

CALIFORNIA STATE UNIVERSITY SAN MARCOS

PROJECT SIGNATURE PAGE

PROJECT SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE

MASTER OF PUBLIC HEALTH

PROJECT TITLE: Quality of Life in Substance Abuse Treatment

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DATE OF SUCCESSFUL DEFENSE: November 26, 2018

THE PROJECT HAS BEEN ACCEPTED BY THE PROJECT COMMITTEE IN  
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC  
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**QUALITY OF LIFE IN SUBSTANCE ABUSE TREATMENT**

**Presented to the  
Department of Public Health  
California State University San Marcos**

**Of the Requirement for the  
Degree Master of Public  
Health**

**By  
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**December 2018**

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# Acknowledgments

We would like to first acknowledge facilities, Choices in Recovery and Mission Treatment Services for allowing us to conduct our research and to all the clients or patients that were a significant part of the process. Thank you for taking the time to fill out such a long survey and for allowing us the opportunity to learn how to become better researchers. To the faculty members of the public health program, Lisa Bandong for our internship experiences and education of health systems, this was both empowering and enlightening. Dr. I for helping us to see the big picture environmentally and for teaching us that change must come from a participatory standpoint. Dr. Santos for our introduction into public health creating curiosity and questions; thank you Dr. Holub, for your insights into the public health sector and the importance of health promotion. I would like to give a special thanks to Dr. Deborah Morton (academic chair) for taking the time to help us throughout this entire journey. You taught us that even though you may have a PhD and a renowned career that we are all equal. I will forever admire your down to earth thinking and want to acknowledge you as a great mentor. I would like to thank my undergraduate mentor Professor Roche for inspiring me to further my education and attend this amazing Public Health program. Without her expressing her beliefs in me I would not be the person I am today. Lastly, thank you to our amazing families for all their support throughout this process. It has been with their time and patience we owe everything. This degree is dedicated to both David Taylor and David Davies.

## Abstract

**Background:** Addiction is acknowledged as a disease which enables health care systems to offer funding or Medi-Cal benefits for treatment giving healthcare access and increasing one's quality of life for individuals who suffer from addiction. The focus of this study was to assess and determine which treatment interventions were most successful in offering a higher quality of life.

**Methods:** The study included 140 participants of which 48 were females, 88 were men and one identifying as a transgender. Recruitment was conducted from two substance abuse treatment facilities in San Diego, California; Mission Treatment Services (MAT) and Choice in Recovery (DFT). Participants were administered a questionnaire that included the Quality of Life Index, characteristics of addiction, and demographics.

**Results:** There was no significant difference in the Quality of Life between medically assisted treatment and drug-free treatment. However, more Non-Hispanic participants were college graduates and attended medically assisted treatment compared to drug-free treatment. Hispanics were more likely to attend a drug-free treatment.

**Conclusion:** This study discovered substance abuse treatment depends on the individual's needs, criminal justice system status (probation or parole) and preference. Both treatment modalities proved to work as long as it was individualized for the participant specialized needs. Both treatment modalities were equally successful if an individual was truly committed to recovery and psychotherapy was offered.

# Background and Literature Review

The United States has an opiate epidemic which shows increased mortality rates, crime rates, and incidence rates of illnesses primarily among adult populations. According to the Office on National Drug Control Policy (ONDCP), drug abuse costs American society close to 200 billion dollars. This occurs in sectors such as healthcare, and criminal justice. Research shows that this epidemic has grown across the globe at an alarming rate. The World Health Organization (WHO, 2017) reports that since 1985 heroin production has increased exponentially, with approximately 13.9 million individuals currently who have an opioid dependency (WHO, 2017). Opiates are widely prescribed pain killers that include such synthetic drugs as Fentanyl, OxyContin, Vicodin, Codeine, and Morphine; this also includes the illicit drug known as Heroin. Recent studies show that most individuals seeking treatment for drug addictions, are opiate dependent (WHO, 2017). The American Society of Addiction Medicine reported that from 1999-2010 synthetic drug overdoses increased for women over 400% and men 237% (ASAM, 2016). In the United States the leading cause for accidental death was attributed to drug overdoses with approximately 20,000 people dying from opiate prescriptions in 2015 and has since increased to over 65,000 people in 2016 (ASAM, 2016). This is an epidemic causing global concern showing many health ramifications and a need for integrative approaches for adults 18 and older who have an opiate dependency (WHO, 1995). Public health is an important factor to consider in preventative techniques for this type of epidemic. With increasing accessibility of medication assisted treatments (MAT) we believe there will be an increase in treatment retention, a decrease in mortality rates, and an increase in quality of life.

The primary risk factors of concern are high rates of morbidity and mortality from opiate dependency. A longitudinal study was conducted on participants selected from MAT and DFT

(Joe & Simpson, 1995). They wanted to determine if mortality rates had increased among opiate addicts by conducting follow up survival rates of participants involved in the study. They found that people were dying at a 6.9% increased rate compared to the general population. Indicating nearly half of the individuals involved in some form of MAT or therapeutic communities were still dying from their drug addictions. This delineates the need for more than one form of treatment offered to the opiate dependent individuals. It is important to address these risk factors by looking at evidenced based integrative treatment solutions that may help decrease mortality rates.

Another risk factor of concern is quality of life for individuals suffering from opiate dependency. As studies have shown in the past, people who are opiate dependent lead high risk lifestyles. This demonstrates a need for integrative approaches involving diverse populations and a need for more comprehensive care such as, health care centers, psychotherapy, and MAT programs (Tran, et. al., 2016). Research shows with quality health care and a holistic approach, we may begin to see higher retention rates to treatment, lower mortality rates, and higher quality of life perception (Canada, 2008).

