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The Prevalence of Opioid Overdose in Young VS. Old Patients: A Literature Review

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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Review Article

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ABSTRACT

Opioids are a class of drugs that include prescription painkillers like oxycodone, hydrocodone, and morphine, as well as illicit drugs such as heroin. Opioids act on the central nervous system, particularly the respiratory centers in the brain. An overdose can cause slow and shallow breathing, which can lead to a lack of oxygen in the body. Common signs of opioid overdose include pinpoint pupils, confusion, unconsciousness, and difficulty breathing. The skin may become pale or clammy, and the person's lips or fingertips may turn blue or gray. Individuals with a history of opioid use disorder, those taking high doses of prescription opioids, or those using opioids in combination with other substances are at an increased risk of overdose. Opioid overdose is a serious and potentially life-threatening medical emergency that occurs when an individual consumes a toxic amount of opioids, leading to respiratory depression, unconsciousness, and if left untreated, death. Opioid overdose is a significant public health concern, and efforts are ongoing to address both the immediate crisis of overdose and the broader issues of opioid misuse and addiction. Public awareness, education, and access to life-saving interventions like naloxone play critical roles in reducing the impact of opioid overdose on individuals and communities. This study highlights the importance of public health initiatives aimed at mitigating the impact of opioid overdose. Increased awareness, access to naloxone, and comprehensive treatment options for opioid use disorder are

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fundamental components of a holistic response to this pressing public health crisis. By developing a deeper understanding of opioid overdose and its implications, stakeholders can work collaboratively to implement effective strategies that save lives and address the root causes of opioid-related harm. It also lays a firm background on the misuse of opioids that leads to such problems in the future, thereby warning the physicians and medical personnel regarding an up-and-coming problem that would change the world, but mostly for the worse.

Keywords: Opioids; opioid overdose; misuse of drugs; naloxone; opioid toxicity.

1. INTRODUCTION

Over the past two decades, a growing number of reports have expressed concerns regarding the safety of opioid drugs, with cases of overdose and opiate toxicity consistently emerging across major cities in the United States [1].

What is particularly alarming is the significant surge in opioid prescriptions during this period. This empirical prescribing trend within the healthcare sector has not only heightened the risk of overdose within medical settings but has also contributed to an epidemic of opioid-related incidents beyond clinical environments.

Consequently, it becomes essential in this case for healthcare practitioners to remain vigilant and recognize signs of opiate toxicity in patients presenting with unexplained lethargy or unresponsiveness. Doing so could help save the lives of many patients along with minimizing the risks that opioid toxicity could have on the lives of these people [2].

A concerning trajectory is seen in the timelines. Between 2001 and 2010, rates of opioid diversion, opioid prescriptions, and opioid-related deaths in the United States experienced exponential growth [3].

Although these rates plateaued between 2011 and 2013, they saw a resurgence from 2013 to 2014. Pain management experts posit that a substantial number of opioid overdoses are not intentional but rather a consequence of patients attempting to cope with persistent, unrelenting pain [4].

Opioid overdose unfolds when an individual experiences excessive and unopposed stimulation of the opioid pathway, leading to diminished respiratory effort and, potentially, fatal outcomes.

The frequency of opioid overdose is on a rapid incline, with drug overdose now standing as the primary cause of accidental death in the United States, with opioids being the most prevalent contributor. This is indeed an alarming situation [5].

The CDC estimates over 1,000 daily emergency department visits linked to opioid misuse and approximately 91 opioid overdose deaths each day. Between 1999 and 2010, prescriptions for opioid-containing medications quadrupled, coinciding with a four-fold increase in opioid overdose deaths. The majority of these fatalities can be attributed to the use of heroin and synthetic opiates other than methadone [6].

The struggle to adequately manage pain has prompted medical professionals to turn to various short and long-acting opioids. While these medications have proven effective in pain relief, issues arise when patients deviate from recommended dosages. An escalation in dosage or duration of opioid use increases the risk of toxicity. Though the annual rates of transition from nonmedical prescription opioid use to heroin are relatively low, such transitions do occur [7].

Heroin, priced at approximately $2 per bag, is up to ten times cheaper and more accessible than prescription opioid medications, which average about a dollar per milligram on the street. Compounding this issue is the rising trend of heroin being mixed with fentanyl and other synthetic opioid compounds. This blending results in variable concentrations of opioid potency, significantly heightening the risk of overdose.

