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Systematic Review

Universal Health Coverage and the 2030 SDG Targets: Interventions to Prevent and Combat Drug/Substance Use, Abuse and Addiction amidst the Covid-19 Pandemic

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ABSTRACT

Universal Health Coverage and the 2030 Sustainable Development Goals have impacted global substance/drug reform policy through strict prohibition and criminalization in the 21st century. Thus, the Covid-19 lockdown and measures have raised concerns regarding the disproportionate impact on persons with substance use, abuse and addiction in South Africa. This paper was guided by Social Learning Theory of substance use and abuse, explaining how interactions with others may contribute to substance use as people learn messages about substance abuse. This has placed more emphasis on the role social structure plays as opposed to individual or psychological factors. This paper takes a broad look at the implication of substance use, abuse and addiction among users amidst the Covid-19 pandemic in South Africa. The study used systematic review derived from articles that were sourced from research databases (such as Scopus, Medline, Sage, Google Scholar etc.), and a total of 84 articles were selected in line with the objectives. Also, a desktop review of key information was adopted in line with the objectives, as there are no definitive data on the extent of substance/drug use in South Africa. The provision of health education, advocacy and community awareness around substance use and addiction should be made to target and identify populations-at-risk with substance use and addiction in South Africa. Hence, to address this gap, it is therefore important that sensitization and reform health policies are developed and implemented to address health risks among these vulnerable substance users amidst the Covid-19 pandemic in South Africa.

Keywords: *Covid-19 pandemic, Addiction, drug use and abuse, SDG, social learning theory*

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INTRODUCTION

Universal Health Coverage (UHC) for sustainable development is central to better health and well-being for all, and this has delivered gains across the 2030 Agenda for Sustainable Development Goals (SDGs), which embodies the 2030 Agenda pledge to 'leave no one behind'. The SDGs, also known as the Global goals, were adopted by the United Nations in 2015 as a universal call to address social, health, and economic issues, and to ensure that by 2030 all people enjoy peace and prosperity (WHO, 2019; Decouttere *et al.*, 2021). The 17 SDGs are integrated and each action in one area will affect outcomes in others, and the development must balance social, economic and environmental sustainability (WHO, 2019). This agenda has reaffirmed that "health is a precondition for and an outcome and indicator of sustainable development" and recognizes UHC as fundamental in achieving the SDGs. The Covid-19 pandemic has brought major challenges to healthcare systems and public health policies globally, as it requires innovative actions and preventive strategies to explore the pandemic impact on

humans (WHO, 2019; UNODC, 2021). Individuals with substance use disorders (SUDs) are an at-risk population for contamination owing to numerous factors attributable to their clinical, psychological and psychosocial conditions (Dannatt, 2020; Myers, 2020).

Furthermore, previous studies have reported that tobacco and alcohol consumption can facilitate and aggravate influenza (Myers, 2020; Zaami *et al.*, 2020). The fact that drug users frequently abuse these substances in combination with other drugs can cause additional risk. Older persons are also in the main risk group, and it is important to note that the prevalence of SUD in this population is higher than ever in the world, including both licit and illicit drugs (Chodkiewicz *et al.*, 2020; Myers, 2020). Therefore, substance use could increase the risk to this already at-risk group when associated with these clinical comorbidities. Conversely, increased risk of Covid-19 infection, adverse health outcomes owing to prevalent pre-existing chronic diseases and rigid public health measures such as social distancing, closures of non-essential businesses and services, and limiting social gatherings, have

negatively impacted the lives of people who use drugs (PWUD). This has put them at greater risk for experiencing substance and health-related problems, including overdoses and a decreased ability to mitigate risk behaviours (Myers, 2020; Marcus *et al.*, 2020).

Thus, several studies conducted in South Africa on substance abuse is equitably certain, as South African police data reported a 123% increase in drug-related crimes from 2003/2004 to 2013, and driving under the influence of alcohol increased by 148% in this period (Myers, 2020; Dannatt, 2020). During this period, the national injury mortality surveillance system on post-mortem investigations found that 54% of violence-related deaths and 52% of transport-related deaths were alcohol-related. For instance, a study conducted at five trauma units in Cape Town, Durban and Port Elizabeth found that one-third of patients tested positive for cannabis, 15% for metaxalone and 14% for white pipe (a combination of cannabis and metaxalone) (Dannatt, 2020). The same study showed violence was strongly related to the use of substances: 67% of trauma cases in these hospitals were alcohol related, 45% were related to illicit drug use, 84% were related to at least one substance, 40% were related to cannabis use, and 17% were related to white pipe use. Another research conducted on drug use in South Africa reported that the high prevalence of drug use (13.3%) among the South African population, has resulted in substance abuse in 3.9% of individuals and dependencies in 0.6% of the population, with high levels of inhalant use among youths (Myers, 2020; Marcus *et al.*, 2020).

Cannabis (dagga) was the drug of choice among those undergoing substance abuse treatment, and methamphetamine (tik) abuse was common in the Western Cape and Eastern Cape. For instance, the use of crystal methamphetamine known locally as 'tik' has exploded very quickly across Cape Town in South Africa and it is one of the city's main drugs of abuse, through smoking using a straw in a light bulb, and can include the use of alcohol. This has become an epidemic as more than half of the drug-using population in Cape Town have tik as their primary substance use (Dannatt, 2020). Tik is a new drug that is cheap and is widely available, easy to make and the precursors are also accessible. However, there was a noticeable increase in the use of over-the-counter and prescription medicines, especially by young people, which includes the highest use of methaqualone in the world. Of concern was the use of emerging new connections, such as nyaope (whoonga), which may contain dagga, heroin, household cleaner, and the HIV drug Efavirenz (Myers, 2020). Also, environmental factors have a role to play in drug abuse, including the level of urbanization, socio-economic status, ethnic diversity, and genetics, where genetics was found to contribute to 50% of the risk of addiction (Mohasoa *et al.*, 2017). Thus, to meet the requirements or expectations of the unmet needs of drug users, there is a need to change one's perceptions, by replacing stigma and shame with a new understanding of addiction as a treatable disease.

