inquiry: (a) flexibility within the research question for themes to evolve and (b) a two-part review process to compare themes against the full data (Braun & Clark, 2017). Thematic analysis allows the researcher to not only theme the perceptions but also to theme and code the implications of the perceptions (Akhtar & Boniwell, 2010). Thematic analysis can be used in both inductive and deductive studies; using an inductive (data-driven) approach gives the research the ability to explore new data.

I used thematic analysis of qualitative data to understand providers' views of chiropractic care as an alternative to opioid prescription to treat pain. Conducting one-on-one interviews with providers allowed me to identify themes in perceptions. To account for bias, I used the inductive approach to thematic analysis because it relies on descriptive and interpretive understanding of the data (see Pietkiewicz & Smith, 2014). The inductive approach allowed me to develop a theory based on rich data derived from the interviews (Braun & Clarke, 2017).

Identification of themes was done with software to avoid researcher error. Review and analysis were concise and organized. Thematic analysis was used to understand patterns in and across the data collected from participants (see Braun & Clark, 2017). The objective of doing thematic analysis was to understand the advantages and disadvantages of perceptions of treatment providers regarding chiropractic care.

Role of the Researcher

In this study, I interviewed participants to explore their views of chiropractic treatment for opioid addiction. Using a qualitative approach and navigating interviews with participants required me to be an observer-participant. I had an active role in the semi structured interview process, and it also allowed flexibility in coding (see Braun & Clark, 2017). The goal was not to use any participants who were known me. The participant pool was from area hospitals and treatment facilities. A video journal was used to mitigate researcher bias. The goal was to establish confidence and rapport with each participant and not guide the interviews. There was no known conflict of interest when conducting the research.

Steps were taken to avoid participants who had a prior relationship with me. To conduct thematic analysis, I noted any bias and focused on participants' perceptions. Thematic analysis focuses on the perceptions and themes that emerge from interviews, and by clarifying my participants' narratives I prevented implicit bias. My social work experience had shaped my view of addiction treatment, and my chiropractic experience had shaped my understanding of current treatment and research. I interviewed my participants with those assumptions and experiences set aside and had to check in with my committee before starting my analysis of the data (see Creswell, 2014).

Methodology

Participant Selection Logic

Participants were individuals who collaborated directly with patients dealing with pain and/or addiction and had direct involvement in their care. I also included physicians or therapists who were directly involved in MAT management. Flyers were posted in several local courts for participants who had direct involvement in the county's drug court. The participants were limited to medical model providers who provided addiction treatment or management and were licensed professionals involved in the treatment of opioid addiction. These participants were recruited from a pool of volunteers across the United States.

Sampling

I used the latent approach to thematic analysis in which I analyzed participants' assumptions (see Braun & Clarke, 2017). Data saturation was met with six participants. If the sample had been too large, my data would have become repetitive. Grady (1998)

clarified that more of the same data would indicate “data saturation has been reached” (p. 26). Data saturation is met when the ability to replicate the study is present and when new coding is unattainable. Burmeister and Aitken (2012) reported that data saturation is met with quality and quantity of data. Because I used thematic analysis, I determined that saturation was met when I could no longer code for new themes (see Guest et al., 2006). Each participant was screened with a telephone interview to ensure sampling criteria were met: a licensed professional involved in the treatment of opioid addiction with (a) at least 1 year of experience or involvement in the treatment of opioid addiction, and who was (b) English speaking. The participants were contacted via email with a flyer (see Appendix B).

Instrumentation

The interview guide was developed to explore the barriers that prevent addiction providers from recommending alternative care, specifically chiropractic. Because I used thematic analysis, I wanted the interview questions to be guided for credibility and open-endedness. I developed the questions based on the literature review and my research question. An example of the open-ended questions was “what is your experience with the current opioid addiction crisis that is facing the United States?” (see Appendix A). Using video journaling and note keeping throughout the interview process helped me mitigate researcher bias. Walker (2012) noted that adequate and quality are essential criteria in the data collection process.

Participant Recruitment and Data Collection Procedures

Walden's Institutional Review Board (IRB) approval was obtained before recruitment of participants. Flyers and emails were disseminated in treatment facilities, hospitals, and court facilities with my contact information for volunteers to participate. One-on-one interviews were the primary source of data. Selection criteria were limited to providers who provide addiction treatment, management, and referral and are licensed professionals involved in the treatment of opioid addiction with (a) at least 1 year of experience or involvement in the treatment of opioid addiction and are (b) English speaking. I not looking for participants that had knowledge of chiropractic; the participants were sought for their experience and perspective of addiction treatment and their perceptions of alternative treatments of addiction because they are the main referral sources for treatment. The call-to-action question in my interview guide was to explore what these participants know about chiropractic or alternatives to addiction treatment.

