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Research Article

Keywords: opioid, overdose, death, racial disparity, singlehood

Posted Date: June 4th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-572796/v1>

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Version of Record: A version of this preprint was published at Harm Reduction Journal on August 16th, 2021. See the published version at <https://doi.org/10.1186/s12954-021-00534-z>.

Opioid Overdose Crises During the COVID-19 Pandemic: Implication of Health Disparities

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Abstract

Background. Recent data suggests a disproportionate impact of opioid overdoses on Black Americans. The study aims to describe emergency department (ED) visits at a Southern, urban ED pertaining to opioid overdose and associated health disparities.

Methods. Patients presenting to the ED at the University of Alabama at Birmingham Hospital with opioid overdoses from January 1 to October 31, 2019, and from January 1 to October 31, 2020, were identified from electronic medical records.

Results. The total number of opioid overdose visits increased 9.7% (556 to 611) between January through October 2020 compared with 2019. Among patients who presented with opioid overdose, the mean ages were 50.3 years and 48.3 years, in 2019 and 2020, respectively. In both 2019 and 2020, more Blacks than whites were treated for opioid overdose in the ED (284 vs. 258 in 2019, and 306 vs. 271 in 2020) although 28 patients did not record their race in 2020. Consistently, more overdose deaths were observed in Blacks than in Whites in 2020. More individuals seeking opioid overdose treatment were single in both years.

Conclusions. The study reported a greater number of visits for opioid overdoses from January to October of 2020 in an ED of a deep south region, as well as higher overdose deaths in Blacks. Our findings highlight the importance of substance use treatment, harm reduction, and overdose prevention efforts that should be immediately present to reduce opioid overdose especially for vulnerable populations in the South, i.e., Black community, and individuals experiencing singlehood.

Keywords: opioid; overdose; death; racial disparity; singlehood

Background

The United States drug overdose epidemic continues to cause substantial morbidity and mortality. Overdose cases have increased significantly following the start of the COVID-19 pandemic. Multiple causes have been attributed; many were impacted by unprecedented stress which worsened individuals' mental health and triggered the reuse of opioids and unintentional opioid overdose [1]. It is also important to understand that access to treatment programs were restricted during the pandemic and were only made available to the most emergent cases. Additionally, the public was encouraged to remain socially distant and isolated in their homes, which resulted in many individuals who normally used in groups to use alone, which left them without a rescue [2]. Recently, news reports have shown an acceleration in the number of overdose related deaths from May 2019 to May 2020, the prime time of the COVID-19 pandemic [3]. In 12 months, more than 81,000 deaths arose from drug overdose related consequences [3].

While general visits to the emergency departments (EDs) transiently plunged during early to mid-pandemic, visits related to opioid misuse increased across the country [4]. In Kentucky alone, transportation to EDs due to opioid overdose increased by 17% [5]. Furthermore, there was a 71% increase in ambulance calls, but patients refused treatment. Another study conducted at Virginia Commonwealth University (VCU) showed the number of patients with a nonfatal opioid overdose increased from 102 to 227 from March through June 2019 to March through June 2020 [6]. Current data suggests that the exacerbation of the opioid epidemic by the COVID-19 pandemic may be disproportionately affecting Black Americans [7]. Indeed, a study conducted by VCU also demonstrated that from March through June 2019 and March through June 2020, the number of Black patients with unintentional opioid overdose rose from 64 to 181, while the number of White patients only rose from 29 to 32, indicative of the presence of racial/ethnic disparities in opioid overdose during the COVID-19 pandemic [6]. Thus, racial discrepancies appear to have intensified during the pandemic.

The state of Alabama has been particularly impacted by the opioid epidemic and overdose death. In 2018, approximately half of the 775 overdose deaths reported in Alabama involved opioids [8]. Furthermore, recent reports show that opioid related overdose deaths have increased by 32.5% in just the first six months of 2020 in Jefferson County, the most populous county in Alabama. Jefferson County is a known hot spot for opioid use disorder and its associated complications in Alabama [9]. In addition to racial and ethnic disparities, it is important to consider the impact of other social determinants of health, such as singlehood, on opioid overdose as well. Thus, this study aims to determine the effects of COVID-19 on ED visits related to opioid overdose and any associated demographic disparities, including race, with the aim to provide a more complete assessment of the impact of the pandemic on patients living with opioid misuse and opioid use disorder.

Methods

This retrospective cross-sectional study was approved by the Institutional Review Board at the University of Alabama at Birmingham (UAB), and informed consent was waived. Patients who presented and were treated for opioid overdoses in the ED at the UAB Hospital from January 1 to October 31, 2019, and from January 1 to October 31, 2020, were identified from electronic medical records (EMR). EMR search was based on patients who were treated in the ED primarily due to opioid overdose. Our EMR clearly indicated whether patients experienced a fatal opioid overdose death or not. Thus, extracted data included both non-fatal opioid overdose and fatal opioid overdose. Data on opioid overdose fatalities in November and December of 2020 were not included for analyses because the retrospective review was conducted in November of 2020. Manual medical record reviews to abstract patients' data were conducted by two research team members independently, and discrepancies were checked against the EMR. Demographic characteristics, including age, sex, race/ ethnicity, and marital status, were also obtained from the EMR. We analyzed data from January through October of 2019 and 2020 and compared the number of total patients with opioid overdoses in these 2 years. Descriptive statistical analyses were performed using SPSS version 26 (IBM).