Evidence from assessments of the current state of the physical psychological, and mental well-being of individual shows that there is excessive abuse of dependency-creating substances: drugs, alcohol, and tobacco, with alcohol being the most abused substance in South Africa (Ryan, 2020). The

Social Development department led a national drug master plan, as well as national campaigns such as 'Ke Moja' to prevent and reduce abuse of dependency-creating substances, but these interventions have had limited impact. Also, the problem of insufficient treatment facilities, with only ten operational public treatment centres in South Africa, suggests that adolescents involved in substance abuse remain untreated and may transition to adulthood with long-term and irreversible effects of substance abuse (Meyers, 2020; Dannatt, 2020). There is also poor implementation of the prevention and treatment for substance abuse Act 70 of 2008, particularly with regards to the provision to curb unregistered substance abuse treatment facilities. Also, it is difficult to quantify the impact of the interventions, as lack of monitoring and evaluation measures are based on age-disaggregated data. This paper takes a broad look at the role 2030 SDG targets have played in combating substance use, abuse and addiction among users, while examining the social determinants of substance use, ascertaining the impact of Covid-19 lockdown measures on substance-addicted users, and exploring the adverse health implications of substance use/addiction and coping strategies to combat substance use, abuse and addiction in South Africa.

The Interface of Substance use and Disorder and Covid-19: The Covid-19 pandemic has stuck the global economy, leaving millions of people unemployed, deprived of a social development and inadequate access to healthcare and social services (Tan Teck *et al.*, 2021). The connotations of unintentionally or unforeseen becoming without a job with SUD and mental health issues, and the affirmative consequences of reemployment remain well-established. As soon as individuals with SUD lose the structure of employment and sense of purpose, substance use and SUD symptom severity may increase (Johnson *et al.*, 2020). In sub-Saharan African countries such as in South Africa, home foreclosures have been associated with a delayed commencement of depression and anxiety after adjusting for pre-existing depression and nervousness (Stowe *et al.*, 2020). As pandemic-related unemployment rises, and home foreclosures and eviction rise, mental health and SUD problems may increase across all ages irrespective of gender. Accordingly, several studies on economic predicaments, related to the pandemic-induced recession have shown that SUD-related mortality and suicide will increase in its prevalence and new incident circumstances (Holland *et al.*, 2021; UNODC, 2021).

The coronavirus (Covid-19) pandemic is a global crisis that has intensely changed day-to-day life. This is expected to have lasting effects on individual well-being, including increased prevalence of psychological distress (Meyers, 2020; Degenhardt *et al.*, 2021). The pandemic has resulted in numerous stressors, including social isolation (Saladino *et al.*, 2021) and historically high unemployment rates (Stowe *et al.*, 2020), which are likely to have ongoing implications for public health globally. One possible implication of the Covid-19 pandemic is changes in substance use and types of drugs used, as well as alcohol use in the general population in South Africa. The convergence of the substance use epidemics and Covid-19 pandemic has created new healthcare challenges,

and amidst the crisis, the healthcare system is reforming policies and interventions that will help to prevent and treat Covid-19 (SAMHSA, 2019; Temmingh *et al.*, 2020). Individuals with substance use disorder are uniquely challenged as a result of interference to treatment, medication diversion, and seclusion during the pandemic. It is important to note that in the frontline of the pandemic, healthcare workers and professionals have also been reported to be associated with increased mental health problems as a result of substance use during the pandemic crises in parts of Asian nations (Tan Teck *et al.*, 2021).

The emergence of SUDs and Covid-19 is centered on strategic features that are deeply rooted on its interface, as its meeting point is established on five key factors. First, drug and alcohol use are often communal and may contribute to the spread of Covid-19 (Meyers, 2020). Second, many individuals with SUD have limited financial resources, unstable housing and limited access to clean water and soap, increasing their risk of infections (Mohasoa *et al.*, 2017; UNODC, 2021). Third, co-morbidities prevalent among people with SUD are often associated with more severe Covid-19 symptoms, complications and fatalities as well as increased vulnerability to Covid-19 (Zaami *et al.*, 2020). Fourth, Covid-19 public health easing measures (such as social distancing, isolation, face mask wearing and quarantine) may exacerbate loneliness, mental health symptoms, withdrawal symptoms and psychological trauma (Holland *et al.*, 2021). Fifth, Covid-19 step-down mitigation measures have a good chance to inhibit access to SUD treatment services (BCCSU, 2020; CCSUA, 2020a). Consequently, these impacts concerning Covid-19 and SUD has led to more straightforward outcomes, especially surrounded by older adults with SUD who at present have inadequate individual and social resources (CCENDU, 2020; CCSUA, 2020c).

Lastly, as a result that Covid-19 burdens healthcare and social services, resources may be diverted from additional facilities at a time when people with SUD need additional interventions. Subsisted involvement and experience of

stigma and discrimination may also dissuade individuals with SUD from seeking healthcare during the pandemic (Myers, 2020). It is imperative that addiction care and social service providers are made aware regarding the vulnerability of the different sub-populations to Covid-19. This will facilitate providers to treat people with SUD in a non-stigmatizing and non-discriminatory manner and arrange for suitable facilities (Dannatt, 2020). The Covid-19 epidemic has grave consequences for individuals with SUD, including continuing socioeconomic and public health burdens. In addition, prior studies on financial and health spending catastrophes from out-of-pockets provides a consideration of the negative impact the pandemic has on SUDs users. Therefore, policy approach and clarifications for engaging in SUD within the context of Covid-19 pandemic and its subsequent blow to health and economic systems should be suggested (Stowe *et al.*, 2020).

