

Short Communication

How Methanol Poisoning Outnumbered COVID-19 in Mortality in Fars, Iran, During The COVID-19 Outbreak? A Report from Fars Province, Southern Iran, March-April 2020

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- Methanol poisoning
- Alcohol abuse
- Public education

Abstract

Objective: We intend to provide a subjective and scientific report on a tragic incident happened during COVID-19 outbreak in Iran which is a mass methanol poisoning in one of the provinces in Iran. Unexpectedly, this poisoning has outnumbered COVID-19 in mortality in Fars province which emphasizes the significance of this incident. Methanol poisoning cases count and its mortality was respectively so high. Accordingly, it can be distinguished as one of the largest methanol mass poisonings reported and this paper aims to present this poisoning quantitatively.

Method: Comprehensive data on reported methanol poisoning and COVID-19 cases were collected from different reliable sources such as world health organization, Iran health ministry, and Iranian national official press. The similar data for mortality was also collected. We tried our best to have reliable data and collect as much as data available especially in case of methanol poisoning. The collected data is presented in this paper.

Result: Highest poisoning mortality was observed in the first two months of the COVID-19 outbreak in Fars province, Iran. We also made this incident noted from a scientific point of view in order to investigate where this happening is rooted in. The main reason of such mass poisoning seems to be lack of knowledge about alcohol consumption in Iranian society.

Conclusion: After discussing the causes of such events, we proposed some solutions in order to prevent recursion of such incidents which are mainly focused on educating society in order to provide them with necessary knowledge about alcohol.

ABBREVIATIONS

COVID-19: Coronavirus disease 2019; **IRNA:** Islamic Republic News Agency; **CPDI:** COVID-19 Peritraumatic Distress Index

INTRODUCTION

Since the initial reports on the coronavirus disease (COVID-19) cases in Wuhan, China in December 2019, more and more countries experienced clusters of cases caused by community transmission (1). Iran health ministry reported the first cases of COVID-19 on February 19th 2020 (2). Despite pre-emptive measures such as; social distancing, shutting down the public gatherings, suspending schools and universities; and education of hand washing and sanitization, the disease spread rapidly all over the country.

Based on officially published statistics, Iran health care system controlled the outbreak in a satisfactory fashion and

the daily number of new cases as well as mortalities followed a decreasing trend (Figure 1a). However, other problems arose which led to even further mortality in some regions (3).

Meanwhile, emergency departments, in some provinces, reported increasing number of admissions due to alcohol (methanol) poisoning (4). Considering that Iran is an Islamic state, producing, distributing, and consuming alcoholic drinks are forbidden all over the country. However, alcoholic drinks are available through smuggling and unsupervised home-made production. This poses a high risk of distributing products containing methanol (toxic to human).

In this paper, we aim to report the methanol mass poisoning which happened simultaneously with COVID-19 outbreak. In addition, we intend to study the causes of this incident by taking it into account from a scientific point of view.

