

OPIOID TREATMENT FOR INDIVIDUALS WITH  
CO-OCCURRING CHRONIC NON-MALIGNANT  
PAIN AND ADDICTION

BY

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## Dedication

This research project is dedicated to all of those individuals who suffer from co-occurring chronic non-malignant pain and addiction during their quest for adequate pain management.

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## Abstract

Chronic non-malignant pain (CNMP) is a major health problem in the United States. When coupled with addiction, under-treatment of this pain often occurs. Health professionals hesitate to prescribe opioids for pain management in patients with co-occurring CNMP and addiction, based on the belief that such treatment may increase the risk of relapse. In the State of Michigan, the Health Professional Recovery Committee (HPRC) created an innovative approach to this problem through the development of a pain management program for licensed health professionals with co-occurring CNMP and addiction. This retrospective case-control study compared relapse episodes between participants in the pain management program (n=27) and those who also have an addiction but do not suffer from CNMP (n=54). The purpose of this research project was to determine the relationship between opioid treatment for CNMP and rate of relapse. From these data, an effort can be made to educate those who currently treat individuals with CNMP. Results from this research indicate there is no significant difference in total relapse episodes between the two groups ( $t=.519$ ;  $df=.79$ ;  $p=.605$ ). In conclusion, these findings suggest that physicians should consider using opioid treatment as a pain management technique in patients with co-occurring CNMP and addiction without fear of an increase in relapse episodes.

## Chapter I

### Introduction

#### Opioid Treatment for Individuals with Co-occurring Chronic Non-Malignant Pain and Addiction

Opioid treatment for individuals with co-occurring chronic non-malignant pain (CNMP) and addiction has been a questionable and unresolved issue for researchers and health professionals for many years. For the purpose of this research, addiction refers to an addiction to alcohol and/or drugs unless otherwise specified. Some physicians possess a fear of prescribing opioids based on the belief that a person diagnosed with an addiction should not receive opioids for their pain management due to the increased risk of relapse. As Nichols (2003) explains, this often leads to under-treatment of pain in addicted patients. Consequently, the patient will request additional pain medication or an increase in dosage, confirming the physician's fear.

#### *Purpose*

To address this issue, in April of 1999, the Michigan Health Professional Recovery Corporation (MHPRC) implemented an innovative pain management pilot program that was established by the Health Professional Recovery Committee (HPRC). The HPRC's membership includes a representative from each profession eligible to be treated by MHPRC (n=19) plus two persons representing the general public. The pain management pilot program was designed to monitor licensed health professionals with co-occurring CNMP and addiction during their recovery process. Data collected



throughout the initial three-year pilot period and continuance of the program include information on program participants' medication use and relapse episodes. Based on E. M. Rogers' Diffusion of Innovations theory, the purpose of this research project is to determine the relationship between opioid treatment for individuals with co-occurring CNMP and addiction, as well as the rate of addiction relapse episodes. This research will provide useful data which can be utilized to educate individuals, such as physicians and nurses, who currently treat patients with CNMP.

### *Hypothesis*

The null hypothesis ( $H_0$ ) for this project is as follows: Individuals with co-occurring CNMP and addiction are no more likely to relapse if treated with opioids for pain management than individuals who have an addiction yet do not suffer from CNMP. Therefore, the research hypothesis ( $H_a$ ) is that individuals with co-occurring CNMP and addiction are more likely to relapse if treated with opioids for pain management than individuals who have an addiction yet do not suffer from CNMP. Thus, this research will answer the question: Does opioid treatment for CNMP increase the rate of relapse episodes in individuals who have an addiction?

### *Significance*

“Providing safe and successful management of pain to addicted patients can be a challenge” (Nichols, 2003, p. 87). Currently, there is an insignificant amount of research and inadequate existing data pertaining to opioid treatment for individuals with co-occurring CNMP and addiction. Fletcher (2003) states, MHPRC's pain management pilot program is the first program in the United States to treat health care professionals

with co-occurring CNMP and addiction; thus, the results of this study will be of great interest and benefit to health professionals nationwide.

### *Definitions*

It is important to clearly define the terms and variables included in this research.