The growing problem of Drug/Substance use across African Countries: The Universal Health Coverage and the 2030 SDG targets have created a platform that aims to provide equity in access to healthcare and financial-risk protection for the cost of health services incurred (Akokuwebe, 2016; Akokuwebe *et al.*, 2019; Akokuwebe *et al.*, 2021a; Akokuwebe *et al.*, 2021b). This is one of the key areas of progress in ensuring that everyone has access to healthcare in the African region. However, the Covid-19 pandemic continues to ravage economies, decimating livelihoods and altering lifestyles with devastating effects. Thus, with anxiety around job losses, reduced incomes, disruptions in school calendars and ways of life, individuals are turning to drugs and alcohol for consolation (Steiner, 2019; Akokuwebe *et al.*, 2020; Odularu *et al.*, 2020; Akokuwebe *et al.*, 2017; CDC, 2021). Studies have shown that medics and psychologists have raised alarm over the growing abuse of drugs, particularly during the stringent lockdown measures and restricted movements (Marcum *et al.*, 2015; CDC, 2021).

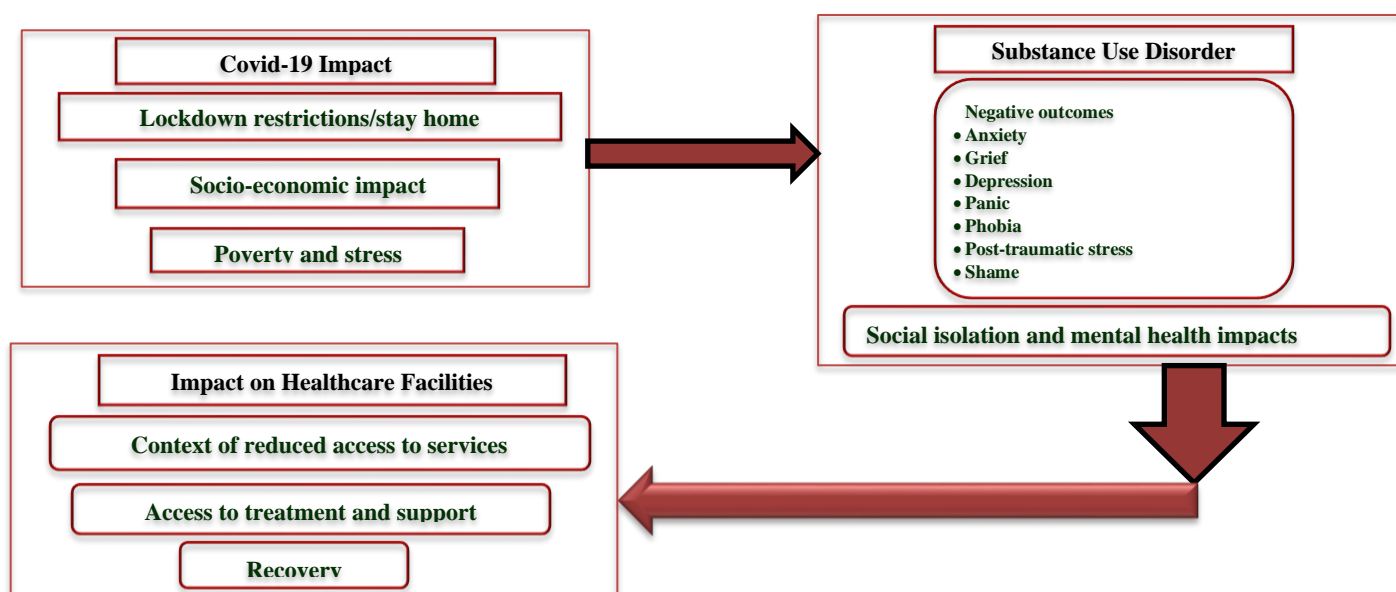


Figure 1:
Covid-19-Psychosocial impact of lockdown regulations

The impact of Covid-19 lockdown regulations has a severe influence on psycho-social behaviours of individuals who have the inability to manage stress and acute cravings, anxiety and distress. This has led to a strong strain on the SUD treatment systems among substance use disorder patients. Figure 1 below explains the psychosocial impact of lockdown regulations in South Africa. Notably, this drug and substance abuse has affected young school children who are now indulging in drugs to pass the time as school closures disrupt their normal lives. Persons who use substances have reported a loss of social connection and support, as well as an increase in isolation, fear and anxiety as a result of the Covid-19 pandemic. Thus, compared to the general population, they are more vulnerable to health impacts of Covid-19 and the hardships of physical distancing as well as restricted movements (Bijral *et al.*, 2019; Lindqvist *et al.*, 2021). In Africa, studies have raised concerns on drugs and alcohol abuse, as pandemic-induced reliance on drugs has reached epidemic proportions as travel bans, social distancing, quarantine and government directives have altered supply chains, patterns of use, availability, and price of the substances (Johnson *et al.*, 2020; Ornell *et al.*, 2020; Jemberie *et al.*, 2020). Global authorities have reported that there is a spike in the trend of drug use, showing that the African continent is not just a transit point, but has become a key market on its own as demands grows (WHO, 2019).

