

Time Series Analysis Of Narcotics Use During COVID-19 Pandemic Lockdown In A National Referral Hospital – An Exploratory Study

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KEYWORDS: COVID-19, Drug Utilization, Narcotic Analgesics, Essential Medicines, Patients.

ABBREVIATIONS

COVID-19: Corona Virus Disease of 2019, SDR: Scheduled Drugs Register, CMS: Central Medical Stores.

1.0 INTRODUCTION

Medicine utilization in a healthcare setting reveals details about what is used, how much of it is used and who uses such medicine [1]. Over time, medicine utilization studies have been used to inform drug policies so as to minimize costs due to wastefulness. Such policies can help in prioritizing the Ministry of Health's expenditure on essential medicines. Thus, the focus will be on improved and informed patient management. The COVID-19 pandemic put enormous strain on healthcare and pharmaceutical supply chain systems, culminating in compromised patient management.

This study aims to look at the trends in the utilization of narcotic analgesics in a referral hospital, with a particular focus on drug consumption during the lockdown period due to the COVID-19 pandemic.

2.0 NARCOTIC ANALGESICS USE IN HOSPITAL SETTING

Opioid analgesics or narcotics are controlled drugs according to the Namibian Medicines and Related Substances Control Act 13 of 2003. These drugs are regarded as Schedule 4 substances, thus, can only be prescribed by medical doctors and dispensed by pharmacists in the hospital setting. Strict measures are put in place, owing to the fact that they are prone to abuse or misuse [2]. SDR is used to receive these drugs from the CMS or loaning facilities in the event of stock shortage at CMS and in the issuance of the drugs on a ward basis from the pharmacy stores on a duly completed and signed internal requisition form. Narcotic analgesics are used in the management of moderate to severe pains in both ambulant and admitted patients.

A facility-based retrospective medicine utilization analysis to determine the rate of consumption of narcotic analgesics at Windhoek's regional referral hospital, Katutura State Hospital, was carried out in December 2020. SDR containing detailed issued quantities of all the controlled drugs to different hospital wards were used as the primary data source. The accessible population was consumption data, i.e., quantities ordered and issued from the main pharmacy of Katutura State Hospital to in-patient units of the hospital between December 2019 and September 2020. The main study variables were narcotic analgesic and dosage formulations.

The study was approved by the Ministry of Health and Social Services' Ethics Review Board (17/3/3 JG). The review board waived the requirement for consent, as the study did not deal with human subjects or their records. No data was shared with a third party unless directly involved in the study.

Data on the type of narcotic analgesic were collected from individual SDRs and entered into a spreadsheet prior to analysis. Collected data were analyzed using Microsoft Excel Spreadsheet 2016. Frequencies were derived from tables generated, and a graphical representation of the time-series variations was obtained using the same Microsoft Excel Spreadsheet 2016.

Seven opioid analgesics were included in this study based on their availability and utility within the hospital. Table 1 shows the actual consumption of narcotics during the study period, while Table 2 depicts the monthly variations of these medicines.

Table 1: Consumption of narcotic analgesics.