These definitions are as follows:

1. Addiction: “According to the American Psychiatric Association in the Diagnostic and Statistical Manual of Mental Disorders (DSM IV), addiction is the preoccupation with the acquisition of the drug, compulsive use of the drug despite adverse consequences, and relapse” (Newshan, 2000, p. 81).
2. Health Professional Recovery Committee (HPRC): “A membership board which includes eligible licensed health professionals and the general public. The HPRP is administered under the guidance of the HPRC (Department of Consumer and Industry Services” (DCIS), 2002, ¶ 4).
3. Michigan Health Professional Recovery Program (MHPRP): “The MHPRP was established by legislation in 1993. This confidential program is designed to encourage health professionals to seek treatment before their impairment harms a patient or damages their career through disciplinary action” (DCIS, 2002, ¶ 3).
4. Michigan Health Professional Recovery Corporation (MHPRC): “A private-sector contractor whose responsibility is to administer the MHPRP” (DCIS, 2002, ¶ 4).
5. Opioids: “A class of highly addictive drugs (e.g., heroin, codeine, methadone, morphine) that are derived from the opium poppy plant, contain opium, or are

produced synthetically and have opium-like effects. Opioid drugs relieve pain, dull the senses and induce sleep” (Web definition, 2002, p. 1).

6. Physical dependence: “Occurs when stopping the drug. Results in predictable signs and symptoms of withdrawal, depending on the particular drug” (Newshan, 2000, p. 81).

7. Relapse episode: “Recurrence of disease or symptom after apparent recovery” (Hyperdictionary, 2000, p.1).

8. Tolerance: “Is indicated by the need for increased doses or more frequent timing of the medication to achieve the initial effects of the drug. Tolerance and physical dependence are necessary physiologic adaptations and responses of the brain to regular use of a drug. However, the presence of tolerance and physical dependence is not specific for addiction” (Newshan, 2000, p. 81).

## Chapter II

### Literature Review

#### *Pain*

Pain is a serious public health problem. According to Wehrwein and Warfield (2002), it is estimated that eighty-six million Americans experience some degree of disability caused by pain. In addition, forty million medical visits are attributed to pain in the United States annually. It is also estimated that forty-five percent of all Americans will seek medical care for pain at some point in their lifetime. Thus, the impact on individuals and society is tremendous.

Pain is categorized as either acute or chronic. Acute pain is usually temporary and often results from surgeries, fractures, infections, and/or burns. Chronic pain can also result from these events; however, it persists for more than three to six months and may disrupt a person's overall quality of life (QOL). A subset of chronic pain is CNMP. This category excludes pain resulting from a terminal illness, such as cancer (Physicians' Desk Reference (PDR), 2001). CNMP is the focus of this study.

CNMP and its treatment are very costly. "Pain is one of the most common reasons people consult a physician, yet it frequently is inadequately treated, leading to enormous social cost in the form of lost productivity, excessive healthcare expenditures, and needless suffering" (The use of opioids, 1997, p. 1). The American Chronic Pain Association (ACPA) states that business and industry lose approximately \$90 billion annually to sick time, reduced productivity, and direct medical costs due to chronic pain among employees. Furthermore, Medicare costs are estimated at \$124 million per year (Goodman, 2003). Still, when inadequately treated, pain has an adverse effect on afflicted

individuals' QOL. It can interfere with multiple activities including sleep, mood, ability to drive, sexual relations, appetite, concentration, social activities, and work.

Co-occurring CNMP and addiction creates conflict in adequate pain management.

### *Addiction*

Addiction in the United States is on the rise. According to the U.S. Substance Abuse and Mental Health Administration, approximately 16.6 million Americans in 2001 were classified as either dependent on or abusing either alcohol or illicit drugs. This accounts for 7.3% of the total population in the United States (Nichols, 2003). To quote Nichols (2003):

In a consensus definition, the American Academy of Pain Management, the American Pain Society, and the American Society of Addiction Medicine agreed that addiction is a primary, chronic, neurobiologic disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. The disease is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving (p. 87).

Furthermore, Newshan (2002) stresses the importance of remembering that relapse is part of the disease of addiction. Therefore, addiction and the potential for relapse create conflict in the practice of pain management.

### *Pain Management*

Although opioids are an essential part of a pain management plan, "there is currently no nationally accepted consensus for the treatment of chronic pain not due to cancer, yet the economic and social costs of chronic pain are substantial, with estimates

ranging in the tens of billions of dollars annually” (The use of opioids, 1997, p. 1). Thus, CNMP management and treatment options are becoming a high priority in the United States.

