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The Effects of Motivational Interviewing for Those Afflicted with Opioid Addiction

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THE EFFECTS OF MOTIVATIONAL INTERVIEWING FOR THOSE AFFLICTED WITH OPIOID ADDICTION

by

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DEDICATION

This evidence-based project is dedicated to my family, Edgar my husband whom has put up with me going everywhere with my computer. To my sons Eric, Isaiah and Nathan thank you for understanding my absence in your life-time achievements. My parents and sisters Sherry and Sheila who have stepped helping me with day to day household functions. Finally, my best friend Dr. Lisa Biancalana-Marsh who inspired me to go back to school and has cheered me on throughout the whole process even while enduring her own health concerns.

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ABSTRACT

Substance use disorders are a worldwide problem, according to the Center for Disease Control (CDC) there were 70,237 drug overdose deaths that occurred in the United States in 2017, of which 47,600 were opioid related. Illinois had a 14.3% increase of opioid deaths from 2016-2017 (CDC, 2017). Numerous interventions exist to address this health concern, yet evidence shows that Motivational Interviewing (MI) was the most efficient and effective way to promote behavioral change. The purpose of this EBP project was to provide evidence that MI increased referrals and promoted compliance with appointments to treatment programs. The sample for this project included adults with an opioid use disorder (OUD) from a general medicine clinic in Chicago, IL. Motivational Interviewing involves four steps: (1) express empathy (2) support self-efficacy (3) roll with resistance and (4) develop discrepancy. The first group included patients from September 2019 through December 2019 who received MI during their visit and were compared to patients seen September 2018 through December 2018 which consist of patients who did not have MI included in their visit. The primary outcome was to measure and compare the number of agreed referrals to treatment among those who received MI and those that did not. The secondary measurement was to measure and compare the compliance for appointments among those who received MI and those that did not. Data collected was analyzed using a chi-square of independence to determine if the use of MI increases referrals and increases appointment compliance for treatment of OUD. Findings from this project demonstrated that there was a statistically significant behavioral change among the patients whom received MI to those that did not by increasing the number of agreed referrals and compliance to treatment for the disease.

CHAPTER 1

INTRODUCTION

Background

Today, about 20% of patients with non-cancer pain or pain-related diagnoses are prescribed opioids, which include pain medications such as oxycodone, hydrocodone, morphine, and fentanyl (Daubresse, Chang, Yu, Viswanathan, Shah, Stafford, Kruzewki, & Alexander, 2013). These prescriptions are impacting and influencing patients to become opioid dependent causing chaos within our healthcare communities. The epidemic of opioid use/dependence is also consuming lives and destroying many families across the United States and worldwide. Public health authorities, local governments as well as the public have expressed, with growing alarm, an unprecedented rise in morbidity and mortality related to substance use. Among the various drugs abused, opioids are responsible for many of the overdose deaths in the United States (Center for Disease Control and Prevention, 2017).

According to the Center for Disease Control (CDC) opioid use and opioid death rates are rising at a rapid pace especially for those whom use heroin unknowingly that it was laced with fentanyl (CDC, 2017). Despite the prevention efforts and implementation of drug addiction programs such as methadone clinics and inpatient rehabilitation centers, substance use disorders continue to be a major issue that needs a multifaceted public health approach to solve it. This epidemic urgency comes with many challenges for our primary care providers (PCP) due to the lack of skills necessary to provide appropriate interventions that focus on getting these patients in agreement for a positive behavioral change. Motivational interviewing (MI), which is usually a person-centered counseling style is one intervention that has been proven to be effective in sustaining treatment for patients with substance use disorders. The problem primary care providers have with MI is that it can be time-consuming especially if the techniques have not been learned or mastered thus causing underutilization within their clinics. Many

PCP's want to focus on traditional methods for treatment of chronic illnesses such hypertension and diabetes not realizing that if used appropriately, MI can be used in all aspects of health care problems.

The literature review that was conducted by this project leader (PL) resulted in numerous amounts of evidence where Motivational Interviewing (MI) was found to be an efficient and effective intervention promoting behavioral change, for this evidence-based project (EBP) the searches were related with Opioids. Motivational interviewing originated in the early 1980's by Miller, W. R., & Rollnick, S. (2012) for alcohol abuse and since then has become a well-recognized intervention for several areas for counseling including substance use disorders (SUD). Berg, Hammerstrom, Steiro, Dahl, & Karlsen, (2011) reported that MI was intended to work through four steps: (1) express empathy (2) support self-efficacy (3) roll with resistance and (4) develop discrepancy. On the official home page of motivational interviewing (http://motivationalinterview.org) expressing empathy involves seeing the world through the client's eyes, understanding how the patient perceives the problem or if they see it as a problem. Supporting self-efficacy is where the client is responsible for choosing and carrying out their actions for change. This is where the change talk is identified and the provider can assess if they are ready for change, do they understand what is needed to make the change happen or how will the change affect them. Rolling with resistance is where the provider or counselor does not fight the resistance making the patient feel criticized or attacked leading them to deny there is an issue so they "roll with it". In this step the PCP treats and respects them as individuals allowing them to be involved in making the decisions, not putting labels or assuming reasons for their actions. It is important that they are not feeling pressured or that someone is making the choices for them. This is a moment where the provider or counselor can further explore the client's views. The final step is motivation for change, where they identify discrepancies. This occurs when the clients can perceive where they are and where

they want to be, addressing any possible obstacles they may encounter or inhibit there change. Goals are often identified in this stage.

Data from the Literature Supporting Need for the Project

Substance use disorder is a worldwide problem, according to the Center for Disease Control (CDC) there were 70,237 drug overdose deaths that occurred in the United States in 2017, opioids were involved in 47,600 of those deaths. In the state of Illinois alone there was a 14.3% increase of deaths in 2016-2017 from opioid use (Center for Disease Control and Prevention, 2017). In Cook County where this project was implemented, there were 741 opioid related deaths in Chicago and 340 deaths in suburban Cook County in the year 2017. The greatest number of opioid deaths were seen in cases involving synthetic opioids, mainly fentanyl according to NIDA (2019, November 21). These statistics show the need to have our providers prepared and ready to identify, counsel and treat our patients appropriately.

Data from the Clinical Agency Supporting Need for the Project

Communication among key stakeholders within the facility, which include providers, patients and supportive staff was conducted to asses the needs and desire to incorporate EBP for behavioral change among our patients with an OUD and to impact the epidemic within our community they serve. An understanding from literature on how many of the opioid use disorders that originated from a prescription for opioids among the population within our community was identified. The clinic started a pilot study a year ago identifying that out of the 354 patients screened only 19 patients were currently being prescribed an opioid drug, of those 19 patients, 9 of them have signed opioid agreements which were on record. The quality improvement project is a step in the right direction impacting the number of providers prescribing of opioids and encouraging signed agreements thus reducing the risk for abuse. An overview on the results of a current pilot study related to reducing opioid prescriptions has proven to have a positive effect within the clinic resulting in utilizing a controlled substance

contract between the provider and the patient. This projects plan was to assess the effects of motivational interviewing to determine if patients afflicted with an opioid use disorder accepted referrals to our MAT clinic and if they will keep their scheduled appointments. The needs of our patient population will be met by identifying and providing them with effective treatment within our Medically Assisted Treatment clinic (MAT).

Purpose of the Evidence-Based Practice Project

The purpose of this Evidence-Based Practice Project is to implement and evaluate the use of motivational interviewing's (MI) effectiveness among patient's who are afflicted with an opioid use disorder. The goal is to impact the epidemic that our community is currently facing and promote healthier lifestyles for our patients.

PICOT Question

"Does the use of Motivational Interviewing by provider's in the General Medicine Clinic effect the number of referrals to a treatment program, and compliance to appointments among adult opioid dependent patients in comparison to non-motivational interviewing within 12 weeks?

Significance of the EBP Project

The significance of this Evidence-Based Practice project is important because there are many patients that are afflicted with an opioid addiction and their day-to-day struggle is real affecting not only their lives but their finances, families, communities and overall health. Substance use disorders can prohibit a patient's cognitive ability to make sound healthy choices causing them to commit crimes and remain a non-productive member to society. The financial burden of having an opioid use disorder leads patients to partake in unsafe criminal activity which then may result in incarceration or death causing broken families and heart ache for loved ones. Children of those whom are dealing with a SUD are often left in the care of an elderly

grandparents or in child and family services system inflicting pain, loneliness, feelings of worthlessness, mental disorders and financial strains among communities. No matter the structure of a family, your race or ethnicity there are commonalities for individuals who struggle living with a substance use disorder (SUD). Implementation of this EBP will demonstrate to our professional peers on how effective MI can be in addressing those whom are afflicted with the problem, help them admit to having a problem, support and encourage them to get treatment and finally how to stay in treatment. If the problem is not addressed, we will not have the opportunity to encourage behavioral change and that is where motivational interviewing can make an impact on the disease.

CHAPTER 2

EBP MODEL AND REVIEW OF LITERATURE

Evidence-based Practice Model

This chapter will focus on the overview of the Evidence-Based Advancing Research and Clinical Practice Through Close Collaboration (ARCC) EBP model selected to implement the project. Discussion on how the ARCC model will be utilized within an institution for practice change while identifying possible strengths and barriers is documented. The literature search process was started with the search of several data bases. Terms based on how motivational interviewing is effective to promoting behavior change among patients that afflicted with a substance use disorder, particularly opioid use/opioid abuse were used. Evaluation of the literature was completed by the John Hopkins appraisal tool which was selected by the project leader to determine the validity and reliability of the articles. An overall synthesis of the literature was completed explaining commonalities among the articles found. This synthesis led to development of the best practice intervention utilized in this project.

Overview of EBP Model

The evidence-based model chosen for this project was the Evidence-Based Advancing Research and Clinical Practice Through Close Collaboration (ARCC) Model. The ARCC model was founded through a major strategic planning initiative at the University of Rochester School of Nursing in the spring of 1999, which involved nursing faculty, School of Medicine and Dentistry faculty, individuals representing nursing practice at the academic health center, and community leaders (Melnyk & Fineout-Overholt, 2015). The strategic planning process at this institution identified the need to strengthen the unification of practice and research in the form of

evidence-based practice. Benchmarking with other leaders at schools or nursing and academic health centers throughout the country also revealed a tremendous national need for the advancement of EBP.

The ARCC Model includes important concepts regarding behavior change in individual clinicians as key strategies in advancing and sustaining system-wide implementation of EBP (Melnyk and Fineout-Overholt, 2015). Findings from studies testing the ARCC Model have indicated that strengthening clinicians' beliefs about EBP does lead to greater implementation of evidence-based care, and that organizational culture is important in strengthening the EBP beliefs of clinicians. The model has five steps;

1. Assessment of organizational culture and readiness for implementation of EBP in the healthcare system.
2. Identification of strengths and barrier of the EBP process in the organization
3. Identification of EBP mentors
4. Implementation of the evidence into organizational practice
5. Evaluation of the outcomes resulting from practice change

After years of implementing the ARCC model, Melnyk sought to refine it and collaborated with Ellen Fineout-Overholt. Together the model was expanded to include several theories that help to eliminate barriers that were thought to impede the implementation of EBP (Kim al., 2017). The ARCC model also has four assumptions that form the foundation of the model (Melnyk & Fineout-Overholt, 2015). The model's assumptions are;

1. Barriers to adapting EBP exist in health care facilities as well as with individuals
2. For EBP to be adopted as a best practice, barriers must first be removed.
3. Health care providers and staff must adopt the beliefs and attain confidence in the importance of EBP to fully be implemented for practice change.

