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The Opioid Epidemic and Inadequate Medicaid Coverage

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By

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Abstract

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Opioid overdose is considered one of the major causes of preventable mortality in the United States. With the expansion of Medicaid, it was speculated that the rate of opioid use disorder would experience a significant decline. The present study explored the trends and causes of OUD in aspect of Medicaid expansion and demographic diversity in the United States. The study was based on a systematic review of evidence-based literature. The systematic review indicated that the opioid epidemic in the U.S. is driven by multiple factors such as age, ethnicity, socioeconomic profile, healthcare insurance, and social stigma across the interested stakeholders. Additionally, the benefits of Medicaid expansion were recognized by those counties that took appropriate measures to monitor and regulate the share of prescription opioids. The concept of prior approval for prescription options was an innovative initiative to prevent inconsiderate use of opioids. Also, the approval for other medications by Medicaid that are used to control similar

disorders such as depression, opioid addiction, and hypertension possesses the ability of reducing the danger of the opioid epidemic in the U.S. in the near future. However, Medicaid expansion for OUD could also prompt and increase the popularity of heroin abuse or abuse of other substances across the involved stakeholders. As a result, an integrated effort between public health officials, physicians, and third-party health insurance agencies is required to mitigate the opioid menace in the U.S. The concerned stakeholders should be provided the opportunity to access timely and appropriate care without the concern of social stigma.

Keywords: opioid, epidemic, United States, Medicaid, causes.

Introduction

Background

Since 1999, the death toll due to opioid overdose has significantly climbed in the United States. Historically, opioid abuse has remained a significant public health concern across the United States. Orgera & Tolbert (2019) highlighted that almost two million nonelderly individuals across the United States were affected by opioid use disorder (OUD) during 2017. It was also reported that 47, 600 registered deaths due to OUD occurred in the nation during the same period. The death toll due to OUD in the United States virtually doubled between 2007 and 2017. The major cause of opioid abuse has been connected to prescription pain-relievers. Prescription pain-relievers have been significantly associated with misuse, addiction, and overdose with opioids. Studies suggest that opioids are not only used for pain relief but are often abused and misused from the viewpoint of addiction and misdiagnosis, respectively. As the opioid epidemic continues to grow worse in the United States, Medicaid could play a crucial rule in alleviating the growing crisis.

In 2017, there were almost two million nonelderly adults with opioid use disorder (OUD). OUD is a clinical condition where the use of opioids has caused problematic patterns and to serious impairment or distress (PCSS, 2017). The President of the United States declared the opioid crisis as a national health emergency due to the increased incidences of opioid misuse, addiction, and deaths related to overdose (Gold, &Wong, 2018). If Medicaid were to be expanded in all states, then an additional 1.1 million individuals would have access to SUD (substance use disorder) treatment (Gold &Wong, 2018). The major cause behind opioid misuse and overuse is attributed to the prevalence of chronic pain. Pain is a personal experience and lacks a natural basis. Although the existence of pain cannot be denied in an individual, its

severity and nature are often confounded by the emotional background and intention of the end-user for seeking prescription opioids. On the contrary, certain types of pain, such as neuropathic or psychopathic pain are often misdiagnosed as nociceptive pain. Although such circumstances require the use of GABA-agonists and antidepressants, the patients are often prescribed opioid analgesics (Debono, Hoeksema & Hobbs, 2013). Additionally, the habit-forming properties of opioids are well acknowledged. Therefore, opioids are often abused in the disguise of prescription medications. Although the sales of opioids as OTC (over-the-counter) products is strictly prohibited in the United States, different OTC products (such as Marijuana) are abused by end-users. For this reason, different states have denied health insurance for the affected individuals. However, the introduction of the Affordable Care Act paved the way for enrolling individuals of OUD with Medicaid.

In the past, Medicaid has been instrumental in addressing the healthcare gaps in the field of public health in the United States (Jacobs & Callaghan, 2013). Such initiatives are supported by the role of Medicaid in addressing the widespread of AIDS in the U.S. during the 1980s as well as their role in overcoming the Flint Water Crisis. Medicaid is the Federal Health Insurance agency in the United States, which provides health coverage and the necessary support for individuals affected with OUD. Up until May 2019, 36 states, along with Washington D.C., have adopted the Medicaid expansion. The increased federal funding is speculated to cover all U.S. adults with an annual income of 138% of the national poverty level (NPL). The NPL is presently estimated to be approximately 17,000 Dollars. The Medicaid expansion package for OUD allows to cover the financial liabilities associated with behavioral health services as well as services for reducing substance use disorders (SUD). The widespread outlook of Medicaid coverage of OUD connects that individual who confronts withdrawal problems due to opioid abuse and replaces

opioids with other substances could still be covered through the federal health insurance agency (Cher, Morden, & Meara, 2019).

Such provision raises the concern whether Federal Health Insurance agencies should continue to support victims of substance abuse. The justification is based on the philosophy that individuals of substance abuse often misuse and abuse substances from the perspective of addiction or habit-forming behavior without any clinical relevance. On the contrary, the definition of substance abuse has changed over the years to include the terms "substance addiction," "substance abuse," and "substance misuse" into one broad category "Substance Use Disorders." Since the domain of substance use disorder is classified as a behavioral disorder, healthcare coverage of OUD and other SUDs cannot be denied to the concerned stakeholders by the National Health Insurance agencies. On the other hand, reports suggest that ethnicity, age, and gender are strong confounders of OUD. Therefore, a dilemma exists whether opioid abuse and misuse should be strictly outlined before Medicaid expansion (Cher et al., 2019). Although such outlines could provide the necessary silver-line for addressing the dilemma of Medicaid coverage, it could be difficult to implement such strict measures across the clinical settings. This is because both clinicians and policy-makers might find it difficult to set apart opioid misuse from opioid abuse.