Some treatment options for CNMP include acupuncture, biofeedback, meditation, physical therapy, massage, and drug therapy. Opioids are commonly used in drug therapy to relieve pain from a variety of conditions (Ross-Flanigan, 1999). Opioids are successful because they act to bind receptors in the brain and spinal cord, thereby blunting transmission of pain messages to the brain (Fear of opioid, 2002). However, physicians frequently under-treat patients with co-occurring CNMP and any type of chemical addiction for fear of exposure to relapse episodes.

The overall goal of treating CNMP is to decrease pain while increasing function and QOL, and also to use medicines with the least amount of undesirable side effects (Sullivan, 2001 & Pain under-treated, 2001). When physicians focus only on addiction and relapse, medical care declines and patients subsequently suffer. Importantly, the majority of people who are prescribed opioids by physicians will not become addicted (Drug Enforcement Administration (DEA), 2001). A process that will help alleviate the possibility of relapse is to involve an addiction specialist when an addiction is present; but it is inappropriate to deny opioid analgesia to all addicts (Collins & Streltzer, 2003).

#### *Pain Management Goals and Guidelines*

Due to the separate evolution of addiction medicine, as well as pain medicine, pain management for individuals with an addiction has been unsatisfactory.

“Addictionists and pain specialists are being challenged to re-evaluate their positions, and most importantly, to work together for the common good of the patient” (Feldman, 2002,

p. 2). This can be achieved through a joint consensus of pain management goals such as eliminating pain or reducing it to its lowest level, alleviating the suffering caused by CNMP, and maximizing the patient's QOL (Aronoff, 2000).

Newshan (2000) states that pain management goals can be achieved through a set of guidelines established for the treatment of CNMP in non-addicted individuals. These guidelines include: 1) assessing the pain; 2) choosing the appropriate drug therapy; 3) evaluating the patient's response to the drug; 4) choosing the least invasive route of administration; and 5) prescribing the appropriate dosage which will alleviate the pain with the fewest side effects. "Patients with addictive disease and pain have the right to be treated with dignity, respect, and the same quality of pain assessment and management as all other patients" (Nichols, 2003, p. 87).

### *History of Opioid Treatment*

As discussed in the publication, "Re-evaluating opioids" (2002), pain management for CNMP has a long history, beginning in the 1960s when prescribing opioids for the treatment of pain was virtually nonexistent. Continuing through the 1980s with the government's war on drugs, physicians became even more nervous with prescribing opioids. However, in the 1990s there began a shift toward the liberal use of opioids in CNMP management. Many physicians believe opioid prescribing has gotten out of hand. Dr. Joel Saper (2001), a specialist in pain management, fears that primary care physicians are prescribing opioids as a first-line treatment program in patients who have not been evaluated by a pain specialist.

*Controversy*

As the literature indicates, many health professionals have debated whether or not opioids should be utilized in the treatment of CNMP patients with co-occurring addiction. These debates have included such topics as unfounded patient pain, methadone treatment for pain, non-relief of pain due to an addiction, ineffective pain relief through opioid treatment, QOL while being treated with opioids, and opioid induced addiction relapse.

Many physicians suspect the pain may not be real and the patient simply wants narcotic drugs for the recreational purpose of getting “high.” Streltzer (2003) believes that while patients complain of more pain, physicians increase dosage or dosing frequency all too often in the quest to manage pain in individuals with an addiction. Conversely, Newshan (2000) feels that pain is subjective and physicians need to err on the side of compassion unless proven otherwise. Moreover, physicians are ethically and legally bound to treat patients with CNMP regardless of their substance use and/or abuse history.

Some physicians believe that a patient utilizing methadone treatment for an addiction will not need additional pain medication. Instead they feel the methadone treatment alone will alleviate their pain. In contrast, Newshan (2000) describes those individuals on methadone as not only having the normal range of pain, but that they may also need higher doses of opioids administered more frequently. This is likely due to the narcotic tolerance patients develop over time.

Many physicians believe opioid treatment will not relieve their patient’s pain because of the patient’s addiction. Newshan (2000) maintains there is a common belief that addiction results in a higher tolerance to pain medication, thereby requiring higher



analgesic doses. However, this is a possible consequence of under-medicating, which in turn results in a patient requesting a higher dosage or increased frequency of pain medication.

