

Prevalence of Substance Use Disorders During the Covid-19 Pandemic: A Cross-Sectional Study in Kanyama Township of Lusaka District, Zambia

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Abstract

The coronavirus disease (Covid-19) pandemic has caused suffering and pain to mankind leading to many individuals practising self-medication and substance abuse that could elevate substance use disorders (SUDs). This study assessed the impact of Covid-19 on SUDs among Kanyama residents of Lusaka district, Zambia. We conducted a retrospective cross-sectional study using patient files at Kanyama First-Level Hospital from September 2021 to October 2021. Data analysis was done using IBM SPSS version 26.0. Of the 101 participants, 86.1% were male. The study showed that Covid-19 had an impact on SUDs with alcohol (83.2%) being the most abused substance. There was no significant difference in the type of substances abused ($p=0.870$) and intoxication symptoms ($p=0.331$) between the pre-Covid and post-Covid groups. There was a significant difference between substance use ($p=0.001$) and withdrawal symptoms ($p=0.002$) in both cohorts, with the post-Covid group consuming more substances and experiencing more withdrawal symptoms. Factors that influenced substance abuse included recent unemployment ($p<0.001$), boredom ($p<0.001$), overcrowding at home ($p<0.001$), and gender-based violence ($p<0.001$) influenced the change in the pattern of substance use. Recreational use was not associated with a change in the pattern of substance abuse ($p=0.667$). This study found that the Covid-19 pandemic increased the practices of substance abuse among Kanyama residents, especially those who were unemployed, bored, overcrowded at home and experienced gender-based violence. There is a need to heighten the monitoring and restriction of substance use, especially among adolescents and youths to curb some mental health problems.

Keywords: Covid-19; Pandemic; Self-medication; Substance abuse; substance use disorders; Zambia.

Introduction

Pandemics such as the coronavirus disease 2019 (Covid-19), have negatively affected people and their way of living [1-10]. For example, during the outbreak of the Severe Acute Respiratory Syndrome (SARS) epidemic

in 2003 and the Middle East Respiratory Syndrome (MERS-CoV) in 2012, there was an increase in mental health problems including stress, depression, anxiety, and emotional disturbances [11-17]. Over 64% of people

Received: 29.06.2023

Accepted: 18.08.2023

Published on: 29.09.2023

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experienced mental health challenges during the SARS outbreak of 2003 [11].

Additionally, approximately 8.9% of individuals experienced anxiety while 16.6% experienced anger due to isolation during the MERS-CoV outbreak in 2012 [18]. Alcohol, nicotine, opioids, and cannabis were among the substances that were abused during the outbreak of SARS in 2003 [14]. The Covid-19 outbreak is more widespread and known by people as compared to previous outbreaks like the SARS and MERS-CoV [5, 19]. During disease outbreaks, people increased their consumption of alcohol, nicotine, opioids, cannabis, and other drugs as means of coping with stress and fear [20, 21]. Consequently, there has been evidence of mental health problems across populations during the Covid-19 pandemic [22-30].

During the time of Covid-19, there could have been a change in the pattern of substance abuse [31-33]. Specifically, there could have been a change in the amounts of substances abused during Covid-19 as compared to the pre-Covid era [20, 34, 35]. This could have occurred as a result of the psychosocial factors that could have had an impact on patterns of substance abuse [34, 36]. Some of the psychosocial factors include loneliness, lack of physical interactions with friends and family due to quarantine, social distancing measures, and the recent loss of employment [37-39]. Furthermore, the restrictions together with the fear of getting Covid-19 could have increased stress among the people [40-44]. These factors could have led to an increase in substance abuse during the Covid-19 pandemic [45]. Furthermore, individuals who practised substance abuse experienced withdrawal seizures, accidental opioid overdose, and ultimately death [21].