4. Mentors are an integral part of the EBP implementation and are vital to the adoption and the continued success of an EBP system change within a health care facility.

Application of EBP Model to DNP Project

The ARCC model was chosen because the facility where the project was conducted is a part of a large teaching institution and there is a potential for growth and development of mentors to help facilitate evidence-based practice change. The project was conducted in Clinic B which consist of 6 medical doctors and 2 nurse practitioners. After discussing the project with the director and the clinical collaborator, this project's ability to impact our providers was identified and appreciated. The ARCC model allows our organization to move forward and implement the process with guidance of EBP.

Step one in the ARCC model is to assess the organizational culture and readiness for implementation within the clinical site (Kim et.al. 2017). Identifying our patient's cultural and medical needs during this opioid crisis the project leader will gather statistics on the community in which it serves for those whom are battling opioid use disorders and presented this project's idea to leadership. After speaking with leadership and staff, the organization understands the importance of empowering our provider's ability to effectively incorporate motivational interviewing in care given which evidence has shown to be best practice. The clinic's increase need for opioid treatment has left an urgency for provider's to be well prepared and knowledgeable to use an appropriate intervention that promotes behavioral change.

Step two is Identification of strengths and barrier of the EBP process in the organization (Kim et.al. 2017). The strengths of the EBP process in the organization were identified as it being a teaching institution where many of the staff and providers are continuously working on a quality improvement project or understanding that research is a continuum in medicine. Research and evidence-based practice is highly respected and accepted especially since there are many medical students, residents and nursing students completing clinical hours at this

facility. Barriers that may hinder the projects' success were identified as: time allowance, the high demand of patient care, high leveled care needed, leave providers limited time to attend workshops and training sessions. Many providers would have to give up their personal time or administrative time to attend such trainings. Another barrier could be the age of our providers as many providers at our facility have been practicing medicine for years and have their own way to provide effective care and feel comfortable therefor resisting change.

Step three is Identification of EBP mentors. An important part of the ARCC model is to identify the mentor's strengths and weaknesses that impact the success of this project. After discussion with the project collaborator it was decided that the project leader would be the main mentor leading others to prepare the organization and providers to implement the EBP project within our clinic. Discussions with lead physicians whom were interested in motivational interviewing could be additional mentors in the future. A more detailed training would be required for mentors and brief training sessions for others. The importance of mentors was emphasized throughout the ARCC model for the likelihood to succeed in implementation and adoption of change within the organization (Kim et.al. 2017).

Step four involves implementation of the evidence into organizational practice (Kim et.al. 2017). Providers within this organization are familiar with quality improvement projects and have demonstrated a previous acceptance to change based on evidence. Once the providers have been provided evidence on how motivational interviewing demonstrates successful change, the training and EBP implementation may begin. The process may take longer then most institutions due to the political ties and size of the organization. Providing evidence on the success of this intervention in various settings will be key for adopting and implementing the change.

Strengths and Limitations of EBP Model for DNP Project

The ARCC model has been used in several settings**, i**n an article by Kim et. al 2017 an evaluation of EBP with the use of the ARCC model was conducted within a fellowship program

to improve beliefs, implementation, group cohesion and implementation of EBP change. It was found that through mentorship, if EBP beliefs were established, adoption and implementation of EBP were successful (Kim, et.al 2017). This is exactly what we are trying to do with this project, improve the belief of MI and its effectiveness and increase patient's appointment compliance. In the fellowship program beliefs had a direct impact on the improvements leading to job satisfaction and attractiveness to those involved in the change. Finding those that are motivated and committed to carry out EBP projects would be ideal for development of mentors and cohesiveness.

The strength of the ARCC model is that it is designed to implement EBP into organizations that are willing to adopt a new practice or amend their current one. The model provides guidance for an organization to assess their readiness for change and implement interventions that have been proven successful through evidence-based practice. It provides a needs identification for an organization, allowing them to compare their current practice to what current evidence has proven successful. ARCC model's four step process is easily applicable to both the novice and experienced providers making it suitable for busy providers.

The major limitation of the ARCC model is the use of a mentor in the various settings that an organization will have. Staffing is a problem in most institutions and may prohibit the development of mentors. Time restraints also will impact the training of new mentors. Many healthcare organizations struggle with maintaining safe staffing for its day to day functions, therefor allowing mentors to be trained will take additional time and money. Finally, another limitation identified is the senior provider's beliefs and attitudes regarding changing a method that has been working for them for years. These limitations are not in every organization but should be considered when implementing the model.

Literature Search

Sources Examined for Relevant Evidence

For this project a detailed search was conducted to find the most relevant evidence regarding motivational interviewing and whether it is an effective intervention for implementing behavior change among patient's that are afflicted with an opioid use disorder. The focus of the search was to locate evidence where motivational interviewing was found to be successful in communicating and attaining treatment for patients who have an opioid use disorder. Utilization of various search strategies and databases were explored. Databases that were searched include CINAHL, Cochrane, Johanna Briggs, ProQuest, Psych INFO and the Nursing Allied Health Literature. Key words used were "motivational interviewing" And "opioid abuse" OR "substance abuse" OR "opioid addiction" OR addict* AND "nurse practitioner" OR provider* OR physician*. Limiters such as English language, scholarly written, peered reviewed and years were applied to each search.

Inclusion criteria for the literature search included: scholarly written, peer reviewed, English language and date ranges from 2014-2019. These inclusions lead to the most relevant evidence currently available. Additional inclusion criteria were a population of adults ages 18-65yrs old and setting of a primary care, outpatient or family practice area. Exclusion criteria were hospital or in-patient settings, under 18yrs of age, non-addiction treatments and mental health disorders.

The CINAHL, Cohcrane, Johanna Briggs, Medline, and PsychInfo databases were search yielded 1,782 results, after adding Boolean's "opioid abuse" OR "substance abuse" OR addict* OR "opioid epidemic" OR "opioid addiction" 166 results were yielded. Additional Boolean's were added with "nurse practitioner" OR apn* OR provider* OR physician* Search results are shown in Table 2.1

Results in CINAHL resulted in 27 articles, 4 of those articles were chosen for the project. In the Cochrane results of 24 reviews and 2451 trials, with a final result of 3 in which one article

was selected. In the Johanna Briggs database the results yielded 11 articles, no articles were chosen from this selection because content was not relational. For Medline's yielded 187, 29 reviewed and 2 were selected.

Table 2.1

Database Search Results

Database	Evidence Yielded	Duplicates	Reviewed	Accepted
Cinahl	166	2	27	4
Cochrane	24	0	6	1
Johanna Briggs	24	0	11	0
Medline	400	4	27	3
PsychINFO	187	0	29	2

Levels of Evidence

The John Hopkins research appraisal tool was selected for this project. The tool utilizes a hierarchy ranking the highest level of evidence, level 1 and the lowest level being 5. Level 1 is comprised of randomized controlled trials (RCT) and systematic reviews of RCTs with or without meta-analysis. Level II evidence is quasi-experimental or systematic reviews with RCTs. Level III includes quantitative non-experimental studies and systematic reviews containing non-experimental studies. Level IV are clinical practice guidelines and consensus statements. Finally, Level V consist of literature reviews and quality improvements. The search strategy produced a total of 11 pieces of evidence. Utilizing the John Hopkins appraisal tool there were 6 level 1 articles, 3 of those articles were Grade A, 2 articles were Grade B and 1 was a Grade C. For level 2 evidence, there were 3 articles retrieved and all 3 were Grade B. Finally, for level 3 there were 2 articles in which bother were Grade A. There were no level IV or V articles used for this EBP.

Appraisal of Relevant Evidence

The John Hopkins research tool also allows you to rate the quality of the evidence. Quality of evidence is given a grade of A, B, or C which is consistent ranging from highest to lowest. Quality grade level of (A) has “consistent, generalizable results; sufficient sample size for study design; adequate control definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence” (Dang & Dearbolt, 2018, p. 131). A quality grade level of good (B) included “reasonably consistent results; sufficient sample size for the study design; some control; definitive conclusions. Quality grade level of low or majorly flawed (C) demonstrates “little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn” (Dang & Dearbolt, 2018, p. 131).

Level I evidence

A randomized control trial (RCT) was performed by Carrol, et al, 2006 to examine the effectiveness of integrating MI techniques into the initial contact and evaluation sessions in multiple sites in comparison to standard intake evaluations. A comparison of the effect on retention and substance abuse outcomes were done for standard intake evaluations. Those evaluations where there were MI techniques done it was then integrated in the session. The study was conducted in five sited and there were 640 individuals screened. Of those 423 substance users were selected to continue with the study. Those that had no substance abuse in the last year, seeking detoxification, impatient or methadone maintenance, insufficient housing, going to jail within 60 days or less than 18yrs of age were excluded. Sessions were videotaped and rated on the degree to which MI was implemented as intended and could be identified from standard interventions. Results suggest that integrating MI techniques at and early phase of treatment have positive effects on retention when compared to the standard intake techniques. This is a grade B because the results were reasonably consistence with some control and the literature recommendations were consistent.

A systematic review by Berg, et al., 2011 was conducted to assess the effectiveness of motivational interviewing for substance abuse, retention in treatment, readiness to change and the number of repeat convictions. The authors assessed studies for inclusion and categorized their results into four categories, (1) MI versus no treatment (2) MI verses treatment as usual (3) MI verses assessment and feedback (4) MI versus other treatment active treatment. There were 59 studies included with a total of 13,342 participants. The results showed that MI in comparison to no treatment had a significant effect on substance use which was stronger post MI treatment. A comparison of the treatment and control groups at posttest and at different follow-up times was conducted. This review was Grade A for its consistency in results, sufficient sample size and fairly comprehensive review of the literature.

A meta-analysis that synthesized findings from randomized controlled trials by VanBuskirk & Wetherell, (2014) examined health behavior outcomes within primary care populations that utilized the intervention of motivational interviewing. The research questions pursued was “is MI effective in improving behavior modification in patients seeking treatment for health conditions in primary care settings, as compared to treatment-as-usual, or other interventions, in randomized controlled trials?” (VanBurskirk & Wehterell, pg 769, 2014). The mean effect ranged from .07 to .47. effect sized were found for the adherence subgroup P=.004 The experiments condition technique could be delivered by clinicians, nurses, doctors or trained professionals. Follow up data was not distinguished. The authors also included articles that used only MI and combination treatment that included MI. The main objective was to see if MI was effective in improving behavior modification for those in a primary care seeking treatment. The results concluded that MI was found to be effective in comparison to several behavioral treatment outcomes within a primary care setting. The grade for this study was A for its consistent results, adequate control and definitive conclusions.

