



## Self-medication during Covid-19 pandemic: challenges and opportunities

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### Self-medication (SM) during COVID-19

The World Health Organization (WHO) defines self-medication (SM) as the selection and utilization of medicines to treat self-recognized symptoms or ailments without consulting a physician [1]. It also includes the usage or re-usage of previously prescribed or unused drugs, direct purchasing of prescription drugs without consultation, and irrational use of over-the-counter (OTC) drugs [2]. SM is a significant concern globally, affecting both developed and developing countries [3, 4]. Various studies have indicated that SM is a common practice, with a prevalence of 32.5–81.5% worldwide [5]. The most commonly self-prescribed medications are analgesics, antipyretics, antitussives, antidiarrheals, calcium and vitamin supplements, anabolic steroids, sedatives, certain antibiotics, and many herbal and homeopathic remedies [3]. As of September 21, 2020, there were 30,905,162 confirmed cases of COVID-19 [6], and, to date, no definitive treatments or vaccines are available to treat or prevent this viral infection. This situation has increased the influence of social media regarding misinformation about medications, leading to public confusion and panic and increased use of SM, including home remedies, without established safety and efficacy [7, 8].

Between 7 January 2020 and 1 June 2020, the increase in people's interest in online SM information during the COVID-19 pandemic is reflected in the Google trend for searches on SM [9]. Suggestions of SM for COVID-19 may come from friends, family, neighbors, pharmacists, previous prescriptions, and the media. In developing countries, such as India, the use of SM with hydroxychloroquine and chloroquine without a prescription to prevent COVID-19 has been documented [12]. Later, the US Food and Drug Administration (FDA) declared the use of hydroxychloroquine and chloroquine as being unsafe in mild-to-moderate COVID-19 based on their therapeutic safety profile in COVID-19 patients [13]. Similarly, while UK researchers have declared dexamethasone to be a 'life-saving drug' in the treatment of severe COVID-19, the UK Minister of the National Health Service stressed that dexamethasone should only be used in critically ill patients and should not be used as an SM in mild to moderate cases due to its inherent safety problems [14].

Ivermectin is sold OTC in some countries, and people are self-medicating and, more concerningly, self-dosing it for the treatment of COVID-19. Therefore, the WHO has provided several warnings to observe caution when using SM to treat COVID-19, including the irrational use of antibiotics, herbal remedies, and other OTC drugs [15]. Many herbal drugs have been used to treat COVID-19 in China, Pakistan, and other countries worldwide. Such products are readily available to the public without a prescription and are used as SM to avoid hospital visits and admissions, but their use in COVID-19 lacks evidence-based support [7]. In China, three patented herbal products (Lianhuaqingwen capsules and Jinhua Qinggan granules to treat mild conditions, and Xuebijing for severe conditions) were recommended to treat COVID-19. However, their potential effectiveness and safety needs to be confirmed by the results of randomized controlled clinical trials before being used to treat COVID-19 [7]. Similarly, there was increased demand and use of Sanna Makki, a herbal plant, by local people in Pakistan due to its claimed efficacy in treating COVID-19 symptoms [16].

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SM is considered as a part of the more extensive self-care process, which motivates individuals to undertake activities related to health improvement, treatment of illness, disease prevention, and restoring health after injury or disease [17]. SM helps to decrease the economic burden on patients, the healthcare system, third-party government agencies, and insurance companies [4]. However, the consequences of inappropriate and unnecessary SM cannot be understated, as SM may lead to polypharmacy, incorrect diagnosis, adverse effects, drug interactions, antibiotic resistance, and increased drug expenses [2, 3, 10]. Healthcare policymakers prefer to promote law and policies in favor of prescribed drug use, but the challenges associated with SM in the general population cannot be ignored [18]. Thus, improved public awareness and education about the safe and rational use of drugs are necessary to overcome the challenges of SM.

## Controlling SM in the COVID-19 era

According to the WHO guidelines on SM, individuals should know the medication's method of use, efficacy, and adverse effects and their management [1]. The practice of SM should be monitored appropriately, particularly in low- and middle-income countries, which are facing an economic crisis and often have low educational standards and inadequate healthcare facilities, especially during COVID-19 [11]. SM, during the COVID-19 pandemic, can aggravate the current situation of a health crisis for which no country is fully prepared [19]. A holistic approach should be taken to improve the use of SM through public education, sound training of healthcare professionals, including community pharmacists, and strict pharmaceutical regulations on public advertising and drug use. Positive support from national health authorities will reduce the potential risk of SM and reduce the stockpiling of drugs during this pandemic [18, 19]. The authorities should provide proper strategies for drug usage. Readily available, cost effective, and proper consultation with healthcare providers should be encouraged to alleviate SM practices and to promote rational use of medicine by the public [16, 20]. Mass media should be utilized to target general public awareness and education programs created regarding the proper use of medicines and possible risks regarding their inappropriate use; every campaign should be evaluated for its usefulness [21].

## Conclusion

SM has become an essential area within healthcare, but the provision of SM is an overall major global concern, especially during the COVID-19 pandemic. SM may facilitate better healthcare with reduced prescribing drug costs.

However, inappropriate SM can lead to an incorrect diagnosis, serious adverse effects, drug interactions, drug dependence, and microbial resistance. Thus, there is a dire need to control and manage appropriate SM practices by applying strong legislation and involving healthcare professionals and policy makers.

## Take-home messages

- During health crises, such as the COVID-19 pandemic, people should seek advice from health experts before using any remedy.
- The use of self-medication could be improved by educating the public about the harmful effects of irrational drug use.

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