Residential drug free treatment is important in the recovery process; it removes the individual from their negative environment and utilizes evidence-based practices to promote cognitive and behavioral change. There are many treatment techniques used in DFT, and all techniques used promote cognitive awareness, critical thinking, and cognitive clarity (England et al., 2015). One technique used in residential drug free treatment is cognitive behavioral therapy (CBT). CBT is a psychotherapy that addresses negative thinking by cognitive formulation, conceptualization, cognitive model, and automatic thought redirection (England et al., 2015). A main goal for individuals in residential DFT is to change negative cognitive thinking, help

reduce negative behaviors, and provide education and essential tools to formulate a new lifestyle (England et al., 2015). During this time a counselor may help a patient with relapse prevention strategies, alcohol and other drug (AOD) education, referrals to outside agencies, and discuss long term safety plans for their continued abstinence of illicit drug use. A patient will need continued support from family, friends, professionals, and support networks to continue to maintain a life of recovery.

Poverty-stricken and low socioeconomic status communities are drug afflicted, illness-prone, and show higher rates of criminal activity within their surroundings (Singh and Singh, 2008). Addiction has proven to be a serious burden on the economy. Healthcare costs are rising due to the spread of infectious diseases and drug-induced chronic illness due to the deteriorating effects of opiate use and the consequences on the body (Schwartz, 2017). This is one factor that reduces the quality of life of an individual, it also affects the mental state of an individual due to altering the body's biological process (Poudel and Gautam 2017). Drug-induced mental disorders have taken a toll in the United States. Most individuals with an opiate addiction will also suffer from a mental health disorder (Merikangas and McClair 2010). According to the Substance Abuse and Mental Health Services Administration (SAMHSA), in 2014 approximately 8 million people suffered from co-occurring disorders such as substance use disorder and a mental health disability.

Prevalence and incidence rates of infectious diseases have increased due to opiate addiction among injection users (NIH 2014). The common infectious diseases among adults are Human Immunodeficiency Virus (HIV), acquired Immunodeficiency Syndrome (AIDS), and Hepatitis C. Hepatitis C has a cure however, continued infections occur within this at-risk population due to lack of education and lack of regular access to healthcare. It is crucial to

educate these individuals and provide healthcare while receiving integrative substance abuse and mental health treatment. The criminal justice system is another factor in this opiate epidemic that needs to be addressed. Incarceration has increased over the years due to overcrowding in the jail system. Policies have been developed to force criminals that are charged with a drug crime to be sentenced to treatment facilities (Håkansson et al., 2012). This is where we as a society need to put our focus on recovery and rehabilitation opportunities to help individuals ascertain an increased quality of life.

An overview of three articles were examined in relation to the opioid epidemic. The primary article reviewed, written by Joe & Simpson (1987), is about a longitudinal study used to determine mortality rates among opioid addicts. The purpose of the study was to conduct a follow up on the survival rates of opioid addicts. They found that people were dying at a 6.9% increased rate compared to the general population or 15.2 deaths/1000-person years. It is important to look at treatments that may help decrease mortality rates.

In a second study conducted by Pierce, Bird, Hickman, Marsden, Dunn, Jones, & Millar (2016) investigated and ascertained that agonist pharmacotherapy was found to be beneficial to decrease opioid mortality rates. They looked at public records including patient characteristics, criminal justice referrals and greater follow through of treatment programs. Three separate groups were included in the study, individuals receiving only MAT services, individuals receiving MAT and psychotherapy, and individuals not seeking any treatment. Of 151,983 participants there were 1499 deaths or 3.4/1000 person-years. The findings also indicated that people who used opioid agonist pharmacotherapy were shown to have a decrease in mortality rates, and people who use two forms of treatment such as MAT and Psychotherapy had a two times greater decrease in mortality rates. They also found patients referred by the criminal justice

system showed a greater motivation for abstinence and/or a reduction in drug use which in turn led to a decrease in opioid fatal poisoning.

*Behavioral and Quality of Life Outcomes in Different Service Models for Methadone Maintenance Treatment in Vietnam*, (2016) was reviewed. In this study researchers found a need for integrative approaches involving diverse populations, as well as, a need for more comprehensive care such as, health care centers, psychotherapy, and methadone maintenance treatment (MMT) programs. Results showed that 95.4% of patients reported an improved quality of life while on the MMT program. It is clear in reviewing this research that different risk factors and behaviors can contribute to both positive and negative outcomes leading higher or lower quality of life.

### **Risk Factors/Health Behavior Theory**

Continued opioid drug abuse has increased risk factors with grave implications on personal health. An increased incidence of crime, higher mortality rates, and a lower quality of life are of all grave concern. With the use of methadone maintenance programs and psychotherapy we may begin to find interventions successful in abstinence or drug reducing behaviors for opioid dependent individuals.

### **Application of Health Behavior Theory**

With the use of health behavior theories, we may be able to promote change within individuals seeking help for their opioid dependencies. With increased awareness of a need for change, individuals can begin to personalize the risks and benefits of MMT. This is definitely done first by helping the person to stabilize on methadone maintenance and then working with them regularly in AOD counseling, utilizing CBT or Motivational Interviewing techniques to encourage a motivation for change. Once an individual reaches the contemplation stage, smart goals may assist the patient in preparing for a life of abstinence. Over a time period of one year

we begin to gage a patient continued motivation of remaining clean and sober as they progress through the rest of the stages of change.

With an increasing need to make policy changes directed towards opiate addictions evidenced-based practices have been showing great success in this field of research. Treatment facilities are implementing new therapies in hopes that their effectiveness will help clients achieve and maintain sobriety from opiate dependency (Andrews, D' Aunno, Pollack, & Friedmann, 2014). Health-related quality of life and quality adjusted life years are scaled that policy-makers are using today to measure “the scientific evidence related to the effectiveness, appropriateness, *and cost-effectiveness* of clinical preventive services” (U.S. Preventive Services Task Force, 2015). The importance of utilizing health related outcome measures could lead to more innovative person-centered approaches. These measures should be routinely given within the treatment setting to document progress and perceptions of one’s own quality of life thereby indicating both successful and unsuccessful treatment modalities.