After initial recruitment and asking participants questions to ensure they met the inclusion criteria, I conducted interviews over the phone or through video conferencing software such as Zoom and recorded the interviews with software. I scheduled a day and time to meet with participants either in person or by Zoom, Skype, or phone. I then reviewed the informed consent with each participant, including requesting permission to conduct an audio-recorded interview for about 60–90 minutes. I discussed how the interview would be voluntary and explained the minimal risk of the interviews. I conducted member checking at the end of each interview and reviewed notes for

accuracy with the participant. Transcripts with identifiers redacted were shared with my university faculty along with my analysis.

Data Analysis Plan

After each interview, all transcription was done using MAXQDA software. I printed all transcripts and reviewed audio with transcripts to ensure accuracy. I reviewed again for audio and transcript clarity and made notes. Then I reviewed a third time to analyze the data. I compared my initial handwritten notes with software-navigated codes. I used MAXQDA for the content/interpretation and annotations. MAXQDA also has relationship grouping. All six interview transcriptions were reviewed for accuracy and were coded using MAXQDA software to minimize bias and time for coding.

Transcription was completed by software to avoid human error and was checked in reviews against the audio for accuracy. The initial inspection and coding were done by hand, which allowed for more exploration of the data. MAXQDA is qualitative analysis software that supports the transcription of audio and video data with advanced functions. Playback speed can be slowed in the software to ensure transcription accuracy; rewind intervals within MAXQDA allowed for more accuracy, and exact timestamps of specific words allowed for tracking and referring to the data. Using the visual tools in MAXQDA allowed me to create a log and sets of codes defined by topic as well as create concept maps and visualization of the data. MAXQDA allowed me to organize my data, code my data with colors and symbols, and retrieve information easily.

My data was built and updated with each piece of information and using Braun and Clarks (2017) six steps to analysis. Familiarization by reviewing and note taking of

reading and rereading transcripts by listening to the recordings organized and transcribed in MAXQDA. After familiarization, I identified meaningful data as preliminary codes. Once preliminary codes were found, I reviewed for themes in two phases, the first checked against the codes and second to the overall data, MAXQDA allowed me to track and log all sets of codes. Defining and naming themes came from the ongoing analysis of TA using MAXQDAs organization and color coding. Producing the analysis of the themes that come from my interviews and how they relate to my research question, came at the end of my analysis with all the visual tools MAXQDA had afforded me to review (Braun & Clark, 2017). The data determined themes that arose (Braun & Clarke 2017).

Issues of Trustworthiness

Trustworthiness was established with credibility, transferability, dependability, and conformability (Lincoln & Guba, 1985). The subjective nature of qualitative data leads a researcher to be more specific and accountable in their data collection as well as ways to improve the trustworthiness of their data.

Lincoln and Guba, (1985) define credibility as findings being believable and accurate. I gave my participants the opportunity to clarify the data collected at the end of the interview and corrected any errors or account for any misunderstandings. Credibility was achieved through accuracy, understanding my bias, and being transparent in my question allowed for greater rapport with my interviewees. Member checking or sending a summary to each participant after each interview, ensured information accuracy and that I understood their main points (Lincoln & Guba, 1985) and followed up with each

participant after transcribing interviews for any clarifications and corrections in their interview transcript.

Obtaining six participants' perceptions and creating rapport with these participants translated to rich data. Systematically record keeping and detailing methods of analysis with thick description offered transferability and credibility. Transferability is the accurate and translational ability to provide rich detail when explaining and presenting context of the study. Obtaining rich descriptive data translated to authenticity (Lincoln and Guba, 1985). The authors highlight that the findings of the data should translate across other contexts.

Dependability relied on quality and clarity of the data collection process and the reader having the ability to understand the data collection process, dependability also relies on peer reviews conducted by my committee (Lincoln & Guba, 1985). Chapter 4 holds the descriptive data found in each interview allowed the research to be readable. The study's dependability leaned on the procedures and data collection process and the transparency in my process as I went through the participant interviews. I provided context and depth for each participant; this addressed the quality that Lincoln and Guba (1985) point out.

Confirmability was achieved by transparency in bias, allowing the reader to see my answers to the research question pre- and post-interviews and detail my video journal throughout the process. Video journaling has been done on my laptop after each interview and was reviewed after each participant. Issues, memos, and reminders were easy to record and allowed transparency with my committee. Intra-coder reliability can

be achieved by becoming overwhelmingly familiar with the transcription and using a consistent approach to coding throughout the data (Lincoln and Guba, 1985).