The effectiveness of opioids for pain management is a topic of much research in the literature. As stated in “Re-evaluating opioids” (2002), many studies have shown that 35% of patients do not respond to opioid drugs and an estimated 40% cannot tolerate the drugs. Collins & Streltzer (2003) believe that the chronic intake of opioids actually increases sensitivity to pain. This position is supported by a physiological process which occurs when the body shuts down intrinsic pain fighting mechanisms and develops new pain pathways to increase the ability to experience pain. However, the U.S. Drug Enforcement Administration, along with 21 other health groups, states that opioids offer the most effective way to treat CNMP and are often the only option that provides significant relief.

Related to QOL, it is often questioned whether opioid treatment enhances or hinders functionality while at the same time alleviating pain. In “Re-evaluating opioids” (2002), opioid-related side effects often include diminished cognitive functioning, drowsiness, constipation, impaired vision, and the inability to drive. To contrast this, Manzer (2003) found patients reporting a 58% reduction in pain, as well as improvement with activities of daily living.

Addiction relapse is a common fear for physicians as well as patients, family members, friends, and colleagues. Because addicts are high risk patients, special care and attention needs to be placed on the monitoring of such individuals. However, this fear is not a sufficient reason for withholding pain medication. Newshan (2000) notes there have

been various non-conclusive studies conducted in the area of opioid treatment and subsequent relapse episodes. According to Nichols (2003), the stress of unrelieved pain may actually contribute to relapse episodes in the recovering patient or increased drug use in the patient who is actively using or abusing drugs.

Proponents of opioid treatment for CNMP in individuals with addiction argue that it is time for physicians to move beyond the stigma attached to opioid use, including worries about addiction and relapse, and recognize the drugs' value for patients with intractable pain (Mitka, 2003). "Addiction is not caused by exposure to drugs solely. It's caused by exposure to drugs in the context of multiple risk factors" (Manzer, 2003, p. 64).

#### *Relevant Research*

Research conducted by David E. Joranson and colleagues (2000) strongly supports the use of opioid treatment for CNMP. Their research examined trends in abuse of opioid analgesics. This research reviewed hospital records to determine usage of five different Schedule II opioid analgesics (Appendix A) – fentanyl, hydromorphone, meperidine, morphine, and oxycodone. They compared medical use of these five opioid medications with the total number of drug abuse cases found in the same medical record review. Interestingly, the investigation concluded that the medical use of morphine increased by 59 percent, while fentanyl increased 1,168 percent (ten-fold), oxycodone increased 23 percent, and hydromorphone increased 19 percent. In addition the authors found a 35 percent decrease in meperidine; the only decrease among the five opioids reviewed (Increasing use of opioids, 2000). However, "relative to the total number of drug abuse cases, the abuse of these painkillers decreased from 5.1 percent to 3.8 percent

of overall cases” (Increasing use of opioids, 2000, p.1). This research had some significant findings, which indicate a trend. While medicinal drug use increased, drug abuse decreased.

Overall, Joranson and colleagues (2000) concluded that the current trend of increasing medical use of opioids to treat pain does not appear to contribute to opioid abuse. As a side note, Joranson adds that the World Health Organization (WHO) views the increase in opioid use as an indication that efforts to manage pain are improving (Increasing use of opioids, 2000). However, “Deficiencies in providing adequate pain management have persisted, despite multiple attempts to educate the medical community” (Miller, 2000, p. 2317). Barriers such as attitudes, knowledge, legalities, and concerns about physical dependence, tolerance, and addiction still persist when dealing with medical use of opioids.

Keeping with the research trends, a Michigan-based prospective cohort study conducted by Green and colleagues (2003) examined the potential differences in physician pain management based on the type of pain and patient demographic characteristics. The purpose of this study was to determine pain management knowledge, attitudes, and physician prescribing habits. The physicians surveyed for this study reported that their goals for relieving acute and cancer pain were much higher when compared to treating chronic pain. As such these actions may lead to the under-treatment of CNMP (Pain, 2003).

In addition, research by Potter and colleagues (2001) analyzed the attitudes and practices of primary care physicians regarding the use of opioids to treat CNMP. The study also examined the factors associated with the willingness to prescribe opioids for

CNMP. The results of this study were broken down into three areas: physician's attitudes, practices, and willingness to prescribe. The authors found that, when examining attitudes, only 15% of the physicians agreed with the statement, "I enjoy working with patients who have CNMP," while just 15% felt that daily opioids have no place in the treatment of CNMP. Moreover, it appeared that physicians' major concern was physical dependence (Potter et al., 2001).

