

An Evaluation of Methadone Substitution Therapy in the Context of Nigeria: Cultural Considerations and Clinical Effectiveness

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Abstract

Background: Methadone Substitution Therapy (MST) is employed to manage opioid addiction and has generated extensive discourse. While widely embraced in the West, its applicability in Nigeria, considering its unique cultural, infrastructural, and societal nuances, remains debated.

Methods: A critical literature review methodology was utilized, focusing on English-language studies from databases such as PubMed and Google Scholar. The review centered on MST in Nigeria or similar cultural contexts, examining its pharmacological properties, clinical effectiveness, ethical considerations, health economic implications, and cultural perceptions.

Results: Methadone, introduced in the 1960s, reduces cravings and withdrawal symptoms but raises concerns about cognitive impairment and potential exacerbation of cravings. While some studies show its effectiveness in decreasing criminal behaviors, others suggest prolonged use may hinder genuine recovery from opioid dependence. Within Nigeria's resource-limited setting, MST raises concerns about resource allocation, cost implications, and long-term cost-effectiveness. Additionally, the behavioral economics of MST suggests potential pitfalls in addressing the core behaviors leading to addiction. In addition, MST's utility is potentially limited by its marginal contribution to Quality Adjusted Life Years (QALYs) and concerns about patient autonomy and societal benefits. Further, the sociocultural fabric of Nigeria plays a significant role in MST's acceptance. Despite MST's evident challenges, cultural perceptions surrounding addiction and medication are pivotal.

Conclusion: While MST offers a potential intervention for opioid addiction, its challenges are evident, especially in the Nigerian context. Economic, cultural, and clinical implications necessitate a nuanced, context-specific approach.

Keywords: Methadone Substitution Therapy, Nigeria, Cultural Perception, Health Economics, Opioid Addiction.

Introduction

Methadone substitution therapy, a method employed to manage opioid addiction, has stirred considerable debate within the medical community and the general population. In Nigeria, this approach encounters both support and opposition. The cultural dynamics, healthcare infrastructure, and societal perceptions play a vital role in

shaping the acceptance or rejection of such therapeutic practices.

In the West, methadone therapy has been widely embraced since its inception by Dole and Nyswander in 1965[1]. However, in

Nigeria, the adaptation and effectiveness of this therapy are not entirely clear. Some argue that it conflicts with cultural norms and values, while others see it as a vital tool in the fight against substance abuse. This essay will explore the multifaceted dimensions of methadone substitution therapy in Nigeria, examining its pharmacological basis, cultural compatibility, clinical outcomes, and ethical implications.

Aims/Objectives:

1. To analyze the pharmacological properties of methadone and its function as a substitution therapy.
2. To assess the clinical effectiveness of methadone therapy in the management of substance use disorders in the Nigerian context.
3. To examine the ethical considerations associated with methadone substitution therapy.
4. To analyze on the health economic implication of downside of methadone substitution treatment.
5. To evaluate the cultural perceptions and societal attitudes towards methadone therapy in Nigeria.

Methodology

The study employed a critical literature review approach, utilizing both primary and secondary sources. A comprehensive search was conducted on databases such as PubMed, and Google Scholar to gather peer-reviewed articles, clinical studies, and relevant reports. The inclusion criteria encompassed studies published in English, focusing on methadone substitution therapy in Nigeria or similar cultural contexts. Data were extracted, analyzed, and synthesized to present an informed perspective on the subject.

Results/Discussion

Methadone: A Primer Methadone, a synthetic opioid, has gained traction as a pharmacotherapy for opioid addiction since its introduction in the 1960s[1,2]. Primarily utilized for heroin addiction, methadone works by reducing cravings and withdrawal symptoms associated with opiate use[3]. However, the pharmacological properties of methadone raise concerns, primarily due to its potential to induce cognitive impairment and its paradoxical ability to exacerbate cravings in certain conditions[4].

Pharmacological Concerns from Methadone Use

Methadone's pharmacological properties resemble those of morphine when administered subcutaneously. Chronic administration has been associated with a range of effects, including lethargy, apathy, hemodilution, sedation, and physical dependence. Furthermore, Martin et al. (1973) noted drug-seeking behaviors even among patients on a 100 mg/day regimen[3].

Research has raised concerns about its cognitive impact. Curran et al. (2001) noted episodic memory impairment following a single methadone dose in patients with extensive heroin use history[5]. Another study by Wang et al. (2013) indicated that methadone maintenance treatment (MMT) might be linked to reduced cognitive function, though the role of dosage, treatment duration, and plasma levels remain unclear[2].

Methadone for Opioid Substitution Therapy (MST): Is it Effective?