Hall, Staiger, Simpson, Best & Lubman (2015) conducted a systematic review that explicitly examined training outcomes on motivational interviewing for those working with substance abuse treatment. Selection of studies were geared toward clinicians who met the beginning proficiency in MI after a training period. They set a certain criterion level of MI beginner’s proficiency since the certification standards are used to train clinicians. The studies examined were those that included 75% of their clinicians whom had undergone MI beginner’s proficiency training. This was done to justify the investment cost of training participants to reach competency. Of the 20 studies 15 collected training outcomes using standardized treatment integrity and fidelity. Follow up were measured from 8 weeks to 2.5 years. Of the 15 studies only 8 used MITI which three reported positive impact of training, one study did no measure the outcomes for substance abuse. This was a Grade C due to a low sample size and inconsistent results.

DiClemente et al, (2017) conducted a literature review of literature reviews. The purpose of the project was to review articles relating to motivational Interviewing's efficacy and effectiveness. The authors examined existing reviews of MI interventions used for various substances of abuse and gambling in the last decade. The goal was to gain a deeper understanding of current evidence and future implications. The literature search dated from January 1, 2007 through January 30, 2017. A total of 34 articles which included 6 Cochrane reviews were used in their article. The challenge in the authors attempt to review MI was that there is significant heterogeneity in what is labeled "motivational interviewing". The various ways MI is applied in different studies and practice also hindered the reviews.

The review supports the overall use of motivational interviewing over no treatment and as effective but not necessarily more effective than other treatments. A breakdown of various addictions such as illicit drugs such as opioids, cannabis, cocaine, methamphetamines and alcohol and tobacco abuse were examined. Findings clearly supported the effectiveness of this intervention although there were many variables involved in this population and the type of drug choice and type of intervention provided varied. The study was a Grade A for its sufficient sample side and definitive conclusions.

A systematic review written by Jiang, Wu & Gao (2017) aimed to synthesize evidence on the effectiveness of motivational interviewing that was delivered other than face-to-face such as on-line, via telephone or group sessions in prevention of substance abuse. They searched for randomized clinical trials that evaluated the effectiveness of MI. A total of 25 articles were used for this review. The focus was to determine if alternative modes of MI deliverance were as effective as face-to-face. Additional modes researched were telephone MI and internet MI. The results showed that alternative modes of MI are effective however their short-term follow up may hinder its true effectiveness. The author's suggest future long-term research with methodological rigor to have the potential of facilitate MI into daily practice. This study was a

Grade B for its reasonably consistent results and its sufficient sample size. The recommendations were fairly based on the literature.

Level II Evidence

A random control trial study by Williams, et al. 2014 where results were obtained from a cross-sectional analysis examined the impact of individual and organizational characteristics regarding the decision to adopt the EBP motivational interviewing. The sample size of 311 was appropriate and consisted of directors and front-line staff from community health organizations and community behavioral health organizations. The study identified race, gender and attitudes toward EBP. A descriptive analysis was conduced using SPSS19 to examine the differences in decision-to-adopt MI categories between Community behavioral health organizations and community health organizations and between front line staff and directors. Correlations were conducted between all possible variables to ensure lack of collinearity. The results showed most white males whom were director were more willing to adopt MI, the grade for this study was a B due adequate conclusions and reasonable consistency with results.

Morton, et al. (2015) conducted a systematic review on the effectiveness of motivational interviewing for health behavior change in primary care settings. The purpose was to examine evidence for MI in primary care setting. Through their data search they utilized 33 papers. 50% of those studies showed positive effects to health behavior change with the use of MI. They examined MI alone or in as an additional intervention component. Sample sizes ranged from 50 to over 1000 participant in various studies. The focus topics for this review was on dietary and physical activity identifying how MI can impact behavioral changes, there was no discussion on opioid abuse. Half of the studies used face-to-face and half use both face-to-face with phone MI sessions. The results showed there were many limitations although MI was found be an effective intervention within a primary care setting to achieve behavior change. The authors identify that the specific conditions such as substance abuse in which MI may be more effective than other conditions such as cancer patients or cognitive impairments. They suggest more

rigorous and systematic development to evaluate such interventions. This grade was a B for its control and fairly definitive conclusions and reasonable results.

Level III Evidence

Mullin, et al. (2016) conducted a study to examine outcomes of a 22-hour motivational interviewing course that was online or in-person. It also evaluated clinician's ability to accurately self-assess their skills. There were 34 clinicians whom participated in the study and completed the training. A recording of the clinicians acting out MI with patient encounters was done early in the training and then again after the training. After each session the clinicians self-evaluated their use of MI. The purpose to identify if on-line or in-person trainings differ. A Motivational interviewing treatment integrity MITI coding system was used for the findings. The results showed that there were no meaningful differences between those who completed training on-line or in-person. Results also confirmed that there was little correlation between the clinician's self-assessments and objective assessments of the motivational interviewing techniques. The grade for this case study was A for its consistent results, sufficient sample size and adequate control.

Aldermir, Berk & Coskunol (2018) produced a study to evaluate the effectiveness of an Addiction Programme of Probation (APP) which includes utilizing the intervention of motivational interviewing (MI) and Individual intervention (II). The sample consisted of probationers, they were separated into three treatment groups APP (N=28); MI (N=30) and II (N=30). The participants were 18yrs and older. The study involved a treatment programme once a week for 45 minutes lasting 6 weeks. The statistical analysis results show that the APP group had an increase readiness to quit using drugs, MI increased the sense of importance and readiness to quit drugs and decrease cravings. The grade of this literature is a B for its fair definitive conclusions and reference to scientific evidence.

A clinical trial by Guydish, Jessup, Tajima & Manser, (2010) to test drug abuse treatment interventions into daily practice. The author used a qualitative method to examine the adoption

of motivational interviewing and motivational enhancement therapy (MI/MET). The trial was conducted eleven sites participated, five tested MI and six tested MET. MI was noted to have greater treatment retention at 28-day assessment, overall substance abuse outcomes did not differ between the two. A total of 29 interviews were completed by directors, supervisors and counselors. The number of those that adopted the motivational interviewing intervention was more than those who did not adopt the intervention. This study was a grade B since there was some control and fair conclusions measured.

Authors	Purpose	Design/level	Sample	Measurement/outcomes	Results/Findings
Aldemir, E., Berk, G., & Coskunol, H. (2018).	study to evaluate the effectiveness of an Addiction Programme of Probation (APP) which includes utilizing the intervention of motivational interviewing (MI) and Individual intervention (II).	Case Control Level III	probationers, they were separated into three treatment groups APP (N=28); MI (N=30) and II (N=30). The participants were 18yrs and older.	Assessed by State Anxiety Inventory; the WHO Quality of Life-Brief form; The Treatment Motivation Questionnaire. Visual Likert-type scales to assess importance and readiness for quitting	The APP increased readiness of quitting p=.056 MI increased both sense of importance and readiness to quit drugs p= .083 It increased confidence in treatment, deceased level of anxiety p= .014

Berg, Hammerstrom, Leiknes & Karlsen	To assess the effectiveness of MI for substance abuse, retention in treatment, readiness for change and number of repeat convictions	Systemic Review Level 1	Pts identified as having substance abuse, dependency or addiction.	To measure the extent of substance abuse, retention in treatment, motivation for change and repeat conviction	59 studies, 13,342 participants. Significant effect on substance abuse post intervention SMD 0.79 weaker at smd 0.17
Carroll, K. M., Ball, S. A., Nich, C., Martino, S., Frankforter, T. L., Farentinos, C., ... Woody, G. E. (2006).	To evaluate the effectiveness of integrating MI into the initial contact and evaluation of treatment	RCT Level 1	423 Substance Abuse Adults	Randomized patients MI versus non-MI intake at five community-based treatment settings	Participants assigned to MI had significantly better retention through the 28-day follow-up than those assigned to the standard intervention. There was no difference at 60 day follow ups

DiClemente, C. C., Corno, C. M., Graydon, M. M., Wiprovnick, A. E., & Knoblach, D. J. (2017).	The authors examined existing reviews of MI interventions used for various substances of abuse and gambling in the last decade. The goal was to gain a deeper understanding of current evidence and future implications	Meta-Analysis Level 1-A	34 review articles, 6 were Cochrane Reviews. Patients with addictive behaviors	Reviewed efficacy and effectiveness with MI with brief MI. for addictive behaviors over the last 10 years	Results varied from type of addictive behavior. For adults four meta-analysis were examined resulting in a small but significant effect (d=0.18-0.39) Demonstrating MI to be more effective than no treatment and as effective of other treatments.
Guydish, J., Jessup, M., Tajima, B., & Turcotte Manser, S. (2010)	To examine the adoption of MI and MET in five clinics where these methods were being tested	Qualitative Clinical Trial Level III -B	5 clinical sites Clinic staff	Interviews about the MI/MET study were conducted to evaluate if adoption, partial adoption or no adoption of intervention among the five clinics	A total of 31 interviews were planned among staff 29 were completed. Adoption found in 2/5 clinics Partial adoption found in 1/5 clinics No adoption found in 2/5 clinics

Hall, K., Staiger, P. K., Simpson, A., Best, D., & Lubman, D. I. (2016).	To examine training outcomes for MI in the SUD for clinicians working in SUD treatment roles	SR Level I-C	20 studies involving Clinicians who were trained to use MI	Measurement of proficiency after training.	A total of 20 studies were identified, 15 were measured training at a follow up time point using standard fidelity measures. A broad range of training studies failed to achieve sustained practice change in MI. It was found unlikely that proficiency would be attain without continuous monitoring.
Jiang, S., Wu, L., & Gao, X. (2017).	To Synthesis the evidence on the effectiveness of MI delivered in modes other than face-to-face, to prevent and treat substance abuse	SR Level I-A	68 Articles Sample size 9,920 participants in 22 of the eligible studies	Four data-bases were searched for RCTs that evaluated the effectiveness of alternative modes for MI other than face-to-face	The effectiveness of telephone MI was supported by all RCTs The inter-reviewer was high for both screening and full assessment (kappa= 0.83 and kappa =0.86)

Morton, K., Beauchamp, M., Prothero, A., Joyce, L., Saunders, L., Spencer-Bowdage, S., Pedlar, C. (2015).	To review and examine the evidence base for MI interventions in primary care settings to achieve behavior change	SR Level II-B	33 Articles 50-1,000 participants from a primary care setting; Adults 18yrs and older	Studies that were operationalized a behavioral outcome measure. Extraction of information related to sample characteristic, study design, MI description and components, MI delivery, MI training and fidelity of approaches	33 papers met inclusion criteria. Approximately 50% demonstrated positive effects in relation to health behavior change. Efficacy of MI approaches were unclear due to inconsistency of MI descriptions.
Mullin, D. J., Saver, B., Savageau, J. A., Forsberg, L., & Forsberg, L. (2016).	To examine the outcomes of a 22hr MI course compared to an online course.	Case Control Level III-A	34 clinicians (4) clinical social workers (2) medical students (5) family medicine residents (5) nurse practitioners (5) Primary care/OBGYN physicians (3) research staff (4) psychologists (6) other health care	Participants completed MI workshops either in-person or online. The use of MI was recorded Using MITI fidelity skills measurements.	There was a significant result in the MI training but no meaningful difference between those whom got training online or in-person p=<.05

			providers and affiliates		
VanBuskirk, K. A., & Wetherell, J. L. (2014).	Examined health behavior outcomes within primary care populations that utilized the intervention of motivational interviewing.	Meta-analysis Level I-A	Studies that were a RCT and used MI as a primary technique of the intervention 272 Articles were identified, with inclusion criteria 12 studies were used	To see if MI was effective in improving behavior modification for those in a primary care seeking treatment.	The mean effect sized ranged from .07 to .47. effect sized were found for the adherence subgroup P=.004