As for measuring physicians' prescribing practices, 41% reported that they generally wait for the patient to request opioids for their pain management versus taking the initiative themselves. Furthermore, it was found that 37% of the physicians surveyed are never the first provider to prescribe opioids; they generally wait for other specialists to initiate the treatment. When it involves patients with a former or current substance abuse disorder; 16% of physicians said they would never prescribe to a previous substance abuser and 42% would never prescribe to a current substance abuser (Potter et al., 2001).

Finally, Potter and colleagues (2001) report that physicians' lower level of concern about physical dependence, tolerance, and addiction were the most significant predictors of the willingness to prescribe opioids for patients with CNMP. Potter and colleagues (2001) describes physicians' willingness to prescribe:

Few clinical studies of opioids in the alleviation of CNMP have been conducted, and most have been small, retrospective, uncontrolled, or focused on patients seen in referral settings. In clinical practice the absence of definitive data on the risks and benefits of opioids for CNMP presents a dilemma. Decisions about potency, frequency, and duration of treatment must be made without benefit of evidence-

based guidelines and with the knowledge that state medical boards or other legal authorities may scrutinize opioid prescriptions. More research is needed to determine the root of physician concerns about physical dependence, tolerance, and addiction (p. 145).

*Theory: Diffusion of Innovations*

Along with additional research in the area of opioid treatment for CNMP, education plays a major role in changing the attitudes and beliefs of health professionals. Research results need to be disseminated to health professionals in the position of treating patients with CNMP. The majority of health professionals obtain new information through professional journals; such as *The American Journal on Addictions*; *American Journal of Nursing*; *Nursing Research*; *American Physician*; and *The Journal of the American Medical Association (JAMA)*. Current research and education is disseminated through professional associations, e.g., The American Academy of Pain Medicine, the American Pain Society, and the American Chronic Pain Association. In addition, conferences and seminars are an excellent source of knowledge transfer within the profession.

E. M. Rogers' Diffusion of Innovations theory is a health-related theory which addresses the issues of how social practices are spread within a society or from one society to another. This theory attempts to identify predictable patterns of program adoption across population groups (Oldenburg & Parcel, 2002). Diffusion is defined by Rogers as "the process by which an innovation is communicated through certain channels over time among the members of the social system." In addition, Rogers (1983) defines

innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (Oldenburg & Parcel, 2002, p. 314).

As Oldenburg & Parcel (2002) discuss, the Diffusion of Innovations theory consists of five stages: 1) innovation of development; 2) dissemination; 3) adoption; 4) implementation; and 5) maintenance. Innovation of development includes all decisions, actions, and their impacts from the start of a program through its development. Originators of the innovation play a major role in identifying the target audience and contributing to further development of the innovation. They are involved in providing information and feedback on content, design, and presentation.

Oldenburg & Parcel (2002) continue on to state, “Dissemination is defined as an active approach for knowledge transfer from the resource system to the user system” (p. 314). This involves identifying various communication channels by which the target audience can be reached (Oldenburg & Parcel, 2002). Many health professionals likely obtain new information via professional journals, professional associations, conferences, and seminars.

According to Rogers (1995), the adoption stage involves the uptake of the program by the target audience, which requires movement through the innovation’s stages of knowledge, persuasion or attitude development, decision, implementation, and finally confirmation (Oldenburg & Parcel, 2002). Issues regarding the needs of the target audience, their attitudes, behaviors, and barriers must also be addressed. This can be accomplished by increasing individuals’ awareness of the innovation by explaining how it can be useful to them as well as how to put it into practice (Oldenburg & Parcel, 2002).

Initial use of the program defines the implementation stage, during which

self-efficacy and skills building are essential. It is imperative that the target audience has the opportunity for training, trouble shooting, and the opportunity to ask questions (Oldenburg & Parcel, 2002). The implementation stage prepares the individual for the maintenance of the innovation.

The last stage of the Diffusion of Innovations theory is maintenance. This refers to the ongoing implementation and continued use of the innovation in practice (Oldenburg & Parcel, 2002). Because medical technology and information is continually changing, maintenance in this arena may not always apply nor may it always be beneficial. An understanding of how the five stages of the Diffusion of Innovations theory are implemented is critical to the impact of changes in health behavior.