Problem Statement

The compelling question that upsets public health officials and policy-makers is "whether the expansion of Medicaid provisions would increase the probability of opioid abuse or misuse?" Although Cher et al. (2019) explored the relationship between Medicaid expansion and opioid usage pattern in the United States, the authors did not highlight whether opioid use and abuse were replaced by other habit-forming medications. Yet, both Sharpe at al. (2018) and Cher et al.

(2019) highlighted that Medicaid expansion replaced the indiscriminate use of opioids with specific medications for depression and anxiety or idiopathic pain. In addition, Salonerand et al. (2018) highlighted that Medicaid expansion significantly enhanced the prescriptions for buprenorphine (a drug indicated for treating opioid addiction) as well as prescriptions for cardiovascular conditions such as diabetes. However, different authors are concerned that Medicaid expansion could significantly worsen the opioid epidemic over the long-term.

Such findings were accompanied by the fact that although the prescription shares of opioid pain-relievers have cumulatively reduced by 13% over the last five years; the widespread presence of OUD has risen by 38% in the U.S. during the same period. These findings suggest that the commonness of opioid use, abuse, or misuse is not primarily driven by prescription-based utilization. For example, more than 77% of the nonelderly adults who were affected by OUD in 2017 happened to be non-Hispanics. Likewise, the prevalence of OUD across males is significantly higher in U.S. males than females (60% versus 40%). However, the popularity of OUD across nonelderly females is significantly on the rise across the U.S. Studies also suggest that age is also a risk factor for OUD because 50% of the incidences of OUD are attributed to the age groups between 18 years and 34 years (Saloner et al., 2018).

In addition, a report published by the Bloomberg School of Public Health (BPH) during 2018 suggested that both private and public insurance agencies have contributed to the opioid epidemic in the U.S. The report stated that the various insurers missed significant opportunities to ensure safe and effective healthcare at the cost of providing coverage for prescription opioids. In 2016, the healthcare burden of the opioid epidemic in the U.S. was estimated to be 504 billion dollars. The significant rise in healthcare costs would further inflict a financial burden on the federal funds for providing Medicaid expansion for OUD. It was reflected that the lack of firm

control by insurers or the policy-makers on prescription opioids would uplift the danger of the opioid epidemic in the U.S. in the near future.

The researchers at the Bloomberg School have opinionated for step therapy for managing pain and inflammation with less risky medications such as the non-steroidal anti-inflammatory drugs in place of opioids. However, the clinical indications for opioid cannot be impaired under any circumstances. This is because opioids have the ability for restricting central pain. Hence, opioids continue to remain the gold standard ethics for managing acute pain. The Bloomberg report acknowledged this issue and voiced for the prior authorization of prescription opioids from both public and private insurers before approving them for managing chronic pain. Such checks and controls have been already initiated in the U.S., whereby prior authorization for prescription opioids has become mandatory for managing patients of chronic and non-cancer pain. The present policy on such conditions is to initiate therapy with extended-release and long-acting opioids. Such opioid formulations provide significant relief from chronic pain and have a low potential for addiction or abuse.

On the contrary, the commercial plans tend to offer covered opioids at a relatively cheap premium. For example, the median commercial plans support 74% of the approved opioid pain-relievers in Tier 1 while the median commercial co-payment category in Tier 1 offers opioids to its end users for just 10 dollars per month. Such findings suggest that the policy guidelines of public or private health insurance agencies on opioid prescriptions could rule the opioid epidemic. Such provisions do not necessarily translate into opioid misuse or overuse because opioids are still prescription medications and not OTC in the United States. Therefore, it could be argued that physicians would not randomly prescribe opioids to their patients. Nonetheless, the physicians are often forced to prescribe opioid analgesics because other medications are not approved under insurance coverage. On the contrary, the Centre for Disease Control and

Prevention has forced stricter limits on prescription opioids from 2016. The CDC (2016) guidelines suggest that non-opioid therapy should be the preferred principles of treatment for managing chronic pain except for the pain associated with cancer, palliative care, or end-of-life care. These findings suggest that policy guidelines could play a significant role in overcoming the opioid epidemic. However, there should be more strict guidelines for encouraging or discouraging prescription opioids based on evidence-based literature.

Purpose of the Study

It would be suitable to explore the causal factors for opioid use disorder (OUD) beyond prescription-based consumption. Such findings would help to plan appropriate public health interventions for reducing the frequency of OUD rather than providing financial support through Medicare and Medicaid. Although it is too early to draw any definite evidence on the assumption that Medicaid coverage would further worsen the opioid epidemic, the trends in prescription-based opioid usage and opioid abuse could provide a suggestion, whether the decision to expand Medicare coverage to opioid users is justified and rational. Therefore, the present article investigated the research question, "Whether Medicare Expansion under the Affordable Care Act has significantly influenced opioid prescriptions in the United States?”

