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The effect of narrative medicine combined with medication assisted treatment on decreasing the desire to use intravenous substances in hospitalized patients with infective endocarditis

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Final DNP Project Report

The effect of narrative medicine combined with medication assisted treatment on decreasing the desire to use intravenous substances in hospitalized patients with infective endocarditis.

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Spring 2019

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Dedication

This work is dedicated to my husband and children who have supported me throughout the entire process. Thank you for always encouraging me to push myself further than I ever thought possible, believing in me even when I didn't believe in myself, and for loving me unconditionally. Thank you for putting life on hold at times so that I could reach my goal. This is for my parents who taught me the value of hard work and determination. This work was done for each person that has been negatively impacted by substance abuse. My hope is that patients can see their value and worth despite their addiction.

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Table of Contents

Acknowledgements.....	iii
List of Tables.....	vi
List of Figures.....	vi
Abstract.....	1
Introduction.....	4
Background.....	7
Purpose.....	9
Evidence Based Practice Model.....	9
Methods.....	10
Setting.....	10
Sample.....	11
Data Collection.....	12
Data Analysis.....	13
Results.....	13
Sample Characteristics.....	13
Quality of Life Scale.....	14
Desire to Use.....	15
Discussion.....	15
Limitations.....	16
Recommendations for Future Studies.....	16
Conclusion.....	17

Appendix A.....	18
Appendix B.....	19
Appendix C.....	20
Bibliography.....	27

List of Tables

Table 1. *Demographics (N=22)*.....21
Table 2. *Substance Use History*22
Table 3. *Quality of Life Scale (QOLS)*23
Table 4. *DTU*.....24

List of Figures

Figure 1. *First Illegal Substance Used*.....25
Figure 2. *IV Drug of Choice*.....26

Abstract

Substance abuse is a significant problem that spans the nation. Of particular concern is the growing population of patients at UK HealthCare who have endocarditis as a complication from IV substance abuse.

PURPOSE: The aims of this study were

1. To assess the effect of narrative medicine combined with MAT, compared to MAT alone, on desire to use in hospitalized patients with a history of IV substance use
2. To examine the changes in quality of life before and after the introduction of narrative medicine in hospitalized patients with a history of IV substance abuse using The Quality of Life Scale (QOLS).

METHODS: The study design was a single-blinded, randomized controlled trial of patients aged 18-60 years who were currently admitted with endocarditis due to IV substance abuse. The sample consisted of 22 patients who were hospitalized with infective endocarditis.

RESULTS: It was determined that regardless of time in the hospital, the treatment group had significantly higher QOLS ($p=0.02$). The overall DTU was lower in the treatment group ($p=.002$). The subsets of the DTU tool were all higher in the control group. Compulsivity ($p=.004$), expectancy ($p=.003$), emotionality ($p=.003$), and purposefulness ($p=.006$) were all higher in the control group.

CONCLUSION: The addition of narrative medicine was found to have a positive impact on decreasing desire to use and improving quality of life in hospitalized patients with a history of IV substance abuse and infective endocarditis. The results of this project will be used to

standardize future treatment, including the addition of narrative medicine, to meet the medical and mental health needs of this patient population.

Introduction to Final DNP Project

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Introduction

Over the last decade, the number of endocarditis and osteomyelitis cases from intravenous (IV) substance abuse has doubled in the United States (Prendergast, 2006; Fanucchi & Lofwell, 2016; Fleischauer, Ruhl, Rhea, & Barnes, 2017; Weymann et al., 2014) affecting 15,000 Americans annually (Rabkin et al., 2012). Experts have identified an increasing problem with heroin and prescription opioid abuse in Kentucky and nationwide (Cicero, Ellis, Surrant, & Kurtz, 2014). Of particular concern is the growing population of patients at UK HealthCare who have a history of IV substance abuse. These patients have higher morbidity and mortality rates than those without a history of IV substance abuse (Oylumlu, Ercan, Basanalan, & Davutoglu, 2013; Shrestha et al., 2015). Infective endocarditis, overdose, and hepatitis are common complications associated with IV substance abuse (Weir et al., 2019). Hospitalized patients with endocarditis spend approximately six weeks receiving IV antibiotics; this is a prime opportunity to address the underlying addiction. Experts recommend that healthcare providers initiate hospitalized patients with a history of IV substance abuse on MAT for opioid dependence (Suzuki, 2016; Fanucchi & Lofwell, 2016; Timko, Schultz, Cucciare, Vittorio, & Garrison-Diehn, 2016). In order to provide complete treatment for this patient population, both the infectious process as well as the underlying addiction must be addressed.