In Zambia, the first cases of Covid-19 were reported in March 2020 leading to the implementation of lockdowns [8, 9, 46]. The government implemented the preventive measures recommended by the World Health

Organisation (WHO) which staying at home, social and physical distancing, frequent hand washing and sanitizing [47]. The implementation of lockdowns and fears of contracting Covid-19 caused individuals to develop poor health-seeking behaviours, stimulating practices of self-medication and substance abuse [9, 48, 49]. Moreover, previous studies have reported an increase in mental health problems associated with Covid-19 [50-53]. Subsequently, most young people in Zambia are unemployed and homeless thereby predisposing them to substance abuse [54, 55]. Furthermore, most youths abused substances as a means of coping with stress and during social gatherings [54-56]. Due to the increase in SUDs in Zambia, policies, and guidelines to prevent further abuse of drugs have been developed but remain underutilized [57]. It is therefore crucial to examine the impact of Covid-19 on SUDs in different geographic regions to gain a comprehensive understanding of the phenomenon and for instituting context-specific interventions where needed. Therefore, this study assessed the impact of Covid-19 on SUDs among residents of Kanyama Township in Lusaka district of Zambia.

Materials and Methods

Study Design, Site and Population

This retrospective cross-sectional study was conducted at Kanyama First Level Hospital, Psychiatric Clinic Lusaka, Zambia, from September 2021 to October 2021. The sources of the data were patient files for individuals of substance abuse who visited Kanyama First-Level Hospital, Psychiatric Clinic before and after the start of the Covid-19 pandemic. Files that were illegible or incomplete were excluded from the study. Kanyama Township is an overpopulated area with many youths who remain unemployed. Additionally, substance abuse such as increased alcohol consumption is a public health problem in the Township [49].

Sample Size Estimation and Sampling Technique

The sample size was estimated using Cochran's formula [58]. With no previous study done in Zambia, the prevalence was obtained from the hospital records and was found to be 7%. This meant that for every 100 patients, seven (7) were involved in substance abuse practices. Therefore, using a prevalence of 7% and a margin of error of 5%, we estimated a sample size of 101. All patient files were selected using the convenience sampling method because sampling depended on the availability of files having SUDs during the period of the study.

Data Collection

Data were collected from patient files of individuals with SUDs during the period from October 2019 to September 2020. The files were segregated into two sections. The first section (referred to as the "first cohort") encompassed files dated from October 2019 to March 2020, representing the pre-Covid-19 era. The second section included files dated from April 2020 to September 2020, reflecting the time during the Covid-19 pandemic. A comprehensive data collection sheet was devised by the research team to capture various aspects such as the socio-demographic characteristics of participants including gender, age, and level of education. We also collected information on substance use patterns (type and amount abused), psychosocial factors, and psychiatric disorders associated with Covid-19. A comparative analysis was conducted between the two cohorts to examine changes in

substance use disorders and identify psychosocial factors associated with these changes.

Data Analysis

The data obtained from the data collection sheet were entered in Microsoft Excel for cleaning and then exported to IBM Statistical Package for Social Sciences (SPSS) version 26 for statistical analysis. The dependent variable was SUD which had two outcomes (increased or decreased substance abuse). The chi-square test of independence was performed to examine if there were any significant differences between the first and second cohorts concerning the above variables. All statistical tests were determined at a 95% confidence level ($p < 0.05$).

Ethical Approval

This study was approved by the University of Zambia Health Sciences Research Ethics Committee (UNZAHSREC) with Protocol ID 202112030021. We obtained clearance from the hospital management to use patient files for our study. All the data that were collected were kept confidential.

Results

Socio-demographic Characteristics of Participants

One hundred and one (101) medical files were included in this study; 50 in the first cohort and 51 in the second cohort. There were more males than females, (86.1 % vs 13.9 %), most patients between the ages of 18 and 25 years (29.7 %), and most only had a primary level education (52.5 %) (Table 1).

