

**A Youth Epidemic: Opioid Addiction and Overdoses Among Adolescents**

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## Introduction

Within various demographic groups, the intricate web of drug addiction's consequences poses a pressing challenge to public health initiatives, necessitating a tailored and multifaceted approach. However, this concern has grown in recent years. Beginning around 2019, the proliferation of fentanyl within the opioid market sparked a drastic surge in overdose cases among all age groups, even adolescents in America, marking a concerning escalation in the opioid crisis. Opioid overdoses are a serious public health problem and have affected communities, families, and people all around the country significantly. Within this context, there is a compelling need to investigate the unique difficulties experienced by adolescents since addiction and overdoses are at an all-time high due to synthetic opioids like fentanyl. This paper will discuss the epidemiology and determinants of adolescent (13-18) opioid addiction and overdoses in New Mexico, with implications for effective interventions and policies.

## Search Methods

In my research, I employed PubMed as the primary search method to explore opioid-related outcomes in adolescents. I also relied on national and state-level epidemiological reports. This method proved essential in facilitating a thorough and evidence-based examination of the subject, contributing to a more comprehensive understanding of the challenges and consequences associated with opioid use among young individuals.

Top Searches	Results	Valuable
Search: ("Opioid-Related Disorders"[Mesh]) AND "Opioid-Related Disorders/epidemiology"[Mesh] Filters: Systematic Review, Humans, English, Adolescent: 13-18 years	46	7
Search: ("Opioid-Related Disorders"[Mesh]) AND "Risk Factors"[Mesh] Filters: Randomized Controlled Trial, Humans, English, Adolescent: 13-18 years	13	4
Search: ("Opioid-Related Disorders"[Mesh]) AND "Protective Factors"[Mesh] Filters: Humans, Adolescent: 13-18 years, English	7	4

I established strict inclusion and exclusion criteria to ensure the quality and relevance of the studies included in my analysis. Papers considered for inclusion had to focus on adolescents, provide data on opioid-related outcomes, and be published in peer-reviewed journals. Non-English language papers and those with insufficient data or a primary focus on adult populations were excluded to maintain the research's focus and rigor. In this study, the exploration of opioid-related deaths among minors is constrained by ethical considerations and privacy regulations. Reporting on such fatalities involves respecting the dignity of the deceased and complying with stringent laws safeguarding minors' health records. Consequently, detailed state-level data on these deaths are limited compared to national surveillance (Caswell & Turner, 2020). Despite these constraints, this research aims to theorize a potential link between increased opioid use, the proliferation of counterfeit pills, and the rise in unintentional overdoses among minors.

### **Part I: Broad Epidemiological Trends**

Opioids are a class of potent psychoactive substances that interact with the body's opioid receptors, primarily in the central nervous system, to produce a range of effects, including pain relief, euphoria, and, when misused, the potential for addiction and overdose (Centers for Disease Control and Prevention, 2021). Reviewing the country-wide statistics on opioid addiction and overdoses among adolescents is the necessary background for comprehending how the problem of underage drug misuse is changing in the 2020s. Looking at key findings from the U.S. Centers for Disease Control and Prevention (CDC)'s WONDER database, the epidemiological picture of adolescent drug use and overdose during the past 20 years indicates a complicated and dynamic trend among adolescents (Curtin et al., 2017). The number of opioid drug overdose deaths among adolescents varied notably. It surged from 1.6 per 100,000 people in 1999 to 4.2 in 2007, a worrisome over twofold increase. However, it decreased by 26% from

2007-2014, reaching 3.1. Although this positive trend was only temporary, in 2015, there was a shift, with the death rate rising to 3.7 per 100,000 (Curtin et al., 2017).