Methadone used for substitution therapy in the management of unhealthy opioid use and related health issues has been offered as a safer alternative to reduce harm associated with opioid use. A Study has shown its

effectiveness in reducing criminal behaviors and other opiate uses[2]. However, Maddux and Desmond (1992) indicated that prolonged methadone use might impede recovery from opioid dependence[6]. Their research suggests that those on methadone substitution therapy for extended periods showed reduced chances of achieving abstinence compared to those with minimal methadone exposure. Interestingly, a study by Curran et al. highlighted the paradoxical effect of methadone i.e., increased dosages might "prime" heroin cravings[4].

Quality of Life and Health Outcomes

Rosen et al. addressed the changing demography of opioid addicts, with the older population increasing. Their study highlights that while MST may address addiction, it might not address the holistic health needs of this aging cohort, many of whom suffer from mental health disorders and physical ailments[4].

For instance, MST has a significant but limited impact on HIV incidence and prevalence from a study in similar African cultural context. In this mixed-method mathematical modeling and qualitative study in Kenya, it was found that methadone produced only slight reductions in HIV incidence and prevalence, even at coverage

levels anticipated in the planned roll-out of MST[8]. This raises concerns about its effectiveness as a primary preventive measure against HIV transmission in specific settings.

Economic Dimensions of Methadone as a Substitution Treatment Goal

Despite the applause for the questionable clinical efficacy of MST, the economic dimensions, especially within a resource-limited setting like Nigeria, warrant scrutiny. This will be briefly assessed through the health economic, behavioural, and utility-related downsides of MST within Nigeria's unique socio-cultural milieu.

Health Economics

1. Resource Allocation: Integrating MST in a health ecosystem with competing challenges such as infectious diseases and maternal mortality might divert crucial resources. Given MST's primary role as a harm reduction tool rather than a definitive pathway to abstinence, questions arise about its long-term cost-effectiveness[11,12].

2. Cost of Methadone: While global methadone prices fluctuate, establishing the infrastructure for MST in Nigeria, which involves importing methadone (injectable or oral) and setting up dedicated clinics, is

expected to strain health financial resources[13].

3. Direct and Indirect Costs: Overheads related to regular monitoring (for both short and long-term use in early vs. chronic opioid users), addressing potential side effects (like cognitive impairment, declining quality of life etc.), consequent associated stigma and managing methadone misuse (apart from the paradoxical effect of rising cravings) present additional economic burdens[9,11-14].

Behavioural Economics

1. Rehabilitation Dilemma: By just replacing one opioid with another, MST might not significantly alter the core behavioural underpinnings leading to addiction, leaving patients in a perpetual cycle of dependency [4,5].

2. Immediate Gratification: Behavioural economists posit that humans often opt for immediate rewards over future gains. The immediate relief MST offers might overshadow its long-term implications, resulting in a potential mismatch between patient expectation and addiction outcome [15,16].

3. Temporal Inconsistency: Initial enthusiasm for MST can wane over time due to changing personal circumstances or the sheer comfort

it provides, hence not leading to definitive behavioral change [16].

Utility

1. QALYs Assessment: The health economic value of an intervention is often gauged by its contribution to Quality Adjusted Life Years (QALYs). If MST provides marginal improvements over illicit opioid use, its QALYs might be limited, thereby diminishing its health economic justification [13,14].

2. Patient Autonomy: A continuous reliance on methadone might be viewed as limiting patient autonomy, consequently reducing the therapy's utility.

3. Societal Benefit: From a broader societal lens, if MST doesn't translate to reduced criminality or enhanced public safety, its societal utility becomes questionable.

Efficacy across Various Socio-Cultural Contexts

Apart from the limited effectiveness of MST in reducing opioid addiction and related harm, the role of cultural contexts goes a long way in influencing its acceptance. This was illustrated in a study on MST in Morocco, where it was found that the effectiveness of the treatment depends not just on the

molecule used, but also on the sociocultural context [9]. This perhaps echo the universal culture, values, and beliefs of the silent majority that is averse to use of any type of drugs of abuse nor its substitution [10]. In other words, the Nigeria's sociocultural fabric can't be ignored when considering MST. Cultural perceptions around drug addiction, rehabilitation, and medication is expected to impact the acceptance of MST, despite the challenging effectiveness and ethical downside. This highlights the potential limitation of MST's universal application, especially as it goes contrary to the all-embracing "Prevent. Don't Promote," cultural and societal backgrounds of the silent majority, patients and global communities.

Conclusion

Methadone, while a potential pharmacological intervention for opioid addiction, comes with its set of challenges. It's vital to weigh its benefits against potential drawbacks, especially concerning cognitive function and genuine recovery from addiction. Moreover, while these findings offer a broader perspective, there's an urgent need to contextualize these outcomes within Nigeria's unique cultural setting. Ultimately, the economic intricacies surrounding

Methadone Substitution Therapy, especially within Nigeria's context, are multifaceted. When juxtaposing the benefits against the health economic, behavioural, and utility-related downsides, the justification for MST becomes clouded in uncertainty.

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