The ease with which home delivery of various products are being made to minimize human interaction to contain the spread of Covid-19 has seen a spike in demand for alcohol and drugs, which is having a ripple effect on societies and families (Chodkiewicz *et al.*, 2020; Degenhardt *et al.*, 2021). With alcohol and drug abuse happening in homes and people trying to deal with the uncertainties that have come with the pandemic, that change of lifestyle has had an impact on the family setting. During the lockdowns and restricted movements, children who look up to their parents are doing what their parents are doing, which is fanning the drug abuse cycle. Also, studies have revealed that a worrying trend showing an increased prevalence of domestic violence cases in homes has been attributed to the drug abuse problem (Stowe *et al.*, 2020; Saladino *et al.*, 2021). For instance, Kenya's National Authority for the Campaign against Alcohol and Drug Abuse has raised the alarm over the growing exposure of children to alcohol and drugs, especially in the Covid-19 era. In various suburbs of Kenya's capital, Nairobi, residents have complained of an increasing number of teenagers who chew khat, smoke cigarettes and bhang, consume alcohol and use other substances like jet fuel as a hobby (UNODC, 2018; Ryan, 2020; Stowe *et al.*, 2020).

A global survey by the International Society of Addiction Medicine (ISAM) indicates that Kenya, Georgia and Oman have shown the biggest change in drug availability, prices and health impact. The Report further points to an increase in the use of sedatives, bhang and alcohol particularly in those with substance use disorders (Stowe *et al.*, 2020; Temmingh *et al.*, 2020). In South Africa, despite enforcing strict lockdowns and border surveillance protocols to manage the virus, authorities recently confiscated a cocaine consignment estimated at \$1.8 million (Stowe *et al.*, 2020; Peltzer *et al.*, 2018). To beat the

system, the drug trade has become sophisticated by moving activities online and, with borders being closed, there has been a proliferation of local drug laboratories. As demand for drugs grows in Africa, studies further indicate that the black market is finding new customers in the desperate population, especially the younger generation, whom the pandemic continues to disfranchise. In the longer run, the economic downturn and associated lockdowns have the potential to disrupt drug markets (Mohasoa *et al.*, 2017; Myers, 2020).

Rising unemployment and lack of opportunities will make it more likely that poor and disadvantaged people engage in harmful patterns of drug use, suffer drug use disorders and turn to illicit activities linked to drugs – either production or transport (Chodkiewicz *et al.*, 2020; Holland *et al.*, 2021). Drug trafficking organisations are likely to exploit the situation by providing services to the vulnerable, and boosting their ranks with new recruits. As such, with governments less able to respond, these shifts could quickly take root and become the new reality for many communities. In Zimbabwe, methamphetamine, a powerful, highly addictive stimulant that affects the central nervous system, is being widely abused by young people known on the streets as crystal meth or mutoriro, the drug that has traditionally been used in the country, has recorded a huge rise in demand during the Covid-19 period, as unemployment levels soar and children remain out of school (Lawn *et al.*, 2020; Jemberie *et al.*, 2020). However, suppliers and peddlers easily obtain drugs from neighboring countries such as South Africa owing to the porous borders between the countries (Dannatt, 2020; Horigian *et al.*, 2021).

With the continued impact of Covid-19 diverting the interdiction and surveillance capacities of law enforcement bodies in the region, there is a significant likelihood that Afghan meth flows will penetrate beyond the initial South African sink, seeping along traditional smuggling routes to establish new footholds in neighboring illicit drug markets across the region (UNODC, 2021). More so, in understanding substance abuse and addiction, vital information such as identifying areas of special needs, emphasizing new emerging substances and their effects/consequences, raising awareness by enlightening high-risk populations, is needed in the form of data gained from assessment programmes to notify the general public and policy-makers of the dangers of the increased prevalence of unhealthy substance use (Meyers, 2020). Although the use of surveys for data-gathering said that existing information for drug use was mostly restricted to sub-groups, innovative approaches should be employed to reach adolescents who are out of school, and drug users who are not in treatment (Meyers, 2020; Marcus *et al.*, 2020).

Preferably, psychological experts and clinicians should aim to collect self-report and bio-marker data to collect blood samples for laboratory testing in nationwide studies to get a more precise validation of the presence and levels of toxicity in the bloodstream at the time of data collection (Temmingh *et al.*, 2020). Consistently, drug use is under- or over-estimated, and survey participants do not always want to disclose their drug use. Importantly, national surveys should be conducted every three to five years that conform to drug consumption trends, disaggregate data by gender, age and geographical region, and to evaluate interventions (UNODC,

2018; Degenhardt *et al.*, 2021). With substance abuse and addiction crises induced by Covid-19 escalating out of control, some experts have warned that several African nations are not prepared to handle the expected mental health issues, with devastating impacts on the African continent. Prior to the pandemic, numerous African countries were ill-prepared to handle mental health issues, and with rising cases of drug and substance abuse, depression and gender-based violence, a bigger catastrophe is beginning to take a toll on nations if the right health investments and healthcare financing is not put in place to prioritize drug and substance use disorders (Holland *et al.*, 2021).