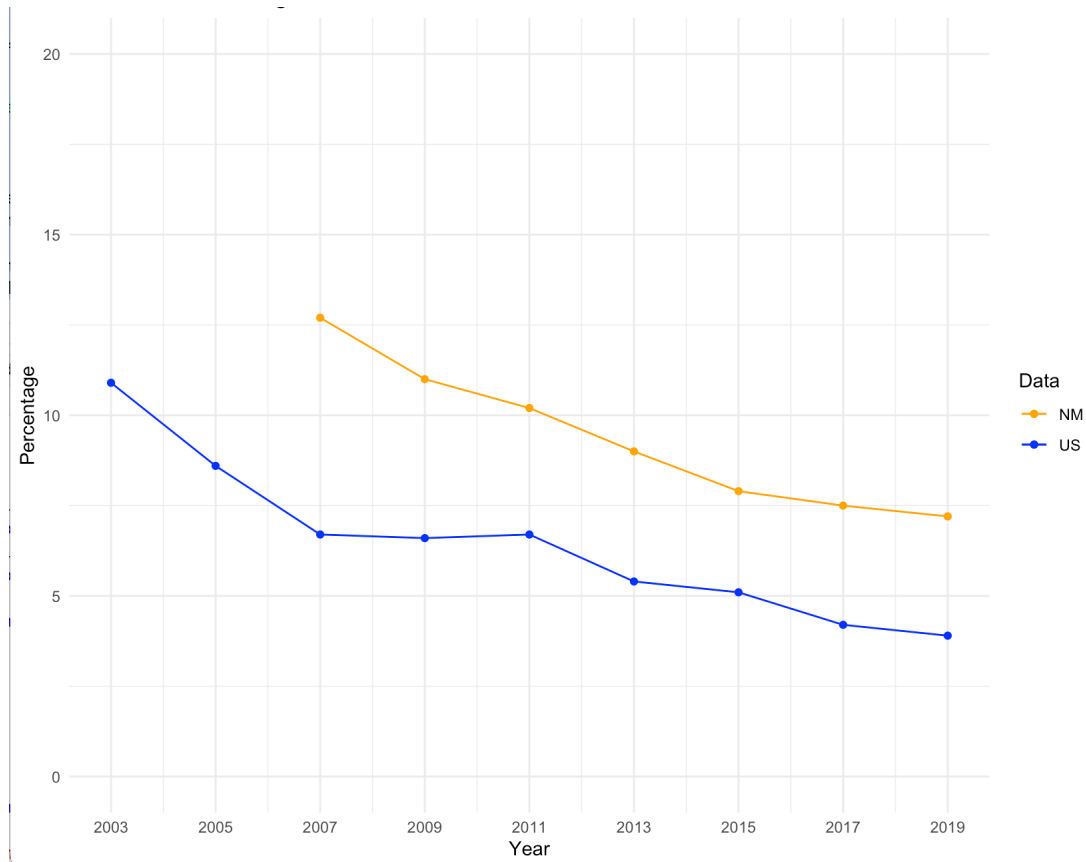
The number of adolescents who die from opioid-related overdoses within the same age range is particularly concerning. This rate unexpectedly increased more than three times between 1999-2007, going from 0.8 per 100,000 to 2.7 (Curtin et al., 2017). There was a period of relatively stable conditions between 2007-2011. However, the situation's stability should not obscure that it is still quite serious. The rate of opioid overdose deaths decreased to 2.0 between 2012-2014. This respite, however, was only temporary, as the rate bounced again in 2015 and reached 2.4 per 100,000 (Curtin et al., 2017).

Based on a data analysis from the School of Medicine at UCLA, adolescent drug usage patterns have changed significantly over the last 10 years, with rates remaining stable between 2010-2020 (Friedman et al., 2022). The crucial turning point, however, occurred in 2021, when it was discovered that 10th-graders were significantly more likely than before to consume illicit drugs—with the widespread use of illegal fentanyl and the dangers it poses, prompted an extensive analysis of adolescent overdose fatalities. The examination of fatal overdoses presents a grave picture (Friedman et al., 2022). Adolescent overdose deaths were reported in 518 cases in 2010, translating to a death rate of 2.40 per 100,000 people nationally. These numbers remained largely steady through 2019, with 492 deaths occurring at 2.36 per 100,000 people. (Friedman et al., 2022) Alarming, overdose deaths have increased exponentially since then, increasing to 954 deaths among adolescents in 2020 (4.57 per 100,000) and a disastrous 1146 deaths (5.49 per 100,000) in 2021. (Friedman et al., 2022) To put this into context, the overdose fatality rates among adolescents increased by a startling 94.03% between 2019-2020 alone. With a further 20.05% increase in 2021, this frightening surge persisted.