Ethical Procedures

Ethical procedures were maintained by first obtaining IRB approval. APA guidelines (2019) were used to establish an ethical research plan. Informed consent is part of the recruitment memo, including maintaining confidentiality to protect my participants, (APA, 2016) and the permissions to be recorded. Participants were allowed to quit or remove themselves from the study while the researcher was in the process of interviewing participants. Throughout each interview, it was reiterated that no identifying demographics will be in my study. Each participant was color-coded (MAXQDA) and given a number; Participant 1, Participant 2, etc. I stored the data obtained through interviews and using MAXQDA software on a portable hard drive that is password encrypted and stored in a locked safe when not in use. I will destroy all audio after accurate transcription and written documents in five years (Alase, 2017).

Summary

The methodology was used to provide transparency and understanding. The purpose of this study was to understand the perceptions of treatment providers toward chiropractic care and addiction. To understand the barriers to most alternative treatment protocols, I needed to explore and set aside my own bias. Thematic analysis has been discussed in detail, and this methodology was used to understand code and themes that arose from this study. These themes that arose can help understand the barriers to using chiropractic in the fight against opioid addiction

Chapter 4: Results

According to the CDC (2022), opioid addiction overdose deaths almost doubled from 2019 to 2021. The pandemic increased the opioid epidemic at immeasurable costs at $78.5 billion annually (AMA, 2022). West Virginia is using almost a quarter of its gross domestic product at $8.8 billion to combat the opioid epidemic (Merino et al., 2019). The criminal justice costs, substance abuse treatment, and fatal overdoses costs have turned the opioid epidemic into a public health disaster (Merino et al., 2019). There is a gap in practice as regarding little to no access to chiropractic treatment for opioid addiction in the criminal justice system. The only exception is drug courts that engage in research; however, this research is over 9 years old (Defulio et al., 2012). Berryessa and Chandler (2020) noted the issues with defense attorneys not being comfortable advising clients on rehabilitative options due to lack of addiction and medical knowledge. Roman et al. (2020) discussed how drug courts work and noted the lack of understanding of how drug courts achieve success, which is related to the lack of research. Roman et al. also concluded that the drug court is only successful based on the treatment model followed outside the courts. By understanding the perceptions of current providers in addiction treatment, I sought determine the barriers to using the alternative to prescription opioid treatment: chiropractic care. The research question was the following: What are the perceptions of providers who treat opioid addiction regarding the use of chiropractic care in treating opioid addicts? In this chapter, I explain the setting and demographics. I also describe the data collection, analysis methods, evidence of data trustworthiness, and results of the study.

Setting

The interviews took place in a Zoom call or by phone. I was in a private room in my home. There was no interruption in five of the six interviews. In the first interview, there was a slight recording issue, which was corrected with a backup recording method set up before the interview. This interruption did not seem to impact the rest of the interview. The participants were from various parts of the United States. Four participants were in their home office, and two were in the office at their work location. There was no incentive to participate in the study.

Demographics

A total of six individuals participated in the study. All were over the age of eighteen, spoke English, and were licensed in their field. Participants were three men and three women. The participants were an emergency room physician, a nurse practitioner, an addiction specialist, a chiropractor, and two mental health providers. In recruiting for this study, I learned that the addiction field was complicated, and addiction is treated without any continuity of care. Recruitment forced my research to change the parameters of my search. The only variation to data collection was asking the IRB to change the wording so it would not be limited to medical doctors, Doctor of Philosophy, and nurse practitioners. I asked the IRB to allow me to change my criteria to a licensed individual who had worked in the addiction field for a least 1 year. I learned the treatment field has different layers of care. This change in criteria was used to widen my inclusion criteria. I received approval within 14 days to continue data collection. Addiction is treated acutely in the emergency room, under an umbrella of addiction at a treatment facility, as a

referral from a primary care provider, and from a mental health referral for mental health providers. Chiropractors treat pain and have found themselves treating pain with patients with addiction. Each participant had more than 1 year in the addiction field as required by my inclusion criteria. No other data were collected from participants.

Data Collection

I posted my research flyer in mental health and online addiction forums, suboxone clinics at public hospitals, local public universities, and social media. Four participants contacted me by email, and two by phone. Once I obtained informed consent from the six participants, I conducted the interviews via Zoom or by phone, and with participants' permission I audio recorded their responses to the interview questions. Interviews lasted 20 to 30 minutes. I initially scheduled interviews for 60 minutes. The research question was the following: What are the perceptions of providers who treat opioid addiction regarding the use of chiropractic care in treating opioid addicts? The first theme (lack of knowledge) was a good indicator of why interviews were shorter than expected.

Responses were direct and inquiring, and participants offered in-depth responses to each question. Most participants were specific in their answers. The data were reflective of the perceptions of the providers. I assumed due to the repetitive nature of the interviews and the inability to extract more data meant that data saturation had been met with Participant 6. I used thematic analysis to determine that saturation had been met when I could no longer code for new themes (see Guest et al., 2006).

