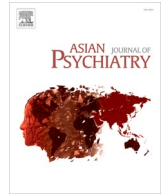




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Short communication

Accidental deaths from hand sanitizer consumption among persons with alcohol dependence during the COVID-19 lockdown in India: Analysis of media reports

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ABSTRACT

Unanticipated alcohol bans, as witnessed during the lockdown in response to Covid-19, led to severe withdrawal among dependent users. This sometimes resulted in desperate measures to handle withdrawal. We reviewed media reports of 54 persons who died from the consumption of hand sanitizer or other toxic chemicals due to the unavailability of alcohol during the lockdown in India. An informed and gradual cutdown of alcohol availability along with ensuring access to medical help for alcohol withdrawal should be considered of utmost priority in such a context.

1. Introduction

The world reported the first case of COVID-19 in December 2019. Soon it was declared a pandemic by the World Health Organization. Globally, all human efforts were understandably directed to contain viral transmission, leading to a state of lockdown in many countries. However, different federal and state governments around the globe adopted varying stances with regard to the availability of alcohol during the lockdown. While certain countries listed alcohol among the essential-commodities and continued to make it available during lockdown, in others alcohol availability was regulated to a variable extent, including a complete ban in some countries (Neufeld et al., 2020).

India identified its first COVID-19 case in January 2020. To curb the spread of the pandemic, the Central Government of India declared a 21-day nationwide lockdown on 24th March 2020. The lockdown was enforced within a few hours following notification. This lockdown continued for about eight weeks and the process of unlocking was undertaken by various states in a phased manner (De, 2020). The sudden announcement of the lockdown led to an immediate cessation of alcohol supply in states throughout the country. This led to forced alcohol withdrawal in a substantial number of dependent alcohol users. The lack of access to acute medical care for alcohol withdrawal further compounded the situation. There were reports of suicides, accidental deaths, and increase in cases of delirium tremens or alcohol withdrawal seizures in emergency settings due to the unavailability of alcohol (Ghosh et al.,

2020; Narasimha et al., 2020).

Apart from lockdown as a means of containing Covid-19, hand hygiene was universally advocated as an essential measure to prevent human-to-human transmission of the infection. This led to the increasing use and availability of alcohol-containing hand sanitizers. Following this, there have been sporadic incidents of adverse health consequences such as toxic amblyopia leading to blindness among alcohol-dependent individuals who consumed hand sanitizers to control withdrawal syndrome (Kochgaway et al., 2020). Hand sanitizers are unsafe for human consumption and might lead to serious health hazards, including death. The current study was aimed at understanding factors associated with accidental deaths among persons with alcohol dependence from consumption of various toxic chemicals due to the unavailability of alcohol during COVID-19 induced nationwide lockdown in India.

2. Methods

A Google search was performed for the customized date range from 24th March 2020 to 30th September 2020 using the 'tools' option. The first search command used was: *Deaths due to consumption of sanitizers and toxic chemicals during the lockdown in India*. This search resulted in the display of '146' nonrepetitive items after the inbuilt filter had omitted the entries that were very similar to those already displayed. To increase the chances of identifying relevant reports, the search was

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repeated with a second command: *Consumption of toxic chemicals due to unavailability of alcohol*. The second search resulted in the display of '114' nonrepetitive items after similar entries were filtered out. Overall, 260 items obtained from the above searches were subjected to the screening of the title and content. The inclusion criteria required the news item to report an incident of accidental death among people who intentionally consumed toxic chemicals due to the unavailability of alcoholic beverages during the study period. The news report could be published in English or any Indian language. Exclusion criteria involved news items reporting deaths by suicide due to the consumption of hand sanitizer or accidental deaths resulting from consumption of bootleg alcohol. Finally, 12 news items were chosen for the detailed analysis. Supplementary-1 depicts the search strategy in detail.