Williams, J. R., Blais, M. P., Banks, D., Dusablon, T., Williams, W. O., & Hennessy, K. D. (2014).	To examine the impact of individual and organizational characteristics regarding the decision to adopt the EBP motivational interviewing	RCT Level II-B	311 of directors and front-line staff from community health organizations and community behavioral health organizations	The study identified race, gender and attitudes toward EBP. A descriptive analysis was conducted using SPSS19 to examine the differences in decision-to-adopt MI categories between Community behavioral health organizations and community health organizations and between front line staff and directors.	Participants tended to be white (78.8%) Female (75.9%) late 40's (M=47.0, SD=11.3) Staff were more likely to be younger (t=5.10, df=309, p=0.000), African American (x^2=5.78, df=1, p=0.02)

Construction of Evidence-based Practice

Synthesis of Critically Appraised Literature

The nationwide epidemic of opioid abuse is steadily rising placing clinicians at the front line to care for those afflicted with substance or opioid use disorders. Martino et. al. (2010) expresses how international and U.S. policymakers are strongly encouraging clinicians to learn mental health and addiction treatments to meet these demands. There is an abundance of literature that supports using motivational interviewing to promote behavior change for substance abuse, yet many do not utilize the technique whether it be a lack of knowledge, little exposure or minimal training in that area. Exploring the positive outcomes MI has on other diseases can influences the possibilities it will have on those whom are afflicted with opioid abuse disorders. The modes of motivational interviewing may be carried out in various settings; in person, online, in groups or via telephone. The literature speaks volumes of its effectiveness however, a lack of training inhibits the providers ability to incorporate the technique within the clinical setting.

Modes of Motivational Interviewing

According to Lundahl, Kunz, Brownell, Tollefson, & Burke, (2010) MI approach continues to grow at a rapid pace due to its humanistic philosophy and how quickly it can be taught. Several of the appraised studies conducted comparisons of the modes of delivering MI treatment. Carrol, et al. (2006) conducted a randomized control on integrating MI techniques into the initial contact which included telephone MI, group MI, one-to-one and group MI. The results showed that all were effective and that comparisons with each mode did not make a significant difference. Mullin, Saver, Savageau, Forsberg, & Forsberg, (2016) examines the outcomes of an online course vs an in-person course.

Readiness for change

Morton et, al. (2015), and Lundahl, et, al. (2010) examine how in a primary care setting motivational interviewing interventions achieve behavior change for substance abuse, alcohol abuse, physical activity and dietary changes. Morton noted that MI is more than the use of technical interventions it is the quality of the patient-therapist spirit of MI which they base off three key elements: collaboration (an approach where the practitioner is the expert), evocation (bringing out the client's own reason for change instead of imposing ideas) and autonomy (recognizing the patient to change lies within the clinic and encouraging them to take the lead when it comes to deciding how to achieve a change; Miller & Rollnick, 2002). Lundahl et, al. (2010) found that MI significantly increased client engagement in treatment and showed potential to enhance change intentions for the patients.

When addiction programs include MI in their treatment it provides an increased sense of the importance and readiness to quit drugs. Aldemir, Berk & Coskunol, (2018) performed a study to asses which three treatments increased client's readiness for change Addiction programme on treatment motivation (APP), motivational interviewing (MI) and Individual treatment (II). Mi was noted to not only decrease the severity and frequency of craving as well as promoting behavioral change. MI techniques have improved mental and physical health along with readiness to quit.

Adoption of Motivational Interviewing

In studies by Gudish, et al (2010) and Williams et al (2014) the authors examine adoption of Motivational Interviewing. They both conducted their studies in community health settings where the impact of the individual and organizational decisions to adopt the evidence-based practice MI among their directors, clinicians and clinical staff. The results varied dependent upon organizational barriers and readiness for change, those that did adopt the intervention found that MI made a positive impact on the care they delivered. Those that did

not, did not negate the fact of its effectiveness and had various reasons for not implementing them.

Clinicians Ability to Deliver MI

Mullin, Saver, Savageau, Forsberg, & Forsberg, (2016) examines the outcomes of an online course vs an in-person course. 34 clinicians participated and completed the workshops. The clinicians were video taped as they acted out their technique in implementing the intervention of motivational interviewing. The recordings were done early in training and then in the end. Clinicians were able to self-evaluate themselves with their use of MI. Results showed significant difference in the on-Line course versus the in-person course.

Best Practice Model Recommendation

The reviewed literature identifies that the use of motivational interviewing has been effective in numerous health care settings. Identifying providers ability to implement the intervention, training those that need it. Motivational interviewing is the most appropriate intervention to implement while addressing and identifying those patients that afflicted with an opioid use disorder. The nationwide epidemic is reason for empowering our providers based on the evidence a strategy to implement MI in the clinic was developed to answer the clinical question "Does the use of Motivational Interviewing by provider's in the General Medicine Clinic effect the number of referrals to a treatment program, and compliance to appointments among adult opioid dependent patients in comparison to non-motivational interviewing within 12 weeks"?

CHAPTER 3

IMPLEMENTATION OF PRACTICE CHANGE

This chapter will describe methods to answer the following PICOT question; “Does the use of Motivational Interviewing by provider’s in the General Medicine Clinic effect the number of referrals to a treatment program, and compliance to appointments among adult opioid dependent patients in comparison to non-motivational interviewing within 12 weeks?” Substance use disorders are a major health care problem that is affecting families and causing financial strain to people across the world. Several strategies and interventions have been utilized to promote change and induce healthy lifestyles, but none has been uniformly adopted. According to Miller & Rollinick, (2013), behavioral change is needed when one’s actions lead to unsatisfactory results and those same patients whom are ill as a result of their behaviors need to adapt to a new behavior that produces positive results. Evidence has shown Motivational Interviewing’s efficiency and efficacy in promoting behavioral change, thus impacting current treatment regimens, however healthcare providers continue to consider it labor-intensive and time consuming to incorporate within their care. Motivational Interviewing is a collaborative conversation style used to strengthen a person’s own motivation and commitment to change (Miller & Rollnick, 2013). Initially, it was an intervention that was utilized for alcohol abuse and later expanded to help with change for many other health related behaviors including OUD (Jiang, Wu & Gao, 2017). To impact this health problem of OUD among our patients, we must empower those whom deliver healthcare with the evidence-based practice knowledge on how to best promote change and that includes the use of MI.

Collaboration among clinical experts and staff were initiated in June then continued through July and August 2019. Collection of data started in August 2019, Implementation to practice change occurred over three months, starting in September 2019 and ending in

December 2019 with a prediction of improving the number of patients with OUD to accept referrals and be compliant to their appointments as a result of using motivational interviewing during their clinic visits. As this data was collected a retrospective review of charts was conducted on patients seen in the clinic during the same times frame in 2018, September through December. Ultimately, the EBP demonstrated to other PCPs and the facility on how MI was effective in promoting behavioral change, referring the patient's to treatment and having patients compliant to keeping their scheduled appointments for the treatment program. A long-term goal with the guidance of the ARCC model was to promote organizational change using EBP identifying

Participants and Setting

The project was implemented in Chicago, IL in a general medicine primary care clinical setting where patients were coming in for treatment of chronic and acute medical problems. The clinic consists of approximately 35 providers, 29 Medical Doctors and 6 Nurse Practitioners, all with various years of experience. The project leader (PL) along with the medical assistants (MAs) was responsible for identifying patients whom have an opioid abuse problem, implementing motivational interviewing during their clinic visits, referring them to our Medication Assisted Treatment (MAT) clinic and monitor them for appointment compliance. The medical assistants are involved in the intake process, where an already existing screening takes place to identify patients whom have a substance abuse or alcohol problem. Patients that are being prescribed opioids for pain control, admits using of opioids, or have been admitted to chronic use of opioids were identified and flagged by the MA to be included in the EBP.

Population for inclusion were participants that were male or female, over the age of 18yrs, at risk patients prescribed opioids who verbally consented to treatment and screened positive for opioid use On average with consideration of "no shows" most providers see 7-14 patients in 4 hour clinic increments and have 10-14 patients scheduled for each session. After each session any patient included in the EBP project would be assigned an identifier number

and logged to be a part of the project in a binder. A manual review of patients' electronic health records was done to determine the inclusion and exclusion criteria. Participants that were excluded were those patients whom are currently prescribed an opioid for cancer pain, medical diagnosis that attain cognitive impairments and patients whom have high psychiatric conditions.

A manual review of patients' electronic health records was done to determine the inclusion an exclusion criteria. Participants that were excluded were those patients who are currently prescribed an opioid for cancer pain, medical diagnosis that attain cognitive impairments and patients whom have high psychiatric conditions.

Comparison Group

Patients seen in the General Medicine clinic between September 2018 through December 2018 consisted of primarily the same race, African Americans (10) 50%, Hispanics (4) 20% and Caucasians (6) 30%. There were (16) 60%of men and (8) 40% of women. The age range for the pre-implementation groups were 18 to 80 years of age with the mean age being 50.6 years old (SD = 13.3).

Intervention

The project leader became certified in MAT from the American Academy of Addiction Psychiatry (AAAP). This certification is required to work and treat patients in a medication assistant treatment (MAT) clinic to provide treatment for patients whom are afflicted with OUD. In addition, the PL became certified in motivation interviewing through an online course offered by Health Education & Training Institute (HETI) to advance her knowledge on MI. The EBP project is a multifactorial strategy that promoted and empowered behavioral change among our provider through evidence encouraging the use of MI within the general medicine clinic. Once approval was granted from both the University and facility, the EBP project was conducted over 12 weeks from September 2019 through December 2019. The process started with the medical assistants (MA) who were responsible for identifying patients whom were being prescribed opioids, admitted to having an opioid use problem or had a history of opioid use. Staff utilized a generic substance use disorder screening tool that was already in existence and being used within the clinic. The tool consists of 3-5 simple yes and no questions, if they were positive the chart was flagged, the data was communicated to the PL of the EBP. Once a flagged chart was identified, the provider would know when to utilize MI in their care. Patients decision to participate were logged, then a continued monitoring through March 2020 for their appointment compliance was tracked and logged. Descriptive data was also collected and put into a logbook and later into SPSS where a statistical analysis was calculated. Each patient was assigned an identifying number for reference during the project.

A retrospective chart review from September 2018 through December 2018 identified patients whom were positive for being prescribed opioids, admitted to having an opioid use problem or a history of opioid use. At this time there was no MI being used within their clinic visits. Patients that met the criteria were logged into the project and a review of their acceptance to a referral for treatment and compliance to their appointments was conducted.

This data was also entered the SPSS worksheet and later analyzed. Descriptive characteristics of the patients were documented and included in the data collection.

Comparison

A comparison was conducted on 24 patients that were identified with an OUD and received MI during their visit from September 2019 through December 2019 and accepted or did not accept a referral to the MAT program. These patients were compared to 24 patients seen in the clinic from September 2018 through December 2018 whom accepted or did not accept a referral and did not have MI used in their visit. A secondary comparison was conducted on the same patients that were identified with OUD for appointment compliance from September 2018 through December 2018. Descriptive characteristics such as age, race, sex, amount of use and years of use were compared as well.