Table 1. Socio-demographic Characteristics of Participants

Variable	Values	Frequency	Percentage
Gender	Males	87	86.1
	Females	14	13.9
Age (years)	12-17	9	8.9
	18-25	30	29.7
	26-31	29	28.7
	32-37	12	11.9
	38-45	14	13.9

	Above 45	7	6.9
Level of education	Primary	53	52.5
	Secondary	41	40.6
	Tertiary	7	6.9

Patterns of Substance Abuse in Both Cohorts

The most abused substance was alcohol (83.2 %), followed by a combination of alcohol and cannabis (6.9 %), and alcohol and opioids

(3%). During the Covid-19 pandemic, most (58.4%) patients increased their amount of substance abuse, and most (27.7%) of them experienced severe withdrawal symptoms (Table 2).

Table 2. Pattern of Substance use among Participants

Variable	Value	Frequency	Percent
Type of substance	Alcohol	84	83.2
	Alcohol & Cannabis	7	6.9
	Alcohol & Opioids	3	3.0
	Alcohol, Opioids & Cannabis	3	3.0
	Cannabis	2	2.0
	Alcohol, Opioids & Heroin	1	1.0
	Alcohol, Cannabis & Heroin	1	1.0
Amount of substance	Increased	59	58.4
	Decreased	1	1.0
	Maintained	41	40.6
Intoxication	Mild-Moderate	14	13.9
	Moderate-Severe	10	9.9
	Total	24	23.8
	Not stated	77	76.2
Withdrawal symptoms	Mild	23	22.8
	Moderate	27	26.7
	Severe	28	27.7
	Total	78	77.2
	Not stated	23	22.8

Substance Use by Type

In both cohorts, alcohol was the most (88%) abused substance whereas none abused opioids (Table 3). There was no significant difference in the type of substance use between the first and second cohorts (p=0870).

Quantity of Substance Use among Participants

There was an increase in substance use in the second cohort compared to the first cohort (Table 4).

Table 3. Type of Substance use Stratified per Cohort

		Cohort			
		First Cohort		Second Cohort	
		n	%	n	%
Substance type	Alcohol	44	88	40	78.4%
	Opioids	0	0	0	0
	Cannabis	1	2	1	2.0%
	Heroin	0	0	0	0
	Alcohol & Opioids	1	2	2	3.9%
	Alcohol & Cannabis	3	6	4	7.8
	Alcohol, Opioids & Cannabis	1	2	2	3.9
	Alcohol, Opioids & Heroin	0	0	1	2
	Alcohol, Cannabis & Heroin	0	0	1	2

Table 4. Change in Substance use in Each Cohort

Substance Use	Decreased	Remained Same	Increased	P-value
First cohort	1	40	9	0.001
Second cohort	0	1	50	
Total	1	41	59	

Substance Use Withdrawal Symptoms

This study found that of the participants in the first cohort, 18 patients had mild symptoms, 10 patients had moderate symptoms, and 9 patients had severe symptoms of withdrawal from substance use. In the second cohort,

however, the withdrawal symptoms for five people were mild, 17 patients were moderate, and 19 patients were severe. Most of the individuals experienced moderate and severe withdrawal symptoms in the second cohort compared to the first cohort (Table 5).

Table 5. Substance Use Withdrawal Symptoms among Participants

		Withdrawal Symptoms			Total	p-value
		Mild	Moderate	Severe		
Cohort	First Cohort	18	10	9	37	0.002
	Second Cohort	5	17	19	41	
Total		23	27	28	78	

Psychosocial Factors Affecting Substance Use among Participants

This study found that of the participants in the first cohort, three (6%) patients mentioned being recently unemployed to be a factor, no patient mentioned boredom and being crowded, however, two (4%) patients mentioned gender-based violence to be a factor and 45 patients (90%) mentioned recreational use. In the second cohort, 25 (49%) patients mentioned

being recently unemployed to be a factor, eight (15.7%) people mentioned boredom, another eight (15.7%) patients mentioned being crowded, and seven (13.7%) people mentioned gender-based violence to be a factor. Three (5.9%) patients mentioned recreational use as a factor in the second cohort (Table 6).