#### *Michigan Health Professional Recovery Program (MHPRP)*

The MHPRP's pain management pilot study is the first program in the country to treat health care professionals with co-occurring CNMP and addiction (Fletcher, 2003). The purpose of this pain management program is to admit into the program and monitor licensed health care professionals who suffer from co-occurring CNMP and addiction and hence, may be prescribed opioids as a treatment method. Development of the program began in April of 1999. The Health Professional Recovery Committee (HPRC) established the program's procedural guidelines, along with various stakeholders, including pain management providers, the Department of Consumer & Industry Services (DCIS) staff, as well as the MHPRC staff (MHPRC, 1999). The MHPRC, as the independent contractor of the MHPRP, is responsible for operationalizing the pilot program according to the guidelines set forth by the HPRC.

The MHPRC sponsored several conferences designed to introduce the pain management pilot program. On March 20 of 2001, the MHPRC presented information regarding the management and monitoring of chronic pain and addiction in health care professionals. Audience members included addictionists, pain management specialists, HPRC members, staff from the Attorney General's Office, and the DCIS staff. In September of 2002, the pain management pilot program was presented to the Federation of Physician Health Programs. Discussion involved the value and the need for replication in other state monitoring programs (MHPRC, 1999). Additional conferences were held around the State of Michigan to present the pain management pilot program and to solicit feedback from qualified health professionals and political parties.

The MHPRP's four-year pain management program was accepted following the implementation of a three-year pilot program. Data have been collected on medication use and relapse episodes on all participants since the inception of the pilot program; and they continue to be collected. It is the purpose of this research project to determine the relationship between opioid treatment for CNMP and rate of relapse in an effort to acquire information that can be utilized to educate those who currently treat individuals with CNMP, such as physicians and nurses. This information and education can then assist in the implementation and maintenance of health care practices which incorporate the use of opioid treatment for individuals who have co-occurring CNMP and addiction.



## Chapter III

### Methodology and Design

#### *Subjects*

The target population for this study consisted of all currently practicing health professionals (nurses, physicians, and others) licensed to practice in the State of Michigan. The sample included licensed health professionals who were designated as participants in the MHPRP from April 1, 1999 through June 30, 2003. For inclusion in the study, participants had to meet the following criteria: Must have been in the MHPRP consistently for no less than 18 months, between the dates of April 1, 1999 and June 30, 2003. The MHPRC's participant database served as the sampling frame, which consisted of 1,470 licensed health professionals.

#### *Research Design*

A retrospective case-control study design was utilized. Cases were all licensed health professionals in the MHPRP pain management program who had at least 18 months participation and who were also prescribed opioids for their pain management. Controls were randomly selected from the group of licensed health professionals, but were not involved in the pain management piece of the pilot program, yet did have at least 18 months of participation in the MHPRP. So, cases were those who participated in MHPRP's pain management program, while controls were those who were involved with the MHPRP in some capacity, however were not participants in its pain management program. After excluding ineligible cases, randomization was achieved by selecting every tenth participant from the beginning of the sampling frame list produced by the

MHPRC's participant database. Since this was a retrospective study and the cases were anonymous, informed consent was not obtained.

### *Variables*

The dependent variable throughout this study was relapse episodes, while the independent variable was opioid treatment for pain management. Data were collected on the number of relapse episodes each participant incurred during his or her respective 18 months in the program.

### *Data Analysis*

The Statistical Package for the Social Sciences (SPSS) 10.1 for Windows was used for data entry and analysis. Descriptive statistics were computed for demographics including gender, profession, and age range. Gender was defined as percentage of males and females. Professions included all licensed health care professionals and were categorized as nurse (RN, LPN), physician (MD, DO), and other. Age was measured in the following age ranges; 18-30, 31-40, 41-50, 51-60, and 61 and over.

The independent sample t-test was utilized for comparison of relapse episodes between participants in the MHPRP's pain management program who use opioids for pain management and participants in the MHPRP who are not involved in the pain management program.

## Chapter IV

### Results

#### *Sample*

The sampling frame consisted of 1,470 licensed health professionals within the time frame criteria of April 1, 1999 through June 30, 2003. There were a total of 75 pain management participants and 1,395 non-pain management participants. From this list, 38 pain management participants met the 18-month participation criteria and 920 non-pain management participants met the 18-month participation criteria. From the 38 pain management participants, one participant was excluded due to failure to enter into a contract with MHPRC and ten participants were excluded who did not meet the qualifications for the pain management program. Therefore, 27 cases were analyzed.