Currently, the addiction medicine team evaluates patients with a history of IV substance use at UK HealthCare. If appropriate, the patients are prescribed MAT and followed by the addiction medicine team. Narrative medicine is an adjunctive therapy available to assist patients with personal discovery. The expectation of this study is that the integration of narrative medicine into the current treatment of this patient population will provide patients

with an opportunity for understanding the cause of the underlying addiction. Understanding the cause of addiction will lead to improved treatment outcomes.

The effect of narrative medicine combined with medication assisted treatment on decreasing the desire to use intravenous substances in hospitalized patients with infective endocarditis.

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Background

IV substance abuse can lead to life threatening complications including endocarditis and osteomyelitis (Weymann et al., 2014; Fanucchi & Lofwell, 2016). Infective endocarditis is an infection of the endocardial surface of the heart and can lead to severe valvular insufficiency. The incidence of endocarditis among those with IV substance abuse is approximately 1.5-3.2 cases per 1,000 (Suzuki, 2016). From 2014-2016, the incidence of endocarditis cases increased 333% at UK HealthCare (Martin et al., 2018). The definition of endocarditis is the same for both those who developed endocarditis from IV drug use as well as for those who developed it from another source. The difference is that those patients with a history of IV substance use have a significantly higher morbidity and mortality rate than those without that history. Hospital costs for the treatment of endocarditis from IV substance abuse has increased from \$1.1 million in 2010 to \$22.2 million in 2015 (Fleischauer, Ruhl, Rhea, & Barnes, 2017). This cost increase is directly proportional to the fact that the frequency of surgical intervention has increased from 25-30% (Prendergast, 2006) to 50% (Prendergast & Tornos, 2010) in those with acute endocarditis. There is some debate among cardiothoracic surgeons regarding the need for surgical intervention for those with tricuspid valve endocarditis since it is most often associated with IV substance abuse (Shetty, Nagpal, Koivu & Mrkobrada, 2016; Oylumlu, Ecran, Basanalan, & Davutoglu, 2013). The majority of patients with endocarditis from IV substance abuse are younger so there are fewer patients with underlying cardiovascular disease or significant comorbidities (Shrestha et al., 2015; Fleischauer, Ruhl, Rhea, & Barnes, 2017). While this patient population does not typically have significant health problems, there is a high comorbidity

between illicit substance abuse and both medical and mental health disorders (Krupski et al., 2015; Rabkin et al., 2012).

Addiction is a chronic disease process that involves cycles of relapse and remission (Loffreda et al., 2003). Addiction is often characterized by the inability to abstain from a habit such as IV substance use. Experts have identified an increasing problem with heroin and prescription opioid abuse in Kentucky and across the nation (Cicero, Ellis, Surrant, & Kurtz, 2014). According to the American Society of Addiction Medicine (ASAM) guidelines, psychosocial treatment is recommended in conjunction with all MAT (2018). Collaboration among multidisciplinary teams is important for successful treatment outcomes (Prendergast, 2006; David et al., 2007; Prendergast & Tornos, 2010). MAT includes the use of methadone, buprenorphine, or naltrexone. MAT increases survival by decreasing cravings and illicit drug use (Rosenthal et al., 2016). Narrative medicine is an adjunctive therapy to assist patients with personal discovery. Narrative medicine helps people develop their human potential by allowing them to gain insight about their health and overall well-being (Kalitzkus & Matthiessen, 2009). Combining narrative medicine and MAT may provide this patient population with the necessary tools needed to address the underlying problem of addiction. Narrative medicine is the bridge that may improve both clinical practice and interpersonal relationships with this particular patient population. Creating this bridge between the patient and provider should lead to more successful outcomes. The goals of narrative medicine include decreasing the patient's desire to use, improving quality of life, preventing the use of illegal substances while hospitalized, decreasing readmissions from relapse and facilitating the patient's arrangement of appropriate follow up as an outpatient in their community.