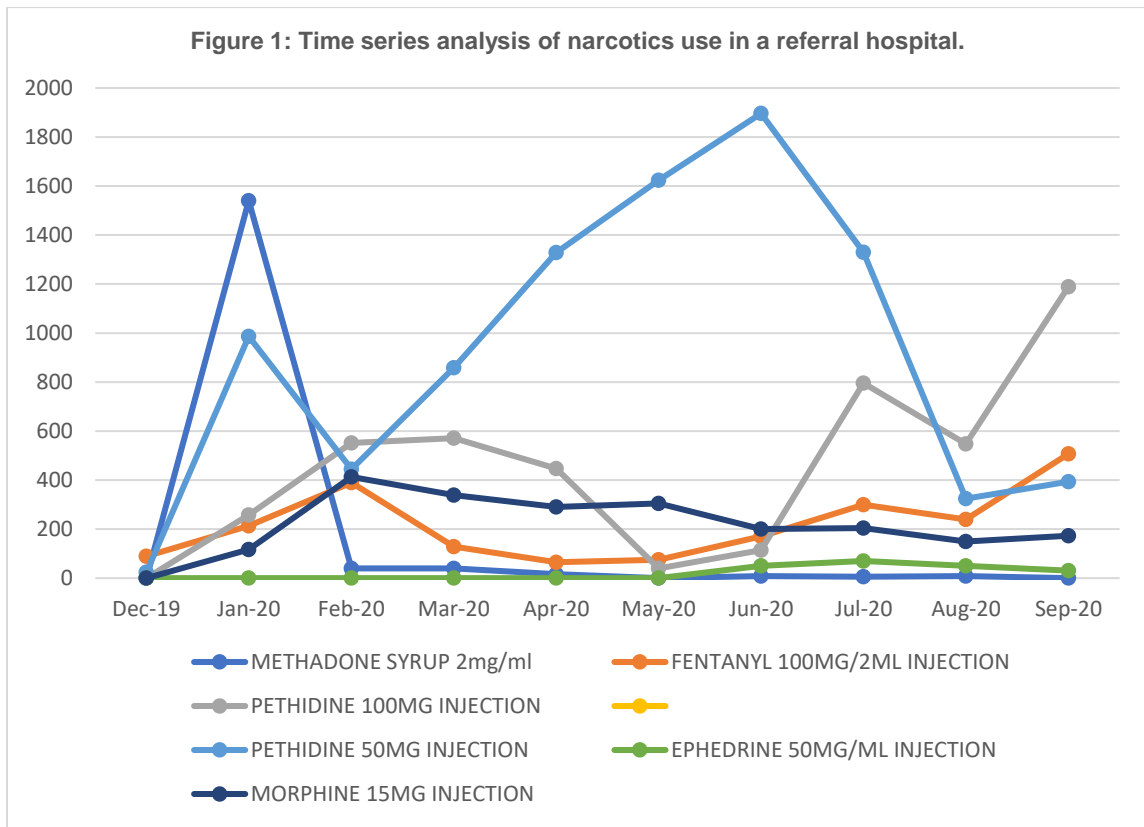
Opioid analgesic/antipsychotic	Sum (QI)	Average (QI)	Total QR	Number of stockout days	Quantity issued prior to lockdown	Quantity issued during lockdown
Methadone syrup 2mg/ml	1657.8	40	0	0	1620	37.8
Codeine phosphate 30mg tablets	192	48	100	0	90	102
Morphine powder (Mist)	127.5	7.5	249	0	75	52.5
Fentanyl 100mg/2ml injection	2179	27.9359	3353	23	822	1357
Pethidine 100mg injection	4514	17.8419	4004	0	1380	3134
Pethidine 50mg injection	9214	23.5051	9328	0	2317	6897
Ephedrine 50mg/ml injection	200	16.66667	200	26	0	200
Morphine 15mg injection	2252	22.74747	3170	17	929	1323

QI – Quantity issued

QR – Quantity received

Table 2: Time series analysis of narcotics use in a referral hospital.

Narcotic analgesic	Monthly consumption									
	December 2019	January 2020	February 2020	March 2020	April 2020	May 2020	June 2020	July 2020	August 2020	September 2020
Methadone syrup 2mg/ml	0	1540	40	40	16	0	8	5.8	8	0
Fentanyl 100mg/2ml injection	90	213	390	129	65	75	170	300	240	507
Pethidine 100mg injection	0	258	551	571	447	40	114	796	548	1189
Pethidine 50mg injection	24	986	444	859	1328	1624	1896	1330	325	394
Ephedrine 50mg/ml injection	0	0	0	0	0	0	50	70	50	30
Morphine 15mg injection	0	117	413	339	291	305	201	204	149	173



Most of the essential narcotic drugs used in the facility were in stock during the review period, though stock-outs were experienced for brief periods. Governments must be prepared for eventualities such as pandemics or other natural disasters that might lead to disruption of the normal running of the healthcare systems [3].

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CONFLICT OF INTEREST

None.

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