## **Specific Aims/Purpose**

The purpose of this study was to assess and determine which treatment interventions are most successful in offering a higher quality of life between medically assisted treatment (MAT) programs and drug-free treatment (DFT). Our research objective was to determine whether individuals who are receiving medically assisted treatment would have a higher quality of life compared to individuals who receive drug-free treatment. Secondly, we hypothesized that higher quality of life will be associated with longer length of treatment. MAT offers great solutions in harm reduction methods; however, there is an inherent danger if an individual continues to use illicit substances. Policies may need to be created or revised in order to assess and reduce any possible harm from current treatment modalities.

Specific Aim 1: To assess the quality of life of individuals enrolled in Medically Assisted Treatment (MAT) and Drug Free Treatment (DFT) programs and to determine which treatment modalities increases the quality of life.

Specific Aim 2: To assess the association between the length of treatment and quality of life.

Specific Aim 3: To analyze current policies related to treatment programs and make recommendations in revising or creating new policies in opiate treatment.

### **Hypotheses**

Our first hypothesis is that individuals who receive MAT have the same quality of life compared to those who receive drug free treatment. Our second hypothesis is that individuals who receive increased time in residential treatment will have higher quality of life when compared to those who receive MAT.

# METHODS

## **Study design**

We conducted a quasi-non-experimental 2x2 factorial cross-sectional design with two conditions. Condition one includes individuals who are medically assisted with methadone maintenance treatment (MAT) and psychosocial therapy. Condition two includes individuals in a residential drug-free setting who also receive psychosocial therapy (abstinent/drug free modality). Due to the nature of the study random assignment will not be utilized, however convenience sampling will be used. The first condition participants will be administered the QoL survey at Mission Treatment Services. The second condition participants will be administered the QoL survey at Choices in Recovery residential treatment facility.

## **Study Sample**

Data was collected from two facilities from June 2018 to July 2018. Participants were enrolled from two different locations in North County San Diego. A total of 140 participants were used 70 from each facility. The population sample included individuals who suffer from addiction and mental health disorders and were involved with the criminal justice system. Individuals who are enrolled at Choices in Recovery a residential treatment facility in Vista California. They temporarily reside in the program on a short-term live-in basis. This provides a safe stable environment during the recovery process. Individuals enrolled at Mission Treatment Services are enrolled in an outpatient capacity. These individuals are homeless or independent living. Most of the population receiving care are below the federal poverty level (FPL) and receive Medi-Cal benefits. A very small proportion of the patients pay for their methadone and psychotherapy on a monthly basis with cash. The research protocol was approved by the International Review Board at California State University San Marcos.

**Drug Free Treatment Study Sample**

Targeted population for this study group are individuals who are on parole and have a substance use diagnosis. Funding for Choices in Recovery comes from STOP a state funded program for individuals on parole. This funding is distributed by Healthright 360 organization. The second targeted population at this facility are individuals who have HIV, and funds provided for this population are allotted from the County of San Diego Intensive case management (ICM). The third target population at this facility are individuals who pay out-of-pocket for treatment. Substance abuse treatment at this facility does not take Medi-Cal or private insurance.

**Medically Assisted Treatment Sample**

Targeted population for this study group are individuals located in Escondido, California. Individuals come from all backgrounds, but a high percentage of people admitted to this office are homeless or living under the Federal Poverty Level and have Medi-Cal insurance. Patients are offered MAT and counseling to help improve one's quality of life during a recovery process. Patients must be 18 years or older and can prove that they are opiate dependent. This facility is staffed with qualified doctors, nurses, and counselors. This program is a federally approved for profit opiate agonist treatment program and follows all federal methadone treatment protocols including participants having an opioid dependent diagnosis.

**Procedure**

Participants were from Choices in Recovery and Mission Treatment Services. Certified substance abuse counselors Ana Davies CADAC III & ICADC and Robin Hobbs CADAC II & CATC III administered the quality of life survey to individuals enrolled in either of the programs. A 92 self-administrative questionnaire assessed quality of life of individuals and substance use treatment utilizing Quality of Life Index by Ferran and Powers, characteristics of addiction, and demographics (age, gender, marital status, level of education, ethnicity, number of children, and homelessness). All data collection was confidential, and all surveys were given to

chair committee Dr. Morton (Academic Chair) for destruction after study completion. Within this population, there will be a high percentage of minorities.

The study utilized the Ferrans and Powers Quality of Life Index Generic Version III (PQoL) following a demographic survey questionnaire. The (PQoL) survey has four subcategories: health and functioning, social and economic, psychological / spiritual, and family. The internal consistency reliability for Ferrans and PQoL index range from .73 to .99 utilizing Cronbach's Alpha. The four subscales range from .70 to .94 for the health and functioning subscale, .78 to .96 for psychological / spiritual subscale, social and economic subscales ranged from .71 to .92, family subscale ranged from .63 to .92 (Ferrans and Power 1984). Secondly, temporal reliability test-retest of total score is ( $r = .79$ ), health and functioning ( $r = .72$ ), social and economic ( $r = .68$ ), psychological / spiritual ( $r = .76$ ), and family ( $r = .69$ ). There is strong content validity and a strong correlation convergent validity between the quality of life index and (Campbell et al., 1976) Measure of Life Satisfaction (Ferrans and Power 1985). The PQoL index has a strong reliability and validity measurements, this will aid researchers to determine the quality of life in substance abuse treatment modalities.

## **Data Analyses**

The statistical analysis techniques utilized in this research were chi-square, analysis of variance (ANOVA) and binary logistic regression. Confounding variables were controlled by recording satisfaction scores by subtracting 3.5 from satisfaction response for each item. Secondly, re-coded satisfaction response were multiplied by the raw response for each pair of satisfaction and importance item. Finally, we added together the weighted response. Also, to eliminate any negative numbers we will add 15 to every score. Comparison of quality life between medically assisted treatment and drug-free treatment were performed with t-test

analysis, characteristics of addiction were analyzed utilizing analysis variance (ANOVA) and chi-square was used to analyze the demographics of the sample study. All statistical tests were two-tailed with  $p < 0.05$  significance, and mean values were significant at the 95% confidence interval were reported. Data were analyzed using the IBM SPSS Statistics version 24 (IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp).