Outcomes

For this EBP project a primary measurement of the number of patients accepting referrals to the MAT clinic for patients whom received MI was compared to those whom did not receive MI. A secondary measurement of how many patients were compliant with their appointments whom received MI to those whom did not. Results demonstrated how MI will promote and empower behavioral change among our patients and providers equipping them with the ability to effectively meet the needs of our patients.

Time

The initial collaboration began in June 2019 and continued through June, July and August 2019. IRB application submission took place in July 2019. Training for motivational interviewing and to be project lead was completed in August 2019. Implementation to practice change with the guidance of the ARCC model occur over three months starting in September 2019 through December 2019 with a prediction of improving motivational interviewing skills among our provider, to identify patient's whom need intervention for a substance use disorders

and to deliver care with respect and dignity. The overall goal is to identify those whom are at risk, have a substance use disorder and to provide appropriate treatment.

Protection of Human Subjects

To protect participants from unethical behavior or risk in violating HIPPA laws, IRB approval was submitted to both the school and the institution where the project was conducted. All patient identifiers were confidential throughout the project's process. IRB exemption was received and provided ease to move forward.

CHAPTER 4

FINDINGS

The EBP focused on the impact motivational interviewing has on patients with opioid use disorders. Motivational Interviewing is a conversational technique that encourages those patients to accept referral for treatment and remain compliant with their appointments in a general medicine clinic setting. The PICOT question for this EBP project was "Does the use of Motivational Interviewing by a provider in the general medicine clinic effect the number of referrals to a treatment program, and compliance to appointments among adult opioid dependent patients in comparison to non-motivational interviewing within 12 weeks?" After the completion of the implementation phase of this project the data collected was analyzed. An increase in referral acceptance and compliance with use of motivational interviewing in comparison to those patients who did not receive motivational interviewing was expected. The following analysis describes the demographics of the participants, project outcomes, and compares groups that received motivational interviewing to those whom did not receive motivational interviewing.

Participants

Participants included a total of 48 patients that were seen in the general medicine clinic. 24 patients (group 1) were seen between the months of September 2019 through December 2019, these patients were >18yrs old and identified as having an OUD. Participant's appointments included in this comparison group had implementation of motivational interviewing during their clinic visit. 24 patients (group 2) were patients identified through a chart audit as having an OUD that were seen from September 2018 through December 2018, this comparison group did not have implementation of motivational interviewing during their visits. The 24 adult patients labeled as group 1 (or intervention group), whom were identified by the MA as having an opioid use problem, were seen by the Project Leader (PL), this group received motivational interviewing during their clinic visit and a record of acceptance to receiving a referral for our

MAT program was documented, kept in a log and monitored over three additional months for compliance to their appointments.

Participants Characteristics The demographics for both groups were reviewed. Group 1 (intervention group) consisted of 10 males and 14 females identified and group 2 (intervention group) consisted of 16 males and 8 females (figure 4.4). The age range for comparison group 1 (intervention group) was 18 to 73 years of age with the mean age being 52.4 years old (SD = 11.73) (figure 4.2). The age range for comparison group 2 was 18 to 72 with the mean age being 48.8 years old (SD=14.86). There were no significant differences between the groups on the demographic variables. The variables for race during the EBP remained consistent throughout the project, the primary races included in the project resulting in Hispanics, African Americans and Caucasians. The race breakdown for group 1 (intervention group) was 10% Hispanic, 55% African American and 35% Caucasian. The race for group 2 was 20% Hispanic, 50% African American and 30% Caucasian (Figure 4.3).

Additional demographics considered were; number of years used, amounts of drugs used, type of use, marital status and educational levels (see chart 4.2). For the number of years that a patient used heroin, for both groups the trend was >5yrs, however in the group where MI was utilized there were 33.3% that had been using heroin >20yrs in comparison to the group where no MI was used the majority of patients had been using for 11-15yrs with 29.2% (Figure 4.7). This analysis shows that most of the patients seen have been using >10yrs which can demonstrate the difficulty of cessation.

The amount of heroin use per day varied, patients that were seen in 2019 resulted in having patients that used >$100/1gram or more per day in comparison to the previous year 2018 where there was no use of MI, the majority used less than $10-40 or 1/10 gram per day (Figure 4.5). Demonstrating that the amount of use per day has increased from the year 2018 to 2019 which coincides with statistics from the CDC on how the opioid epidemic is increasing every year. This data also prepared the PL for intensive use of MI and avoid possible

resistance for treatment. Many of the participants seen in this clinic primarily have a history snorting heroin by 75% in compared to IV use 25%.

Statistical Testing Data was entered the Statistical Package for the Social Sciences (SPSS) version 22 for analysis. A chi square test of independence was calculated comparing referral acceptance for treatment for patients seen in the general medicine clinic who received MI in 2019 to those whom did not receive MI in 2018. A further analysis on patient compliance to their appointments were analyzed from patients that received MI in 2019 to those whom did not in 2018. Results are shown in Table 4.1.

Table 4.1 Statistics

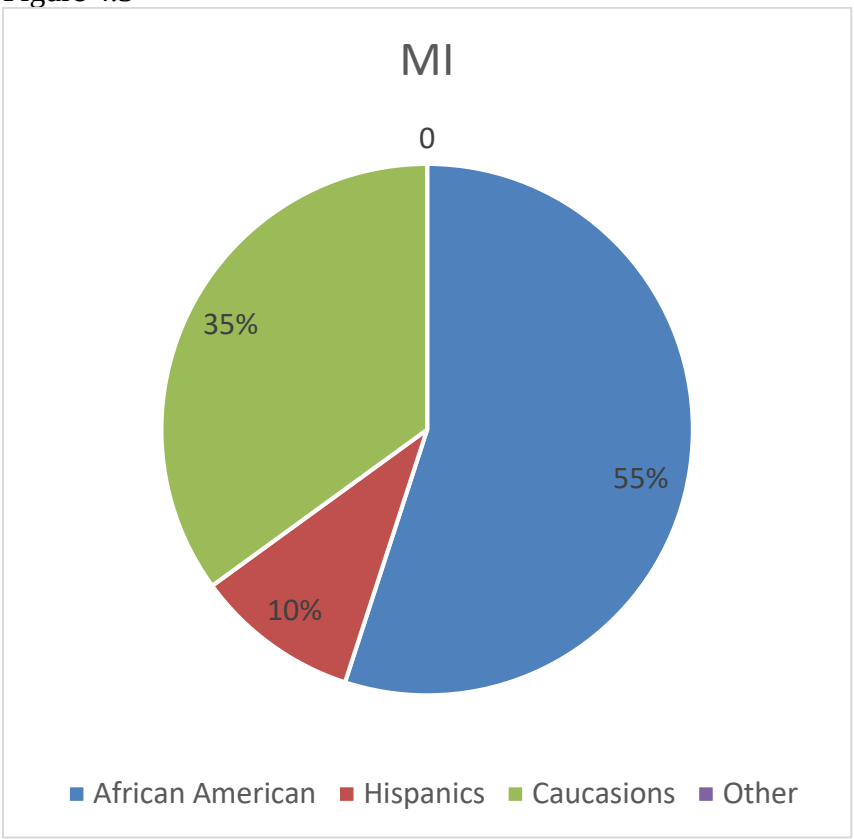
Outcome	MI (n) %		No MI (n) %	
Referrals χ^2 7.056	Yes (19) 79.1%	No (5) 20.8 p= 0.008	(10) 41.6%	(14) 58.3%
Compliance 12.343	Yes (16) 66.6% 0.001	No (8) 33.3%	(4) 16.6%	(20) 83.3%

Table 4.2

Patient Chart Audit Characteristics

Variable	Group 1 MI (N= 24)	Group 2 No MI (N= 24)	Total (N= 40)
Age Mean (SD)	11.735	14.868	
Gender			
Male	40% (10)	60% (16)	100%
Female	60% (14)	40% (8)	100%
Race			
Hispanics	10% (2)	20% (4)	30 % (6)
African American	55% (11)	50% (10)	110% (21)
Caucasians	35% (7)	30% (6)	65% (13)
Marital Status			
Married	10% (2)	05% (1)	15% (3)
Single	90% (18)	90% (18)	180% (36)
Widow/widower	0% (0)	5% (1)	5% (1)
Divorced	0% (0)	0% (0)	0%
Type of Use			
Prescription Drugs	0% (0)	0% (0)	0% (0)
Heroin IV	0% (0)	0% (0)	0% (0)
Heroin Snorted	75.0% (18)	83.3% (20)	58.3% (38)
Combination	25.0% (6)	16.7% (4)	41.7% (10)
Years of Use			
<5yrs	0% (0)	4.2% (1)	4.2% (1)
5-10yrs	6.7% (4)	25.0% (6)	41.7% (10)
11-15yrs	29.2% (7)	29.2% (7)	68.4% (14)
16-20yrs	20.8% (5)	20.8% (5)	1.6% (10)
>20yrs	33.3% (8)	20.8% (5)	54.1% (13)