Methodology

Study Design and Sampling

This study was conducted based on a systemic review because such design is considered the highest level of evidence (Level-1) in the field of evidence-based literature. Many procedures were put to an application to guarantee quantitative and qualitative literature review interconnected to the opioid epidemic and lack of Medicaid coverage in the United States. Comprehensive research was done utilizing MeSH terms constructed from the keywords, and Boolean connectors were used to access various clinical websites such as Pubmed Central, Cochrane Database, CINAHL, MEDLINE, and OVID online. The articles were composed of peer-reviewed journals, case studies, government-based reports, and other articles. Appropriate keywords were linked through Boolean connectors for conducting a scoping search on the relevant articles. The keywords and Boolean connectors for this study were Medicaid OR Affordable Care Act AND Opioid Use OR Opioid Epidemic AND Factors OR Causes AND United States. These keywords were also searched on California State University Northridge's library search engines which also helped access additional articles for comprehensive examination pertaining to the opioid epidemic in the United States, Medicaid laws, Affordable Care Act and topics related to these areas. The article criteria were narrowed down to those published during the last 15 years, and in English were only considered for the systematic review. The period was so selected to compare the frequency of opioid epidemic before and after the implementation of the Affordable Care Act while English was chosen as the preferred language of publication owing to the lingual barriers of the researcher. After sorting out the articles based on the inclusion and exclusion criteria, a CASP (Critical Appraisal Skills Program) analysis was administered to measure the relevance and reproducibility of the findings. My

search utilized a minimum, but not limited, of 25 peer-reviewed articles. A detailed explanation of the data collection process is presented in the next section, which is also included in Table 1.

Data Collection

The detailed inclusion and exclusion criteria for the systematic review are presented in Table 1.

Table 1: Inclusion and exclusion criteria for the studies selected for the review

Inclusion Criteria
Studies published in English and during the last 15 years
Studies, with a CASP score of at least seven
Articles available in the form of abstracts and full publication
The respective publication should have been cited in indexed journals.
Exclusion Criteria
Studies published in languages other than English and before the last 15 years
Studies, with a CASP score of below seven
Articles available in the form of white papers or newspaper publications
Publications that were cited in indexed journals

Data Analysis

A CASP analysis is a critiquing tool that evaluates the accuracy of quantitative or qualitative studies based on their background, methodology, results, and conclusion. Articles with a CASP score of at least seven were finally considered for the systematic review. Finally, the articles selected for the review was sorted into three broad themes; causal relation for the opioid epidemic in the U.S., the role of Medicaid in alleviating or aggravating the opioid

epidemic, and the role of Medicaid in improving care provisions in individuals presenting with idiopathic pain. A thematic analysis was carried out on the sorted as articles to assume conclusive evidence on the relationship between Medicare expansion and the opioid epidemic in the U.S.

Research Questions and Hypothesis Testing

The study explored one main research question (MRQ) and three sub-research questions. The sub-research questions (SRQs) were investigated to answer the MRQ in a complete and conclusive manner. The MRQ that was investigated in this study is "Whether Medicare Expansion under the Affordable Care Act has significantly influenced the opioid epidemic in the United States?" The SRQs and their respective hypothesis that were explored in this study are presented in Table 2.

Table 2: SRQs and their Respective Hypothesis

SRQ1: Whether the opioid epidemic in the U.S. is driven by different risk factors, and is health insurance one amongst them?
H0 $_{SRQ1}$: Opioid epidemic in the U.S. is driven by different risk factors, and health insurance is one amongst them.
SRQ2: Whether Medicaid expansion promise reduction of the opioid epidemic in the U.S.?
H0 $_{SRQ2}$: Medicaid expansion promise reduction of the opioid epidemic in the U.S.
SRQ3: Whether Medicaid expansion has resulted in improved outcomes amongst individuals presenting with non-specific or idiopathic pain?
H0 $_{SRQ3}$: Medicaid expansion has resulted in improved outcomes amongst individuals presenting with non-specific or idiopathic pain.

SRQ4: Whether Medicare Expansion under the ACA (Affordable Care Act) has increased the incidences of substance abuse apart from opioids?

H0: Medicare Expansion under the ACA (Affordable Care Act) has not increased the incidences of substance abuse apart from opioids.

Discussion and Analysis

Impact of Medicaid Expansion on Opioid Usage

Cher et al. (2019) reported a significant increase in the mortality rate due to opioid overdose in the U.S. since 1999. The authors composed that the extension of Medicaid provisions as per the ACA of 2014 might weaken the opioid crisis. Such apprehensions were enclosed on the assumption that the end-users of opioids would have easy access to low-cost and reimbursable care provisions. The authors investigated the association between Medicaid expansion and Medicaid-covered prescriptions for opioid analgesics and addiction. The study evaluated the Medicaid State Drug Utilization Data (MSDUD) from 2010 to 2016 for those states that adopted the Medicaid expansion and those states that did not. A regression analysis was applied as the statistical tests of inference to explore the cause-and-effect relationship between Medicaid expansion and trends of opioid prescription.

Although the number of prescriptions per enrollee significantly increased post-2014, there was only a modest increase in opioid prescriptions. On the contrary, there was significant growth in the prescriptions for antidepressants and drugs for managing opioid abuse. The study further reflected that the growth in prescription drugs for managing opioid abuse was higher across those states that exhibited a higher prevalence of opioid use disorder before 2014. The Cher et al. (2019) study showed that Medicaid expansion did not worsen the opioid crisis; rather, it played a significant role in alleviating the opioid crisis by providing easy access to affordable care. Furthermore, the indiscriminate use of opioids was replaced by specific drugs for pain, depression, and hypertension. Therefore, it could be inferred that Medicaid not only promises to curb the opioid epidemic in the U.S. but could also translate into greater diagnosis and positive health outcomes in the concerned stakeholders.