Purpose

The purpose of this study is to examine the effects of narrative medicine combined with MAT in decreasing the hospitalized patient's desire to use IV substances. Addressing the underlying addiction may improve the patient's quality of life. The primary aims of this study include: 1) To assess the effect of narrative medicine combined with MAT compared to MAT alone on the desire to use among hospitalized patients with a history of IV substance use, 2) To examine the changes in quality of life before and after the introduction of narrative medicine in patients with a history of IV substance use, using the Quality of Life Scale (QOLS). The project is critical to UK HealthCare because of the significant number of patients who present with endocarditis secondary to IV substance use. There are significant costs associated with this patient population as well as with recurrence of endocarditis because of relapse. It is the expectation that this study will help patients understand their addiction, decrease their desire to use, and improve their quality of life.

Evidence Based Practice Model

The Iowa model guides the implementation of evidence-based practice (EBP) at an organizational level (Melynk & Fineout-Overholt, 2015). The Iowa model is a fluid model that can be applied at various settings including inpatient and outpatient. Consideration of substantiating evidence, feasibility, fit, and current practice all go into the decision-making process (Gawlinski & Rutledge, 2008). There are ten stages of the Iowa model, which include the following: 1) Problem focused or knowledge triggers; 2) Is this topic a priority of the organization? 3) Team formation; 4) Assemble relevant research and related literature; 5) Critique and synthesize research for use in practice; 6) Is there a sufficient base? 7) Pilot the

change in practice if there is a sufficient base; 8) Decide if the change is appropriate for adoption into practice; 9) Widespread implementation with continual monitoring of outcomes; 10) Disseminate results (Melynk & Fineout-Overholt, 2015). Strengths of the Iowa model include both internal and external triggers that can lead to an EBP project and the model flows cohesively. If there is a problem, the team can regroup without having to start over at the beginning. The weakness of this model is that numerous steps can seem daunting, but in reality, the steps are fluid.

Methods

The study design was a single-blinded, randomized controlled trial that included 22 patients between 18-60 years of age, admitted to UK HealthCare with infective endocarditis and a history of IV substance use within the last year. The participants in the study chose a numbered envelope that revealed to the primary investigator (PI) if they were in the control group or the intervention group. A narrative medicine expert talked weekly with the participants in the intervention group. The participants incurred no additional costs. Narrative medicine was not privy to the patient information obtained by the PI from the participant interviews. During the study, participants were initially interviewed within 7 days of admission, halfway through the hospitalization course (about 3 weeks), and again prior to hospital discharge (about 6 weeks) by the PI. Each patient, regardless of participation in the study, was provided with a list of resources for addiction treatment options in his or her local community.

Setting

UK HealthCare is an academic research institution located in Lexington, Kentucky. The mission of UK HealthCare is to provide the most advanced patient care to the people of

Kentucky and to serve as an information resource. UK HealthCare partners with community hospitals and physicians to improve the care provided to the people of the Commonwealth of Kentucky as well as several other states including West Virginia, Ohio, Tennessee, and Indiana. The participants within this study were located throughout the hospital on a variety of teams including medicine, cardiology, cardiothoracic surgery, and pulmonary.

Sample

Participants were referred to the PI through both nurse and physician colleagues at UK HealthCare. Forty-seven patients were referred for the study, but only twenty-two met inclusion criteria. After chart review, the PI met with those patients who met the inclusion criteria for the study. Data collection took approximately 4 months.

Inclusion Criteria

- Ages 18-60 with a history of IV substance use in the last 12 months
- Diagnosis of infective endocarditis
- Previous cardiac surgery for reasons besides substance abuse related valve replacements
- May have septic emboli to the brain, lungs, liver, spleen, and/or kidneys
- May have vegetation on any of the heart valves

Exclusion Criteria

- Previous valve replacement due to infective endocarditis
- Debilitating stroke that affects speech and/or cognition
- Infective endocarditis from other sources beside IV substance abuse
- Unstable medical conditions
- Prisoners

Data Collection

Approvals from the University of Kentucky Nursing Research Council and the Institutional Review Board (IRB) were obtained prior to the collection of data. Patients admitted with a diagnosis of infective endocarditis were identified by the primary admitting teams and referred to the primary investigator (PI). A detailed chart review was completed to ensure a documented history of IV substance abuse within the last year. Potential participants were seen after referral to the PI and provided with detailed information related to the study. The PI returned to see the potential participant approximately 24 hours later and written informed consent was obtained from those volunteering to participate. The participants were randomly assigned to either the control group receiving MAT only or the intervention group receiving both MAT and narrative medicine. Only the PI knew the participant's designation but did not know until after the initial interview was completed.