Data Analysis

The collected data from the six participants appeared to have reached saturation. Recordings were transcribed through software. I reviewed the transcripts times multiple times to ensure accuracy of transcription. To mitigate researcher bias, I used the inductive approach to thematic analysis because it relies on descriptive and interpretive understanding of the data (see Pietkiewicz & Smith, 2012). The inductive approach allowed me to develop a theory based on rich data derived from the interviews (see Braun & Clarke, 2017). I used the latent approach to thematic analysis in which I analyzed participants' assumptions (see Braun & Clarke, 2017). It was crucial to understand the perceptions of providers to answer my research question. The assumptions and beliefs were the core to understanding the perceptions of providers in a qualitative way.

To familiarize myself with my data (see Alase, 2017), I printed each transcript and reviewed for themes, noting similarity in answers and themes. In the second review, I used a new color code and searched for confirmation of initial themes. In the third pass, I assigned another color to code for the next theme. I then compared my initial handwritten notes with the software-navigated codes. I used MAXQDA for the content/interpretation and annotations. MAXQDA also has relationship grouping. All data from interview transcriptions were reviewed for accuracy and then coded using MAXQDA software to minimize bias and time for coding. The initial inspection and coding were done by hand. MAXQDA is a qualitative analysis software that supports the transcription of audio and video data with advanced functions.

My data set was updated with each new piece of information using Braun and Clark's (2017) six steps to analysis. Familiarization was done by reviewing, note taking, and rereading transcripts by listening to the recordings organized and transcribed in MAXQDA. After familiarization, I identified meaningful data as preliminary codes. Once preliminary codes were found, I reviewed for themes in two phases: the first to check against the codes and second to check the overall data. MAXQDA allowed me to track and log all sets of codes. I defined and named themes from the ongoing thematic analysis using MAXQDA's organization and color coding. The data determined themes that arose (see Braun & Clarke, 2017). Themes that emerged from the data were (a) lack of knowledge outside practitioners' scope of practice, (b) lack of familiarity with current research, (c) concerns with insurance coverage of chiropractic care and subtheme of specialization in chiropractic care, and (d) providers perceptions were positive with more knowledge. Main themes were present across all participants data sets, and the subtheme was present in at least four of the data sets.

Evidence of Trustworthiness

Credibility, transferability, dependability, confirmability, and trustworthiness of the findings were established by using evidence throughout the data collection process. I clarified data with each participant after each interview. To establish credibility, I spent time establishing rapport with my participants to understand and interpret their perceptions through prolonged exposure and using multiple sources from different subsets in addiction treatment until saturation was met as well as correcting any errors. Member checking was implemented to ensure credibility by supplying participants the

transcript to review and allowing them to check for accuracy (see Lincoln & Guba, 1985). All participants completed this task. To show transferability, I reported the rich data collected. In the results section of this chapter, I use direct quotes to provide readers with access and understanding.

I established dependability by the detailed methods section. Methodology ensures that the data were collected with proper standards (Lincoln & Guba, 1985). For confirmability, I used a video journal to note and understand my thought process and reactions to ensure bias would not influence the participants' perceptions throughout the study. Data were stored and organized for veracity, and all processes can be reviewed.

Results

The purpose of this study was to understand the perceptions of providers regarding the use of chiropractic care in the treatment of opioid addiction. I audio recorded semi structured interviews with six participants, averaging 25 minutes. The interview questions were designed to elicit data to answer the following research question: What are the perceptions of providers regarding the use of chiropractic care in opioid addiction treatment? After data analysis, four main themes emerged regarding the perceptions of providers in using chiropractic care in opioid addiction. These themes were present in all data sets in a comparative way. The data sets did not show any major discrepancies. As discussed in Chapter 3, I used the inductive approach to thematic analysis: "a method which is descriptive because it is concerned with how things appear and letting things speak for themselves, and interpretative because it recognizes there is no such thing as an uninterpreted phenomenon" (Pietkiewicz & Smith, 2012, p. 6). The

information gathered adds to the current literature because it presents diverse providers' perceptions to clarify and suggests future research in a specific direction.

Theme 1: Lack of Knowledge of Outside Practitioners' Scope of Practice

All participants except for one had questions at the beginning of the interview that focused on how they would benefit from the study if they had no knowledge of chiropractic. One participant said, "I do not have any history with it as a provider or personally." Another participant had personal experience but did not have any professional understanding: "Well I suppose that if it treats pain and huh, that is an interesting concept. I mean I get why but I do not understand why it is not part of addiction treatment." The stigma that chiropractors face is they are known for back pain treatment and someone a person goes to after an accident. One participant adding their understanding: "Chiropractic treatment falls under medical bills that car insurances payout." All but one of the participants had no history with chiropractic referral or inclusion in their treatment protocols. The one participant who did have knowledge was a chiropractor working with the addiction population directly but was treating pain, not the addiction, due to insurance regulations.