Figure 4.3


MI
0
35%
55%
10%
African American
Hispanics
Caucasions
Other

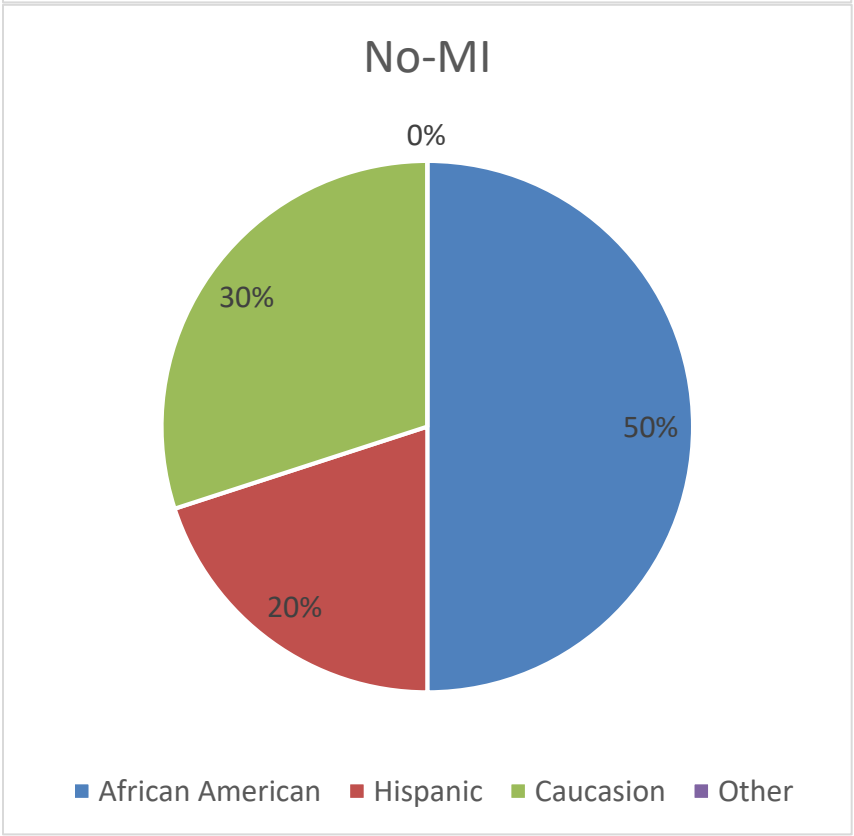

No-MI
0%
30%
50%
20%
African American
Hispanic
Caucasion
Other

Figure 4.4

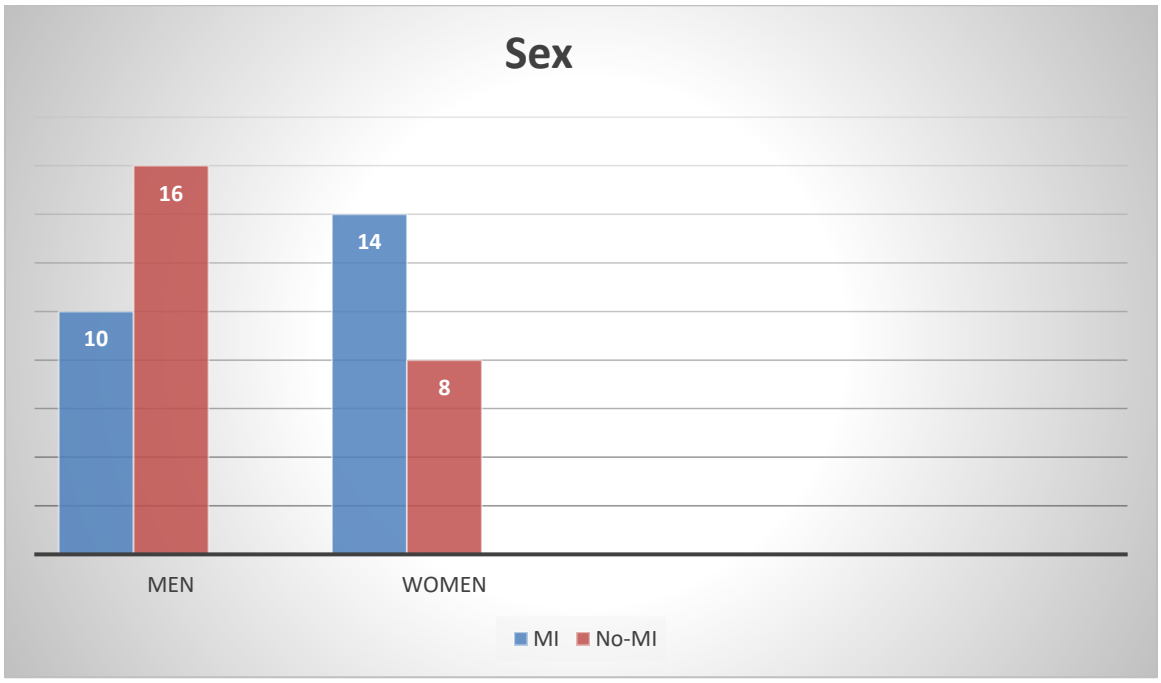


Figure 4.5

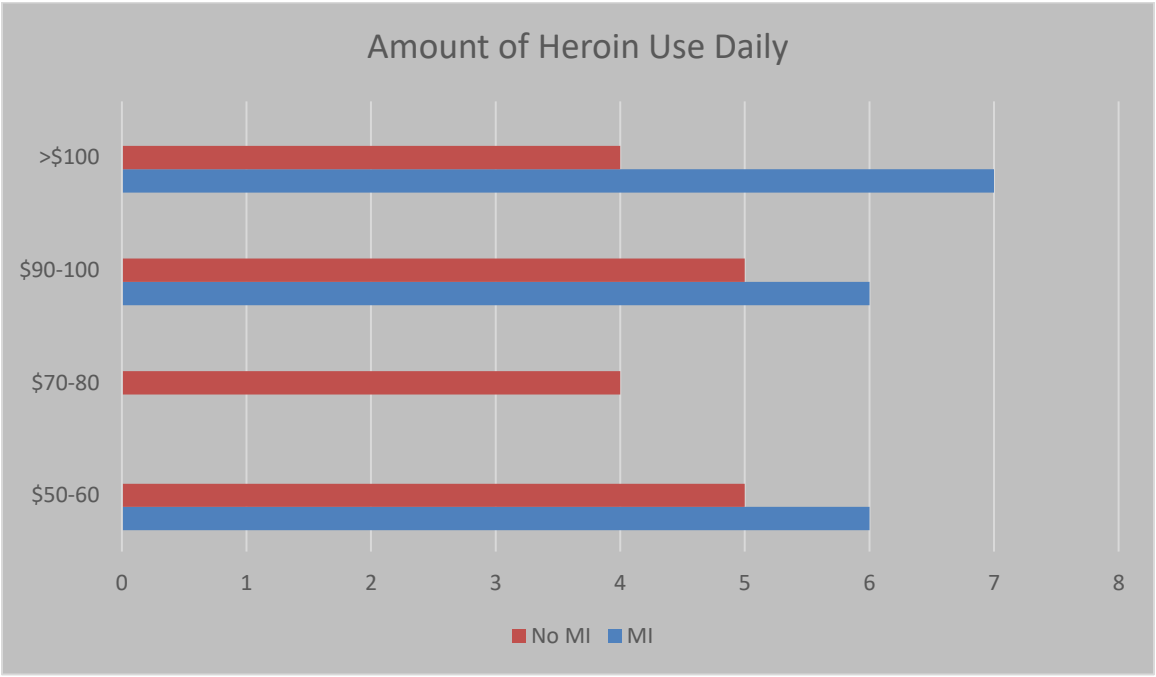


Figure 4.6

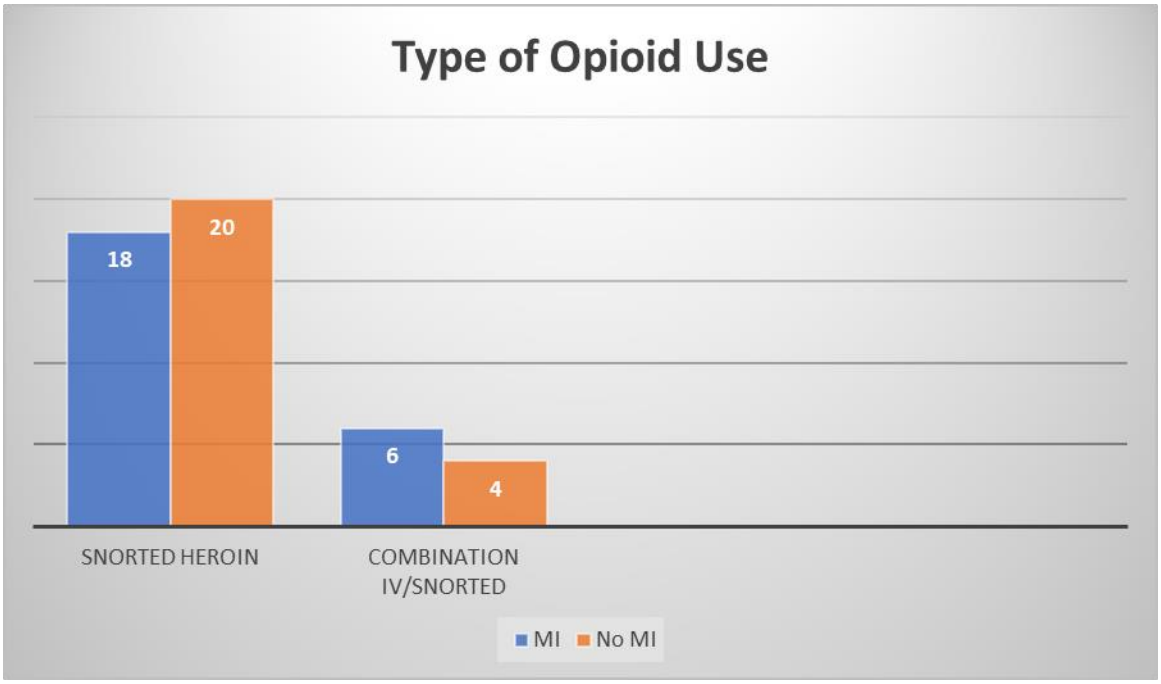
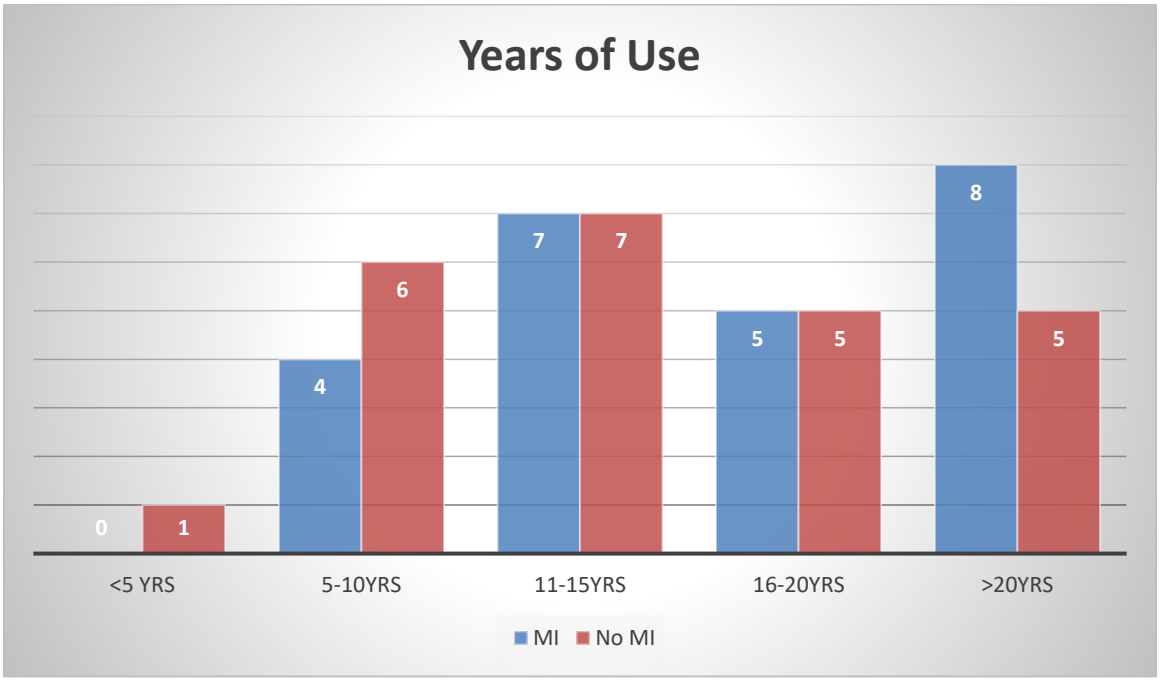


Figure 4.7


Years of Use
0
1
4
6
7
7
5
5
8
5
<5 YRS
5-10YRS
11-15YRS
16-20YRS
>20YRS
MI
No MI

Primary outcome. The primary outcome of this EBP demonstrated that if patients whom have an OUD received motivational interviewing during their clinic visit there was an increase in referral acceptance to treatment in our MAT program in comparison those patients whom have an OUD and did not receive MI during their clinic visit. There were 19 participants whom received MI and agreed to a referral in comparison to 10 participants whom did not receive MI with statistical significance of p=0.008

(figure 4.1).

