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The Burden of Unlawful Use of Opioid and Epidemiological Characteristics in Africa: A Scoping Review protocol

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Abstract

Abstract

Introduction:

There is an ongoing global upsurge of opioid misuse/ abuse, fatal overdose and other related disorders and may be heating hard on the African continent, especially resource limiting sitting due to poor epidemiological surveillance systems. This study aimed to review present studies to provide scientific evidence on epidemiological data on opioid misuse, to highlight the contributing drivers, public health risk factors and reason for use, for effectiveness in control/management and intervention of the brewing opioid crisis in the region.

Method:

The databases (PubMed, Scopus, Web of Sciences) and references of the included studies will be searched. While the
outcome to be considered includes various studies on the epidemiology or prevalence of opioids, opioids overdose or opioids misuse or opioids abuse or opioid use/addiction or heroin or hydromorphone or hydrocodone or oxycodone or
morphine or codeine or thebaine or paramorphine or fentanyl or pethidine or tramadol or dextropropoxyphene or opioid/ heroin injection or injecting drug. We shall include all types of studies, irrespective of the designs, provided it
was conducted within the African region. However, we intend to exclude titles that dealt with opioids in palliative care or therapeutic opioid use for pain management, studies of substance use in Africa that were not opioid specific, and
studies focused only on epidemiologic estimations methodology as they were not opioid specific. Finally, we shall exclude outside Africa multinational surveys and systematic reviews in favour of original research publications. An analysis of the findings of this study will be presented narratively.

Guidelines

Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. Annals of Internal Medicine, 2018. doi:10.7326/M18-0850

Materials

Materials and Method

The procedure suggested by the Joanna Briggs Institute (JBI) [51, 57] and the step outline in Fig. 1 will be used for this scoping review.

Search strategy

The keyword relevant to epidemiology, prevalence, opioids, and types, as detailed in the supplementary file (Text A1), will be searched in three databases: PubMed, WOS, and Scopus.

Information sources

PubMed, WOS, and Scopus, and references from included studies.

Study selection

All identified studies will be compiled and extracted into a CSV or excel file in RStudio after the search, then combined and duplicates deleted. Two authors (HO and AOA) will separately examine the titles and abstracts retrieved from the search for possibly suitable papers. The full texts of the identified studies will be obtained and assessed for eligibility using the inclusion and exclusion criteria. Any issues over eligibility will be resolved through debate and consensus among these authors. Any unresolved discrepancies between the two authors will be judged by a third author (FO). The scoping review will report the reasons for excluding full-text papers that do not match the inclusion criteria.

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) will be used to describe the study selection process [58]. The results of the data extraction will be presented in a narrative format.

Data Extraction

Using a steered data extraction form developed from the JBI data collection tool, two authors (HO and AOA) will independently extract data from each included study. The following information will be included on this form: Authors, year of publication of the article, the country where the study was conducted, study design, epidemiological characteristics, prevalence, type of intervention, and any other objective and significant findings of the study.

Data presentation

This will entail a logical and detailed explanation of the findings corresponding to the review's objective(s) and the information in the data extraction form. When appropriate, a table will be given summarizing the features of the included studies as well as the important information pertinent to the review topic. However, this might be fine-tuned during the review and evaluation. When necessary, we shall contact the primary research investigators to get any missing data or information from the studies. The evidence will not be assessed for methodological constraints or risk of bias, as this is not required for scoping reviews [57].

Troubleshooting

Safety warnings

N/A

Ethics statement

N/A

Before start

N/A

1 **The Burden of Unlawful Use of Opioid and Epidemiological Characteristics in Africa: A Scoping Review protocol**

2 **Abstract**

Introduction: There is an ongoing global upsurge of opioid misuse/abuse, fatal overdoses, and other related disorders, and may be heating hard on the African continent, especially resource-limiting sitting due to poor epidemiological surveillance systems. This study aimed to review present studies to provide scientific evidence on epidemiological data on unlawful use of opioid, to highlight the contributing drivers, public health risk factors and reason for use, for effectiveness in the control/management and intervention of the brewing opioid crisis in the region.

Method: The databases (PubMed, Scopus, and Web of Sciences) and references of the included studies will be searched. While the outcome to be considered includes various studies on the epidemiology or prevalence of opioids, opioid overdose, opioid misuse, opioid abuse, opioid use or opioids misuse or opioids abuse or opioid use/addiction or heroin or hydromorphone or hydrocodone or oxycodone or morphine or codeine or thebaine or paramorphine or fentanyl or pethidine or tramadol or dextropropoxyphene or opioid/ heroin injection or injecting drug. We shall include all types of studies, irrespective of their designs, provided they were conducted within the African region. However, we intend to exclude titles that dealt with opioids in palliative care or therapeutic opioid use for pain management, studies of substance use in Africa that were not opioid-specific, and studies focused only on epidemiologic estimation methodology as they were not opioid-specific. Finally, we shall exclude outside Africa multinational surveys and systematic reviews in favour of original research publications. An analysis of the findings of this study will be presented narratively.