Theme 2: Lack of Familiarity With Current Research

There is a gap in literature regarding the use of chiropractic care in opioid addiction treatment, and participants were open to the concept but had no understanding of the current research because it was not presented to them in any forum. One participant said "I think I just have not been exposed to it. Like literally, no one's ever talked about it with me…I think exposure, which is the main thing seeing outcomes and being exposed

to it.” Another factor in familiarity of current research is that chiropractic care is an alternative treatment modality. A participant stated, “so I think people’s ideas about these holistic approaches like chiropractic … are gets in the way of them investigating whether in fact it might be helpful.” Another participant asked how they can find the research and do their own investigation: “But I may be more interested to see you know, the research on this.”

Theme 3: Concerns With Insurance Coverage of Chiropractic Care

Insurance coverage was a specific worry across all participants: “So it has to be made easy into easy access into the system, whereby patients directly jump into it” (PX) and “chiropractic is restricted even though we are licensed to provide services but are limited by government and insurance companies” (PY). Medical providers and mental health providers receive a fraction of what is owed to them in a cost or fee schedule. Insurance companies are limited on coverages, and participants were mindful of their patients, stating that they need to do more research to understand what coverages would be allowed: “I need to find out professionally what the protocol would be and how we would get insurance to pay (for the treatment)” (PX).

The subtheme was more of a concern for providers who were working directly with the addiction population. The concern was if practitioners send Patient A to Chiropractor 1 and send Patient B to Chiropractor 2, it is not clear whether they will get the same treatment for addiction. Application of care was an important part of participants concern for this subtheme. PX stated “that every chiropractor treats patients differently on how they provide their adjustments” and then asked, “how do we know we

are sending our patients to the right chiropractor?" PX said "I think that if I were to refer, I would need to know who I am referring to."

Theme 4: Participants' Perceptions of Using Chiropractic Care for Addiction Treatment Were Positive With Access to More Knowledge

All six participants were invested in the outcome of this study. PX stated "this will give me the information I need to bring a chiropractor on staff." PX quoted the current opioid epidemic and said, "we need another way to manage this, the system is broken." All participants requested a copy of the completed study, and all participants requested more information and access to the research reviewed in the study.

Summary

The purpose of this study was to explore perceptions of providers regarding the use of chiropractic care in opioid addiction. Barriers to referring to chiropractic were addressed in Chapter 1 as the gap in the literature (see Dowell et al., 2016). The main themes were lack of knowledge of outside providers' scope of practice, lack of education (see Coulter et al., 1998) and familiarity with current research, and concerns with insurance coverage of chiropractic care. In Chapter 5, I interpret the results and discuss the limitations of the study and implications for social change.

Chapter 5: Discussion, Conclusions and Recommendations

Perceptions of providers of opioid addiction treatment were crucial to understanding the barriers to alternative care of addiction treatments. According to the NIDA (2015), opioid overdose deaths quadrupled from 21,088 in 2010 to over 68,000 in 2021. MAT creates an increased risk of opioid overdose due to the loss of tolerance; this encourages an exploration of alternative outcomes. Studies have shown that a few patients enrolled in MAT have experienced overdose (Au et al., 2021). I used thematic analysis and HBT to explore the perceptions of providers who treat opioid addiction because perceptions need exploration and cannot be quantified (see Creswell, 2014). I conducted interviews with the participants to answer the research question: What are the perceptions of medical providers who treat opioid addiction regarding chiropractic care in treatment of opioid addicts?

The results yielded four themes: lack of knowledge of outside practitioners' scope of practice, lack of education and familiarity with current research, concerns with insurance coverage of chiropractic care, and positive perceptions with more knowledge. One subtheme emerged: understanding specialization in chiropractic care. In the Chapter 5, I interpret the findings, discuss the implications for positive social change, and offer recommendations for further research in the addiction field.

Interpretation of the Findings

In this study, I identified four main themes in the perceptions of providers regarding use of chiropractic in addiction treatment. These themes addressed some of the gaps in the literature concerning the use of chiropractic in opioid addiction.