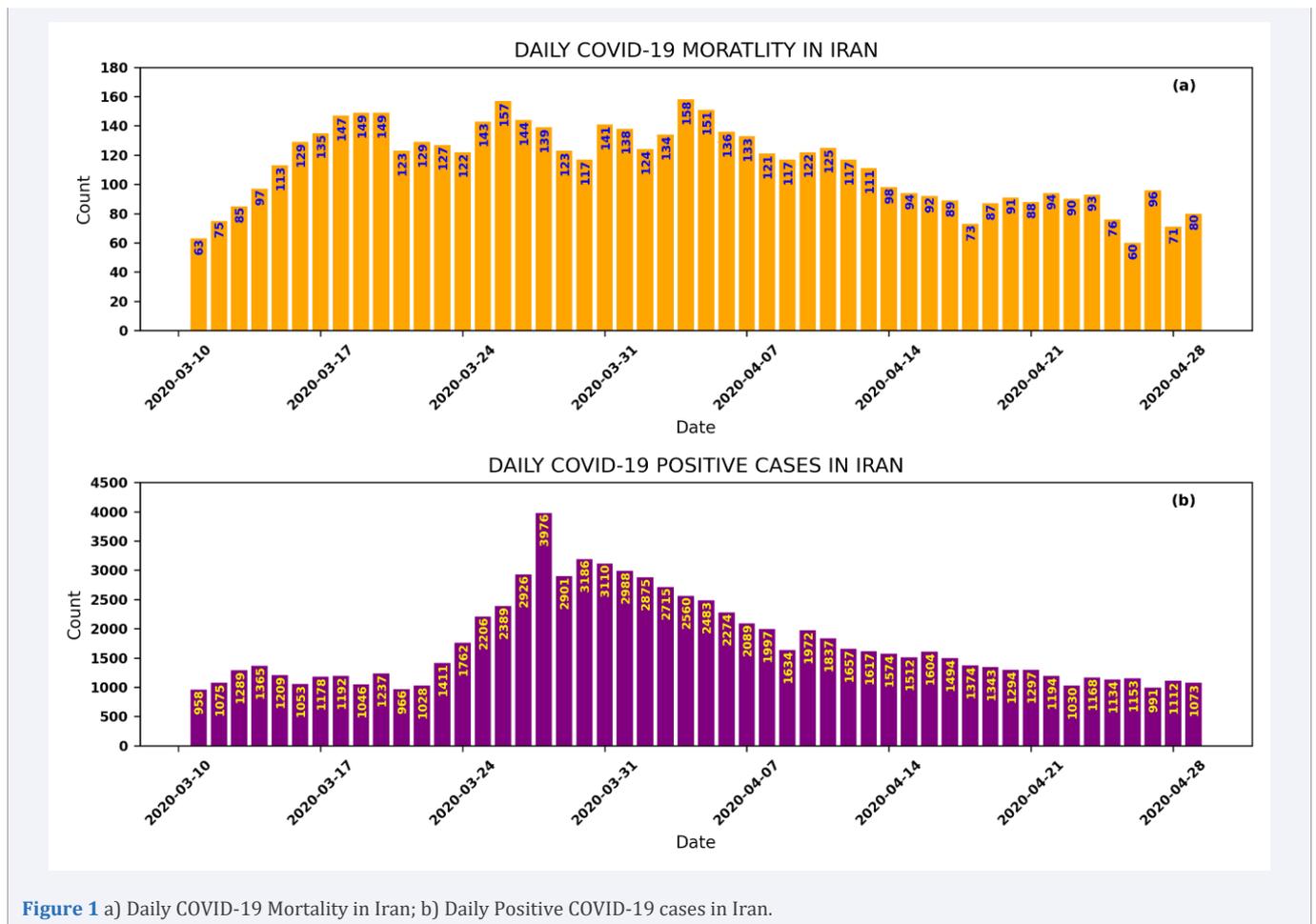


Figure 1 a) Daily COVID-19 Mortality in Iran; b) Daily Positive COVID-19 cases in Iran.

The “Fars” disaster

Fars province, a region in southern Iran, with almost 5 million inhabitants (the 4th most populated province) experienced the highest number of admissions and mortalities due to methanol poisoning since the start of COVID-19 outbreak in Iran. Surprisingly, the toll of dead caused by methanol poisoning exceeded the death rate due to COVID-19 during March and April 2020 (Figure 2a).

This is the largest methanol mass poisoning in Fars, Iran and also in the world in last decades (4). Based on the reports published by Forensic Medicine Organization of Iran, the annually mortality of methanol poisoning is between 100-120 in whole country (with population of more than 80 million) in the recent years (5). According to Figure 2a, almost 100 victims died because of methanol poisoning in a single province (Fars) during less than two months.

As shown in Figure 2a, there were days in which, methanol poisoning outnumbered COVID-19 in mortality even by a factor of two. Additionally, a lot of Intensive Care Unit beds, desperately needed for patients suffering from respiratory problems due to COVID-19, have been occupied by poisoned patients.

Shortly after the first officially reported COVID-19 mortalities, on March 11th 2020, a sudden increase in methanol poisoning admission happened (Figure 2b) (6). The toll of death caused by

methanol poisoning outnumbered that of COVID-19 by 14th of March with 26 deaths against 8 (Figure 2a). After a month, the mortality of COVID-19 has reached to 61 individuals on April 15th. However, the number of deaths caused by methanol poisoning is 95 on the same day (Figure 2a).

