

Sigma Theta Tau International's 29th International Nursing Research Congress

Effective Treatments for Opioid Use Disorder: A Systematic Review

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Introduction: The opioid addiction crisis is severe and growing in many countries around the world. The United Nations Office on Drugs and Crime reported (UNODC, 2013; 2015) 32.4 million people have an opioid use disorder with a reported 70,000 to 100,000 dying from an overdose in 2015. In the United States for the same year approximately 2.5 million individuals had an opioid use disorder with an associated overdose mortality of 33,000 people (American Society of Addiction Medicines [ASAM], 2015; National Institute on Drug Abuse [NIDA], 2015).

Background: The pathway to developing an opioid use disorder is varied. Some individuals receive prescription opioids for pain and become addicted either by misusing or building a physiological tolerance to the prescribed dose (NIDA, 2015; Substance Abuse and Mental Health Services Administration [SAMSHA], 2016). Others gain access to opioids from a friend or family member who has a prescription. Finally, some individuals who have an opioid use disorder gain access to prescription like opioids or the even higher risk opiate heroin on the black market (SAMSHA, 2016). Physiological addiction to opioids are caused by the following:

- Changes to the reward and pleasure neural pathways of the brain.
- An increase in the number of opioid receptors that drive the need to increase the amount of opioid taken and cause drug seek behavior (drug hunger) when systemic opioid levels are low (Younger et al., 2011).

There is a range of costs connected to opioid disorder. Governments, organizations, families, and individuals incur tangible costs in terms of paying for hospitalizations and medical care, criminal justice expenses, welfare assistance, and lost earning potential in the workforce (Birnbbaum et al., 2011; Disley, Mulcahy, Pardal, Rubin, & Ruggeri, 2013). Intangible costs include adverse consequences to families in terms of dysfunction, abuse, and fracture. Parrino (2013) estimated the cost per untreated addicted individual is at a minimum \$45,000 annually in the United States while Disley et al. (2013) estimated a cost of €2,627 to €60,665 in Europe.

Purpose: Given the prevalence and severity of opioid use disorder, the negative consequences to addicted individuals, and the high cost to society and families it is important to understand the effectiveness of available treatments. This understanding can provide health care practitioners with the evidence to guide treatment. The purpose of this review was to determine in adults with opioid use disorder what treatments are effective in decreasing opioid use and mortality.

Methodology: In June of 2017, the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and MEDLINE databases were searched using "opioid addiction" AND "treatment" searching for years 2012-2017 in peer-reviewed journals. The search of the CINAHL and MEDLINE databases resulted in 186 articles; six articles were retained from this yield based on treatments for opioid addiction on adults with methadone, buprenorphine, extended release naltrexone, and the exclusion of special populations (i.e. pregnant women, adolescents, those with pain).

Results: The studies analyzed highlighted that replacement therapy using the medications methadone, buprenorphine, and extended release naltrexone are the first line treatment for opioid use disorder. The addition of behavioral therapy to replacement therapy was mentioned as beneficial to those who have an opioid addiction. The standard medications utilized in replacement therapy are methadone,

buprenorphine, and extended release naltrexone (Kampman & Jarvis, 2015; NIDA, 2016; Saxon, Hser, Woody, & Ling, 2013). This type of therapy targets withdrawal symptoms and the neural pathway changes that cause individuals to hunger for and compulsively seek drugs (Saxon et al., 2013). Additionally, replacement therapy blocks the euphoric feeling caused by opioid abuse while “stabilizing psycho-social functioning” (Tetrault & Fiellin, 2012, p. 220).

Discussion: Each of the medications reviewed has benefits and risks associated with utilization as a replacement therapy choice. Overall, methadone has the highest retention rate but also a higher risk for seeking other opioids, abuse, and overdose. Buprenorphine is a safer therapy in terms of abuse and overdose but has lower retention rates. The extended release naltrexone allows for the longest time between administrations and cannot be misused. However, the retention rates are lower than methadone and the daily cost is three times higher than methadone and two times higher than buprenorphine.

The choice of replacement therapy should be completed on an individualized basis with input from both the patient and the health-care professional. Patient preferences, severity of the opioid use disorder, psycho-social issues, and available resources should guide treatment choice. The more important consideration is that some type of replacement therapy should be initiated as all are more effective and safer than not receiving any treatment. The National Institute on Drug Abuse (2016) reported that in the United States less than one-third of patients with opioid use disorder receive replacement therapy. Worldwide the treatment rate is even lower (UNODC, 2015).

Title:

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Keywords:

Medication-Assisted Treatment, Opioid Use Disorder and Replacement Therapy

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Abstract Summary:

Opioid use disorder is reaching a crisis point globally with many individuals severely impacted. Evidence illustrates that medication-assisted treatment (MAT) is effective in helping individuals overcome opioid use disorder. This project reviews medications used in MAT; highlighting retention in treatment and risk for overdose factors.

Content Outline:

I. Introduction

- A. Provide international data on opioid use disorder
- B. Discuss how opioid use disorder devastates the lives of those effected by it – including user and those who have with relationships with the user

II. Body

- A. Background of opioid use disorder
 - 1. Genesis of addiction

a) Assess to opioids

b) Physiologic changes

2. Poor health outcomes and costs associated with opioid use disorder

a) Health outcomes – overdose, HIV, Hepatitis C

b) Costs include legal expenses, employment loss, medical expenses, and family dysfunction/fracture

B. Review of evidence shows that medication-assisted treatment (MAT) is the first-line treatment for opioid use disorder. Medications used in (MAT) include methadone, buprenorphine, and extended release naltrexone.

1. Methadone Treatment

a) Characteristics of Methadone specific to opioid use disorder

b) Side effects, safety issues, and therapy retention information

2. Buprenorphine Treatment

a) Characteristics of Buprenorphine specific to opioid use disorder

b) Side effects, safety issues, and therapy retention Information

3. Naltrexone Treatment

a) Characteristics of Naltrexone specific to opioid use disorder

b) Side effects, safety issues, and therapy retention Information

III. Conclusion

A. Selection of MAT should be done on individual basis and in tandem with behavioral therapy

B. Highlight limited resources and access to effective treatment for opioid use disorder. Look to future endeavors to expand coverage of treatment, increase number of providers who can manage MAT, and the need for more research on the issue of opioid use disorder.

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Professional Experience: Professionally I have been trained to complete research and to evaluate the evidence via my PhD degree; I continue to work with peers and graduate students to complete research. My clinical practice brought me into contact with other professionals and with patients who had intimate knowledge about addiction. I have traveled and presented internationally on substance abuse (Tambov, Russia).

Author Summary: Jill Moore is an associate professor at Indiana State University in the Advanced Practice Department. She mentors DNP students as they work to translate evidence into practice and guides future nurse educators. Jill is a member of the Lambda Sigma Chapter at Indiana State University and serves as the vice-president.