Lack of Knowledge of Outside Practitioners' Scope of Practice

All participants were limited in the understanding of chiropractic care for addiction treatment. The participant who had a chiropractic background knew about the issues with insurance but was not aware of the referral issues, continuity of care, and what was required for chiropractors to treat for addiction rather than pain due to insurance coverage. According to Greene et al. (2006), BMC Complementary Medicine and Therapies alludes to the absence of professional relationships in conjunction with little research investigating the relationships between primary care physicians and chiropractors. The current study indicated that primary care providers were less likely to make formal relationships with chiropractors. The participants described implications for efficiency, quality, and patient safety due to primary care providers not understanding chiropractic scope of practice. This was prevalent with my participants. Each participant was cognizant of the need to know what and how a chiropractor works with patients before they would refer. Patient safety was the cornerstone of concern with my participants.

Lack of Familiarity With Current Research

Most of the participants were not familiar with the research, and the few who had some knowledge of research were focused on their scope and practice. Previous research was focused on perceptions of chiropractic care rather than scope or what the chiropractic specialty was. Wong et al. (2014) examined the perceptions of medical students before and after educational information on chiropractic was given. The research indicated that medical students were more likely to have a positive view of chiropractic after 1 hour of

chiropractic education. The study also indicated that the chiropractic profession was marred by ethics and misleading claims. This can lead to misunderstanding of scope of practice. My participants highlighted that ethics and education of chiropractic were not something they were exposed to, and lack of knowledge was the biggest hurdle in referrals for them.

Concerns With Insurance Coverage

According to the NIDA (2022), health care practitioners are feeling the pressure to cut costs for patients with the understanding that alternative treatments are not covered by insurance or are less accessible and pain medication is usually covered by insurance. All participants in the current study questioned or brought up the topic of insurance and the fear that it would not cover an alternative treatment plan. In the literature review, reimbursement was a concern discussed by Heyward et al. (2018), including complementary and alternative medicine’s struggles with insurance approvals:

> Wide variation in coverage of nonpharmacologic treatments for low back pain may be driven by the absence of best practices, the administrative complexities of developing and revising coverage policies, and payers’ economic incentives. Such variation suggests an important opportunity to improve the accessibility of services, reduce opioid use, and improve the quality of care for individuals with chronic, noncancer pain while alleviating the burden of opioid addiction and overdose. (p. 2)

This theme was mentioned several times in my study and was layered throughout each participant’s concerns. Insurance is a significant issue for alternative health care,

specifically chiropractic. Most chiropractic offices are limited on insurance due to how insurance companies regulate (Heyward et al., 2018). This relates to Lewin's HBT. The purpose of my study was to understand the perceptions of treatment providers that influence their actions (see Pietkiewicz & Smith, 20120. I explored the participants' views on perceived susceptibility (possible harm to patients), severity (need level of patients), benefits (whether providers know the benefits of chiropractic care to patients), barriers (what stops providers from referring to chiropractic), cues to action (what it would take for providers to refer or partner with chiropractic), and self-efficacy (translating the need to patients) by identifying themes that emerged from the data analysis. If there was no knowledge of a proven technique to treat addiction, there would not be a referral. Perceptions in health care influence actions of providers. The current study revealed themes that have the potential to create a different process of education and understanding.

Participants' Perceptions of Using Chiropractic Care for Addiction Treatment Were Positive With Access to More Knowledge

This theme answered my research question addressing providers' perceptions of chiropractic care in treatment of opioid addiction. The gap in the literature showed the need for more education (Coulter et al., 1998), the age of research (Holder & Shriner, 2012), and that perceptions were not limited by personal perceptions but by a multitude of disconnects in the field (i.e., no consistent perimeter of care in addiction, insurance issues, and lack of knowledge). Every participant in the current study had a personal stake in the conclusions of my study, and each of them asked for a follow-up.

In the Limitations section, I address a serious limitation regarding the lack of more depth in each interview. There was a common theme of how to build a bridge. BMC Family Practice focused on perceptions of alternative treatments for chronic pain (Penny et al., 2016). The study revealed that there are over $560 billion in treatment expenses in the current medical model for addiction, and one of the participants noted that they did not have time or drive to reinforce other modalities to treat pain. One of my participants reinforced that belief:

> I need a button to push, if I had a way to refer my patient to alternative care, I would…by the time the referral is in place, the patient goes back to the opioid…due to cost, referral time, or lack of understanding or willingness to go off pain medication.

The complexity of chronic pain management involves context, expectations, resources, and cost versus benefits across time.

HBT

The theme of perceptions that addiction providers have regarding care and referral can be evaluated with the HBT (see Lewin, 1951; Rosenstock et al., 1974) and thematic analysis. Using the inductive approach of qualitative research and applying the scope of HBT, I explored why participants perceived specific barriers to using chiropractic care as a treatment for opioid addiction. Lewin's (1951) theory explains that participants' goals are based on knowledge, trust, and understanding of success of their decisions. According to the four themes found in the current study, knowledge of chiropractic care for addiction treatment is absent, trust is not supported without familiarity, and

understanding of success of their decision has no foundation without the understanding of application of care (i.e., how chiropractors can treat addiction). Thematic analysis allowed themes to emerge from the study. Based on Lewin's HBT, Husain et al. (2018) discussed that freeze, change, and refreeze could be used to change perceptions; however, in the current study perceptions were not negative regarding the use of chiropractic but were guided by outside influences.