Prevalence of Substance Use in South Africa: Generally, the arrival of Covid-19 shocked health and economic systems, leaving millions of people without employment and a safety-net. Thus, the pandemic disproportionately affects people with substance use disorders (SUDs) owing to the collision between SUDs and Covid-19. The pandemic, in turn, diminishes resources that people with SUD need for their recovery and well-being. Persistent use of psychoactive substances increases risk of substance use disorders (SUDs) and biopsychosocial disorders with multiple risk factors interacting at individual and contextual levels, which results in co-morbid health conditions affecting individuals from all social and economic backgrounds (Odularu *et al.*, 2020; Liu *et al.*, 2020). However, substance use is a growing public health problem and the estimated global prevalence of substance use (including amphetamines, cannabis, cocaine, opioids, etc.) was 5.3% in 2014 (Meyers, 2020; Dannatt, 2020). The most frequently used substance globally are cannabis, amphetamine-type stimulants, cocaine and opioids (Stowe *et al.*, 2020; Temmingh *et al.*, 2020), and their use has contributed significantly to the global burden of disease (0.8%) in 2010 (Degenhardt *et al.*, 2018; Myers, 2020). Several campaigns have been started to ameliorate and make impact on services for substance use disorders, presenting new insights arising from contemporary studies. For instance, in a population-based survey conducted among US individuals aged 12 years and older in 2015, in the previous month, use of any illicit drug was 10.1% (Horigian *et al.*, 2021). Population-based national studies have reported that in South Africa in 2008, the prevalence of drug use was 3.7% in the three months prior to the survey (Peltzer *et al.*, 2018). The highest prevalence was seen for cannabis (3.3%), followed by sedatives or sleeping pills (0.8%), amphetamine-type stimulants (0.7%), cocaine (0.6%), opiates (0.5%) and hallucinogens (0.5%) (Myers, 2020). Previous studies in South Africa and other countries found that specific socio-demographic factors were associated with drug use, including male gender (Mohasoa *et al.*, 2017), younger age (Peltzer *et al.*, 2018), specific population groups (mixed race and white people) (Stowe *et al.*, 2020), lower income or not employed (Marcus *et al.*, 2020) and place of residence such as urban or rural areas (Stowe *et al.*, 2020). One study reported the prevalence of substance use disorder in South Africa as shown in Table 1. Table 1 showed that the prevalence of substance use disorders in South Africa was 5.8 (± 0.6) and was higher than the global prevalence of SUDs, with 12 months diagnosis.

Table 1:

Prevalence of substance use disorders

	12-month diagnosis	Perceived need for treatment	Minimally adequate Rx for SUD
Global	2.6 (± 0.1)	39.1 (± 1.1)	7.1 (± 0.5)
LMIC	2.0 (± 0.2)	31.5 (± 2.2)	1.0 (± 0.4)
UMIC	3.3 (± 0.2)	35.6 (± 2.2)	4.3 (± 0.8)
HIC	2.6 (± 0.1)	43.1 (± 1.4)	10.3 (± 0.8)
South Africa	5.8 (± 0.6)	39.3 (± 3.9)	2.3 (± 0.1)

Source: Degenhardt *et al.*, 2017.

Further, certain health risk behaviours such as common mental disorders (major depression and anxiety disorders) (Temmingh *et al.*, 2020), alcohol use disorders (Chodkiewicz *et al.*, 2020), HIV-risk behaviours (Zaami *et al.*, 2020) and criminal victimization (Holland *et al.*, 2021) have been found to be associated with drug use. In order to create interventions for affected victims, more recent national population-based data on substance use among the general population are important and needed, yet there is a dearth of such studies in South Africa. The health consequences of SUDs (e.g., cardiovascular diseases, respiratory diseases, type 2- diabetes, immune and central nervous system, depression, and psychiatric (disorders) and the associated environmental challenges (e.g., housing instability, unemployment, and criminal justice involvement) increase the risk for Covid-19 (Myers, 2020). Covid-19 also adds to the complexity of SUD, as it affects the lives of individuals with SUDs. Relevant stakeholders are employed to build databases for systematic review for prevalence of substance use and stringent measures to combat its menace in line with the UHC and the 2030 SDG targets.

Theoretical Framework: This paper was guided by Social Learning Theory (SLT), and SLT was propounded by Albert Bandura (1977) to inquire into the determinants of human behaviour. Thus, reciprocal determinism is a central component of this theory and proposes that human behaviour is construed by functional relationships between the following dynamics: personal factors, the external environment, and the behaviour itself. SLT deliberates on how environmental and cognitive factors interact to influence human learning and behaviour (Bandura, 1986; Bandura *et al.*, 1961). Using this model, drug addiction can be viewed as resulting from functional relationships between an individual's personal characteristics, social environment, and drug/substance-centric behaviours (Bandura, 1977). Figure 2 throws more emphasis on the clarifications of how modelled behaviour can be rooted in learning environments. In other words, substance use, abuse and addiction can be viewed as a persistently-evolving biopsychosocial disorder, encompassing dimensions that are both internal and external to the person involved (Wall *et al.*, 2002; Ford, 2008; Marcum *et al.*, 2015). Effective treatment interventions should thus aim at all nodes of the model and the practical interactions concerning them, and constantly grow with the advancement of the disorder.

However, studies have argued that there is a need for an organized structure of meta-contingencies, operating within an individual's social environmental, thereby targeting the functional relationships between the factors that drive drug

and substance use, abuse and addiction (BCCSU, 2020; CCSUA, 2020a; CCSUA, 2020b; CCSUA, 2020c; CCENDU, 2020; Temmingh *et al.*, 2020). In most favourable conditions, these meta-contingencies can operate within socially connected persons who have the power to control the functional associations that have influenced substance and drug use. This has become an imperative as the skills to determine the choices allotted to behavioral modification, is required in implementing new strategies to produce positive behavioral outcomes that are significantly accumulative. Social learning theory has placed more emphasis on the importance of observing, modelling, and commencing behaviours, attitudes, and emotional responses of others (Bandura, 1977; 1986).