During the initial encounter, each participant was interviewed using a standardized interview questionnaire created specifically for this study (Appendix A). The interviewer requested data about the participant's history and demographics. The Alcohol Craving Questionnaire—Short Form—Revised (ACQ—SF—R) was modified to create the Desire to Use (DTU) questionnaire (Appendix B). The participants also completed the Quality of Life Scale (QOLS; Appendix C). In order to obtain a baseline score, each participant completed the DTU and QOLS during the initial interview. At 3 weeks into the hospitalization course, the participants repeated the DTU and QOLS. If the participants remained hospitalized at UK HealthCare, they completed a third DTU and QOLS prior to discharge.

Data Analysis

Frequency distributions, means, and standard deviations were used to describe the demographic and drug use characteristics. Paired t-tests were used to compare the DTU at two points in time. Repeated measures analysis was used to determine whether the outcomes changed over time by treatment group. Data analysis was conducted using SPSS, version 25, with an alpha level of .05.

Results

Sample Characteristics

There were 22 participants enrolled in the study. Of these, 68.2% were female (n=15). The largest portion of participants were ages 24-30 (n= 8, 36.4%) and 31-35 (n=7, 31.8%) as denoted in Table 1. The participants were from Kentucky (86.4%), Ohio (4.5%), and West Virginia (9.1%). The largest number of participants were from Fayette County, Kentucky (n=5, 22.7%). Harlan and Madison counties in Kentucky were second with 13.6% each (n=3).

The majority of this particular patient demographic began using illegal substances between the ages of 12-15 (n=11, 50%). The youngest participant reported using marijuana at age 11. As shown in Figure 1, 59.1% (n=13) reported marijuana as the first illegal substance used. Others reported the use of opiates (31.8%, n=7), methamphetamines (2.9%, n=1), and benzodiazepines (2.9%, n=1) as the first illegal substance used. Fifty percent of the participants made the transition to injecting between the ages of 18-25 years (n=11). Four of the participants reported being under the age of 18 (18.2%) when they began injecting illicit substances as denoted in Table 2.

The preferred drug for intravenous injection in this study was found to be heroin (n=11, 50%) followed by methamphetamines (n=5, 22.7%). All of the participants admitted to reusing needles (n=22, 100%) and the majority (n=16, 72.7%) admit to sharing needles. Of the participants who shared needles, none of them was able to verbalize safe injecting practices nor did they participate in the local needle exchange program. None of the participants have been diagnosed with HIV; however, 86.4% (n=19) have been diagnosed with hepatitis C. 40.9% (n=9) have traded sexual contact in exchange for drugs. Nearly half of the participants have been arrested or imprisoned for drug related issues including selling, manufacturing, and/or possession (n=10, 45.5%).

There is a high comorbidity between substance abuse and mental health disorders (Krupski et al., 2015; Rabkin et al., 2012), and the results of this study bear this out; for example, 36.4% (n=8) of the study participants have been diagnosed with depression and 68.2% (n=15) have been diagnosed with anxiety. Twelve of the participants reported a family history of addiction in either one or both parents and/or siblings. A small percentage of the participants had access to a primary care provider (n=6, 27.3%) while none of them had access to regular dental care.

Quality of Life Scale

The QOLS is a reliable and effective tool that can be used to measure the quality of life from the perspective of the patient (Burckhardt & Anderson, 2003). The QOLS is scored by adding the total of each of the 16 questions, with a minimum score of 16 and a maximum of 112. The average total score for a healthy population is approximately 90 (Burckhardt & Anderson, 2003). Higher scores are indicative of a higher quality of life. Regardless of

assessment time, the treatment group had significantly higher QOL scores with an average score of 73.8. The intervention groups had significantly higher QOL scores ($p=.02$).

Desire to Use

The DTU questionnaire is adapted from The Alcohol Craving Questionnaire—Short Form (ACQ—SF—R). The DTU consists of 12 items that assess the participant’s cravings. There are four subsets in the DTU questionnaire: compulsivity, expectancy, purposefulness, and emotionality. Compulsivity refers to the urges and desires in anticipation of loss of control over injecting. Expectancy describes the urges and desires to shoot up in anticipation of the benefits of getting high. Purposefulness refers to the urges and desires coupled with the intent and plans to get high. Emotionality refers to the urges and desires to get high in anticipation of relief from withdrawal. Regardless of assessment time, the treatment group had significantly lower desire to use scores ($p=.002$).