Limitations of the Study

This study was not without limitations. Qualitative studies cannot be as broad and comprehensive as quantitative studies (Creswell, 2014). The small sample size of six participants was specific to that group and limited generalizations. Data saturation was met at six participants from different areas with different titles.

Another limitation to the study was that participants were from different spectrums of addiction treatment modalities. One participant had more knowledge than the other participants, and that participant was a licensed chiropractor working with the opioid addiction population. This group of participants and their differences created a limitation based on a nonhomogeneous group.

Intersectionality and my experiences as the researcher also constituted limitations. During interviews, my background and experience appeared to have created rapport with the participants, which suggested that other researchers may have obtained slightly different results based on their background. It is also unclear whether my chiropractic knowledge was more apparent than I thought. I was careful to not go into too much depth of chiropractic to mitigate bias, but this could have created another serious limitation.

The limitation could have limited the depth I attained in each interview and the lack of subthemes that could have arisen. My background in chiropractic education and researched paired with my education in research and psychology gave me a broader scope as a researcher in this study. This raises the question of whether another research with a different background could have found the same themes as I did. My interviews were shortened to mitigate my bias, but indirectly created a serious limitation in gaining more data.

I used video journaling to avoid bias in data collection and thematic analysis, and I followed my semi structured interview protocol. I was aware of my bias with a background in chiropractic studies; however, this background was used to clarify the questions asked in the interviews. It is possible that my participants noticed this background and explanation of research.

The participants I sought created a need to change my criteria with the IRB. Addictions centers are led by CEOs rather than clinical directors. The emergency room physician reached out due to the influx of suboxone patients and was curious about other options. The interviews showed that physicians may want alternatives, but there has to be a set of approvals and a center of command in the medical system surrounding addiction treatment. There was a lack of research regarding this. Only conversations with hospital and treatment facility personnel throughout the study gave this point of view; however, Dowell et al. (2016) supported this premise because the article omitted chiropractic from the guideline. In the facilities that I reached out to with recruitment notifications, there was a lack of connection or interagency collaboration. Another issue was referring

managers in treatment centers are not typically licensed providers, although they can have the title case manager, behavior specialist, etc.

Recommendations

Recommendations for future research would be to target medical schools, social workers, psychiatrists, and addiction providers in a larger quantitative study (see Coulter et al., 1998). Another recommendation is education in the form of presentations at hospitals, treatment facilities, medical schools, and chiropractic schools, as well as continuing education for therapists, psychologists, and providers who work with individuals with addiction (see Isaza, 2017). The opioid epidemic calls for a change in how providers treat addiction (ACA, 2019; CDC, 2022). Paige et al. (2017) demonstrated that the research is out there: “low back pain, spinal manipulative therapy was associated with modest improvement in pain and function up to six weeks with transient minor musculoskeletal harms” (p. 1458). The next research topic should be how to educate the current field. Tick et al. (2018) encouraged the research community to conduct more research and pursue a comprehensive model of pain care that is used consistently and across all platforms of care. A comprehensive cost analysis of addiction treatment now compared to what it would be with chiropractic or alternative care could set the stage for positive social change (ACA, 2019).

One main theme found in the current study was lack of knowledge of outside practitioners’ scope of practice. Barriers of understanding were also noted in previous research regarding perceptions. This could be addressed with education or communication between medical students and chiropractic students. Chiropractors and

chiropractic as a whole need to have a standardized, evidence-based plan to address chronic pain and opioid addiction (Holder & Shriner, 2012). The education would also address the second theme: lack of education and familiarity with current research. Concerns with insurance coverage of chiropractic care could be remedied by a quantitative study with a cost effectiveness analysis of chronic pain currently compared to cost of chronic pain management in a chiropractic setting. Recent research indicated that nonpharmacological pain management could save hospitals $36,000 plus per patient and save over $11,000 in insurance cost (Tick et al., 2018) This study could also address primary care providers' understanding of specialization in chiropractic care because there would have to be a standardized care plan for addiction treatment in a chiropractic setting.