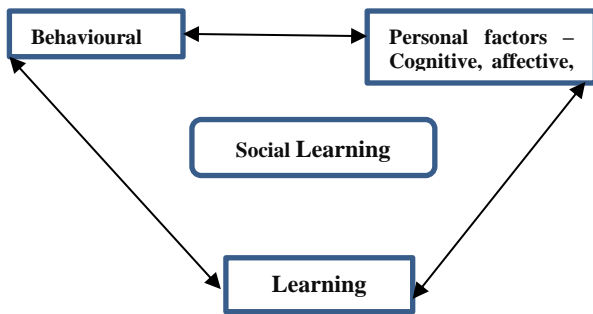


Figure 2:
Adopted from Bandura, 1977. Social Learning Theory

MATERIALS AND METHODS

Search strategy and selection criteria: This study employed a systematic review of existing cross-sectional studies that examined drug and substance use, abuse and addiction amidst the Covid-19 pandemic, and its implications for population health in South Africa. A systematic review of related articles

was conducted on published research studies from ten databases (Scopus, Medline, Sage, Google Scholar, Embase, CINAHL, Global Health, BIOSIS Previews, Web of Science and the Cochrane Library) (Amusan *et al.*, 2021). Keywords such as South Africa, Universal Health Coverage, the 2030 SDG targets on substance use, substance use, drug use, substance abuse and addiction, and the Covid-19 pandemic were used. The search terms used were: substance use, drug use, substance abuse and addiction, drug abuse and addiction, the interface of substance use amidst the Covid-19 pandemic, and implications of drug and substance use and addiction for population health in South Africa. Articles included were cross-sectional studies, which were published between the years 2015 to 2021. Eighty (80) studies were identified, and sampling was done in the screening and selection phases. The justification for selecting articles published from 2015 to 2021 was to sample articles on substance abuse prior to and during the Covid-19 pandemic in order to get the trend and prevalence of substance use in South Africa. Subsequently, the criteria for exclusion and inclusion were designed for the final selection of papers (Amusan *et al.*, 2016; Amusan *et al.*, 2021). First, only articles and media prints that examined drug and substance use, abuse and addiction amidst the Covid-19 pandemic in South Africa were considered. Excluded articles were irrelevant topics, articles not written in English, and articles that were not open access. In addition, articles that examined the drug and substance use, abuse and addiction in South Africa before 2015 were not included. Hence, with the selection criteria mentioned above, only forty-four studies, published from 2015 to 2021, were reviewed. Also, a desktop review of key information was adopted in line with the objectives, as there are no definitive data on the extent of substance/drug use in South Africa (Figure 3 and Table 2). All the included studies were of cross-sectional design, in which one study used secondary data.

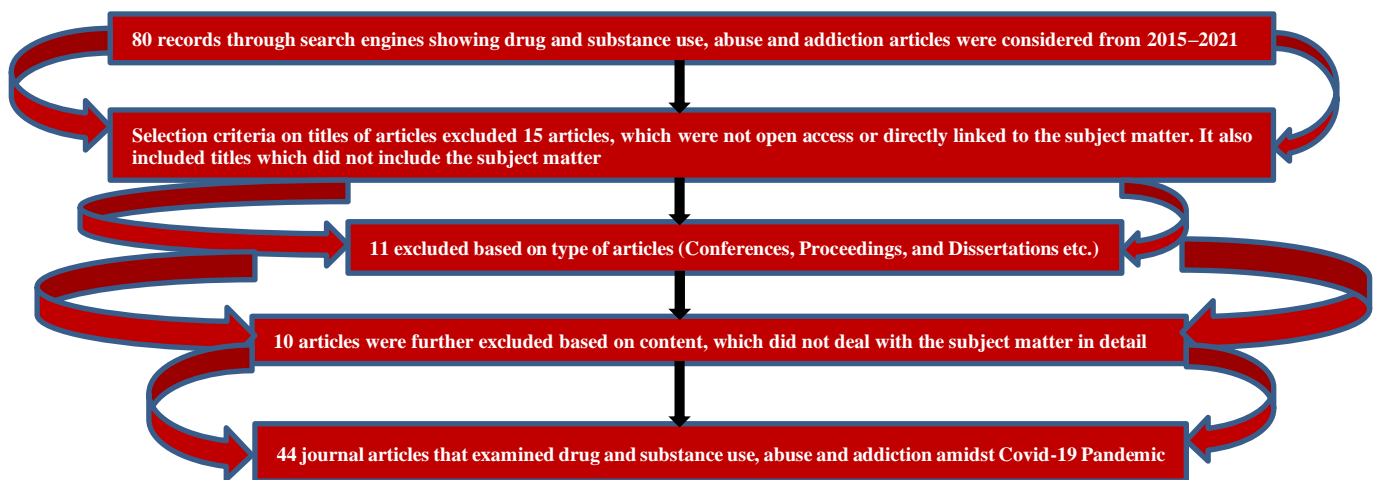


Figure 3:
Flow chart flowing the articles selection for the review and sample sizes

Table 2:
Sampled Articles for the Systematic Review

S/N	Titles of Selected Articles
1	Kieny MP. (2017). Strengthening health systems for universal health coverage and sustainable development. <i>Bulletin of the World Health Organization</i> , 95, 537-539.
2	Steiner A. (2019). ROI on health investment. In <i>Health: A Political Choice</i> . Kirton J, and Kickbusch I (Eds.). Global Governance Project.
3	World Health Organization (WHO) (2019). Health financing. What is health financing for universal health coverage? Accessed on the 10th of November, 2021 from https://www.who.int/health_financing/universal_coverage_definition/en/
4	World Health Organization (WHO)/World Bank (2017). Tracking universal health coverage: 2017 Global Monitoring Report. Accessed on the 8th of November 2021 from https://www.who.int/healthinfo/universal_health_coverage/report/2017/en/
5	United Nations Office on Drugs and Crime (UNODC) (2021). COVID-19 and Drugs: Impact outlook. <i>World Drug Report</i> , United Nations Publications (Pp. 1-101), Vienna, Austria. Accessed on the 5th of November 2021 from https://www.unodc.org/unodc/en/data-and-analysis/wdr2021.html
6	Dannatt L. (2020). The impact of the COVID-19 pandemic on substance use and behavioural addictions: perspectives from early career professionals. In: COVID-19 and the treatment of substance use disorders: International and local perspectives. International Society of Substance Use Professionals (South Africa Chapter) (ISSUP), South African National Council on Alcoholism and Drug Dependence (SANCA National), Addiction Technology Transfer Center Network (ATTC), South Africa-HIV, The U.S. President's Emergency Plan for AIDS Relief (PEPFAR), & University of Cape Town. Accessed on the 9th of November 2021 from https://www.issup.net/knowledge-share/resources/2020-08/covid-19-and-treatment-substance-use-disorders-south-africa .
7	Myers B. (2020). COVID-19 and treatment for substance use disorders in South Africa. In: COVID-19 and the treatment of substance use disorders: International and local perspectives. International Society of Substance Use Professionals (South Africa Chapter) (ISSUP), South African National Council on Alcoholism and Drug Dependence (SANCA National), Addiction Technology Transfer Center Network (ATTC), South Africa-HIV, The U.S. President's Emergency Plan for AIDS Relief (PEPFAR), & South African Medical Research Council (SAMRC). Accessed on the 9th of November 2021 from https://www.issup.net/knowledge-share/resources/2020-08/covid-19-and-treatment-substance-use-disorders-south-africa .
8	Temmingh HS, Mall S, Howells FM, Sibeko G, Stein DJ. (2020). The prevalence and clinical correlates of substance use disorders in patients with psychotic disorders from an Upper-Middle-Income Country. <i>S Afr J Psychiat</i> , 26 (0), a1473.
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FINDINGS AND DISCUSSIONS