Discussion

This study aimed to determine the effect of narrative medicine in addition to the current treatment regimen of hospitalized patients at UK HealthCare with infective endocarditis. This patient population has an increased risk of readmission, reinfection, and death that is approximately 10 times higher than those patients without IV substance abuse (Shrestha et al., 2015; Rosenthal et al., 2016). Narrative medicine is a more holistic approach to patient care and is said to revive empathy and compassion (Muneeb et al., 2017). With the addition of narrative medicine, the treatment group was found to have significant improvement in both the DTU and QOL scores. Narrative medicine is the key to bridging the gap between multiple specialties to allow the patient to have effective care (Muneeb et al., 2017). As this

patient population continues to increase, it is imperative to implement a standardized collaborative treatment protocol at UK HealthCare. Currently, the care is not guideline driven and is dependent upon the admitting team to consult the necessary specialties. This study serves as the basis to recommend the implementation of a practice change in the treatment of this population to include creating a multidisciplinary endocarditis specialty team and a standardized treatment plan that includes MAT and narrative medicine.

Limitations

Several limitations were identified in the design of this study. The data were collected from one health care organization limiting the generalization of the study. Those with a history of IV substance use are challenging because there are many facets that must be managed including the medical illness, the underlying addiction, and the psychosocial issues such as homelessness and unemployment. Due to these challenges associated with the underlying addiction, the data may not fully represent the value of narrative medicine nor addiction medicine. Fifty percent of the patients were discharged, transferred, or left against medical advice prior to the completion of the study. Another limitation of this study is the small sample size; therefore, it is difficult to determine the full impact of narrative medicine.

Recommendations for Future Studies

Recommendations for future studies include the inclusion of those patients who have previously undergone a valve replacement related to IV substance use. There were a significant number of patients who were excluded from this particular study due to recurrence of endocarditis after having a valve replaced. A pilot of a standardized treatment protocol for those with a history of IV substance use should be implemented. This pilot should include

admission to an internal medicine service that specializes in addiction with consultations from addiction medicine specialists, narrative medicine, and behavioral health as well as any other necessary specialties such as cardiology, infectious disease, cardiothoracic surgery, and/or pulmonary. Collaboration with Eastern State Hospital would allow for additional therapy options for the patients at the Recovery Mall.

Conclusion

The goal of this study was to demonstrate the effectiveness of adding narrative medicine into the current MAT treatment for this patient population. It was determined that regardless of time, the treatment group had significantly higher QOLS ($p=0.02$). This may have been due to the increased interaction with narrative medicine. The overall DTU was lower in the intervention group ($p=.002$). Despite this being a small sample, it can be suggested that narrative medicine has a positive impact on decreasing the DTU and improving the QOL in hospitalized patients with a history of IV substance abuse and a diagnosis of infective endocarditis. Since patients are hospitalized for an extended period of time to receive IV antibiotics, this is a prime opportunity to address their addiction. Standardizing the treatment approach to include narrative medicine will ensure that patients receive the appropriate services necessary to meet their medical and mental health needs.

APPENDIX A

INITIAL INTERVIEW QUESTIONNAIRE

1. What brought you to the hospital? What kind of symptoms were you having?
2. Please tell me about your past medical history.
3. Have you ever had any surgeries?
4. Have you ever been treated or are you currently being treated for anxiety? Depression? Bipolar disorder?
5. What type(s) of drugs do you use?
6. How old were you when you first started using?
7. Does anyone else in your family have problems with addiction or use IV substances?
8. How often do you use? Describe the pattern of your drug use for me so that I can get a better understanding.
9. What is your preferred route of administration?
10. Do you reuse your needles? Share needles?
11. If you reuse your needles, how do you clean them?
12. Have you been tested for Hepatitis? HIV?
13. For females: when was your LMP? Pregnancy, birth, abortion history?
14. Have you ever been diagnosed with an STD? Was it treated?
15. Do you ever trade sex for drugs?
16. What happens if you don't use for 24 hours? 48 hours? 72 hours? What kind of symptoms do you have?
17. Please tell me about how you get your drugs and prepare them?
18. Where do you keep your drugs and your paraphernalia? Is it stored in a safe place away from children?
19. Are any of these prescribed medications?
20. Have you ever accidentally or intentionally overdosed?
21. Have you ever had any complications from your drug use? Abscesses? Blood clots? Sepsis? Endocarditis or an infection of your heart valve? If so, how was this treated?
22. Do you smoke? If so, how much do you smoke? When did you start smoking?
23. Do you drink alcohol? If so, how much do you drink and how often (daily, weekly, monthly)?
24. What happens if you don't drink? Describe your withdrawal symptoms to me.
25. Do you feel like your drug use interferes with your daily life?
26. Do you have children? If so, who takes care of them? Where do they live? What effect does your drug use have on your ability to be a parent?
27. How do you afford your habit?
28. Are you able to provide emotional support for others?
29. What effect does your habit have on your family? What about your day to day routine?
30. Where do you live? (City and state)
31. What kind of housing do you have?
32. Do you have a family doctor?
33. Do you go to the dentist on a regular basis?
34. Are you employed? Where?
35. Did you have problems keeping a job?
36. Have you ever been involved in a domestic violence situation either as the attacker or the victim?
37. Has your drug use ever caused you to be arrested or imprisoned?
38. What are your expectations of treatment?