# Results

## Demographics

A chi-square and frequency were utilized to analyze the sample demographics Table 2. There were 140 participants of those participants there were 48 females (35.0%), and 88 males (64.2%). Participants age range from 18 to 55 years old, and age category were 18 to 34 (52.2%), 35 to 44 (17.6%), 45 + (30.1%). The participant's ethnicities were reported as: Asian (6.7%), Pacific Islander (8.2%), African American (4.5%), Hispanic (26.1%), White Non-Hispanic (38.1%), American Indian (11.2%), and Other (5.2%) there was significance  $p < .001$  in this category. Participants education level were Some High school (26.9%), high school graduate (13.4%), Some college and up (59.7%), there was significance in this category of  $p < .001$ . Participants marital status were single (70.8%), married (17.9%). Participants with no children were (39.3%), participants with children range from 4 to 7 children (60.7%). Finally, (18.6 %) participants reported being homeless and (80.9%) not being homeless (Table 1).

The overall age range was 18 to 55 years old with the highest participants age range was between 26 and 34, 26 in MAT and 21 in DFT with a total  $n = 47$ . Demographics of gender were 36 males in MAT and 52 in DFT with total  $n = 88$ ; 32 females in MAT and 16 in DFT with total  $n = 48$ , and 1 other in MAT which consists of  $n = 137$  in the overall gender category. Marital status were 37 singles in MAT and 51 and DFT a total of 88, married or 16 in MAT and 8 in DFT with a total of 24, divorced were 13 and MAT and 9 and DFT with a total of 22  $n = 143$ , education level some high school 13 and MAT 23 and DFT  $n = 36$ , high school graduate 0 in MAT and in DFT 18  $n = 18$ , some college 16 in MAT and 0 and DFT  $n = 16$ , college graduate 31 in MAT and 25 in DFT  $n = 56$ , postgraduate 6 in MAT and 2 in DFT  $n = 8$ , and the total for this category  $n = 134$  there was a significance of  $P < .001$ .

A one-way analysis of variance (ANOVA) was conducted to compare the characteristics of addiction between Mat treatment and DFT treatment and will report significant difference. An analysis of variance shows that the effects of addiction on physical health was significant  $F(1,136) = 8.287, p = .005$ . A second analysis of variance showed that the effects of treatment on length of absence of illegal drugs were  $F(1,138) = 14.009, p = .000$ . An analysis of variance revealed treatment site had significance levels on how many times participant or a treatment for alcohol abuse  $F(1,138) = 53.885, p = .000$ . Another analysis of variance revealed treatment site had significant difference on question 81 'have you experienced not being able to feel a euphoric high (from heroin / other opiates) after stabilization on methadone'  $F(1,131) = 47.703, p = .000$ . An analysis of variance was conducted and revealed between treatment sites were significant with participants on probation or parole  $F(1,135) = 9.640, p = .002$  Table 2.

A cross tabulation was utilized to analyze number of children between MAT and DFT, the results were 24 reported in that treatment no children and 31 reported no children and DFT  $n = 55$ , and participants that had children between 4 and 7 children 46 reported in MAT treatment and 39 in DFT  $n = 140$  there is no significance in this category.

A cross tabulation was utilized to analyze homelessness status 10 reported homeless in MAT and 16 in DFT  $n = 26$ , 58 reported no in MAT and 52 reported no in DFT with  $n = 136$  and there was no significance in this category. In the demographic's category there was a significant difference between ethnicity and education level, it revealed that White non-Hispanics that were college graduates are more likely to receive MAT than those in DFT.

An analysis of variance revealed the effect of substance abuse treatment site on the overall quality of life were not significant,  $F(1,138) = .413, p = .521$ . In addition, the subcategories of the Quality of Life Index results yield as followed: Health and Functioning

subscale  $F(1,138) = .413, p = .522$ ; Social and Economic subscale  $F(1,138) = .028, p = .868$ ; Psychological / Spiritual subscale  $F(1,138) = .041, p = .840$  the following subscale revealed non-significant differences. However, the Family Subscale  $F(1,137) = 6.55, p = .012$  revealed a slight significance (Table 3).

A binary logistic model was conducted to analyze the relationship between treatment site, demographic, characteristic of addiction, and the adjusted R square for model 1 is .846, which Model 1 indicates that treatment site has a variation of 85% of quality of life (table 4). Model 2 adjusted R-squared is .816 (Table 5) which means about 82% of variance in substance abuse treatment between sites.

## Discussion

The current study examined substance use treatment interventions MAT versus DFT, and examined participants perceived quality of life increased or decreased between the two treatment modalities. There were limitations and challenges, that made collecting accurate data challenging. In DFT the most challenging issue was participants experiencing post-acute withdrawal syndrome (PAWS). PAWS first stage is when the body experiences physical withdrawal symptoms from substance use disorder. The second stage of PAWS is emotional and psychological withdrawal and the symptoms are mood swings, anxiety, irritability, tiredness, and chronic pain depending on substance abuse preference, and the second stage can last up to a year or more depending on the number of drugs used and the length of use. One methodological strength of the study was mundane realism, the study was conducted in a natural setting which helped to control reactivity.

Another methodological weakness in the study was representativeness of population, which threatens external validity of the study. We discovered the sample population was not

equal and DFT had three sample population compared to MAT only having one targeted population. Secondly, the survey was too long for individuals who are in the beginning stages of their recovery, and DFT data collection should have been conducted in the late stages of recovery due to the PAWS. Another methodological weakness was convenience sampling for MAT treatment and DFT treatment, and no randomization was conducted which also threaten the external validity of the study.