Zooming in on a state level, New Mexico’s Behavioral Health Barometer reports from the Substance and Mental Health Services Administration (SAMHSA) reveal that in the years 2013–2014, over 17,000 adolescents between the ages of 12 and 17—or 10.1% of all adolescents in the state—reported using illegal drugs in the month before to the survey. This proportion did not significantly change between 2010–2011 and 2013–2014, highlighting the continuous and chronic drug use problem among New Mexico's young (SAMHSA, 2015). With no appreciable variations recorded between 2015-2017 and 2017-2019, the yearly average proportion of 12- to 17-year-olds who used illegal drugs in the previous month remained consistent. An estimated 23,000 adolescents in New Mexico used illicit drugs in the last month on an annual average basis from 2017-2019. This prevalence was 13.6%. This incidence, which was much higher than the regional average of 7.0% and the national average of 8.2%, highlights the increased susceptibility of New Mexico's young to substance addiction (SAMHS, 2020). The figure below illustrates the lifetime opioid usage comparison between New Mexico and the United States, consistently highlighting New Mexico's notably higher percentage usage rates. This stark contrast in opioid usage rates should spur increased efforts and research focused on understanding and addressing adolescent opioid use within the state.

**Figure 1.**

Grades 9-12, Lifetime use of Opioids, by Year, NM, and US 2003-2019



*Note.* Usage percentage weights presented in this figure were combined from heroin and prescription medication data at both the national and state level (New Mexico Department of Health, 2016, 2022).

## Part II: Epidemiology by Disparities

Perceptions of opioid addiction have undergone significant transformations throughout history within Western society. The Western perspective of drug addiction in adolescents has undergone a significant transformation over time as well. Initially seen as a moral failing or lack of willpower, it is now understood as a complex brain disease influenced by genetics and environment. This shift has led to a more compassionate view, focusing on the adolescent brain's vulnerability to substances and emphasizing prevention and early intervention. Treatment approaches have become more holistic, addressing the interconnected biological, psychological, and social aspects of addiction. Efforts to reduce stigma and promote treatment seek to provide support and understanding rather than judgment for adolescents struggling with addiction

(Phillips et al., 2019). Additionally, challenging the common perception, adolescents grappling with opioid addiction defy the traditional stereotype associated with opioid use, highlighting the need for targeted intervention and support systems specific to this demographic.

While opioid misuse has traditionally been more common among males, the gap in opioid misuse between genders is progressively diminishing, with a growing number of women initiating abuse, including a higher prevalence of misuse among adolescent girls (McHugh et al., 2021). Although we are seeing higher misuse use across the board, males still overdose more frequently than females. According to Hermans et al. (2022), in the years 2016-2019, the number of Years of Life Lost (YLL) due to unintentional overdose among adolescents aged 10-19 stayed relatively steady, between 37,000-44,000. However, in 2020, there was a significant 113% jump in YLL compared to the previous year, going from 39,579 to 84,179 YLL. This increase was more significant for males, with a 121% rise, and for females, a 95% rise. In 2020, 19-year-old males had the most YLL, a 98% increase from the prior year. The most significant change, a 600% increase in YLL, was seen in 13-year-old males. Older adolescents (14-19 years) had higher overdose rates than younger ones (10-13 years). The most substantial changes in YLL from 2019-2020 were observed in adolescents aged 15 and below, including a 300% increase in 11-year-old males and 14-year-old females (Hermans et al., 2022). This data graphic below on US trends highlights the need for age-specific prevention efforts and the urgency of addressing the overdose issue.

**Figure 2.**

Years of Potential Life Lost Due to Unintentional Opioid Overdose, by Year, Ages 10-19, USA



*Note.* These figures represent YLL, a metric used to assess the effect of early mortality from drug overdoses among teenagers from 2016 to 2020. YLL is calculated by deducting the age of death from the average life expectancy for each individual. It aids in our comprehension of how these incidents have affected society (Hermans et al. 2022).