As we write this review paper, the social and economic restrictions owing to the Covid-19 pandemic have already seriously impacted the health of the population. The Covid-19 outbreak, and its mitigation measures have led to the implementation of social and physical distancing to curtail the spread of the virus, changing individuals' way of life and behaviours. Individuals have been going through a period of depression, fear and anxiety for loss of job, long unemployment status and apprehension for failing health, and they are forced to live in an unfamiliar lifestyle by depriving themselves of physical and social relationships (Temmingh *et al.*, 2020; Dannatt, 2020). Furthermore, the circumstances of individuals with psychological difficulties may have deteriorated throughout the pandemic as a result of the unconscious reflecting of others' emotions (Jemberie *et al.*, 2020; Ryan, 2020). This peculiar situation may have pushed more individuals towards a deviant behaviour associated with licit or illicit drug or substance use, and it may have been a good opportunity for those selling substance and drugs to attract new users (Bandura, 1977; 1986). However, this has become important, as global and international communities have not preferred the typical drug and substance market. Certainly, physical and social distancing has considerably reduced drug and substance trafficking and sales among the users, pushing affected victims towards illegal or black

marketplaces, on the dark web or through messaging applications (Stowe *et al.*, 2020; Saladino *et al.*, 2021).

The scarcity of classic drugs, together with the impossibility of being able to go out to look for those, might have induced addicts to misuse psychoactive prescription drugs such as benzodiazepines (Ornell *et al.*, 2020). In this concern, although there is dearth of national survey data on the subject matter, the influence of the Covid-19 pandemic could lead to significant alterations in forms of substance use, and an increased danger of substitution, corruption, uncleanness, and increase uptake of potentially harmful substance (drug) (Tan Teck *et al.*, 2021). As such, studies have reported that forensic science and toxicology laboratories are crucial for the early detection and response to such events, especially in this period of home quarantine and lockdowns. Drug and substance users may no longer be looking for 'social' substances to be used in leisure surroundings, but for psychotropic drugs consumed in seclusion which affect the mind, mood or other mental processes as well as influencing human consciousness. Despite this, short periods of isolation and loneliness can have negative consequences on physical and mental well-being, and the feeling of isolation can lead to anxiety, anger, sleep disorders, depression and post-traumatic stress disorders, which may be underestimated owing to dearth of explicit screening facilities (Saladino *et al.*, 2021).

Also, lack of treatment services have been reported by several studies, as several provinces in South Africa have been found

to have only one residential treatment facility, and the Northern Cape Province has no treatment facility (Peltzer *et al.*, 2018; Stowe *et al.*, 2020). As the Covid-19 pandemic exposes entrenched inequalities and gendered power dynamics, marginalized women and girls are experiencing the greatest health and human rights impacts (UNAIDS, 2020). Their disparate experience is related not only to the virus but also to existing discrimination and gender stereotyping; economic inequality; lack of equal access to food, clean water, housing and health services; and stigma and discrimination based on sex, sexual orientation, gender identity, race, age, caste, class, religion, HIV status, disability, indigenous identity and immigration status (Myers, 2020; Dannatt, 2020). Nationwide emergency responses, which in some cases are overly broad, vague and not evidence-based, contribute to the unequal experiences of women and girls and fail to promote their health and human rights. At risk are the hard-fought gains towards gender equality and women's and girl's human rights (UNAIDS, 2020).

Thus, financial constraints have prevented the possibility to scale up these interventions and to make them routinely available across all provinces of South Africa and in all parts of sub-Saharan African countries. Questions such as 'what happens to affected victims after they have been treated at a facility and they return to their residential community' are often posed by several individuals in the community as well as the subjects' families. This question has attracted pleas by community and families of affected subjects to relevant stakeholders and community health workers to try to provide a follow-up care service for former drug users, as most times, the majority of them have been severely damaged by years of substance abuse; coming back into the community without any form of support given to them may mean they revert back to even worse levels of abuse and addiction. Furthermore, psychiatric support from health professionals is not guaranteed owing to short-term exploitation of psychiatric facilities for Covid-19 treatment (Dannatt, 2020; Morin *et al.*, 2021). Moreover, persons who are involved in drug and substance use as well as addiction may be likely to be using prescription sedatives that are accessible at home. Some may have shifted to narcotics such as the new synthetic opioids or designer benzodiazepines, which are available online or through their web networking sites. Certainly, these two groups of new psychoactive substances have shown the highest increase in consumption increase in 2019 (Myers, 2020; Stowe *et al.*, 2021).