2. RISK OF OPIOID OVERDOSE IN THE YOUNG VS. OLD PEOPLE

The past few years have seen a significant surge in the context of mortality that has arisen due to opioid overdose. It is indeed a matter of concern because this implies that the statistics are not favorable for the days to come. Urgent interventions and measures need to be taken to

make sure that the condition does not get out of hands. When a group of experts delved deep into the concerning rise of opioid use disorder (OUD) among the elderly. Their findings painted a chilling picture: between 2006 and 2014, emergency department visits related to opioid misuse among individuals aged 65 and above had surged by a staggering 220%. This startling statistic was more than just numbers; it was a haunting indicator of a rapidly escalating crisis [8].

As they reflected through data, the experts identified several factors amplifying this issue. Older adults, burdened with an increasing number of chronic conditions, found themselves entangled in a web of medications, a situation termed as 'polypharmacy.' The consequences were dire: a heightened risk of injuries from falls and fractures, further complicating their health landscape [9].

Yet, amidst these findings, a shadow of uncertainty loomed. The specifics behind opioid overdose deaths among the elderly remained elusive. The aging process, it appeared, rendered the body less efficient in metabolizing opioids. This physiological change potentially transformed what might have been therapeutic doses into fatal ones [10].

However, the complexities did not end there. Cognitive decline in old age introduced another layer of vulnerability. The very medications meant to offer relief could become treacherous if mismanaged due to impaired cognition. Additionally, the silent adversaries of social isolation and depression, more prevalent in older generations, further exacerbated the risk. These mental health challenges, intertwined with substance use disorders (SUD), cast a dark cloud over the elderly, increasing their susceptibility to opioid-related tragedies [3].

Furthermore, a stark generational shift became evident. The current cohort of older adults, perhaps influenced by evolving societal norms, exhibited higher substance use rates than their predecessors. This surge, when combined with the inevitable physiological changes accompanying aging, intensified the likelihood of opioid overdoses among this vulnerable demographic [11].

It is seen that a distinct pattern has emerged in the landscape of opioid overdose deaths, painting a nuanced picture of the demographics most affected. Men, it seemed, bore a disproportionate burden, consistently experiencing higher rates of opioid-related fatalities compared to their female counterparts. This gendered disparity highlighted a crucial aspect of the opioid crisis, emphasizing the unique vulnerabilities or patterns of use among men [12].

Moreover, a complex tapestry of racial and ethnic dynamics unfolded. Between 1999 and 2019, the rates of opioid overdose deaths among different racial and ethnic groups exhibited fluctuations, reflecting changing patterns and possibly underlying socio-economic factors. A notable trend during the escalating epidemic was the exponential rise in rates among non-Hispanic White adults. This surge not only underscored the severity of the crisis within this demographic but also significantly contributed to the overall escalation in opioid-related fatalities [13].

However, as the years progressed and the crisis evolved, a subtle yet significant shift began to materialize. By the time the data spanned 2017 to 2019, a narrowing of the gap became evident. The rates among non-Hispanic Black adults began to ascend, marking an alarming trend within this community. Concurrently, there was a modest decline observed among non-Hispanic White adults. This juxtaposition suggested a changing landscape, where the opioid crisis was impacting racial and ethnic groups in varying magnitudes and directions, necessitating a more targeted and comprehensive approach to intervention and support [7].

3. ADDRESSING THE NEED TO INTERVENE IN THE INCREASING PREVALENCE OF OPIOID OVERDOSES IN YOUNG VS OLD PEOPLE

Generally, it is seen that healthcare interactions and harm reduction initiatives are pivotal in preventing opioid overdose deaths (OOD), serving as essential touchpoints for screening, treatment initiation, and outreach efforts [14]. In terms of opioid overdose death rates, Whites exhibited the highest Hazard Ratios (HRs) in comparison to Hispanics. This discrepancy, impacting the largest racial group in the U.S., is often ascribed to socioeconomic despair and limited opportunities in distressed American communities.