Similarly, in New Mexico, we are seeing historically more illicit drug use among male youth compared to females. Based on New Mexico Substance Use Epidemiology Profile reports, we can see that in 2013, painkiller usage, including heroin, was 13.2 % among male adolescents compared to 9.3% among female adolescents (New Mexico Department of Health, 2016). Moreover, with the increase in opioid usage starting around 2019, we can see these gender disparities continue to increase; in 2019, opioid usage was 16% among males and 13% among female adolescents in New Mexico (New Mexico Department of Health, 2022). These statistics highlight a concerning pattern of substance use disparities, with males consistently reporting higher usage rates. It is crucial to address these gender-based discrepancies and implement targeted interventions to mitigate the growing opioid crisis among young people in New Mexico.



According to Bares et al., In the past 10 years, rural communities throughout the United States have witnessed a troubling surge in opioid consumption and an unprecedented rise in overdose cases (2019). Paradoxically, the bulk of our knowledge about substance abuse is derived from research conducted in major urban centers. This disparity is evident in the limited number of studies addressing nonmedical prescription opioid use among rural adolescents, which indicate that young people in rural settings are significantly more likely, with ranges from 26%-35%, to engage in nonmedical prescription opioid consumption compared to their urban counterparts (Bares et al., 2019).

These disparities in adolescent misuse of opioids in rural versus urban areas have changed over the past decades in New Mexico. Based on county-level data, we can visualize these changes over time. Starting with more rural counties, let us look at Luna County, which is southwest of the state; in 2013, opioid use among adolescents was 13.3%. Comparing that to New Mexico's most populated county, Bernalillo, which includes Albuquerque, at the time, usage was 13.7%, which is not very significant (New Mexico Department of Health, 2016), but in 2019, there is a shift. Luna County in 2019 reported 20.5% youth usage of opioids, while Bernalillo County reported only 12.5% (New Mexico Department of Health, 2022). These shifting patterns highlight the dynamic nature of adolescent opioid misuse, where rural counties have witnessed a more pronounced increase in recent years. Understanding these variations is crucial for crafting targeted prevention and intervention strategies to address the changing landscape of opioid use among New Mexico's youth.

According to Vaughn et al., an analysis of adolescent nonmedical opioid use trends from 2004-2013 reveals consistent patterns for racial demographics (2016). Over this period, non-Hispanic white youth consistently reported higher levels of nonmedical use of prescription

opioids (NMUPO) compared to their African American and Hispanic counterparts. Notably, prevalence estimates for African American youth remained stable with no significant fluctuations. However, a substantial shift occurred in non-Hispanic white adolescent NMUPO prevalence after 2008, leading to a significant decrease. This decline resulted in prevalence estimates closely aligning with those of African American and Hispanic youth by 2013. In 2004, there was a 2.4% difference in NMUPO prevalence between non-Hispanic white and African American adolescents. In contrast, by 2013, no significant difference in prevalence was observed (Vaughn et al., 2016).

The table below reveals shifting trends in illicit drug use among New Mexico's adolescents and adolescents from 2013-2019. Overall, there is a notable increase in reported drug use, rising from 11.4% in 2013 to 14.6% in 2019 (New Mexico Department of Health, 2016, 2022). American Indian adolescents experienced a significant shift from 8.8% to 16.8% prevalence. Conversely, Black and Hispanic youth, though starting with higher percentages in 2013, showed relatively stable rates by 2019. The most striking change was observed among White adolescents, substantially increasing from 8.2% to 10.6%. These findings underscore the growing issue of substance misuse among New Mexico's youth, emphasizing the need for targeted prevention and intervention strategies tailored to the unique needs of each demographic group to address this concerning trend (New Mexico Department of Health, 2016, 2022).