Hedberg et al. (2019) clarified the importance of integrated approaches between public health authorities and healthcare systems for overcoming the opioid epidemic. The authors highlighted the danger of the opioid epidemic in Oregon is similar to that of the U.S. as a whole. For addressing such crisis, the Oregon Health Authority (OHA) initiated a strategic move known as the "Opioid Initiative" that include the integration of public and associated healthcare systems across various sectors. Hedberg et al. (2019) studied the impact of the "Opioid Initiative" on the opioid epidemic in Oregon for the period 2015 to 2017. The study was based on the background that the state of Oregon registered the sharpest decline in mortality from prescription opioids compared to any other state in the U.S. The program was launched in 2015 and aimed to integrate efforts that directly translated into patient care, safety, and overall population health by promoting access to non-opioid medications for managing pain.

The "Opioid Initiative" further supported medication-assisted treatments and naloxone access for individuals who used, misused, or abused opioids. The major aim of the initiative was to reduce the share of prescription opioids through strict data monitoring and policy regulations. Four stakeholders formed the functional domain of the Opioid initiative of Oregon. These domains include a Medicaid coordinated care provision that aimed to reduce the prescription share of opioids, a Health Evidence Review Commission which set guidelines and standards for the use of opioid and non-opioid medication for managing back pain in patients who were covered through Medicaid, framing of state-wide opioid prescription guidelines, and a data dashboard on opioid consumption. Each domain involved a partnership with the government, public, and private healthcare systems along with the external stakeholders. Hedberg et al. (2019) showed that the percentage of Oregonians who were on 90 or more MEDs (Morphine-Equivalent Doses) displayed a reduction of 37% (11.1 per 1000 individuals versus 7 per 1000 individuals) from 2015 to 2017.

The study further showed that death due to overdose from prescription opioids also decreased by 20% (4.5 per 100, 000 individuals to 3.6 per 100,000 individuals) from 2015 to 2016. The percentage of Medicaid clients who showed a history of 120 MEDs or more for 30 consecutive days reduced from 2.3% in 2015 to 1.6% in 2017. The authors concluded that integrated approaches between public and private health authorities could play a significant role in fighting the opioid epidemic in the United States. The authors properly considered the state that showed the highest decline in Opioid usage during recent years. This is because the findings of the Hedberg et al. (2019) could help other states to device the success and adopt the "Opioid Initiative" that was implemented by Oregon. Hedberg et al. (2019) study implicated a holistic effort from different stakeholders is necessary for fighting the opioid epidemic in the United States.

While Medicaid expansion or coverage of opioid users does not necessarily implicate that it would magnify the opioid threat, such assumptions are supported by the findings of the Opioid initiative in Oregon where regulatory and policy frameworks successfully controlled the numbers of prescription opioid in individuals who were covered under Medicaid. However, the lack of regulatory or policy guidelines or lack in monitoring the prescription share of opioids for Medicaid and non-Medicaid consumers could heighten the opioid epidemic in different states of the U.S. On the contrary, the Hedberg et al. (2019) study supported the findings of Lim et al. (2019) who also showed that Medicaid expansion prompted replacement of opioid prescriptions with non-opioid medications. These medications were not only used for managing physical pain or inflammation but various set of diseases that prompted neuropathic or psychopathic pain and medications for other organic diseases whose symptoms include pain and inflammation. The study further showed that Medicaid and allied health insurance agencies should cover medications that are indicated for the management of opioid overdose or abuse. Although it

might seem to be a financial burden on the Federal funding; however, the decision could have a long term and cost-effective impact owing to the reduction in the frequency of the opioid epidemic. For example, approval for naloxone in the "Opioid Initiative" of Oregon played a significant role in preventing opioid abuse or opioid overdose.

Saloner et al. (2018) shared the impact of the ACA in influencing the opioid crisis in West Virginia (WV). The evidence suggests West Virginia as an epicenter of the national opioid crisis in the U.S. During 2016, the registered incidences of fatal overdose with opioids in WV were estimated to be 43.4 individuals per 100, 000 individuals. Saloner et al. (2018) examined the insurance claims from Medicaid during the period 2014 to 2016 for analyzing the trends of OUD in WV. Like other states of the United States, WV also shared the opportunity of obtaining the Medicaid expansion for OUD under the Affordable Care Act. It was argued that the Medicaid expansion would help those stakeholders with OUD who did not have access to appropriate, timely, and effective healthcare facilities. The study showed that 5.5% of the enrollees in the Medical expansion were diagnosed with OUD every year while the monthly occurrence of OUD nearly tripled, from 2014 to 2016. These findings suggest that Medicaid expansion did more harm than good in combating the opioid crisis in West Virginia. However, there was also a significant increase in the prescription share of buprenorphine during the evaluation period.

The OUD patients also received counseling and drug testing formalities during the same period. From the West Virginia case study, it could be inferred that Medicaid expansion not only provoked the opioid crisis in WV, but it also increased the healthcare costs for the federal resources for covering the medications under Medicaid expansion program for treating opioid abuse and misuse across the concerned stakeholders. The findings of Saloner et al. (2018) are contradictory to that of Cher et al. (2019). The reason for the contradiction might occur for the

difference in demographics of the two populations that were considered for the two studies. However, both the authors agreed that Medicaid expansion helped to treat patients of opioid abuse. Since the prescription shares of naloxone and buprenorphine increased in the U.S. during 2014 and 2018 amongst individuals who availed Medicaid expansion, it could be considered that that opioid users are making a strong attempt to abstain from addiction to opioids. On the contrary, it could also be argued that Medicaid expansion has paved the way for opioid abuse across new enrollees to the state-sponsored health insurance schemes. However, such assumptions could be only proven over the long term.