There was a significant association between substance use and recent unemployment ($X^2 = 20.050$, $p < 0.001$); boredom ($X^2 = 71.5535$, p

<0.001); crowded ($X^2 = 71.535$, $p < 0.001$); gender-based violence ($X^2 = 68.208$, $p < 0.001$).

Table 6. Psychosocial Factors Influencing Substance Use among Participants

	First Cohort				Second Cohort			
	Yes		No		Yes		No	
	N	%	N	%	N	%	N	%
Recently Unemployed	3	6.0	47	94.0	25	49.0	26	51.0
Boredom	0	0.0	50	100.0	8	15.7	43	84.3
Being crowded at home	0	0.0	50	100.0	8	15.7	43	84.3
Gender-based violence	2	4.0	48	96.0	7	13.7	44	86.3
Recreational use	45	90.0	5	10.0	3	5.9	48	94.1

Covid-19-Related Psychiatric Disorders

This study found that 60.8% of the participants had acute stress disorder, no patient presented with major depressive disorder, 9

patients (17.6%) presented with hypochondriasis, and eight patients (15.7%) presented with chronic stress disorder (Table 7).

Table 7. Covid-19 Related Psychiatric Disorders

	Yes		No	
	N	%	N	%
Acute Stress Disorder	31	60.8	20	39.2
Major Depressive Disorder	0	0.0	51	100.0
Hypochondriasis	9	17.6	42	82.4
Chronic Stress Disorder	8	15.7	43	84.3

The distribution of Covid-19-related psychiatric disorders was not equally distributed in the sample ($\chi^2 = 44.606$, $p < 0.05$)

Discussion

The study assessed the impact of Covid-19 on SUDs among residents of Kanyama Township of Lusaka district, Zambia. The most abused substance was alcohol (83.2%), followed by a combination of alcohol and cannabis (6.9%), and alcohol and opioids (3%). During the Covid-19 pandemic, most (58.4%) patients increased their amount of substance abuse, and most (27.7%) of them experienced severe withdrawal symptoms. Our study established that acute stress contributed to substance abuse among participants in the Covid-19 era group.

Our study revealed that Covid-19 caused an increase in substance abuse among the study participants, thereby contributing to SUDs, especially among participants during the Covid-19 pandemic. These findings also align with

other global and regional reports [20, 33, 59-64]. The increased substance abuse during the pandemic could have been due to social and physical isolation, economic collapse, and a lack of access to healthcare services [59]. Most of our participants were younger males highlighting that SUDs may be common in this age group.

A similar study among pupils in Kanyama Township found high substance abuse [49] and reports from other studies [65, 66]. The abuse of alcohol has been reported to be highly prevalent among males than females [67, 68], similar to our findings. However, a study that was conducted in Uganda found no significant change between SUD before and those during the Covid-19 pandemic [69]. Additionally, studies conducted in the US and Canada found variation in SUDs with participants reporting increase and decrease in substance use

depending on age and type of substances abused before and during the Covid-19 pandemic [70, 71].

Our study found that alcohol, cannabis, and opioids were the most abused substances among our participants, hence, the major contributing factors to SUDs. The high use of alcohol in Zambia is not shocking because this product is highly used for social drinking and is part of the Zambian culture [56]. Our findings corroborate those reported in other studies [21, 45, 59, 69, 72].

Our study found that the prevalence of alcohol abuse was 83.2%, comparable with 80.6% among university students in South Africa [73]. A study in Nepal reported increased abuse of alcohol, cigarettes, and illegal drugs among medical students [72]. Similarly, a Tanzanian study also reported high abuse of alcohol and cigarettes among secondary school adolescents [74]. In Nigeria, a study found that codeine-containing products, tramadol, alcohol, and cannabis were highly abused by adolescents and youths due to emotional, economic, and societal problems [75].