On April 28th, the mortality of COVID-19 is 85 and growing. However, the causality of methanol poisoning is 98 which is still more than its of COVID-19, even though two months have passed from the start of COVID-19 outbreak in Fars.

RESULTS AND DISCUSSION

Hereunder, we tend to discuss the underlying causes as well as possible solutions to prevent similar tragedies.

Causes Distress level

Distress during outbreaks such as COVID-19 pandemic and lockdowns is inevitable. Such distress is rooted in fear of the disease, obsessive behaviors, and economic pressure; and may lead to domestic violence, suicidal attempts, and even child abuse (7).

Distress level varies between different cultures and countries. COVID-19 has considerably increased distress level among Iranians. Quantitatively speaking, the mean CPDI (COVID-19 Peritraumatic Distress Index) measured for a 1058-person

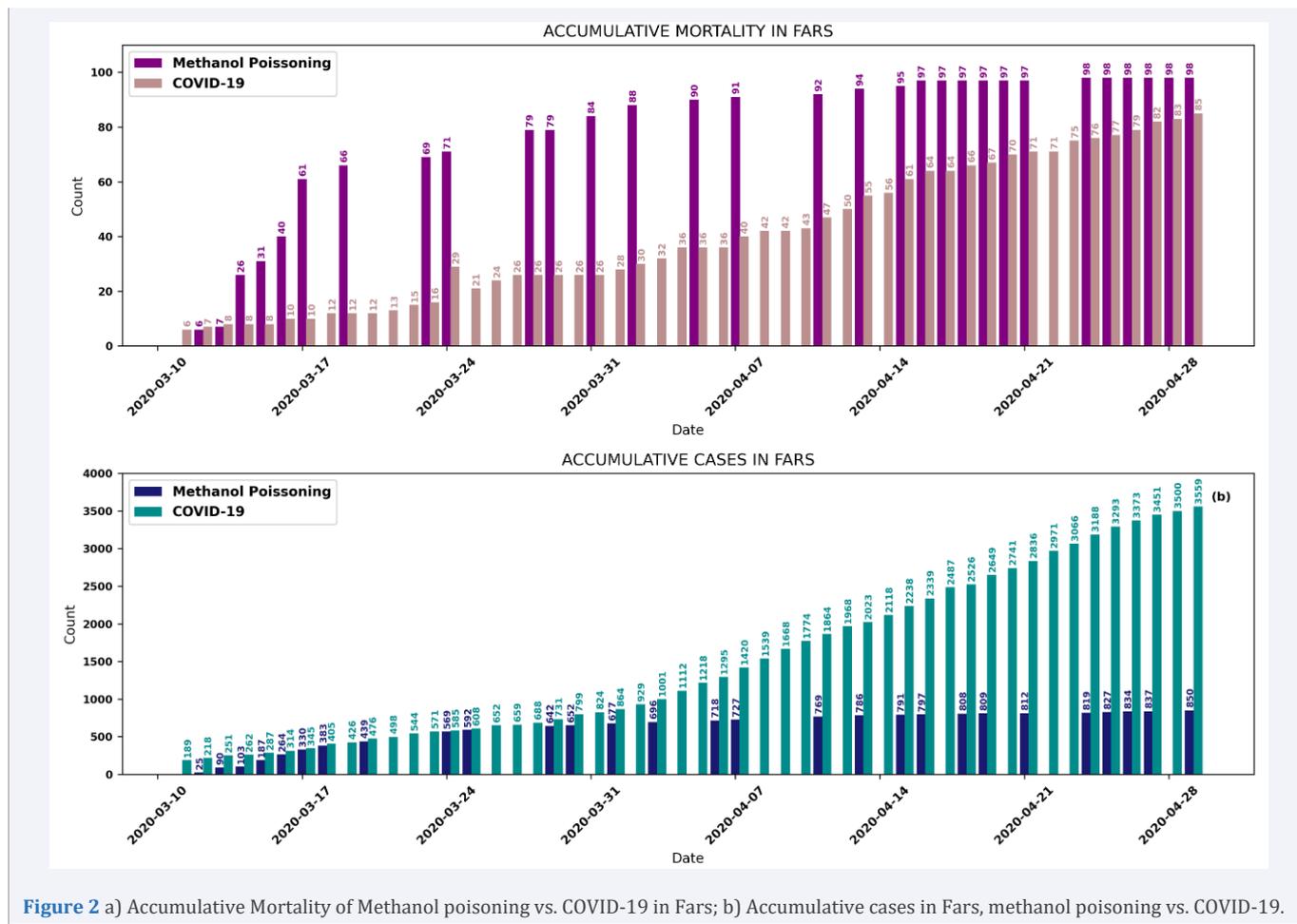


Figure 2 a) Accumulative Mortality of Methanol poisoning vs. COVID-19 in Fars; b) Accumulative cases in Fars, methanol poisoning vs. COVID-19.

sample of Iranians was 34.5 while it was 23.7 for a similar study conducted in China (8).

A clear correlation has been observed by Lindsay and Shelley between stress level and alcohol consumption (9) which supports the hypothesis of increasing demand for Alcohol during COVID-19 outbreak in Iran. In addition, the limited capacity of underground alcohol production could not meet high demands of consumers. Accordingly, the quality of products diminishes dramatically. Furthermore, there is no supervision and quality control on Alcohol supplied by drug dealers. These factors added up and resulted in poisonous alcohol supply to the consumers in Iran during COVID-19 outbreak.

This vicious chain could have been interfered in each of its links, educating people to manage their stress without relying on alcohol, or having supervised distribution of alcoholic products could have prevented “the Fars disaster” reported in this paper.

False belief and lack of information

Alcohol and drugs are considered as a temporary measure that some people might use to combat such distressful situations (10). Providing distressed people with soothing and inspiring entertainments as well as psychologic counselling will be helpful to reduce the abuse of recreational substances in such crises. In COVID-19 outbreak, the desperate hope that alcohol-drink can be effective as sanitizer or anti-viral substance encouraged people