3 **Introduction**

Opiate use disorders and overdoses characterize the opioid crisis, and fatalities from illegal drugs or misuse are an emerging global health concern. Opioids have analgesic or sedative effects that form the basis for their clinical uses, but overprescriptions and non-clinical indications contribute primarily to the escalating global opioid use disorder problem (OUD).

The opioid crisis has metamorphized through the first wave linked to methadone in 1999, the second wave linked to **heroin** in 2010, and the third epidemic wave beginning in 2013 in combination with heroin, counterfeit pills, and cocaine (CDC, 2011) [2, 3], [4–7] [8]. An estimated 62 million people globally used opioids in 2019, and 36.3 million were impacted by their associated problems (UNODC, 2021) [10]. Currently, reports indicate an ongoing upsurge of opioid misuse/abuse, fatal overdose, and other related disorders; in the US has an increasing estimated of 70,029 in 2020 to 80,816 in 2021 [11], in Canada, 7,560 opioid-related fatalities in 2021 [12], in Italy opioid addiction affects more than five people per 1000 [13], in Germany a

regional study among 57 million adults indicate an opioid prescriptions of 38.7 or 12.8 /1000 persons of low- and high-potency opioids in 2020 [14]. But in low-income countries and Sub-Saharan Africa, little is known about these epidemiological characteristics of opioid unlawful uses and prescriptions.

There are reports of opioid abuse, although not specifically on opioid fatal overdose or its related disorders in some Africa countries; Egypt, Nigeria, Kenya, Tanzania, and South Africa [15] [16] [17] [18] [19] [20] [21] [22] [23] [24][25]. Some of these studies reported the increasing use of tramadol and heroin among University and secondary school students, factories and site workers, long-distance drivers, sex workers, as well unemployed youth in the Africa continent [15] [16] [17] [24][25]. While in many other African countries, there is scanty or no information regarding the ongoing opioid crisis. The reason for illicit opioid uses includes; pleasure seeking, craving, habits, impulsivity, improve energy [26], relieve stress [27], peer pressure from friends [28], to engender "morale" and "courage" to engage in sex work and "fight" potentially abusive clients [29]. While some of the reported sources are black market [30], friends and drug dealers [31], roadways, bus terminals or intercity stands, low-income residential areas, abandoned or unfinished buildings, and fishing camps along the Indian Ocean [32].

Opioid usage for non-clinical purposes has surged in Africa as globally opioid trafficking channels have evolved to use the region commerce networks [33]. Specifically, East Africa has become a significant growing location for the transhipment of heroin through the Indian Ocean from Afghanistan to the West (UNODC, 2013[34] [20]. Thereby impacting on the heroin use among the population living in the coastal region of Comoros, Tanzania, Kenya, northern Mozambique, Madagascar, Mauritius and Seychelles [35–37]. Opioid misuse could aggravate the already sporadic spread of infectious diseases like malaria, cholera, HIV [38–42] civil conflict, terrorism/insurgency leading to deteriorating health management system in low-income settlements.

In 2018, the UNODC [43,44] predicted that another opioid crisis was developing in African nations. Despite four years gone, there has been no report on the African situation. Does this indicate that the forecast was inaccurate, or is it possible that the crisis arrived covertly and went unnoticed by conventional research? Given that an insufficient report suggests that the opioid issue in Africa may exist, it is challenging to draw a firm judgment. The epidemiology and monitoring of diseases in Africa are complicated by several factors, including a lack of adequate human resources for healthcare, inadequate diagnosis, inadequate disease management etc. Furthermore, inadequate vital record keeping and surveillance systems make it difficult to comprehend the incidence burden and effects of opioid overdose in Africa [45].

So far, no rigorous systematic reviews have focused on Africa to evaluate and summarize the epidemiological data on opioid misuses/abuses, the contributing drivers, public health risk factors and reason for use. The results of such a thorough

systematic meta-synthesis might be helpful to a variety of stakeholders. First, the researchers who could determine which aspects of interventions have received adequate research and which need more attention. Secondly, the medical experts and policymakers who could identify the programs, management, and methods that have helped (or hindered) opioid addiction/disorders. Lastly, the donors who could determine which aspects of opioid situations might benefit from additional funding. To this end, this study aimed to review present studies to provide scientific evidence on the epidemiology of opioid misuse for effectiveness in control/management and intervention of the opioid crisis in the region.