3. Results

The summary of the reviewed media reports is provided in [Table 1](#) and the links to their sources are provided in supplementary-2. During the study period, 54 people reportedly died by consuming toxic chemicals due to the non-availability of alcohol. These deaths were reported across six states of the country with the maximum number reported from Andhra Pradesh (68 %) followed by Tamil Nadu (17 %) and the rest (15 %) from Kerala, Karnataka, Maharashtra, and Uttar Pradesh. About 44 % of the cases were from rural areas and 15 % from urban areas, whereas such distinction was not reported for the remaining 40 %. Among the victims, 57 % were males, 2% were females and gender of 41 % cases was not reported. The most frequently consumed toxic substance was hand sanitizer (91 %) whereas the remaining victims had consumed aftershave lotion or methanol containing alcohol. One death was reported in a prison setting where the deceased had consumed hand sanitizer, mistaking it for alcohol.

4. Discussion

During the lockdown imposed in the various states of the country, alcohol became unavailable as the vendors were closed. Nearly sixteen crore people who regularly use alcohol in India thus did not have access to alcohol ([Ambekar et al., 2019](#)). Many of them who were dependent users experienced varying levels of alcohol withdrawal. Further, due to the lack of timely medical help, many were left to themselves to deal with their withdrawal symptoms. The 54 cases of accidental deaths due to consumption of hand-sanitizer and other toxic chemicals reported in this study represent one of the unforeseen consequences of lockdown. Although such incidents were reported only from a few states of the country, this perhaps represents just the tip of the iceberg. It is possible that similar cases went unreported from other parts of the country as milder forms of toxicity might have gone unnoticed. A large proportion of victims in our study belonged to the rural areas which possibly reflected the relatively greater difficulty for this population to access care for alcohol dependence, even in normal circumstances. A substantially higher number of males reflects the higher prevalence of alcohol use among males in India ([Ambekar et al., 2019](#)). The most commonly consumed toxic chemical by the large majority of victims was hand-sanitizer, most likely due to its wide availability during the lockdown.

The current study highlights one of the many undesired consequences of an unanticipated ban on alcohol during the COVID-19 lockdown. During the lockdown, multiple incidents of crimes such as smuggling illicit liquor and theft at alcohol stores were reported in various states ([Ghosh et al., 2020](#)). Reports of suicides in the context of alcohol withdrawal have also attracted considerable media and public attention. Following such negative incidents, knee jerk responses included options of home delivery of alcohol, and in some cases, even prescription of alcohol by medical professionals ([Ghosh et al., 2020](#); [Nadkarni et al., 2020](#)). After about three months, when the lockdown in India was relaxed and alcohol sales were reopened, huge crowds

gathered at alcohol outlets across the country, disregarding all social-distancing protocols. Heavy taxes were imposed on alcohol in certain states to deter such overcrowding and heavy consumption among regular users with questionable success ([The Guardian, 2020](#)).

Globally, COVID-19 lockdown has resulted in a variety of approaches with diverse outcomes. Certain countries like Thailand, Sri Lanka, South Africa, and Greenland banned alcohol completely to avoid mass gathering as well as to reduce problems associated with binge drinking like domestic violence ([Ghosh et al., 2020](#); [Neufeld et al., 2020](#)). France, citing a similar reason imposed a total ban on alcohol during the lockdown which had to be lifted within a day following concern and distress expressed by the general public and addiction experts ([The Local, 2020](#)). New Zealand and Australia, where governmental policies on alcohol availability were uncertain witnessed panic-buying and stocking of alcohol by people causing a manifold increase in its sales. It also resulted in overcrowding at alcohol outlets, defeating the very purpose of lockdown ([House, 2020](#)). Centers for Disease Control and Prevention (CDC) reported 15 cases of methanol poisoning from Arizona and New Mexico in the United States of America due to the consumption of hand sanitizers. Four persons died whereas three others developed new onset visual impairments ([Yip et al., 2020](#)). Besides this, Mexico witnessed the deaths of 189 people due to the consumption of methanol-containing alcohol as a result of the ban on the official sale of alcohol amid pandemics ([Mexico News Daily, 2020](#)). In Iran, where alcohol is illegal, hundreds of people lost their lives due to consumption of spurious alcohol in an attempt to 'protect' themselves from coronavirus infection ([Aghababaeian et al., 2020](#)). Such misleading information on alcohol was widely circulated through social media across the world.