Despite measures to control substance abuse being put in place, these vices remain highly prevalent, especially among adolescents and youths [49, 74, 76-79]. These substances have been reported to cause mental health problems to abusers in previous studies [21, 33, 80, 81]. Additionally, substance use may predispose young people to practice risky behaviours including indulging in sexual activities [82]. Thus, there is a need to regulate the consumption of alcohol, cannabis, opioids, and other drugs, especially among adolescents and youths [60, 83-88]. Contrary to our findings, a systematic review reported a decline in substance abuse among youths during the Covid-19 pandemic [32].

The present study found that most patients in the Covid-19 era group had experienced moderate to severe withdrawal symptoms from substance abuse problems compared to those in

the pre-Covid-19 group. Our findings suggest that the Covid-19 era group abused more substances compared to the pre-Covid-19 group. This is similar to reports from other studies [89, 90]. This could be due to the impact of Covid-19 on the lifestyles and livelihoods of individuals.

Our study further revealed that most participants in the Covid-19 group abused substances because of the recent loss of employment, boredom, overcrowding at home, gender-based violence, and for recreational purposes compared to the pre-Covid-19 group. These findings have also been reported in other studies [40, 91]. Loss of employment and income has been reported as a contributing factor to mental health problems that individuals experienced during the Covid-19 pandemic [92, 94]. This caused worry among those who lost jobs and income on how to take care of themselves and their families. Overcrowding due to the stay-at-home recommendation was found to be among the causes of increased SUDs in our study. This could be due to fears of contracting the virus in overcrowded environments. These findings have been reported in other studies conducted during the Covid-19 pandemic [95, 97]. The present study also found that individuals who experience gender-based violence experience increased SUDs. We believe GBV could have partially increased due to prolonged times spent at home across populations. These negative impacts of Covid-19 resulting in increased GBV have been reported by other scholars [98-101].

Our study further established that acute stress during the Covid-19 pandemic contributed to substance abuse among the residents of Kanyama Township. Individuals experiencing stress tend to abuse substances as a means of coping with the stress. These findings are similar to what was reported in other studies that mental health problems such as stress contributed to substance abuse among individuals [20, 91, 102-104]. Furthermore, our

findings relate to other studies that have reported increased mental health problems and reduced quality of life during the Covid-19 pandemic [24, 105-107]. Therefore, there is a need to address stressful events that predispose people to practice substance abuse.

Our study highlights the impact of Covid-19 on substance abuse and use among residents of Kanyama Township of Lusaka, Zambia. These findings may help the government to develop strategies that address substance abuse in communities and among adolescents and youths. We are aware that our study has some limitations.

Firstly, the study was done in one community, hence, the generalisation of the findings must be done with caution. Therefore, due to the geographical specificity of the study, there may be biases in the data which may not make it representative of larger populations. Finally, we used a quantitative study which may not give full information on the predisposing factors contributing to substance abuse. Hence, future research should utilise qualitative methods and longitudinal studies to get a better understanding of the factors that contribute to SUDs.

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Conclusion

The study showed that Covid-19 caused an increase in SUDs among our participants with alcohol, cannabis, and opioids being the most abused products. Substance abuse was most likely to be practised by those who were unemployed, bored, overcrowded at home, and experienced gender-based violence during the Covid-19 period. There is a need to restrict substance abuse, especially among young people and this will in turn prevent substance abuse disorders like mental health problems. Therefore, the government should strengthen policy implementation on substance abuse, and promote further public health strategies and research to curb substance abuse.

Conflict of Interests

All authors declare no conflict of interest.

Acknowledgments

We are grateful to the Kanyama Hospital management for allowing us to conduct the study at their institution and for allowing us to use the patient's medical files.

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