Causes of the Opioid Epidemic in the United States

Saloner et al. (2018) highlighted the opioid overdose in the U.S. is determined by various factors. Opioid overdose refers to the increased consumption or prolonged usage of prescription medications, including heroin and fentanyl. Saloner highlighted that opioid overdose is witnessed across all demographic groups in the U.S; however, its occurrence is relatively higher amongst African-Americans. These findings are supported with the reports of the Bloomberg School, which also portrayed that 77% of the occurrences of opioid usage is witnessed across non-Hispanics. Although the Bloomberg School data hinted at indiscriminate and illicit use of opioids in the referred population, Saloner et al. (2018) highlighted that all incidences of opioid use in the target population are neither abuse nor misuse. Rather, Saloner et al. (2018) suggested that multiple factors such as organizational and clinical influence the risk of opioid overuse.

The fundamental factors that contributed towards the opioid epidemic include poverty and racism, while the clinical factors include inadequate pain management and poor access to harm-reduction or addiction management services. The authors argued that public health initiatives should prioritize on data-based resource allocation and steps to ensure safe and

effective prescription across them. On the other hand, policy guidelines such as stigma-reduction campaigns, increased financial allocation for harm reduction proposals, reforms of legal proceedings driving criminal justice, and regulations on controlled substances could play a significant role in reducing the opioid epidemic. Nonetheless, Medicaid tends to cover low-priced opioids and related compounds that prompt physicians to prescribe such medications to the concerned stakeholders, including the African-American population. Expanding the provision of Medicaid expansion to high priced and relevant medication might reduce the prescription share of opioid analgesics in the U.S. However, the financial burden of such measures should be estimated in terms of cost-benefit ratio before approving them under the Medicaid schedule.

Dasgupta et al. (2018) contradicted the findings of Hedberg et al. (2019) because the authors believed that there is a strong cause for the opioid epidemic in the United States and any attempt to lessen the epidemic would provide short-term data that would not last in the long run. Hence, it could be considered that the Oregon initiative is just an illusion for the two years after the initiative had been implemented. Dasgupta et al. (2018) provided a logical explanation for their speculations based on evidence-based literature. The authors considered historical and established data on the pattern and causes of opioid abuse in the United States. In another interesting but logical discussion, Dasgupta et al. (2018) highlighted that the opioid crisis in the United States is not easy to fix, considering its social, economic, and clinical determinants. Medicaid expansion might be a mediator for opioid abuse. On the contrary, Dasgupta et al. (2018) stated that prescriptions are the major vector for the opioid crisis in the United States. Moreover, the crisis is also fueled by the economic and social disruptions, considering the cause of the disease for which opioids are prescribed. It is evident that opioids act as a retreat not only for overcoming physical and psychological traumas but also to overcome social isolation and

hopelessness. Therefore, an overreliance on opioids led to the opioid crisis over a time-span in the U.S. However, the roots of the opioid epidemic in the U.S. could be traced back to the 1980s. During this period, the prescriptions of propoxyphene (an opioid directed for the management of acute pain) grew so much that it became the second-most prescription-based dispensed drug in the U.S. Reports published during that period reflected that 70% of the documented drug-related injury or deaths in the nation was credited to the use and misuse of legal medications.

However, a decade later, the healthcare settings in the U.S. were shaken by the shocking revelations that chronic pain remained largely untreated or undertreated. Previously, psychopathic therapy such as hypnosis was used to manage chronic pain in the U.S. However, with increased understanding on the basis of chronic pain, different types of analgesics (including opioids) became the most requested drug in the nation for managing pain and inflammation. There is no denial of the fact that certain types of chronic pain do have an organic basis; however, it is also true that all cases of chronic do no mandate opioid prescription (Dasgupta et al., 2018). Dasgupta et al. (2018) further highlighted that apart from the organic basis or the severity of chronic pain, the perception and expectation of patients considering relief from chronic pain stimulated prescription opioids. Moreover, there was a significant increase in the incidences of musculoskeletal disorders due to an aging population and the rise in the obesity epidemic that was prompted by socioeconomic prosperity. Finally, the incidences of higher survival rates from injury and cancer as well as increased obstacle of different surgical interventions greatly increased the popularity of chronic pain in the United States. Therefore, it is not surprising that the U.S. witnessed a surge in prescription opioids from the 1990s. The high occurrence of chronic pain in the United States translated into the opioid epidemic within three decades. Secondly, neither the private nor the public health insurance agencies did find it

sensible to cover behavioral therapy for chronic pain. As a result, both physicians and patients were forced to opt for prescription opioids (Dasgupta et al., 2018).

Also, the pharmaceutical companies took this as an opportunity to promote and develop a channel of painkillers that include new and costly opioids (Herzberg et al., 2016). These medications were marketed in the form of ERF (extended-release formulation), transdermal patches, nasal sprays, and mouth dissolving tablets. Since some of these products were easily available, the risk of opioid abuse persisted in the U.S. healthcare market (Conaghan, 2012). The opioid crisis started to worsen owing to the increase in the occurrences of gastrointestinal and cardiovascular adverse effects of non-opioid painkillers. Hence, the regulatory and legal bases supported opioid usage rather than discouraging its use across U.S. clinical settings. Even nursing professionals were authorized to administer opioids in patients displaying with severe or chronic pain in the lack of a consulting physician or during an emergency (Dasgupta et al., 2018).