Future research is needed to assess if substance abuse interventions are increasing the quality of life of individuals. One suggestion is to administrator a survey with fewer questions due to participants low attention span. A second suggestion is to administer survey questionnaire to a sample size that has at least three months of sobriety due to the symptoms of PAWS for both MAT and DFT programs. The opioid epidemic is a global concern with many health ramifications; causing complex treatment demands, including the availability of medically assisted treatment. There needs to be an integrative approach for adults 18 and older for developing and maintaining a quality of life. With an increasing accessibility of medication assisted treatments (MAT) there will be an increase in patient's retention for treatment, less engagement in criminal activities, and an exponential decrease in mortality rates inevitably increasing quality of life.

## **Public Health Implications**

The public health implication in this research analyzed whether MAT increases an individual's quality of life or causes more to harm individuals creating health and social disparities. Secondly, the opiate epidemic has increased mortality and morbidity rates over the past 10 years (WHO, 2017); we want to examine current policies and help make

recommendations for creating new ones or influence the revision of current policies. Implementing interventions and developing policies would hold substance abuse treatment facilities and criminal justice systems accountable. Making higher education mandatory in Alcohol and Other Drug Studies annually would increase their skills and knowledge thereby better serving our target population. Counselors need to provide proper assessments, referrals to treatment, AOD education, and health care needs to improve an individual's quality of life. Another public health implication found is that this has become a societal issue; we need to empower communities to become a part of the change. Promoting quality of life with effective communication, education, and assessing needs properly could help motivate communities into becoming a part of the solution.

A gap in research is due in part to medically assisted treatment being socially stigmatized and misunderstood. Measuring QoL represents an opportunity to consider outcomes of opioid maintenance treatment (OMT) that are more patient-centered and comparable to their overall health than complete abstinence and is considered the "gold standard of OUD treatment" (Ayanga, Shorter, & Kosten, 2016). This treatment could provide improved solutions, and increased education for individuals suffering from the opioid epidemic thereby reducing risky behavior and increasing one's quality of life. Public Health is an important factor to consider in preventive techniques for this type of epidemic. With increasing accessibility of MAT, there will be an increase in treatment retention and quality of life and a decrease in mortality rates and societal costs. This program is designed to gain data on treatment retention, length of time on medication, and expanding MAT to all eligible individuals with an OUD. This will be evaluated by successful completion of the program, increased quality of life, and decreased mortality rates within the community due to opioid overdose. More research can be instrumental in offering a

more patient-centered modality throughout an individual's treatment episode. Quality of life measures being implemented as guidelines for treatment providers, could be influential with legislation and policy-makers by providing insight to results that show a positive correlation for opiate use disorder. (Bray, 2017).

A strength for this research was breaking barriers and stigma of MAT for OUD. The paper was instrumental in closing the gap in research with OUD, and MMT, which is a contributing factor for reducing the opioid epidemic. The current opioid epidemic has increased mortality and morbidity rates throughout all of society. MAT and naloxone training would decrease these accidental deaths which would lead to a decrease in societal costs. The misconception of MAT being a contributor to the current epidemic, needs continued education within the community and institutions leading to a decrease in bias and stigma and making treatment more readily available for OUD communities. Core beliefs within society are being challenged by a growing body of research on MMT, MAT, and recovery showing great promise for the future of our nation.

The opiate epidemic has no barriers; it crosses all cultures, and destroys the lives of young, old, rich, and poor. There is a need for ongoing research with a focus on the successes of integrative care. An article found through National Institute on Drug Abuse (NIDA) clearly shows positive results to medically assisted treatment for individuals suffering from opiate dependency. Researchers found that people involved with MAT at an 18 month follow up interview showed 51.2% to be abstinent. A third follow up was conducted and showed those still using MAT services 79.6% were still drug-free (NIDA, 2015). Showing these interventions to be successful in helping individuals achieve and maintain abstinence from all opiates.

The nation needs to find ways in which to confront this issue head on. The elimination of bias towards MAT programs is essential. People have been led to believe that MAT is a substitution of one drug for another, but the statistics indicate a significant stabilization for individuals on a global scale. It is the most successful intervention to date for the successful treatment of opiate addiction. People need to be educated on MAT treatment and the successes this lends to an individual's recovery. With the implementation of evidence-based practices, comprehensive approaches, and individual psychotherapy, progress can be made helping those afflicted with the deadly disease of opiate dependency.

# TABLES

**Table 1: Unadjusted sample Characteristics by type of Addiction Treatment North County San Diego, California, 2018.**

	<i>Total</i> <i>n = (%)</i> <i>140 100</i>	<i>MAT</i> <i>n = (%)</i> <i>70 100</i>	<i>DFT</i> <i>n = (%)</i> <i>70 100</i>	<i>p-value</i>
<i>Age mean (SD)</i>		37(11.60)	35(12.60)	.357
<i>Age</i>				0.391
<35	71 (52.2)	33 (48.5)	38(55.9)	
35-44	24 (17.6)	15 (22.1)	9 (13.2)	
45+	41 (30.1)	20 (29.4)	21(30.9.)	
<i>Ethnicity,</i>				<0.001 <sup>b</sup>
<i>Asian</i>	9(6.7)	2(3.0)	7 (10.3)	
<i>Pacific Islander</i>	11 (8.2)	0(0.0)	11 (16.2)	
<i>African American</i>	6(4.5)	0(0.0)	6 (8.8)	
<i>Hispanic</i>	35 (26.1)	14 (21.2)	21(30.9)	
<i>White Non-Hispanic</i>	51 (38.1)	41 (62.1)	10(14.7)	
<i>American Indian</i>	15 (11.2)	5 (7.6)	10 (14.7)	
<i>Other</i>	7 (5.2)	4 (6.1)	3 (4.4)	
<i>Gender</i>				<0.001 <sup>b</sup>
<i>Male</i>	88 (64.2)	36 (52.2)	52 (76.5)	
<i>Female</i>	48 (35.0)	32 (46.4)	16 (23.5)	
<i>Transgender</i>	1 (0.7)	1(1.4)	0 (0.0)	
<i>Marital Status</i>				0.061 <sup>b</sup>
<i>Single</i>	110 (70.8)	50 (30.2)	60 (40.6)	
<i>Married</i>	24 (17.9)	16 (11.9)	8 (6.0)	
<i>Education</i>				<0.001 <sup>b</sup>
<i>Some High School</i>	36 (26.9)	13 (19.7)	23 (33.8)	
<i>High School Grad</i>	18 (13.4)	0 (0.0)	18 (26.5)	
<i>Some College +</i>	80 (59.7)	53(80.3)	27 (39.7)	
<i>Homeless</i>	26 (19.1)	10(14.7)	16(23.5)	0.19 <sup>b</sup>
<i>Children</i>	85(60.7)	46(65.7)	39(55.7)	0.23 <sup>b</sup>