Secondary outcomes. The secondary outcome of this EBP demonstrated if the patients whom have OUD and accepted the referral to the MAT with the use of MI were compliant in keeping their appointments in comparison to those whom did not receive MI. There 16 participants whom received MI and were compliant compared to 4 participants that were compliant and did not receive MI with a statistical significance of p=0.001 (figure 4.1).

CHAPTER 5

DISCUSSION

The purpose of this EBP was to demonstrate the effectiveness of motivational interviewing's use among patients whom are afflicted with an opioid use disorder. The project was aimed not only to get patients to agree to treatment but to encourage them to continue with it. Addiction is a disease that impacts many different people regardless to race, culture, education, sex or socioeconomical status. The day-to-day struggle of OUD is unquestionable affecting not only their lives but their finances, families, communities and overall health. OUD's can prohibit a patient's cognitive ability to make sound healthy choices causing them to commit crimes and remain a non-productive member to society, the financial burden leads patients to partake in unsafe criminal and sexual activity which then may result in incarceration, disease or death.

Substantial consequences from long term opioid use causes broken families and heart aches among loved ones, leaving children of those whom are afflicted with an OUD left alone to fend and care for themselves, thus causing anger and repeated behaviors of their parents as they mature. Often, these children end up in the care of an elderly grandparents or in child and family services system inflicting long term pain, loneliness, feelings of worthlessness, mental disorders and financial strains among our communities. This project was designed to answer the PICOT question, "Does the use of Motivational Interviewing by provider's in the General Medicine Clinic effect the number of referrals to a treatment program, and compliance to appointments among adult opioid dependent patients in comparison to non-motivational interviewing within 12 weeks?"

There was a statistically significant increase in the number of OUD patients who received MI to accept referrals to treatment compared to those whom did not receive MI. In addition to the number of patients that accepted the referral, there was a statistically significant increase in the number of appointment compliance among the same groups. An examination of

the factors associated with this successful outcome will be covered in this chapter. In addition, this chapter will include the steps of implementation, barriers and successes, and strengths and weaknesses of this project. The use of ARRC's model for evidence-based practice was incorporated and analyzed for this EBP. Finally, the chapter will conclude with implications for future research and implementation into practice for other providers over the world.

Explanation of Findings

Primary Outcome: A statistically significant difference p= 0.008 was demonstrated by using a chi square test of independence comparing the number of referral acceptance among patients with an OUD who received implementation of MI during their visit from September 2019 through December 2019 to those whom accepted referrals but did not receive implementation of MI during the same time from September 2018 through December 2018. These findings are comparable to those findings of Berg, et al., 2011, VanBuskirk & Wetherell, (2014) and DiClemente et al, (2017) who find that with the use of MI among their patients had a positive impact on their treatment despite the various settings. When the use of MI was used in addition to other treatments, they saw a significant increase in patient behavioral change thus showing improvements in their care.

` Secondary Outcome: A statistically significant difference p= 0.001 demonstrated by using a chi square of independence comparing the amount of appointment compliance among those patients whom received MI during September 2019 through December 2019 to those patients who did not receive MI during September 2018 through December 2018. These findings are comparable to those findings of Morton, et al. (2015) and Carrol, et al, 2006 where the retention of patients was higher with the implementation of MI during their visits for treatment. In these particular studies there were some patients whom had relapse which was expected, however the rates were by far better than treatment without the use of MI.

Results for the EBP were achieved by a collaborative effort among staff, administrators and the PL. Strategically providing continuous education, support, guidance and feedback to

the MA's inspired their commitment to the project. Comparable to an article by Kim et. al (2017) with the use of the ARCC model as a guide, it was essential to improve beliefs and maintain group cohesion to bring upon EBP change. It was also found that through mentorship, if EBP beliefs were established, adoption and implementation of EBP would be successful (Kim, et.al 2017). Occasional rewards of snacks and lunch enticed staff when frustrations were observed keeping them engaged. Maintaining communication, educating the staff on goals, getting feedback regarding any obstacles faced and discussion of progress was necessary in achieving a successful project, this was encouraged through daily huddles prior to each clinic day in a conference room in the clinic.

Screening were done during intake for patients who have a history of OUD, admit to using opioids during medication reconciliations or have noted opioids prescribed to them. These patients were then flagged allowing the PL to identify the need to implement MI during the visit. At the end of the visit patient's whom agreed to a referral for MAT were logged and followed for three months after their initial visit to see if they were compliant with their appointments.

Daily feedback from the staff and administrators led to education on how first impressions are vital in acquiring comfort for patient's commitment to behavioral change, as discussed in Carrol, et al, (2006) MI needs to be conducted during initial contact with the patient to acquire probable change. VanBuskirk & Wetherell, (2014) found that the inclusion of MI with other treatment were more beneficial than those without the use of MI.

Evaluation of the Project: ARCC EBP Model

The evidence-based model chosen for this project was the Evidence-Based Advancing Research and Clinical Practice Through Close Collaboration (ARCC) Model. The ARCC Model includes important concepts regarding behavior change in individual clinicians as key strategies in advancing and sustaining system-wide implementation of EBP (Melnyk and Fineout-Overholt, 2015). Findings from studies testing the ARCC Model have indicated that strengthening

clinicians' beliefs about EBP does lead to greater implementation of evidence-based care, and that organizational culture is important in strengthening the EBP beliefs of clinicians.

The model has a five steps assessment of organizational culture and readiness for implementation of EBP in the healthcare system. Assessment of organizational culture and readiness for implementation of EBP in the healthcare system is the first step. This step was initially difficult since this institution has been around for over 100yrs and implementing a new practice is not always acceptable particularly with providers and administers that have been employed here for decades, however the PL believes that it was because of its lasting history and readiness to grow they were on board for incorporating change with appropriate evidence.

Identification of strengths and barrier of the EBP process in the organization was the second step. The institution strengths were favorable in acknowledging the importance of utilizing EBP in daily care of their patients, however with it being such a large teaching institution that includes many students from an array of professionals implementing all recommended practices was a barrier due to their time-consuming administrative processes.

Identification of EBP mentors is the third step, initially we wanted to educate as many providers as possible on motivational interviewing, thoughts were that if we had more people implementing the MI we could have a larger group and higher success rates however they only approved the PL to start the process by becoming certified in MI.

Implementation of the evidence into organizational practice is the fourth step, here the organization and its administrative staff allowed the project to carry on as pilot for a much larger scale training and implementation of MI. After going through the process to implement the change administratively then within the clinical area.

In the final stage, Evaluation of the outcomes resulting from practice change, here the organization found value in the PL outcomes suggesting we may incorporate the process not only with our OUD patients, but with other chronic illnesses such as Diabetes, Obesity and

Hypertension. At the next quarterly divisional meeting the PL was asked to present her project and findings among her peers and to lead a group activity utilizing MI.

Strengths and Limitations of the DNP Project

Strengths

The strengths experienced in this EBP were the fact the we have an outpatient treatment program right in our clinic which provides convenience to our patients that have an OUD and have accepted referrals. It is a MAT clinic and it was started a year ago at another site and recently a year ago at the clinic where the project was being implemented. The MAT clinic was designed to treat patients whom have an OUD and want to be successful in staying sober. The program is staffed with a counselor of addiction drug case worker (CADC), the counselor meets first with the patient and then the certified provider meets with them assessing their needs and prescribing suboxone. Suboxone is used to decrease physical cravings for opioids. The patients then attend outpatient group meetings and some meet with a psychiatrist to address build their mental strength and resist cravings. Patients with OUD's that came to the clinic were able to see a primary care provider where they have MI implemented in their visit, see a substance abuse counselor and get a prescription for their opioid use disorder all at one visit. Several of the physicians working at this facility were certified in buprenorphine and are always in need of more providers to accommodate the number of patients needing treatment. An opportunity to become certified was offered to the PL who willingly took, becoming certified, attaining her MAT certification through AAAP and acquired her certification in Motivational Interviewing.

Another strength for this EBP was the interest in motivational interviewing. Several new residents and some providers were aware of literature supporting MI but were never provided the opportunity to be educated about it. A few of the ancillary staff were surprisingly interested in what MI was and realized they too can implement MI. The interest appeared to be genuine and having the administrative staff on board allowing me to utilize the MA's was beneficial. An

institutional plan to offer MI training in the future will be offered and the PL will be given the opportunity to promote and participate in the training process. Whenever a problem in the process was identified, collaboratively we as a team came up with a solution. If a process during the implementation phase was found ineffective, we collectively agreed to not include it or omitted it completely.

Limitations

Although there were many strengths there were some barriers and limitations during the EBP. When the project idea was first brought to the leaderships attention, the thought was to educate as many providers as possible in MI, however due having 52 providers, various clinic sessions, heavy patient loads and limited time with patients there was some pushback from providers stating they like and know MI works but have no time to get certified before the project was to be started. Decisions to have the PL be the sole provider implementing MI was our only option not to delay the start of the project. Once the project was started the MAs were a bit confused on identifying what opioids were and what were not, therefor we missed a few potential patients. To resolve this issue, we provided a list of opioids and it was placed in the folder for the project. Another concern that came about was staffing, due to the shortage of MAs the clinic occasionally used agency staff or simply worked short thus the process of the project had some interruptions. The agency MAs were not aware of the project and it was challenging to get the same MA every day that the PL was in the clinic. As frustrating as it was at times, we were fortunate to not have any major concerns.

Another limitation was the bias against the patients being seen, several of the patients were homeless, unkept and at times displayed impatience. Staff at times would be judgmental and quickly irritated by these behaviors and their appearance. Realizing that there was a lack of education on the disease and withdrawal of opioid symptoms became apparent quickly and to address this issue, brief educational huddles were done for questions and answers.

Implications for the Future

Practice

The APN profession continuously proves to be a major influence for practice change within the healthcare system. The APN's compassion and dedication provides a unique tender approach as they continue to work diligently and strive to implement evidence-based care. This project demonstrates that through education, research and compassion, their influences continue to develop new approaches to confront illnesses at hand. The PL displayed her dedication by acquiring certifications in both buprenorphine and motivational interviewing to become a leader and mentor on treating those afflicted with OUD. Collaboration among peers exhibits the strength and abilities for APNs to contribute to research and policy change every day.

Today, as the use of opioids is steadily increasing the rates of opioid deaths are continuing to rise, according to the CDC (2017) this is partially in relation to the mixture of other products in the drug such as fentanyl. Recently, approval of prescription Narcan for patients with OUD have healthcare professional's hopeful it will make an impact on the epidemic. Motivational Interviewing was initially started by Rollnick for alcoholism and has since been used in various settings, particularly in drug use. Literature has proven its effectiveness when used appropriately.

Theory

The results to this project were guided by the ARCC EBP model. As stated above the model was designed to include important concepts regarding behavior change in individual clinicians as key strategies in advancing and sustaining system-wide implementation of EBP. Whenever a change is desired both within an institution the model is applicable, first assessing the readiness for change, identifying any barriers or strengths that will impact the change, identifying the mentor which in this project was the PL who became certified in buprenorphine and MI. The PL implemented MI and demonstrated its effectiveness where she will now be able

to encourage others to participate in utilizing the process and showing the outcomes proved the model to be conducive to the project.