The major advantage of prescription opioids that prompted its use was its lower potential for gastrointestinal or cardiovascular adverse events in comparison to the non-opioid painkillers (Meldrum et al., 2016). Also, opioids were often viewed as a prescription supplement to the body's elemental opioids; endorphins and enkephalins. Likewise, the central pathways for acute and chronic pain directed the use of GABA-agonists such as opioids for reducing the transmission of pain into the cognitive parts of the brain. Different pharmaceutical companies further took the opportunity to market opioids having lower addiction potential for managing pain and inflammation as off-label products. Additionally, such approaches received strong encouragement from physicians because the pharmaceutical companies offered a profitable package for promoting off-label opioids through CMEs, lobbying, and kickback schemes (Hadland, Krieger, & Marshall, 2017).

Likewise, a certain number of unethical physicians generally prescribed opioids in the disguise of chronic pain that encouraged addiction and overdose of opioids. From 2010, the opioid epidemic in the United States witnessed further shifts. This phase marked the entangled risk of opioid and heroin abuse that rose from 2010 to 2015. During this period, the concerned stakeholders shifted their focus to cheaper and powerful alternatives to opioids. On the other hand, the formulation of Oxycontin was modified that made it difficult to crush. Such modification was thought to reduce the danger of opioid abuse overdose. In reality, the threat of opioid abuse was replaced by heroin use amongst concerned stakeholders. These findings reflected that an advantage to reduce the usage of opioid in the U.S. market would prompt abuse with other medications that are functionally similar to opioids. Therefore, the opioid epidemic includes all those drugs that have a habit-forming property like opioids or those that are used to manage opioid addiction, but itself has the potential for addiction (Dasgupta et al., 2018).

During this phase, the clinicians and policymakers also reassessed the beneficial effects of prescription opioids as outdoor medications based on their safety and efficiency. The next phase of the opioid epidemic in the United States prompted from 2013 and exists until now. This period marked the transition in the opioid epidemic as a function of significant improvements in the global supply chains and logistics that prompted sharp increases on the trade of strong and less-bulky products. As a result, this period witnessed a significant outpouring in the market share of fentanyl and fentanyl equivalents. Fentanyl is a chemical product that is often present in counterfeit pills and commercial heroin. A study highlighted that the sales of fentanyl equivalents registered a massive growth of 540% from 2013 to 2016. Dasgupta et al. (2018) highlighted it would be unwise to blame the prescription share of opioids as the sole influencer for the opioid epidemic in the U.S. Rather; the authors implicated that opioid overdose could expand due to increased consumption and less legal regulations on the sales of habit-forming

drugs other than opioids. Dasgupta et al.'s theory of holding prescription vector as the major cause of the opioid epidemic is challenged by the findings of the Centre for Disease Control and Prevention (CDC, 2017).

The CDC (2017) argued that there was no significant reduction in the opioid epidemic in the U.S. during 2012 and 2015 when the share of prescription opioids registered a significant decline. The CDC assumption was supported from the findings that there was a 38% increase in the incidences of mortality due to opioid overdose during the same period. Dasgupta et al. (2018) further suggested a historical relationship between dispensed volumes of opioids and death due to opioid overdose. Although certain studies suggested that there was misclassification or overestimating of opioid-related mortality due to the lack of appropriate autopsy protocols, the change to non-opioid painkillers or habit-forming drugs other than steroids cannot be undermined under any circumstances. The findings of Dasgupta et al. (2018) substantiated that merely increasing the coverage of Medicaid would not help to lessen the opioid epidemic in the United States. If an initiative was successful, then its benefit should have been observed in each state and county of the United States. On the contrary, studies suggest that the extent of the opioid epidemic in the United States vary between the counties as well as the states.

Kolodny et al. (2015) highlighted that the non-medical use of opioids also increased simultaneously from the late 1990s to reach a peak of 2.7 million new users by 2002. However, the number of non-medical opioid users significantly declined to reach 1.8 million by 2012. Yet, the growing volume of individuals who were non-medical opioid users was significantly high compared to the number of individuals who withdrew from the non-medical use of opioids. On the contrary, there was a significant increase in prescription opioids from 1999 to 2011. For example, the prescription shares of hydrocodone and oxycodone grew by two- and five-times during this period. The mortality rate due to opioid overdose during this period also reached a

powerful high to about four-times from 1999. The opioid risk not only transformed into higher mortality rates but also accounted for a significant increase in emergency room visits, neonatal abstinence syndrome, and in-patient admissions.

The CDC (2017) highlighted opioid overdose in the United States was witnessed across almost every population group; the rate was higher in males below the age of 50 years. A report from the Massachusetts Department of Public Health (2016) highlighted 76% of the deaths due to opioid overdose in Massachusetts was witnessed in individuals belonging to the age group below 50 years. The same report further suggested that the deaths due to opioid overdose were more noticeable in males belonging to the age group between 18 years and 35 years. The death rate across males belonging to this age group was three-times higher than that of females. The number of deaths due to opioid overdose was also higher in individuals who were released from prisons, those who filled the opioid prescription from multiple pharmacies, and those who consumed opioids along with other scheduled medications. The CDC (2017) data further explained that the users for non-medical use of opioids belonged to the age group of 18 years to 25 years while for that of prescription opioids belonged to the age group of 26 years and older. These findings reflect that the younger population might have abused or become addicted to opioids compared to their older peers. On the contrary, older individuals were high users of prescription opioids compared to their younger peers.

Likewise, it could be inferred that older individuals must have exhibited such clinical conditions that mandated prescription opioids. Such findings are not surprising because older individuals exhibit a higher prevalence of chronic pain and obesity compared to their younger peers. Both these conditions demand long-acting opioids for ensuring positive outcomes across the concerned stakeholders. On the contrary, younger individuals are more prone and inclined to abuse different types of substances (including opioids) while transitioning from adolescence to

adults. These findings further confirmed by CDC (2016) that highlighted younger individuals initiate opioid misuse in their early to late 20s. For this reason, mortality due to opioid abuse is more likely in the age range between 25 years to 54 years.