to use more alcohol compared to other periods. Well-timed information supply from trustful channels might have damped methanol poisoning count in Fars. This kind of information should be given in an instructive way in order to be effective especially on young adults. Lack of such information in Iran is most probably due to the fact that even talking about alcohol is a taboo in many Iranian families.

SOLUTIONS

Public Education

As noted in the previous section, we believe that the most important factor causing this methanol mass poisoning was lack of information and this is where public education ought to step in. Public education should not be merely restricted to social distancing and sanitizing principles. The destructive effect of false beliefs such as effectiveness of alcohol-drinks in COVID-19 prevention should be broadcasted through trustful and popular channels. Here, we want to emphasize that ignoring an issue such as alcohol use or abuse and tabooing such matters is really harmful. Teenagers and adolescents should be familiarized in an instructive way in order to prevent this from happening again.

Support

Social, psychological and economic support, primarily by the government officials, is crucial to help individuals and community

go through such distressful situations (11). Due to the fact that most of the hospital admissions of methanol poisoning reported here are among the young adults, it is critical for families to support their young members. This age group needs to be well informed about these substances and the probable outcomes of purchasing them from unreliable sources.

Other Preventive measures

Punishment and penalty for those spreading rumors (false beliefs and information), and producing and distributing poisonous alcoholic products (containing methanol) should be definitive to warn these death merchants.

CONCLUSION

Incidents such as the reported mass methanol poisoning in Fars reveal that pandemics like COVID-19 can endanger public health in different fashions. In the case of COVID-19, the most apparent lethal factor is respiratory failure. However, there are other deleterious effects, which can be more lethal than the illness itself (as methanol poisoning was in Fars). It is crucial that these influences will not be overlooked in the future. In this paper, we reported, quantitatively, a methanol mass poisoning that was caused by COVID-19 outbreak in Fars, Iran. Consequently, the responsible authorities such as health organizations should be aware of such possibilities all over the world. Moreover, they should be ready to take necessary action against such incidents in order to alleviate their harmful effects.

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