<sup>b</sup> Computed only for a 2x2 table

**Table 2: Unadjusted Addiction characteristic by Type of Addiction Treatment; North County San Diego, California, 2018.**

	<i>Total</i> <i>n = (%)</i> 140 100	<i>MAT</i> <i>n = (%)</i> 70 100	<i>DFT</i> <i>n = (%)</i> 70 100	<i>p-value</i>
<i>Physical Health Rating</i>				<0.001 <sup>b</sup>
<b><i>Excellent</i></b>	32 (23.2)	4 (5.9)	28 (40.0)	
<b><i>Good</i></b>	48 (34.8)	31 (45.6)	17 (24.3)	
<b><i>Fair</i></b>	38 (27.5)	23 (33.8)	15 (21.4)	
<b><i>Poor</i></b>	20 (14.5)	10 (14.7)	10 (14.3)	
<i>Mental Health Rating</i>				0.409 <sup>b</sup>
<b><i>Excellent</i></b>	37 (27.0)	14 (20.9)	23 (32.9)	
<b><i>Good</i></b>	41 (29.9)	23 (34.3)	18 (25.7)	
<b><i>Fair</i></b>	38 (27.7)	20 (29.9)	18 (25.7)	
<b><i>Poor</i></b>	21 (15.3)	10 (14.9)	11 (15.7)	
<i>Chronic Medical Problems</i>	67 (47.9)	39 (55.7)	28 (40.0)	.063 <sup>b</sup>
<i>Medication for Physical Problems</i>	61(43.6)	34 (48.6)	27(38.6)	.233
	<i>Total</i> <i>n = (%)</i> 140 100	<i>MAT</i> <i>n = (%)</i> 70 100	<i>DFT</i> <i>n = (%)</i> 70 100	<i>p-value</i>
<i>Medication for Psychological and Emotional Problems</i>	61 (43.9)	36 (52.2)	25 (35.7)	.051
<i>Naloxone Training</i>	80 (58.0)	46 (66.7)	34 (49.3)	.039
<i>Use of Naloxone if given the opportunity</i>	77(55.8)	46(66.7)	31(44.9)	.010
<i>Have you experienced a euphoric high (like heroin) after taking methadone</i>	21 (15.6)	16 (23.5)	5 (7.5)	.010
<i>Have you experienced not being able to feel a euphoric high (from heroin/other opiates) after stabilization on methadone</i>	44 (33.1)	38 (57.6)	6(9.0)	.000
<i>Did a household member ever go to prison while you were growing up?</i>	48 (35.0)	22 (31.9)	26 (38.2)	.436
<i>Did you ever go to prison in your lifetime</i>	53 (39.0)	25 (36.8)	28 (41.2)	.598

	<i>Total</i> <i>n = (%)</i> 140 100	<i>MAT</i> <i>n = (%)</i> 70 100	<i>DFT</i> <i>n = (%)</i> 70 100	<i>p-value</i>
<i>Do you have any current legal issues pending?</i>	30 (22.1)	12 (17.4)	18 (26.9)	.183
<i>Are you on probation or parole</i>	42 (30.7)	13 (9.5)	29 (21.2)	.003
	<i>Total</i> <i>x̄ (SD)</i>	<i>MAT</i> <i>x̄ (SD)</i>	<i>DFT</i> <i>x̄ (SD)</i>	
<i>Chronic Medical Problems in past 30 days mean, (SD)</i>	.55 (.845)	.65 (.901)	.46 (.785)	.206
<i>Length of Treatment</i>	1.73(1.313)	2.39(1.01)	1.07(1.255)	.000
<i>Length of Abstinence from Alcohol</i>	1.39(1.407)	1.61(1.438)	1.16(1.347)	.054
	<i>Total</i> <i>x̄ (SD)</i>	<i>MAT</i> <i>x̄ (SD)</i>	<i>DFT</i> <i>x̄ (SD)</i>	
<i>Length of abstinence in months of illegal drugs</i>	1.41(1.39)	1.83(1.32)	.99(1.291)	.000
<i>Number of times treated for alcohol abuse</i>	.54 (.501)	.27 (.448)	.80 (.403)	.000
<i>Number of times treated for drug abuse</i>	.92 (.270)	.96 (.204)	.89 (320)	.118

**Table 3: Quality of Life Scale and Subcategories; North County San Diego, California, 2018**

	<i>Total</i> <i>x̄ (SD)</i>	<i>MAT</i> <i>x̄ (SD)</i>	<i>DFT</i> <i>x̄ (SD)</i>	<i>p-value</i>
<i>Overall Quality of Life</i>	18.20(5.7)	18.34(5.17)	17.71(6.2)	.521
<i>Health Functioning Subscale</i>	17.86 (5.8)	18.18 (5.5)	17.54 (6.1)	.522
<i>Social and Economic Subscale</i>	17.34 (6.5)	17.44 (5.8)	17.25 (7.1)	.868
<i>Psychological/Spiritual Subscale</i>	18.08 (6.9)	17.96 (6.5)	18.20 (7.2)	.840
<i>Family Subscale</i>	19.59 (6.7)	21.01 (5.5)	18.15 (7.5)	.012