3.1 Rationale for this scoping review

Globally, opioid overdoses and deaths are increasing, but little is known about these issues in resource-limited regions of Africa. In Africa, the burden of opioid misuse/abuse, overdose deaths, and other disorders remains unquantified, and knowledge and access to possible interventions are generally limited. Again, any poor resource settings in Africa lack reliable vital records and are limited level of surveillance and epidemiological data has limited our understanding of the prevalence and consequences of the opioid crisis in the region. Opioid issues may be heating hard on the African continent in combination with the accelerated spread of infectious diseases like HIV [46,47], and lack of resources available to solve these concerns may impede future advancement towards challenging objectives of the Joint United Nations Programme on HIV/AIDS [48–50]. The study aims to synthesize scientific evidence on epidemiological data on opioid misuse/ abuse, the contributing drivers, the reason for use, sources and the impact on public health in the region.

3.2 Review question

What evidence is available from the existing initiatives on epidemiological data on opioid misuse/ abuse, the contributing drivers, the reason for use, and sources in Africa to prevent and manage the ongoing epidemic of opioid overdoses and crisis?

3.3 Selection criteria

To select which research is appropriate for inclusion in this review, we will use the Population, Concept, and Context (PCC) approach developed by [51].

The **population** shall be all African countries or within the African continent.

The **concept** covers the epidemiological data, interventions and outcomes. These include the epidemiological characteristics, prevalence, incidences of opioid misuse/ abuse, the contributing drivers, the reason for use, sources and the impact on public health in the region. Evidence-based drugs its medication for opioid use disorder (MOUD), Diagnostic and Statistical Manual of Mental

Disorders (DSM-5) codes or Medication-Assisted Treatment (MAT), that is the FDA-approved medication uses in conjunction with a psychosocial intervention such as (methadone, buprenorphine, and naltrexone) [52,53], evidence-based interventions to prevent the spread of blood-borne pathogens associated with opioids overdose, such as needle and syringe programs (NSPs), psychoeducation program, Recovery

Solutions for Opioid Patients (RSOP) [54], campaigns or advocacy or training, opioids surveillance, prescription drug monitoring programs, findings/conclusions and any additional interventions mentioned by the authors of the studies included.

The **context** shall be the studies that were undertaken in Africa.

Types of evidence sources. The sources of evidence cover shall be studies irrespective of study design, such as quantitative studies (e.g., experimental, quasi-experimental, prospective and retrospective cohort, case-control, cross-sectional, community or population-based), observational studies (e.g., case series, individual case reports, descriptive cross-sectional studies), qualitative studies, mixed-methods studies, and narrative reviews [55–57] are examples of these. This scoping review will include research done in English and restricted to the year 1990 till the date. Studies that are not conducted in Africa or systematic reviews, newsletters, conference abstracts, opinion publications, literature reviews that describe opioid overdose without epidemiological data and interventions will be omitted. Studies that assess the burden of opioid overdose without describing the treatments taken to mitigate it will also be excluded.

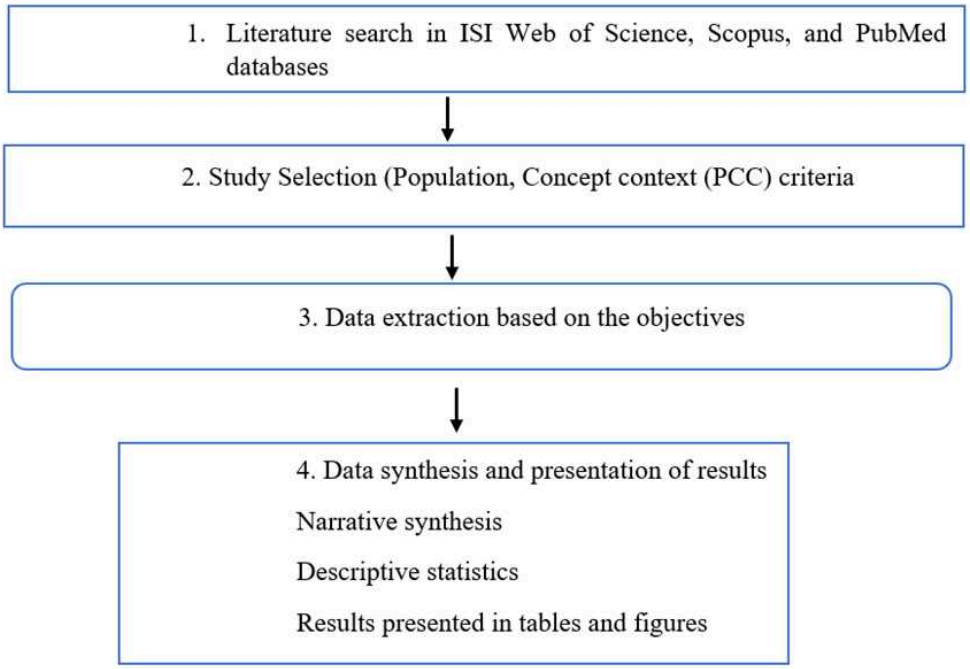

Figure 1. Structural Research Method design.

4 Materials and Method

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PubMed, WOS, and Scopus, and references from included studies.

4.3 **Study selection**

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