Controls were randomly selected from the list of 920 qualifying non-pain management participants. Beginning with the first participant on the list, every tenth participant was chosen. Randomization continued until the number of controls (n=54) doubled the number of cases. This approach was utilized to provide more power in statistical analyses of the two groups.

#### *Descriptive Statistics*

Descriptive statistics were computed for all demographic variables, which included gender, profession, and age (summarized in Table 1). Gender frequency for cases consisted of 4 males (15%) and 23 females (85%). In comparison, the controls had 19 males (35%) and 35 females (65%). Frequencies for participants' profession were computed. Cases were comprised of 24 nurses (89%), two physicians (7%), and one other health professional (4%), while the controls included 38 nurses (70%), 10 physicians

(19%), and 6 other health professionals (11%). The predominant profession for both cases and controls was nurses. See Table 1 for classification of “other” health professionals.

The means and medians were computed for the ages of cases and controls. The mean age for cases was 48 years and the median age was 45.5 years. The mean age for controls was 47 years while the median age was 46.5 years. The breakdown in numbers and percentages of each age range for both cases and controls can be found in Table 1.

Table 1

Descriptive Statistics of Sample

	<u>Cases (n=27)</u>		<u>Controls (n=54)</u>	
	Number	Percentage	Number	Percentage
<b>Gender</b>				
Male	4	15%	19	35%
Female	23	85%	35	65%
<b>Profession</b>				
Nurse	24	89%	38	70%
Physician	2	7%	10	19%
Other*	1	4%	6	11%
<b>Age Range</b>				
18-30	0	0%	1	2%
31-40	6	22%	11	20%
41-50	14	52%	23	43%
51-60	6	22%	17	31%
61+	1	4%	2	4%

\*Dentist, Pharmacist, Psychologist, Social Worker, Counselor

*Relapse Episode Analysis*

An independent sample t-test was utilized to compare relapse episode means between cases and controls. With a 95% confidence interval ( $p \leq .05$ ), results showed

that  $t = .519$  and  $p = .605$  ( $df = .79$ ), indicating that there was no statistically significant difference in relapse episodes between the two groups.

Proportionally, each group had approximately the same number of relapse episodes: cases = 11 (41%) and controls = 24 (44%). Therefore, both cases and controls experienced a higher no relapse rate than relapse rate (cases = 59%; controls = 56%).

Table 2 depicts these relapse episodes rates for the two groups.

Table 2

Relapse Episode Analysis

Number of Relapse Episodes	<u>Cases (n=27)</u>		<u>Controls (n=54)</u>	
	Frequency	Percentage	Frequency	Percentage
0	16	59%	30	56%
1	7	26%	12	22%
2	2	7%	5	9%
3	1	4%	7	13%
4	1	4%	0	0%

## Chapter V

## Discussion

The purpose of this research project was to determine the relationship between opioid treatment for individuals with co-occurring CNMP and addiction and the rate of relapse episodes. These results can be used to educate those who currently treat individuals with CNMP. This research will provide valuable data to all individuals involved in the treatment of CNMP.

Pain is a major health problem in the United States and its cost to society includes lost productivity, excessive health care expenditure, and needless suffering among those afflicted. Therefore, treatment of pain has become a top priority in the United States. Chronic non-malignant pain combined with addiction has left many physicians in a quandary over the “correct” method of treatment. Many physicians fear using opioids as a method of treatment due to the belief that individuals with an addiction may be at an increased risk of addiction relapse when exposed to opioids. This study’s goal was to reach beyond this stigma by providing scientific evidence to support the need for adequate pain treatment for everybody, regardless of current or past addiction status.

When comparing the relapse rate among individuals in the case group versus the control group, no statistically significant difference was found. Those participants who have co-occurring CNMP and addiction and received opioids for their pain management did not have a significantly higher relapse rate compared to those participants who suffered solely from addiction. These findings suggest that physicians should seriously consider incorporating opioid treatment within a pain management regime in patients with co-occurring CNMP and addiction. The commonly reported concern that this

treatment regime increases the risk of relapse episodes in this population may be overly cautious. Based on the results of this study, physicians may feel more comfortable in opioid prescribing knowing that previously addicted patients who receive opioids for CNMP will not suffer a greater likelihood of relapse.