4.1. Lessons learned from the Indian experience

Public health hazards caused by alcohol needs no emphasis. Besides the known medical consequences of chronic alcohol consumption, users are also more susceptible to COVID-19 infection and its complications due to their compromised immune states. Noncompliance with social distancing protocols at alcohol outlets increases the health-risk of even those who do not consume alcohol. However, it also remains that an unanticipated ban on alcohol has numerous unintended consequences in the form of adverse incidents earlier described, increase in the emergency health-care demands and disruption of law and order, which in turn negatively impacts the pandemic control. Thus, the lack of an informed and appropriate alcohol policy during an emergency like COVID-19 has been a real predicament for many governments across the world. This is also evident from the diverse and confusing alcohol policies implemented by different states in the country ([Ghosh et al., 2020](#)). These events illustrate the need for a strategic approach to regulate alcohol-related activities in general and in particular during emergencies. Ideally, the government should timely disseminate information on alcohol policies to all the stakeholders, adequate information about proposed bans through public messaging and information about treatment facilities that can safely support alcohol withdrawal. In the context of the current problem, people should be educated about the dangers of consuming sanitizers, and warnings on sanitizer labels against human consumption need to be considered, just as with methanol. Finally, the healthcare delivery systems should be sensitive about diverse health issues that may arise in alcohol-dependent individuals during periods of forced abstinence.¹

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Table 1

Media reports of accidental deaths due to consumption of sanitizers and other toxic chemicals due to unavailability of alcohol during COVID-19 lockdown in India.

DATE (SOURCE)	DISTRICT (STATE)	REGION	CASUALTIES (GENDER)	CAUSE OF TOXICITY
27 March 2020 (CATCH NEWS)	Palakkad (Kerala)	Urban	1 (male)	Prisoner mistook hand sanitizer for alcohol and consumed it
04 April 2020 (DT NEXT)	Pudukkottai (Tamil Nadu)	Rural	2 (males)	Consumed after-shave lotion-laced soft drink
06 April 2020 (PUNE MIRROR)	Chengalpattu (Tamil Nadu)	Rural	3 (males)	Consumed hand sanitizer due to non-availability of alcohol
12 April 2020 (THE QUINT)	Coimbatore (Tamil Nadu)	Urban	1 (male)	Consumed hand sanitizer due to non-availability of alcohol to manage withdrawal symptoms
15 April 2020 (BANGALORE MIRROR)	Cuddalore (Tamil Nadu)	Urban	3 (males)	Consumed methanol containing chemical from a pesticide manufacturing unit
20 April 2020 (DECCAN CHRONICLE)	Dharwad (Karnataka)	Rural	2 (one male, one female)	Consumed hand sanitizer due to non-availability of alcohol
27 April 2020 (HINDUSTAN TIMES)	Dharwad (Karnataka)	Urban	1 (male)	Consumed a mixture of sanitizer and cough syrup due to the non-availability of alcohol
28 April 2020 (TV9 MARATHI)	Satara (Maharashtra)	Urban	2 (males)	Consumed alcohol-mixed sanitizer due to the unavailability of alcohol
05 May 2020 (NEWS 18)	Ghaziabad (Uttar Pradesh)	Rural	2 (males)	Consumed alcohol-based nail polish remover, aftershave lotion, and sanitizer
19 July 2020 (TELUGU SAMAYAM)	Nellore (Andhra Pradesh)	Rural	1 (male)	Consumed sanitizer due to lack of alcohol
31 July 2020 (THE HINDU)	Prakasam (Andhra Pradesh)	Rural	14 (all males)	Consumed sanitizer due to lack of alcohol
02 August 2020 (TIMES OF INDIA)	Vijayawada, Kadapa, Guntur, West Godavari, Visakhapatnam, (Andhra Pradesh)	Not reported	22* (not reported)	Consumed sanitizer and surgical spirit

* Excluding the 14 subjects that were part of the earlier report.

Declaration of Competing Interest

None.

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None.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.ajp.2021.102794>.

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