Implications of Drug/Substance Use, Abuse and Addiction: In addition to the facts, coronavirus could make addicts, more vulnerable to complications of substance use. Health implications such as chronic respiratory diseases have already been associated with increased overdose mortality owing to opioids, a substance that can depress breathing (Niles *et al.*, 2021; Morin *et al.*, 2021). Therefore, could drug use, abuse and addiction threaten population health? Similar questions can be addressed for patients with chronic use of cigars, crack-cocaine (Bijral *et al.*, 2019; Liu *et al.*, 2020), and perhaps even vaporizers, that are known to cause pulmonary complications and diseases (Dannatta, 2020). Although, no studies have been conducted yet about the implications of

Covid-19 in respiratory complications of drug users, it is probable that the infection will be severely manifested in persons with substance use disorder involving these specific means of drug use (CDC, 2021). While drug use can increase the risk associated with a coronavirus infection, the social and psychological risks of the pandemic can favour and intensify drug abuse, in a potentially catastrophic cycle.

Social distance, isolation or quarantine are essential measures to help prevent coronavirus transmission; however, these strategies, and the pandemic outbreak itself, have been associated with negative emotions, such as irritability, anxiety, fear, sadness, anger or boredom. These conditions are known to trigger relapse, even in those long-term abstainers, or intensify drug consumption (Zaami *et al.*, 2020; Holland *et al.*, 2021). Withdrawal symptoms elicited during lockdown could also jeopardize these preventive strategies, as it could drive individuals to go outside for drugs. In addition, medical assistance for these symptoms will be limited, since the major medical efforts are geared towards the Covid-19 pandemic (Dannatt, 2020). Even in the case of hospitalization, it may be difficult to maintain a voluntary stay, generating more stress to healthcare workers, who are already overburdened as a result of the pandemic. Homelessness can also compromise preventive strategies, as individuals tend to wander during the day and sleep in crowded places during the night, making them potential vectors of transmission (Marcus *et al.*, 2020). Social distancing is also challenged during incarceration, long-stay in the therapeutic communities or other addiction treatment facilities, many of which philanthropic institutions do not comply with health security standards (Myers, 2020).

These are conditions that are highly prevalent among substance users, and may require specific strategies that encompass the individuals' needs for prevention of Covid-19, SUD treatment and the protection of healthcare workers (Johnson *et al.*, 2020; Lawn *et al.*, 2020). In all these scenarios, drug-seeking behaviours could increase exposure to infection for addicts, their families and healthcare professionals. Regarding the world economy—assuming a gigantic financial crisis—would this exacerbate SUD prevalence? Would the prevalence of drug use, abuse and addiction be aggravated among individuals in South Africa? Past disease outbreaks or epidemics have particularly impacted on more vulnerable populations, increasing substance use (Stowe *et al.*, 2020; Lawn *et al.*, 2020). Therefore, it is expected that vulnerable and high at-risk individuals will develop SUD, as well as persons with mild SUD progressing to more severe forms of the disorder. Regarding treatment, the need for personal protective equipment (PPE) by healthcare professionals may limit some strategies, such as street level harm reduction, especially as PPE becomes less available. These strategies could be crucial to help curtail and/or adequately treat Covid-19 in this population.

On the other hand, professionals dealing with Covid-19 may need special training to deal with substance users, if treatment demand among these may increase (Johnson *et al.*, 2020; Lindqvist *et al.*, 2021). Also, healthcare professional dealing with SUD must be aware of the risks and challenges they will meet during and after the Covid-19 outbreak. Addiction care must be reinforced, instead of postponed, in

order to avoid complications of both SUD and Covid-19 and to prevent the transmission of coronavirus (Ryan, 2020). Professionals dealing with Covid-19, on the other hand, should consider complications of SUD during treatment. For substance use, strategies must take into consideration clinical, demographic, socioeconomic and psychological factors. Thus, telemedicine should be considered for mild cases of SUD, and PPE must be made available for those working at the street level. Addiction treatment facilities must adhere to preventive measures and these efforts could help not only the patient with SUD, but also in helping to control the pandemic.

Conclusion/Recommendations

This paper has addressed some established issues associated with the increasing prevalence of drug and substance use, abuse and addiction amidst the Covid-19 pandemic. Several areas of this subject matter which may require further research have become obvious and important. Data on drug and substance use, abuse and addiction are lacking and therefore, the strength of research is lacking when compared to that of physical and sexual abuse and should not be overlooked. Also, much of the literature has focused exclusively on factors that contribute to alcohol and substance use, especially among the youth (Chodkiewicz *et al.*, 2020; Stowe *et al.*, 2020; CDC, 2021). However, it will be critical to focus on research specifically on areas related to tobacco smoking, substance use and alcohol abuse which are both on the increase in South Africa among the general population. Finally, there is value in national samples of data, yet there is dearth of research pertaining specifically to demographic factors and prevalence of substance use across all provinces. Community-based studies, especially in relation to demographic factors, may be more effective in generating findings that are specific to areas and thus, it may be more beneficial in producing and evaluating local prevention and intervention efforts. Hence, to address this gap, it is therefore important that sensitization and reform health policies are developed and implemented to address substance use and addiction as well as its health risks, especially among high-risk vulnerable substance users amidst the Covid-19 pandemic in South Africa. The provision of health education, advocacy and community awareness around substance use and addiction should be made to target and identify populations-at-risk for substance use and addiction in South Africa. Thus, a model of how various forms of reintegration may impact these affected SUD victims' experiences and outcomes, which will assist in reintegration accountability, its implementation, and its effectiveness. Hence, reintegration of those treated with substance abuse disorders back into their communities will help upon their return.

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