Education plays a major role in changing the attitudes and beliefs of health professionals. As evidenced by use of the Diffusion of Innovations theory, the results presented in this study need to be disseminated to health professionals who are in positions where it is likely they will treat patients who present with co-occurring CNMP and addiction. This research is not limited to one type of practice, so it is important that this information is disseminated among various types of health care professionals. To do this, these findings might be published in professional journals, disseminated to individuals via professional memberships and associations, and presented at health care related conferences and seminars. Disseminating research which strongly indicates that opioid treatment actually does not increase the rate of relapse episodes in currently or previously addicted individuals has the potential to improve the health and well-being of individuals suffering from CNMP.

### *Limitations*

An important limitation of this study is the target population. The samples consisted of licensed health professionals, who through the nature of their occupation often have easier access to controlled substances, e.g. narcotics. This factor could result in an increased rate of addiction-related relapse compared to other individuals with co-occurring CNMP and addiction. Therefore, individuals who are not affiliated with the health care setting may experience fewer relapse episodes than the subjects in this study.



Many threats to internal validity are well-controlled for with this study design; however, the threat of selection is certainly plausible here, since a convenience sample was utilized. Nevertheless, it is safe to say that generalizing these results to a similar population is certainly possible.

Additional limitations include the somewhat small sample size and limited geographic location from which the individuals were drawn. Due to the brief history of the HPRP pain management program, this study was limited to a four-year time period that in turn minimized the number of licensed health professionals who would meet the eligibility criteria. Also, licensed health professionals in the State of Michigan are monitored by the MHPRP and the potential variability of health professionals in other localities is unknown. For broader generalization to occur, future studies should include a larger sample size and a sample drawn from various geographic locations throughout the country.

There was also an over-representation of nurses. Nurses (RN and LPN) represented 77% of the sample as compared to 66% of the MHPRP referrals. Physicians (MD and DO) represented 15% of the sample (17% of referrals to the MHPRP have been physicians) with the remaining 8% representing all other licensed health professionals as compared to 17% of the MHPRP referrals being from other professions. There are currently 19 licensed health professionals that, under Michigan law, are mandated to participate in the Michigan Health Professional Recovery Program. Therefore, under-representation of the other licensed health professionals could be a factor that limits interpretation of the results of this study.

*Recommendations*

Various entities have become increasingly interested in the provision of better pain therapies. Health care systems, hospitals, political interest groups, health departments, and many others would benefit from the improvement of policies, procedures, and protocols for pain management. The American Academy of Pain Medicine (AAPM) and the American Pain Society (APS) both maintain that opioids are an essential part of pain management and their members believe that the United States is in a critical phase of state-level policy development with respect to the use of opioids in the treatment of pain. Thus, this is indicative of the evolving nature of opioid treatment policies. This evolution is critical to the future of pain management.

Consequently, scientific research pertaining to opioid treatment is essential in producing solid results that can influence current and future pain management policies. This research substantiates that opioid treatment for individuals with co-occurring CNMP and addiction likely does not contribute to an increased rate of addiction relapse episodes. It is recommended that policy makers and health professionals collaborate for the well-being of the patient who suffers from CNMP. Providing adequate pain management through opioid treatment, if warranted, should proceed without fear or hesitation.

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## Appendix A

## Guide to Controlled Substance Schedule

HealthLink, 1999, 2 (1)

<u>Schedule</u>	<u>Description</u>	<u>Common Examples</u>
Schedule 1	Drug with a high potential for abuse and no medical use in treatment in the US; lacks accepted safety for use in treatment under medical supervision.	Heroin, LDS, Mescaline
Schedule 2	Drug with a currently acceptable medical use with severe restrictions. The abuse of the substance may lead to severe psychic or physical dependence.	Percocet, Perodan, Morphine
Schedule 3	Drug with a high potential for abuse but less so than the substances in schedules 1 and 2; acceptable medical use in treatment in the US; abuse of substance may lead to moderate or low physical dependence or high psychological dependence.	Vicodin, Lorcet, Tylenol 3
Schedule 4	Drug with low potential for abuse, relative to substances in schedule 3; currently acceptable medical use in treatment in the US; abuse of schedule 4 substances may lead to limited physical dependence or psychological dependence.	Valium, Xanax, Fastin, Halcion
Schedule 5	Drug with a low potential for abuse relative to the controlled substances listed in schedule 4, schedule 5 drugs are currently accepted for medical use in treatment in the US. Additionally, schedule 5 drugs have a limited physical dependence or psychological liability relative to the controlled substances listed in schedule 4 or the incidence of abuse is such that the substance should be dispensed by a practitioner.	Lomotil, Robitussin AC,