Results

From January through October, there were 556 patients in 2019 and 611 in 2020 who presented to the ED for treatment of opioid overdose (Figure A). The mean ages of patients were 50.3 ± 15.9 years in 2019 and 48.3 ± 16.1 years in 2020. Among the 556 patients in 2019, 241 were females and 315 were males. Of the 611 patients in 2020, 274 were females, 309 were males, and 28 patients had not recorded their sex ($p=0.22$). In terms of race distribution among patients, there were more Black patients than whites who were treated in the ED for opioid overdose (Figure A). As presented in Figure A, 284 and 306 Black patients were treated for opioid overdose in 2019 and 2020, respectively. From January through October 2019, 63 patients died due to opioid overdose. This number slightly decreased to 59 in January through October in 2020 (Figure B). However, among 59 deaths from January through October in 2020, more Blacks (56%) than Whites (44%) died due to an opioid overdose. In both 2019 and 2020, most patients seeking opioid overdose treatment were unmarried.

Discussion

In this cross-sectional study, we have identified an approximately 9.7% increase in patients who were treated in the ED for opioid overdose from January to October 2020 compared to the same period in 2019. It was also observed that more Black patients than Whites were treated in the ED for opioid overdose in both years. Furthermore, more Blacks than Whites died of opioid overdose in 2020 in our sample. In addition, findings support that individuals experiencing singlehood were also more likely to experience overdose. Our data indicates the presence of social disparities in this local sample within the deep south region.

Increased opioid overdose deaths have been reported by groups in Philadelphia and Virginia [10, 11]. In Philadelphia, more Black residents than White residents experienced higher rates of both fatal and non-fatal overdoses after the pandemic began [10]. This data suggests that racial disparities were intensified due to the pandemic. A similar finding was observed in an ED in Virginia. More Black patients made up a large percentage of the total non-fatal opioid overdose related visits to the ED [6]. In an ED in Alabama, we observed more opioid overdoses visits in ED in 2020, and more overdose death in Black patients. Besides racial disparity, disparities are also present in those who are single. In our sample, more individuals were single than married. As it is known, single status and social isolation are often related to the occurrence of diseases and mortality [12]. Social isolation and physical distancing, especially during the pandemic, may indicate poor mental health which may be one of the reason individuals resort to drugs [12].

Many efforts have been initiated to combat the opioid epidemic and overdose rates; however, the epidemic seems to have been worsened by the COVID pandemic although definite reasons are not clear. There are several theories to explain this phenomenon, including social isolation which is anecdotally known to have caused an increased relapse rate for people who are in solid recovery [13]. Other factors include decreased access to assistance and treatment during the pandemic and a temporary interference in the distribution of naloxone, an opioid overdose reversal drug [14]. There have also been speculations that the pandemic and border closures interrupted the heroin and other drugs supply entering the U.S., causing a “fundamental change in the pharmacology of the drug” [15]. Due to this, what people are buying on the street may be cut with more fentanyl or other drugs. All of these factors may have contributed to increased opioid overdose cases, including non-fatal overdoses, that were seen in our sample.

Several limitations should be noted when interpreting these results. First, urine toxicology screening at UAB does not detect fentanyl, so we were not able to determine whether fentanyl may have contributed to increased opioid overdoses. Secondly, we were unable to determine whether fatal overdoses were due to intentional or non-intentional behavior through the EMR data. Thirdly, urine toxicology screening in many patients showed polysubstance use, so it is difficult to determine the impact of other substances on our observed rates of overdoses or overdose deaths. Lastly, we are limited by our short observation period, i.e., 10 months, so further analysis with additional months of data to verify our findings is warranted.

Conclusion

In summary, our data provides further evidence of health disparities in the Black community and in individuals experiencing singlehood in increased opioid overdose and overdose death that have been magnified during the COVID-19 pandemic. Our findings highlight the importance of substance use treatment, harm reduction, and overdose prevention efforts. Each should be immediately present to reduce opioid overdose especially for the most vulnerable populations, including the Black community and individuals experiencing singlehood.

List of Abbreviations

ED – Emergency Department

VCU – Virginia Commonwealth University

UAB – University of Alabama at Birmingham

EMR – Emergency Medical Records

Declarations

Ethics approval and consent to participate: Not applicable.

Consent for publication: Not applicable.

Availability of data and materials: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests: The authors declare that they have no competing interests.

Funding: Not applicable.

Authors' contributions: I.P. collected and analyzed the data, drafted, edited and approved the final manuscript. L.W. reviewed, edited and approved the final manuscript. L.L. designed the study, collected and analyzed the data, reviewed, edited and approved the final manuscript.

Acknowledgements: We would like to show our appreciation to Mr. Dale Johnson of the Informatics Teams at UAB for his contribution in obtaining EMR data for this project.

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Figure legends

Figure. Comparisons between the number of overdoses in A, the number of overdose death in B, between total sample, Black patients, and White patients.

Figures

Figure 1

Comparisons between the number of overdoses in A, the number of overdose death in B, between total sample, Black patients, and White patients.