APPENDIX B

DESIRE TO USE QUESTIONNAIRE

INSTRUCTIONS: Please indicate how much you agree or disagree with each of the following statements. Place a single mark (like this: **X**) along each line between STRONGLY DISAGREE and STRONGLY AGREE. The closer you place your mark to one end or the other indicates the strength of your disagreement or agreement. We are interested in how you are thinking or feeling right now as you are filling out this questionnaire. Wherever the term drug is used, please substitute whatever substance you have injected in the past. Please complete every item.

RIGHT NOW

1. If I had drugs and a needle, I would probably get high.

STRONGLY DISAGREE ___:___:___:___:___:___:___ STRONGLY AGREE

2. I miss getting high.

STRONGLY DISAGREE ___:___:___:___:___:___:___ STRONGLY AGREE

3. I am not making any plans to get high.

STRONGLY DISAGREE ___:___:___:___:___:___:___ STRONGLY AGREE

4. I could not stop myself from shooting up if I had some drugs here in my room.

STRONGLY DISAGREE ___:___:___:___:___:___:___ STRONGLY AGREE

5. I want to shoot up so bad I can almost taste it.

STRONGLY DISAGREE ___:___:___:___:___:___:___ STRONGLY AGREE

6. I would feel less irritable if I got high right now.

STRONGLY DISAGREE ___:___:___:___:___:___:___ STRONGLY AGREE

7. If I got high, I would feel less tense.

STRONGLY DISAGREE ___:___:___:___:___:___:___ STRONGLY AGREE

8. Getting high would not be very satisfying.

STRONGLY DISAGREE ___:___:___:___:___:___:___ STRONGLY AGREE

9. I would feel less restless if I could shoot up.

STRONGLY DISAGREE ___:___:___:___:___:___:___ STRONGLY AGREE

10. If I were using drugs, I would feel less nervous.

STRONGLY DISAGREE ___:___:___:___:___:___:___ STRONGLY AGREE

11. It would be easy to pass up the chance to get high.

STRONGLY DISAGREE ___:___:___:___:___:___:___ STRONGLY AGREE

12. Getting high puts me in a better mood.

STRONGLY DISAGREE ___:___:___:___:___:___:___ STRONGLY AGREE

APPENDIX C

QUALITY OF LIFE SCALE (QOLS)

Please read each item and circle the number that best describes how satisfied you are at this time. Please answer each item even if you do not currently participate in an activity or have a relationship. You can be satisfied or dissatisfied with not doing the activity or having the relationship.

	Delighted	Pleased	Mostly Satisfied	Mixed	Mostly Dissatisfied	Unhappy	Terrible
1. Material comforts home, food, conveniences, financial security	7	6	5	4	3	2	1
2. Health – being physically fit and vigorous	7	6	5	4	3	2	1
3. Relationships with parents, siblings & other relatives – communicating, visiting, helping	7	6	5	4	3	2	1
4. Having and rearing children	7	6	5	4	3	2	1
5. Close relationships with spouse or significant other	7	6	5	4	3	2	1
6. Close friends	7	6	5	4	3	2	1
7. Helping and encouraging others, volunteering, giving advice	7	6	5	4	3	2	1
8. Participating in organizations and public affairs	7	6	5	4	3	2	1
9. Learning – attending school improving understanding, getting additional knowledge	7	6	5	4	3	2	1
10. Understanding yourself – knowing your assets and limitations – knowing what life is about	7	6	5	4	3	2	1
11. Work – job or in home	7	6	5	4	3	2	1
12. Expressing yourself creatively	7	6	5	4	3	2	1
13. Socializing – meeting other people, doing things, parties, etc.	7	6	5	4	3	2	1
14. Reading, listening to music, or observing entertainment	7	6	5	4	3	2	1
15. Participating in active recreation	7	6	5	4	3	2	1
16. Independence, doing for yourself	7	6	5	4	3	2	1