Research

Research for motivational interviewing continues to evolve and this project demonstrates that if used properly the technique is beneficial not only OUD but for many other chronic diseases. MI is used to promote behavioral change and its technique provides a collaborative approach among the provider and the patient. Allowing the patient to partake in their healthcare decisions and not be judged is imperative to have positive outcomes. Change is not easy for everyone, understanding the disease process, listening to the patients in a non-judgmental manor and working together for goals has proven positive outcomes. Implications for future research are exciting as the future DNP investigators may research how to include MI in a timely fashion or incentives for training providers. Understanding that every encounter can be an opportunity to identify those in need, it is about the approach and the communication style that MI offers that makes it successful.

Education

It is imperative that DNP students acquire the understanding and importance of research. Incorporating the use of evidence-based practices while they treat patients ensures the professionalism that our profession brings to healthcare. Participating in this project brought insight to the impact we have on communities in which we serve. It is ingrained at the start of our career and being a novice nurse, that change is difficult. As the ARCC model explains it is important in any aspect to assess the readiness to change, after that it is all about the technique used to promote that change. Having experienced mentors, whether it be a nurse educator or one whom has great experience in an area, implementing change does not have to be that difficult.

The outcomes for this project will be shared with the staff and the facilities educational department where they can ensure students and the next generation of nurses can implement

the use of motivational interviewing. Together as more students enroll to attain their DNP, we will make a significant difference.

Conclusion

Implementation of MI during clinic visits promotes a healthier relationship among our patients and our providers. Patients want to feel comfortable and trust those they communicate private concerns with and whom better to do that with, their providers. Establishing a healthy relationship takes time and eliminating fear, judgement or reprimand inhibits honesty and full disclosure, therefor it is up to us the healthcare professionals to take responsibility of the outcomes. MI has been around for many years; it is not taught in every school setting and that is why DNPs can impact and promote policy change.

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BIOGRAPHICAL MATERIAL

Mrs. Roberts chose nursing as a second career following her nine years of working as a licensed insurance broker. In 1998 her employment as a ward clerk on a pediatric unit at Mount Sinai Hospital in Chicago led her to exposure and subsequent love for the field of nursing. Soon thereafter, she enrolled nursing school at Triton College where she graduated with an Associate of Applied Science in Nursing in 2001. Over the years Mrs. Roberts has worked in various clinical settings including Pediatrics, PICU and NICU. In 2003 Mrs. Roberts returned to school at Olivet Nazarene University earning her BSN in 2006, later completing her MSN at the same university with certification as a Family Nurse Practitioner in 2009. She is board certified through ANCC and is currently practicing full time as a Family Nurse Practitioner in an Adult General Medicine Clinic at John H. Stroger Hospital of Cook County. Mrs. Roberts is a part-time associate professor for the undergraduate BSN program and co-instructor in the MSN graduate program for Nurse Practitioners. As an active participant of the preceptor program sponsored by her employer, Mrs. Roberts is a clinical preceptor for graduate nurse practitioner students of various academic institutions whom complete clinical rotations at Stroger Hospital. In December 2018, Mrs. Roberts completed the CNE program at Valparaiso University and she is currently attending Valparaiso to earn her Doctorate of Nursing Practice degree, scheduled for completion in May 2020. Mrs. Roberts is also a member of AANP and ISAPN. Mrs. Roberts became personally and professionally interested in treatment for opioid use disorders (OUD) after having a few of her childhood friends pass away from overdoses, realizing that everyone has a unique story and their struggle to overcome the disease is often multifactorial. Mrs. Roberts is recently acquired her certification with her buprenorphine waiver and has her DEAx license to care for this population. It is her hope that with this recent certification in Motivational Interviewing that she will serve to improve treatment and outcomes for OUD patients. She is currently enrolled in Rush Hospital’s Opioid fellowship program to enhance her knowledge on

the disease with plans for completion in August 2020. Mrs. Roberts is planning to work diligently on her journey and continue to treat those affected by the disease.

ACRONYM LIST

AAAP: American Academy of Addiction Psychiatry

ANA: American Nurses Association

APA: American Psychological Association

ARCC: Advancing Research and Clinical Practice Through Close Collaboration

CDC: Centers for Disease Control

MA: Medical Assistant

MAT: Medication Assistance Treatment

MI: Motivational Interviewing

NIDA: National Institute on Drug Abuse

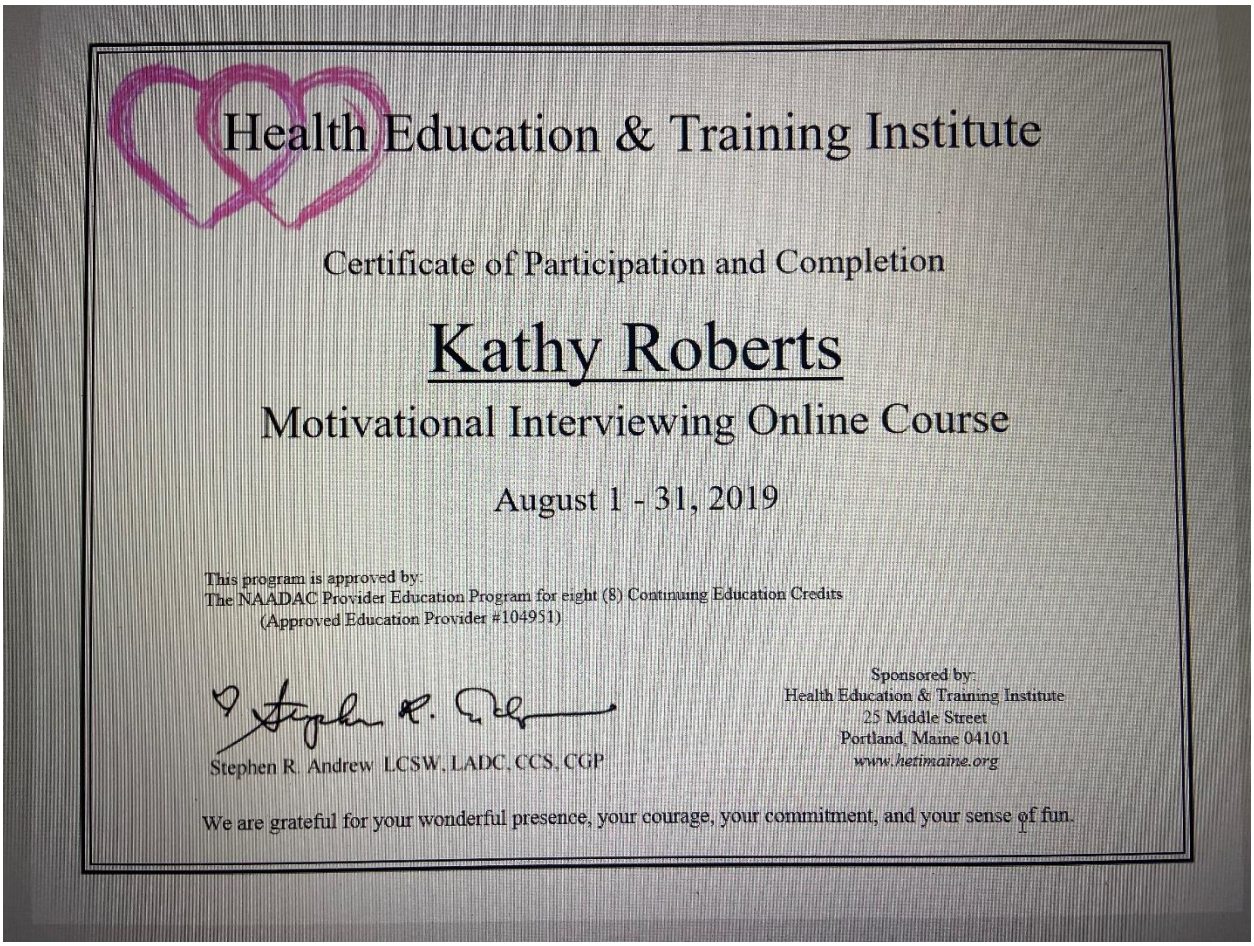
OUD: Opioid Use Disorders

PL: Project Leader

SUD: Substance Use Disorder

OUD: Opioid Use Disorder

Appendix A



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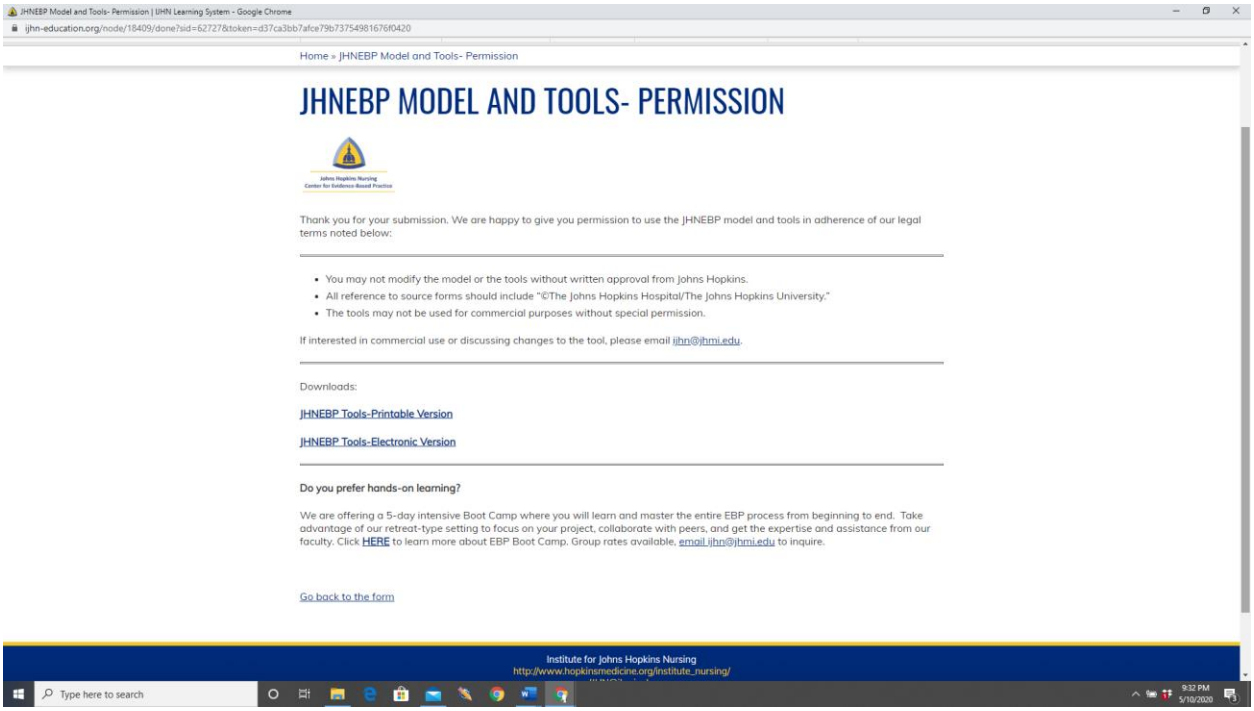
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