**Figure 3.**

New Mexico Youth Opioid Misuse by Race, 2013 and 2019, Grades 9-12

<b>Race/ Ethnicity</b>	<b>2013</b>	<b>2019</b>
American Indian	8.8%	16.8%
Asian/Pacific Islander	22.1%	18.5%
Black	28.9%	26.9%

Hispanic	12.6%	15.3%
White	8.2%	10.6%
Total	11.4%	14.6%

*Note.* (New Mexico Department of Health, 2016, 2022)

### **Part III: Determinates of Risk and Protection**

Epidemiology is pivotal in unraveling health disparities, shedding light on the disproportionate distribution of diseases among various social groups. This understanding of health disparities aligns seamlessly with the Socio-Ecological Framework (SEF), which delves into the multifaceted determinants of health outcomes across populations. The SEF, comprised of individual, interpersonal, community, and societal levels, recognizes the intricate interplay between biological, behavioral, environmental, and socio-economic factors influencing health. As highlighted by Brownson et al., the engagement of public health practitioners, policymakers, stakeholders, and researchers is crucial in navigating evidence-based public health (EBPH) strategies to mitigate health disparities (2019). Moreover, Braveman emphasizes the integral relationship between health disparities and human rights principles, emphasizing the need to address unintentional yet impactful discriminatory processes and structures perpetuating inequities (2014). Understanding health equity as the cornerstone of social justice in health and reducing health disparities is a tangible measure of progress toward achieving better health outcomes for our adolescent population.

#### *Individual*

In understanding the individual aspects linked to adolescent opioid addiction, several factors play a crucial role. Studies highlight that using other substances like alcohol or illicit drugs previously tends to increase the likelihood of non-medical use of prescription drugs (NMUPD). When adolescents grapple with emotional difficulties, they may turn to alcohol or

drugs to cope with their challenging feelings, much like adults. However, this approach can lead to more immediate problems because their brains are still developing. Initially, using substances might seem to help ease unwanted mental health symptoms such as hopelessness, anxiety, and negative thoughts. Nevertheless, over time, it tends to make these issues worse and often leads to substance abuse or addiction (Miller, 2022). Additionally, attitudes that downplay the risks associated with drug use and engaging in delinquent or antisocial behaviors were identified as significant risk factors for NMUPD among young individuals. On the contrary, certain protective factors, such as strong religious beliefs or behaviors, were found to lower the chances of engaging in NMUPD (Nargiso et al., 2015).

### *Interpersonal*

Peers and parents play important roles as socialization and influencing agents in the lives of teenagers inside the system of relationships. Some of the most vital indicators of teenage drug use are found in the peer setting (Nichols et al., 2021). Adolescents who felt a connection with friends using drugs or held favorable opinions about drug use were roughly 1.4 times more inclined to support the misuse of prescription medications compared to peers without these friendships (Ford, 2008). Peer pressure becomes increasingly important in determining drug use habits as puberty progresses. However, one of the most essential factors in predicting adolescent drug usage is the ongoing role of parents and the environment their children live in. Parenting factors that are strongly associated with adolescent opioid abuse include insufficient parental monitoring, low parental engagement, physical abuse, parental histories of drug use, and permissive parental attitudes toward substance use (Nichols et al., 2021). While these friends and family factors have been shown as risk factors, they also provide protective factors for adolescents. Having a strong and consistent support system can be beneficial for adolescents

facing opioid use. Parents with good information and awareness were more likely to protect their adolescent children from drug abuse (Nawi et al., 2021).

### *Institutional*

The most significant impact on the community level for this population is school. School bonding, unfavorable attitudes about school, and academic success are all pertinent risk factors at the school level. Adolescents at risk for these conditions—low academic performance, school dropout, or lack of school bonding—had a much greater prevalence of prescription drug use (Young et al., 2012).