In another study, Rudd et al. (2016) argued that the age-related demographics of opioid abuse and its related mortality is not certain; rather, the cause-and-effect relationship between opioid abuse and mortality is unstable by abuse of other substances such as heroin and synthetic opioids. Muhuri, Gfroerer, & Davies (2013) highlighted most individuals on prescription opioids with an intent to misuse it shift to other medications such as heroin due to their easy availability in the black market. Muhuri et al. (2013) reported that 80% of the heroin users reported that they started with prescription opioids. Moreover, the public health effects and the healthcare burden of opioid and heroin abuse are intertwined. Such facts were confirmed by the CDC (2017) report which reflected that the rate of in-patient admission for OUD between 2001 and 2011nearly doubled amongst non-Hispanic whites belonging to the age range of 20 to 34 years who either simultaneously or subsequently abused heroin in addition to prescription opioids.

However, the in-patient hospitalization rates due to OUD remained fairly stable amongst other age groups and amongst non-Hispanic Blacks. These findings implicate two speculations, either the non-Hispanic Whites were unable to tolerate the combined abuse of opioid and heroin compared to their non-Hispanic black counterparts or the non-Hispanic Whites were economically affluent to access in-patient care compared to their non-Hispanic counterparts. The CDC (2017) report further suggested that the rate of death due to heroin overdose significantly increased (around 2.5 folds) amongst non-Hispanic Whites during this period. Rudd et al. (2016) calculated that there was a 200% increase in deaths due to the cumulative overdose of heroin and opioids from 2000 to 2014. Dart et al. (2015) highlighted the necessity of National initiatives for reducing the share of prescription opioids, and the volume of prescription opioids exhibited an

uncertain decrease from 2012 to 2014. Considering such circumstances, the decision to expand Medicaid to those with OUD seems appropriate and justified.

These assumptions were supported from the study of Cher et al. (2019) that elaborated the field of Medicaid expansion and its impact in alleviating the frequency of OUD. Cher et al. (2019) indeed showed that Medicaid expansion helped to decrease the share of prescription opioids by replacing them with antidepressants and allied medications for alleviating pain and inflammation. Studies also showed that Medicaid expansion helped to increase the prescription share of those medications that were used to treat opioid or heroin addiction. However, the Cher et al. (2019) study did not elaborate on whether the provisions of Medicaid expansion were utilized by the concerned stakeholders. Compton, Jones, & Baldwin (2016) showed that users of prescription opioids mostly transitioned to heroin use that resulted in a three-times increase in heroin overdose deaths from 2010 to 2014. Such finding raises the worry whether the Medicaid expansion would lessen the opioid epidemic or increase it in the disguise of heroin abuse or abuse with other substances. On the contrary, Medicaid expansion would cover the users of heroin by default when they would seek rehabilitation from their addiction to heroin or treatment for managing the complications of substance abuse. Such provisions would certainly increase the healthcare and financial burden on the Federal funds. The authors further highlighted that the cause of opioid overdose is not always apparent. For instance, older individuals might unintentionally or intentionally consume opioids. West et al. (2015) and Rockett et al. (2010) concluded that suicidal focus is one of the significant reasons for opioid abuse in older individuals. Under such circumstances, Medicaid expansion for opioid users and coverage of medications for depression, hypertension, and anxiety seems to be a viable option in reducing the menace of opioid misuse across older individuals (Cher et al., 2019).

Access to Appropriate and Timely Care Provisions: The Role of Family Physicians

Wakeman and Barnett (2018) credited the opioid epidemic in the United States to the inaccessibility of the concerned stakeholders to appropriate and timely care provisions. In 2016, almost 42,000 of the registered deaths in the United States were contributed by opioid overdose. The death rate increased by an overwhelming 28% than what it was during 2015. Furthermore, the authors highlighted there was a significant reduction in the life expectancy of U.S. citizens compared to the previous year. Such figures were surprising considering the widespread implementation of the Affordable Care Act and Medicaid expansion to challenged populations. These findings prompted the authors to speculate that individuals suffering from opioid abuse either do not access timely and appropriate care provisions due to social stigma and fear of ridicule or are denied appropriate and timely care by the physicians who are entrusted for arranging care requirements across the concerned stakeholders. These findings were further confirmed from the trend of buprenorphine sales in the United States. Since buprenorphine is a medication that is indicated for managing opioid addiction, access to timely and appropriate care services for opioid overdose should have increased its prescription share over time. On the contrary, studies suggest that the sales of buprenorphine are either showing a decline or remained more or less constant since its introduction. Such findings confirm two speculations; either the stakeholders are not accessing care necessities for OUD or are shifting to other substances for abuse. Dart et al. (2015) did confirm that there has been a significant transition from opioid abuse to abuse with heroin from 2010 to 2014. In this regard, the authors voiced for the role that Family Physicians could play in shortening the opioid epidemic in the United States. This is because FPs could help individuals with OUD to overcome their abuse because there would be no need for the concerned stakeholders to visit outpatient departments of a hospital. The fear and

apprehensions with social stigma would not limit the access to timely and appropriate care provisions across the concerned stakeholders.