[9] Individuals with disabilities faced a nearly threefold higher risk of death from opioid overdose compared to those without disabilities, a statistic likely influenced by the use of opioid analgesics to manage chronic pain. In response to this concern, the Centers for Disease Control and Prevention (CDC) took a proactive step in 2016 by publishing guidelines aimed at aiding prescribers in the careful evaluation of the benefits and risks associated with opioid therapy for chronic pain. This initiative reflects a broader commitment to promoting responsible prescribing practices and mitigating the risks associated with opioid use, especially among populations vulnerable to the adverse effects of these medications [15].

As the discussion deepened around the complexities of opioid use among older adults, a concerning trend emerged that shed light on the unique challenges faced by this demographic. Those beyond the age of 50 found themselves disproportionately grappling with both cancer-related pain and other forms of non-cancer pain, such as neuropathies and arthritides, compared to their younger counterparts [16].

The intertwining relationship between chronic pain and opioid exposure further complicated matters. Chronic pain not only heightened the likelihood of older adults being prescribed opioids but also significantly escalated their vulnerability to developing opioid use disorder (OUD). This intricate connection painted a grim picture, linking a genuine need for pain relief with the potential dangers of opioid dependency [7].

A comprehensive analysis of American emergency department data unveiled more layers to the problem. The presence of chronic medical conditions emerged as a pivotal factor amplifying the risk of problematic opioid use among older individuals. Alarmingly, the risk escalated with an increased number of concurrent health conditions, emphasizing the compounding effects of comorbidities [17].

Moreover, the study unearthed another concerning link, highlighting alcohol use disorder (AUD) as a potential catalyst for problematic opioid use among the elderly. While AUD itself presented a myriad of challenges, its association with opioid misuse added another dimension to the already complex landscape. Beyond these findings, a myriad of biological risk factors further heightened concerns among older adults with AUD [18]. Factors such as physical disability, deteriorating health status, other substance use disorders not related to opioids, and the intricate issue of polypharmacy, where individuals juggle multiple medications, all surfaced as potential contributors to the vulnerability observed in this population. While these risk factors might not exclusively point to OUD, their presence painted a broader picture of the multifaceted challenges and considerations essential in addressing opioid-related issues among older adults [19].

Additionally, the research delves into the healthcare needs, presentation of care, and associated risks related to non-medical opioid use among this population. The ultimate goal is to contribute valuable insights that can inform future research efforts and interventions tailored to address the unique challenges faced by older adults grappling with opioid misuse [11].

Over the course of several decades, extensive research has underscored the potential of primary prevention interventions implemented during childhood and adolescence to mitigate the later risk of drug use disorders. Within this wealth of interventions, some have demonstrated particular efficacy in reducing the risk of later opioid misuse. The challenge at hand is not only to ascertain the generalizability of these effective interventions but also to facilitate their culturally appropriate and sustainable adoption on a broader scale [20].

The current imperative lies in further research aimed at testing the effectiveness of existing approaches in curbing opioid misuse. This involves considering the myriad pathways that lead to opioid misuse and addiction [21].

Furthermore, with a portion of individuals initiating opioid use later in life, particularly through pain treatment, there is a need for research to develop and assess new prevention strategies tailored for adults. This includes those within healthcare settings, those in contact with the justice system, and patients with pain at risk of transitioning from prescription opioid misuse to illicit opioid use.

As the opioid crisis continues to evolve and expand across the United States, a comprehensive approach becomes imperative. This encompasses overdose prevention, initiatives to reduce opioid overprescribing and curb the supply of illicit opioids, and enhanced accessibility to treatment for opioid use disorders with a focus on supporting long-term recovery. [10,13].

4. CONCLUSION

In conclusion, opioid overdose represents a pressing public health crisis that demands immediate and concerted action. The alarming rise in opioid-related deaths underscores the urgent need for comprehensive strategies to address this epidemic. Efforts should prioritize widespread education on the risks of opioid misuse, enhanced access to addiction treatment and support services, and the implementation of harm reduction initiatives. Additionally, healthcare providers must adopt judicious prescribing practices and leverage alternative pain management strategies to minimize opioid exposure. Governments, communities, and healthcare professionals must collaborate to destigmatize addiction, improve access to mental health services, and implement policies that prioritize the well-being of individuals at risk. By promoting a multi-faceted approach, the whole fraternity could hope to mitigate the devastating impact of opioid overdose and work towards a healthier and safer future for communities worldwide.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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