### *Community*

Drug availability within communities also plays a role in health outcomes. The research conducted by Monnat and Rigg (2015) delves into the intricate relationship between geographic location, adolescent opioid use, and the environmental factors influencing prescription opioid misuse among minors. Their study, using data from the 2011 and 2012 National Survey on Drug Use and Health (NSDUH), meticulously examines how the geographical setting influences the patterns of opioid usage among adolescents aged 12 to 17. Through a nuanced analysis, Monnat and Rigg highlight the differential impact of rural, small urban, and large urban environments on adolescent drug behavior. Their findings underscore the multifaceted nature of drug availability and its correlation with health outcomes among young individuals. The study indicates that rural areas, while exhibiting lower prevalence in illegal drug availability and peer influence, paradoxically demonstrate higher levels of risky attitudes toward drugs, increased engagement in criminal activities, and a greater reliance on emergency room visits, consequently raising the likelihood of obtaining opioids from healthcare professionals. Conversely, urban communities, characterized by a higher prevalence of drug distribution through illegal means and peer

networks, present distinct challenges in addressing and curtailing opioid accessibility among adolescents. By examining individual, social, and community factors, the study illuminates the complex interplay of diverse influences on adolescent prescription opioid misuse, contributing valuable insights into the contextual determinants shaping opioid-related behaviors among minors (Monnat & Rigg, 2015).

### *Policy*

Broader policy factors profoundly influence the use of opioids among adolescents. Elements such as the availability of opioids due to over-prescription, diversion, and aggressive pharmaceutical advertising have significantly contributed to the crisis. Transitioning from prescription opioids to cheaper heroin has been observed, driven by accessibility and cost factors. Government policies like drug scheduling and Prescription Drug Monitoring Programs (PDMPs) impact prescribing practices and treatment availability. Medicaid expansion has notably improved access to opioid use disorder (OUD) treatment. Social stigma, media influence, economic downturns, and law enforcement also play crucial roles in shaping opioid misuse patterns among adolescents, posing barriers to seeking help and exacerbating the crisis in specific communities (Jalali et al., 2020).

### **Conclusion**

In conclusion, this comprehensive analysis sheds light on the critical urgency of addressing the escalating opioid crisis among adolescents, particularly in New Mexico. The paper outlines the recent surge in overdose fatalities, demographic disparities, and the multifaceted determinants influencing opioid misuse. It underscores the imperative for targeted interventions addressing individual vulnerabilities, social influences, community factors, and policy considerations. To address this issue, we should Improve the availability of buprenorphine

and set up a central intake facility to facilitate treatment referrals more efficiently for adolescents. The significance of preventative tactics and regulatory restrictions, such as prescription medication monitoring and naloxone availability, in addition to these focused approaches. To address this issue in a way that is both comprehensive and incorporates customized tactics that consider socioeconomic differences, demographic changes, and the changing context of teen opioid abuse, a comprehensive strategy is required. Public health professionals, legislators, schools, and communities must work together quickly to put these comprehensive treatments into place and stop the epidemic of youth opioid addiction and overdose deaths.

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## **Appendix A**

### **Personal Reflection**

As a native of New Mexico, my personal experiences have woven an intricate connection between myself, my surroundings, and the pervasive issue of opioid addiction, particularly concerning fentanyl overdoses. Growing up and attending high school in this region, I witnessed firsthand the devastating impact of fentanyl overdoses within my high school peer group. The prevalence of these tragedies among my classmates underscored the gravity of the opioid crisis, imprinting upon me the urgency and personal relevance of understanding and addressing this issue.

Moreover, the harrowing journey of a family friend's son, who battled fentanyl addiction since his high school years, provides a poignant illustration of the challenges faced within New Mexico's healthcare system. Despite multiple attempts at inpatient treatment within the state, his struggle with addiction persisted, culminating in five life-threatening overdoses. This personal

connection amplifies the gravity of the opioid crisis, not just as a societal problem but as a deeply personal struggle affecting individuals within my immediate circles.

These experiences have profoundly shaped my perspective on the opioid crisis in New Mexico. They instilled in me a sense of urgency, empathy, and a firsthand understanding of the limitations and complexities of the existing treatment infrastructure within the state. Witnessing the failures and successes within my community has propelled my commitment to advocate for more effective interventions, tailored support systems, and enhanced resources to combat opioid addiction and prevent tragic outcomes. The intersection of my encounters with the opioid crisis, my upbringing in New Mexico, and the ongoing academic exploration of this topic within this paper has cultivated a deep sense of reflexivity. It underscores the interconnectedness between personal experiences, geographical context, and the pressing need for comprehensive and innovative solutions to tackle this pervasive issue within my home state.