**Table 4: Logistic Regression analyze the relationship of Characteristics of Addiction, Sample Demographics, by type of Addiction Treatment North San Diego County, California, 2018.**

	<i>Exponential B</i>	<i>95% C.I)</i>	<i>EXP (B)</i>	<i>Nagelkerke R<sup>2</sup></i>
<i>Model 1</i>		Lower	Upper	.846
<i>Gender</i>	.175	.021	1.48	
<i>Physical Health Rating</i>	.547	.204	1.46	
<i>Mental Health Rating</i>	2.42	.360	16.36	
<i>Chronic Medical Problems</i>	4.12	.560	30.45	
<i>Medication for psychological or emotional problems</i>	.179	.019	1.70	
<i>Length of treatment in months</i>	.279	.126	.619	
<i>Length of Abstinence from Alcohol</i>	.747	.352	1.58	
<i>Number of times treated for alcohol abuse</i>	12.23	1.94	77.15	
<i>Naloxone Training</i>	1.62	.181	14.63	
<i>Use of Naloxone if given the opportunity</i>	3.30	.351	31.04	
<i>Have you experienced a euphoric high (like heroin) after taking methadone?</i>	.890	.040	19.60	
<i>Have you experienced not being able to feel a euphoric high (from heroin/other opiates) after stabilization on methadone?</i>	98.96	5.48	1786.84	
<i>Are you on Probation or Parole?</i>	.107	.016	.710	

	<i>Exponential B</i>	<i>95% C.I)</i>	<i>EXP (B)</i>	<i>Nagelkerke R<sup>2</sup></i>
<i>Highest level of education completed</i>	.644	.198	2.09	
<i>White</i>	.633	.435	.921	

a. Dependent variable is Site of treatment

**Table 5: Logistic Regression analyze the relationship of Characteristics of Addiction, and Sample Demographics, by type of Addiction Treatment North San Diego County, California, 2018.**

<i>Model 2</i>	<i>Exponential B</i>	<i>95% C.I</i>	<i>EXP (B)</i>	<i>Nagelkerke R<sup>2</sup></i>
		Lower	Upper	.816
<i>Physical Health Rating</i>	.930	.448	1.93	
<i>Length of treatment in months</i>	.356	.199	.6	
<i>Number of times treated for alcohol abuse</i>	12.63	2.73	58.44	
<i>Have you experienced not being able to feel a euphoric high (from heroin/other opiates) after stabilization on methadone?</i>	57.89	6.06	552.25	
<i>Are you on Probation or Parole</i>	.172	.037	.793	
<i>Gender</i>	.132	.027	.648	
<i>Highest level of education completed</i>	.468	.162	1.35	
<i>White</i>	.789	.578	1.07	

a. Dependent variable Site of treatment

# Appendix A

Date \_\_\_\_\_ ID# \_\_\_\_\_ Site \_\_\_\_\_

## QUALITY OF LIFE

**PART 1.** For each of the following, please choose the answer that best describes how satisfied you are with that area of your life. Please mark your answer by circling the number. There are no right or wrong answers.

### Survey Scale

- 1 =Very Dissatisfied
- 2 =Moderately Dissatisfied
- 3 =Slightly Dissatisfied
- 4 =Slightly Satisfied
- 5 =Moderately Satisfied
- 6 =Very Satisfied

### HOW SATISFIED ARE YOU WITH:

1. Your health?	1	2	3	4	5	6
2. Your health care?	1	2	3	4	5	6
3. The amount of pain that you have?	1	2	3	4	5	6
4. The amount of energy you have for everyday activities?	1	2	3	4	5	6
5. Your ability to take care of yourself without help?	1	2	3	4	5	6
6. The amount of control you have over your life?	1	2	3	4	5	6
7. Your chances of living as long as you would like?	1	2	3	4	5	6
8. Your family's health?	1	2	3	4	5	6
9. Your children?	1	2	3	4	5	6
10. Your family's happiness?	1	2	3	4	5	6
11. Your sex life?	1	2	3	4	5	6
12. Your spouse, lover, or partner?	1	2	3	4	5	6
13. Your friends?	1	2	3	4	5	6
14. The emotional support you get from your family?	1	2	3	4	5	6
5. The emotional support you get from people other than your family?	1	2	3	4	5	6

(Please Go To Next Page)

### Survey Scale

- 1 =Very Dissatisfied
- 2 =Moderately Dissatisfied
- 3 =Slightly Dissatisfied
- 4 =Slightly Satisfied
- 5 =Moderately Satisfied

6 =Very Satisfied

HOW <b><u>SATISFIED</u></b> ARE YOU WITH:						
16. Your ability to take care of family responsibilities?	1	2	3	4	5	6
17. How useful you are to others?	1	2	3	4	5	6
18. The amount of worries in your life?	1	2	3	4	5	6
19. Your neighborhood?	1	2	3	4	5	6
20. Your home, apartment, or place where you live?	1	2	3	4	5	6
21. Your job (if employed)?	1	2	3	4	5	6
22. Not having a job (if unemployed, retired, or disabled)?	1	2	3	4	5	6
23. Your education?	1	2	3	4	5	6
24. How well you can take care of your financial needs?	1	2	3	4	5	6
25. The things you do for fun?	1	2	3	4	5	6
26. Your chances for a happy future?	1	2	3	4	5	6
27. Your peace of mind?	1	2	3	4	5	6
28. Your faith in God?	1	2	3	4	5	6
29. Your achievement of personal goals?	1	2	3	4	5	6
30. Your happiness in general?	1	2	3	4	5	6
31. Your life in general?	1	2	3	4	5	6
32. Your personal appearance?	1	2	3	4	5	6
33. Yourself in general?	1	2	3	4	5	6

(Please Go To Next Page)

**PART 2.** For each of the following, please choose the answer that best describes how **important** that area of your life is to you. Please mark your answer by circling the number. There are no right or wrong answers.