My study found that participants had a positive perception when offered more knowledge and understanding of chiropractic care. All six of my participants requested a copy of the study upon completion one stating "to understand why it matters and what it will take to lessen the economic impact of drug addiction." Another participant wanted to have the research at their fingertips to justify bring chiropractic into the treatment plan. The American College of Physicians updated it guideline to treating chronic and low back pain, including spinal manipulation as the first line in treating acute and chronic back pain. (ACP, 2017). This research opens new questions on addressing the $874 billion dollars in cost of spinal disorders and chronic pain. The United States has an alternative to addiction treatment, chiropractic is evidence based, what is it going to take to implement it?

Implications

The result of this study has a significant impact on the implications of positive social change. Presentation and educational information for future practitioners could begin to lay the foundation for more research and bridge the current gap. This education would address the lack of knowledge or and increase practitioners understanding and scope of practice. This education would also address the sub theme of specialization. Education and presentation at Chiropractic colleges would benefit from understanding how to specialize in addiction treatment and create another avenue for research to add to the literature.

Chiropractic education comprises four academic years of professional education, most chiropractic universities or colleges require a bachelor's degree and some background/credits in science. Chiropractic education approximates a total of 4,800 hours, ranging from 4,000 hours to 5,500 hours. This includes an average of 2000 hours in clinical sciences and 1,045 hours of clinical internship and externship. Accreditation by the Council on Chiropractic Education is estimated over four thousand hours. A Doctor of Chiropractic are trained in Cardiology, Gastrointestinal, Obstetrics, Gynecology, and Pathology and Radiology to refer accordingly (Coulter., et al., 1998). Chiropractors receive more hours in Anatomy education and Physiology but fewer in public health. This is valuable information to hand back to the public. All but one of my participants had no knowledge of the amount of education and training that chiropractors go through. The chiropractic participant acknowledged that he was not aware of the level of education until he went through it.

The cost analysis is a more in-depth research endeavor has it would lay the foundation for insurance coverage changes. This would be a multi-step process of educating the practitioners, addiction treatment providers, creating a platform for change in the industry and presenting the results to the insurance industry. The benefit to this research could impact the prolonged epidemic of opioid addiction in public health but also address the current economic burden.

Summary

In my recruitment process, I learned that there was not a specific protocol for addiction treatment and that every treatment center is different. There is a lack of licensed professionals that are specifically treating opioid addiction. This disconnect is affecting addiction treatment. Opioid addiction has multilayered and complex consequences; Fifteen hundred people per week, die from opioid related overdoses (CDC, 2022). There is a rise in children in foster care, opioid misuse and fatal overdose cost in the US have reached the trillion-mark (Luo, Mengyao, Florence, 2021) education, research and focusing on alternatives that are more cost-effective will create a social change initiative that will change lives drastically. Frail (2019) noted that there have been multiple controversies in treating addiction with pain medication. Raffaelli and Amaudo (2017) argued pain has long term effect on the quality of life. The National Institute of Health (NIDA, 2020) described addiction as a process that is created from a chronic exposure to opioids. Maglione et al., (2018) revealed that medication assisted treatment affects functionality after a certain amount of time. A call to action is imperative to fight the opioid crisis facing our nation and the world.

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Appendix A: Interview Protocol

Development of open-ended interview questions to explore and understand providers' perceptions. Utilizing the literature research and focusing on the gaps, I am using the following questions: As the questions are open-ended, I would secure 60 minutes of their time beforehand.

1. Who are you, Name, title, qualifications?

2. What is your experience with the current opioid addiction crisis that is facing the United States?

What made you want to become a provider?

3. What are your views on treating opioid addiction?

Give me an example of treatment you provide

4. What do you think is currently working and not working in addiction.

5. Do you use Medication Assisted Treatment? What works?

6. Do you have a perception of the current data/ case studies with regards to functionality in treating addiction with MAT

7. What do you believe is the most challenging part of treating opioid addiction

Can you give me an example?

8. What is your view on alternative approaches:

8a. Auriculotherapy? 8b Acupuncture? 8c Chiropractic?

9. What research have you read regarding chiropractic and opioid addiction?

9a. What is the latest research you have read on opioid addiction?

10. Do you think that perception of a specific treatment influences how it is used or prescribed?

Appendix B: Flyer

Perceptions of Treatment Providers Regarding Chiropractic Care in Treatment of Opioid Addiction.

Seeking Participants:

- I am searching for participants to develop and conduct qualitative research interviews. I am seeking treatment providers that could participate as "interviewees" for my dissertation research. Walden University's approval number for this study is 09-03-21-0977554, and it expires on September 2, 2022.
- You must be a licensed professional involved in the treatment of opioid addiction. The interview process could be arranged in person (local) or via video conferencing.
- The whole process should take approximately30-60 minutes of your time.
- The study has deadlines, I am beginning the process on 01/27/22 and finishing interviews by 08/20/2022

Please contact me by phone, or e-mail, if you are interested in participating.