Table 1. Demographics (N=22)

	n (%)
Gender	
Male	7 (31.8%)
Female	15 (68.2%)
Age	
18-23 years	2 (9.1%)
24-30 years	8 (36.4%)
31-35 years	7 (31.8%)
36-40 years	2 (9.1%)
41-45 years	1 (4.5%)
46-50 years	2 (9.1%)
County of Residence	
Boyd	1 (4.5%)
Breathitt	1 (4.5%)
Fayette	5 (22.7%)
Harlan	3 (13.6%)
Johnson	1 (4.5%)
Lewis	1 (4.5%)
Madison	3 (13.6%)
Magoffin	1 (4.5%)
Ohio	1 (4.5%)
Pulaski	1 (4.5%)
Whitley	1 (4.5%)
State of Ohio	1 (4.5%)
State of West Virginia	2 (9.1%)

Table 2. Substance Use History

	n (%)
Age of Initial Illicit Substance Use	
Less than 12 years	1 (4.5%)
12-15 years	11 (50%)
16-19 years	7 (31.8%)
20-25 years	2 (9.1%)
26-30 years	1 (4.5%)
Age of Initial IVDU	
Less than 18 years	4 (18.2%)
18-25 years	11 (50%)
26-30 years	5 (22.7%)
Over 31 years	2 (9.1%)

Table 3. *QOLS*

	Control Mean (SE)	Narrative Medicine (SE)	p
QOLS	62.5 (3.3)	73.8 (3.0)	0.02

Table 4. *DTU*

	Control Mean (SE)	Narrative Medicine Mean (SE)	p
DESIRE TO USE SCALE	4.4 (0.3)	2.9 (0.3)	.002
Compulsivity	4.3 (0.3)	2.9 (0.3)	.004
Expectancy	4.8 (0.4)	3.0 (0.4)	.003
Purposefulness	3.9 (0.3)	2.7 (0.3)	.006
Emotionality	4.6 (0.4)	3.0 (0.3)	.003

Figure 1. *First Illegal Substance Used*

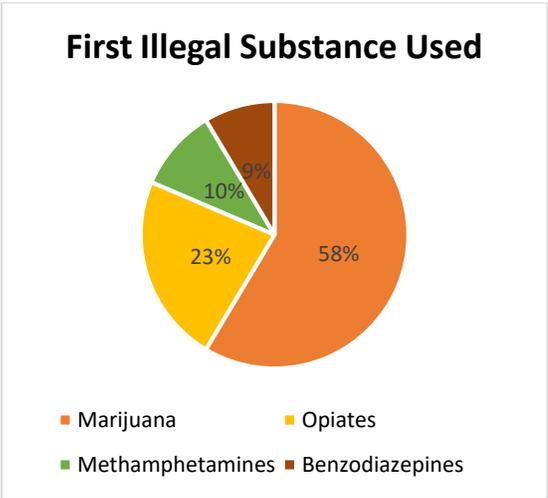
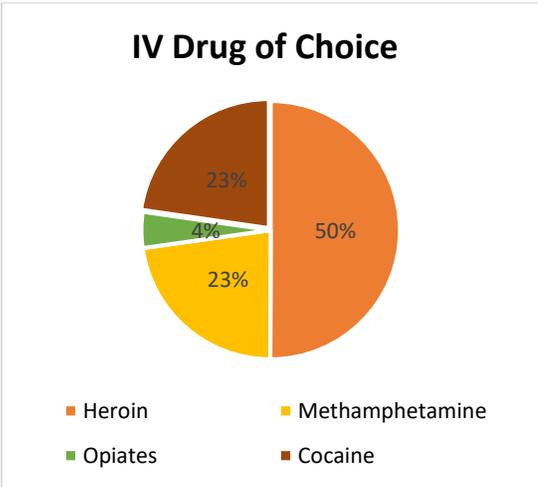


Figure 2. *IV Drug of Choice*



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