**Survey Scale**

- 1 =Very Unimportant
- 2 =Moderately Unimportant
- 3 =Slightly Unimportant
- 4 = Slightly Important
- 5 =Moderately Important
- 6 =Very Important

HOW **IMPORTANT** TO YOU IS:

34. Your health?	1	2	3	4	5	6
35. Your health care?	1	2	3	4	5	6
36. Having no pain?	1	2	3	4	5	6
37. Having enough energy for everyday activities?	1	2	3	4	5	6
38. Taking care of yourself without help?	1	2	3	4	5	6
39. Having control over your life?	1	2	3	4	5	6
40. Living as long as you would like?	1	2	3	4	5	6
41. Your family's health?	1	2	3	4	5	6
42. Your children?	1	2	3	4	5	6
43. Your family's happiness?	1	2	3	4	5	6
44. Your sex life?	1	2	3	4	5	6
45. Your spouse, lover, or partner?	1	2	3	4	5	6
46. Your friends?	1	2	3	4	5	6
47. The emotional support you get from your family?	1	2	3	4	5	6
48. The emotional support you get from people other than your family?	1	2	3	4	5	6

(Please Go To Next Page)

**Survey Scale**

- 1 =Very Unimportant  
2 =Moderately Unimportant  
3 =Slightly Unimportant  
4 = Slightly Important  
5 =Moderately Important  
6 =Very Important

<b>HOW <u>IMPORTANT</u> TO YOU IS:</b>						
49. Taking care of family responsibilities?	1	2	3	4	5	6
50. Being useful to others?	1	2	3	4	5	6
51. Having no worries?	1	2	3	4	5	6
52. Your neighborhood?	1	2	3	4	5	6
53. Your home, apartment, or place where you live?	1	2	3	4	5	6
54. Your job (if employed)?	1	2	3	4	5	6
55. Having a job (if unemployed, retired, or disabled)?	1	2	3	4	5	6
56. Your education?	1	2	3	4	5	6
57. Being able to take care of your financial needs?	1	2	3	4	5	6
58. Doing things for fun?	1	2	3	4	5	6
59. Having a happy future?	1	2	3	4	5	6

<b>HOW <u>IMPORTANT</u> TO YOU IS:</b>						
60. Peace of mind?	1	2	3	4	5	6
61. Your faith in God?	1	2	3	4	5	6
62. Achieving your personal goals?	1	2	3	4	5	6
63. Your happiness in general?	1	2	3	4	5	6
64. Being satisfied with life?	1	2	3	4	5	6
65. Your personal appearance?	1	2	3	4	5	6
66. Are you to yourself?	1	2	3	4	5	6

Please either write in your answer or circle your choice of answers.

**67. In comparison, to others your own age how would you rate your physical health?**

- A. Excellent
- B. Good
- C. Fair
- D. Poor

**68. In comparison to others your own age, how would you rate your overall mental health?**

- A. Excellent
- B. Good
- C. Fair
- D. Poor

**69. Do you have any chronic medical problems which continue to interfere with your life?**

Yes                      No

**70. How many days have you experienced medical problems in the past 30 days**

\_\_\_\_\_ (days)?

**71. Are you taking any prescribed medication on a regular basis for a physical problem?**

Yes                      No

**72. Have you been prescribed medication for any psychological or emotional problems?**

**Yes            No**

**73. What is your length of treatment \_\_\_\_\_ (years/months)?**

**74. What is your length of abstinence of alcohol (not using drugs or alcohol) \_\_\_\_\_  
(years/months)?**

**75. What is your length of abstinence of illegal drugs \_\_\_\_\_  
(years/months)?**

**76. Would you be willing to take a naloxone training (opiate overdose training)?**

**Yes            No**

**77. Would you be willing to keep naloxone on hand if given the opportunity?**

**Yes            No**

**78. How many times in your life have you been treated for alcohol abuse \_\_\_\_\_  
(number of times)?**

**79. How many times in your life have you been treated for drug abuse \_\_\_\_\_  
(number of times)?**

**80. Have you experienced a euphoric high (like heroin) after taking methadone?**

**Yes            No**

**81. Have you experienced not being able to feel a euphoric high (from heroin/other opiates)  
after stabilization on methadone?**

**Yes            No**

**82. Did a household member ever go to prison while you were growing up?**

**Yes            No**

**83. Did you ever go to prison in your lifetime?**

Yes No

**84. Do you have any current legal issues pending?**

Yes No

**85. Are you on probation or parole?**

Yes No

**86. What is your age \_\_\_\_\_ (years old)?**

**87. What is your gender?**

- A. Male
- B. Female
- C. Other

**88. What is your marital status?**

- A. Single
- B. Married
- C. Divorced

**89. What is the highest level of education you have completed?**

- A. Some high school
- B. High school graduate
- C. Some college
- D. College graduate

**90. What is your Ethnicity?**

- A. Asian
- B. Pacific Islander
- C. African American

D. Hispanic

E. White (non- Hispanic)

F. American Indian

G. Other

91. How many children do you have? \_\_\_\_\_

92. Are you homeless? Yes          No

**Thank you for participating you have been a valuable asset to this project!**

# Appendix B

## Quality of Life

### *A Public Health Project*

Two students attending California State University San Marcos are inviting you take a brief survey. We are trying to learn about quality of life for individuals attending substance abuse treatment and could use your help by answering a few questions!



- ★ If you participate in the study you will be given a free coffee and donut as a thank you.
- ★ The packet will take no longer than 25 minutes to complete.
- ★ Your help will be influential in making great changes to the stigma and biases of the opioid epidemic.

### *Purpose of Study*

It is our goal to fill a gap in research by assessing the quality of life of individuals enrolled in Medically Assisted Treatment (MAT) and Drug Free Treatment (DFT) programs and to analyze what treatment modalities increase the quality of life.

Robin Hobbs & Ana Davies (MPH Students)

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