Differences in Medicaid Coverage Pattern for Opioid Users Across the Different States in the U.S

Medicaid took a substantial lead in curbing the opioid menace in the U.S. Apart from the Medicaid expansion for OUD; the new Medicaid policy approved the provisions for naloxone (a drug used to treat opioid abuse), coordination of community care, and eliminating barriers to treatment. The regulations and legal frameworks that contributed to improved provision for OUD include parity laws, workforce licensing, and improving access to drug courts. The Medicaid policy also limited the share of prescription opioids and co-prescription of benzodiazepines with medical opioids. It further mandated safety alerts in pharmacy to prevent OTC and prescription abuse of steroids. The new Medicaid policy further discouraged and regulated the use of the unsafe number of steroids regardless of their apparent clinical benefit. However, Grogan et al. (2013) highlighted disparities and differences in Medicaid coverage across various U.S. states contributed to the opioid epidemic in the nation.

The ACA mandated Medicaid expansion to cover substance use disorders, including opioid abuse; however, it also allowed the states to decide the range and domain of services that would be reimbursable. The authors surveyed healthcare data of Medicaid from 2013 to 2016 that reflected most states did not cover all the levels of care and services that are required for treating OUD as per the directives of the American Society of Addiction Medicine (ASAM). The authors argued that such blockages in Medicaid expansion could enlarge the danger of opioid epidemic across low-income populations in certain states of the U.S. In another study, Clemans-Cope et al. (2017) showed the importance of OHH (Opioid health homes) in alleviating the

healthcare disparity that stems from the inadequate Medicaid coverage in opioid users. The authors highlighted that three states Maryland, Rhode Island, and Vermont adopted the ACA's optional model of OHH in treating OUD.

The provision of OHH was based on the concept of providing similar and standardized healthcare services to opioid users through office-based opioid treatment (OBOT) and opioid treatment programs (OTPs). The study was conducted through a semi-structured interview across 70 individuals that reflected the OHH model was successful in lessening opioid abuse across a wide range of individuals regardless of their socioeconomic and ethnic backgrounds. The major organizers for the OHH model for treating opioid abuse were attributed to the legislature, state leadership, OHH provider features, and design of the program. Clemans-Cope et al. (2017) concluded that the OHH model holds the promise of reducing the healthcare disparities that stem from inadequate Medicaid coverage for OUD individuals. Such provisions could help to mitigate the opioid epidemic in the U.S. in the feature. This is because the authors speculated that OHH would improve the accessibility of the concerned stakeholders to appropriate and timely care requirements that are necessary for withholding from opioid use.

Conclusion and Recommendations

The present study reflected that the opioid epidemic in the U.S. is driven by various risk factors such as age, ethnicity, socioeconomic profile, healthcare insurance, and social stigma. The presence of social stigma is a major cause that limits accessibility to timely and appropriate care necessities in OUD patients. The provision of health insurance seems to moderate the accessibility to the care provisions, as well as prompted abuse with other substances in place of opioid overuse. On the contrary, timely and appropriate access to effective care provisions was considered one of the major affecting factors for magnifying the opioid overuse in the U.S. Medicaid expansion does promise reduction in the opioid epidemic across the United States; however, strict monitoring of the prescription medications that are covered through Medicaid should be strictly reviewed and monitored by the appropriate authorities. Otherwise, such provisions could do more harm than good to aggravate the danger of opioid overuse.

This study reflected that in counties where such monitoring was implemented the frequency of opioid misuse witnessed a sharp decline compared to those counties where the monitoring was not thorough and strict. This study further revealed that Medicaid expansion did not result in significant reductions in heroin abuse, which is considered a spill-off effect of opioid abuse. Therefore, the evidence still remains questionable regarding the role of Medicaid expansion in combating the opioid epidemic in the U.S over the short-term. However, the study reflected that older individuals might be benefitted from the Medicaid expansion on different medications for such diseases that primarily strike as intractable pain or inflammation. However, such assumptions cannot be outlined for younger individuals whose OUD is primarily driven by opioid addiction. Furthermore, the presented literature did not reflect whether patients of opioid overuse were screened or managed for neuropathic pain. Appropriate categorization of pain could help to lessen the threat of opioid misuse or overuse.

Strength and Limitations

This study provided comprehensive evidence regarding Medicaid's role in improving care provisions for OUD. The study highlighted cause and effect relationships that prompted and held the promise of lessening opioid abuse. However, the current study also showed certain limitations that should be clarified in the future. First of all, the study did not expose the vulnerable populations to opioid abuse even after Medicaid expansion and reasons for their susceptibility. Secondly, the study did not feature whether prescription coverage of antidepressants and neuropathic medications reduced the usage of opioids across the concerned stakeholders.

Future Directions

Future studies should be designed as case-controlled trials that should assess the complications and medication usage pattern in individuals who accessed the Medicaid expansion and those who did not. The study should also explore the blockages faced by various individuals in accessing the care necessities for OUD as per the AMSA. Studies should also explore the behavioral services that should be combined with naloxone therapy for lessening the occurrences of OUD in the affected population and the logistics associated with the implementation of such services.

Recommendations

i. An integrated initiative between the public health authorities and insurers is mandated for strictly monitoring opioid prescriptions.

ii. Prior approval should be necessitated for prescribing opioids over the long-term. However, the physician should justify why prescription opioids are necessary for preference to other medications for the respective patients.

iii. Behavioral therapy should be covered by Medicaid and across all states.

iv. A common minimum program should be designed by all states to ensure the minimum standards of care as per the ASAM for ensuring improved outcomes in OUD individuals.

v. Naloxone prescriptions should be monitored and reviewed. Such initiatives could prompt Medicaid and other insurers in shifting or retaining naloxone-based management of opioid addiction.

vi. The policymakers should make appropriate regulations to prevent the inequality in Medicaid coverage for OUD across different states. If required, the federal funding should share the financial burden of the states for implementing Medicaid coverage equally and as per the framework of ASAM.

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