

Research Paper


Prevalence and Factors Related to Self-Medication for COVID-19 Prevention in the Elderly




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 Drug, Elderly, Prevalence, COVID-19, Self-medication

**ABSTRACT**

**Objectives** The Coronavirus Disease 2019 (COVID-19) crisis and health outcomes are among the major human social events of the 21st century. The unknown nature of the disease and the fear of contagion have caused emotional reactions, including the self-consumption of drugs in the elderly. Therefore, this study investigated factors affecting the self-consumption of drugs for COVID-19 prevention in the elderly.

**Methods & Materials** This descriptive and cross-sectional study was performed on 342 elderly in Sabzevar City, Iran, in 2020. The research units were selected as clusters from 16 health centers. The necessary data were collected by an online self-medication questionnaire. Data analysis was performed in SPSS.

**Results** The Mean±SD age of the study participants was 66.2±5.67 years. The frequency of self-medication to prevent COVID-19 was 190(55.5%); analgesics, vitamins, anti-cold, and antibiotics were the most common drugs used. The major factors associated with self-medication in the COVID-19 pandemic were disease prevention, home quarantine, financial problems, experiencing previous self-medication, and others' advice. There was a significant relationship between self-medication and education and insurance coverage. No significant relationship was observed between gender, occupation, and marital status, and self-medication.

**Conclusion** Self-Medication in the COVID-19 epidemic is notable as a crisis threatening the elderly's health. Controlling and monitoring how the drug is used is among the requirements for protection and health promotion in the elderly.

**Extended Abstract**

**1. Introduction**

In 2020, the World Health Organization declared the outbreak of Coronavirus Disease 2019 (COVID-19), as a global emergency [1]. All age

groups are at risk for coronavirus infection; however, the elderly are more vulnerable for various reasons, including deficits in immune systems, chronic diseases, poor personal hygiene, loneliness, multi drugs use, and the lack of medical attention [2]. Morbidity, mortality, the lack of specific treatment for COVID-19 [3], and psychological problems, like death anxiety, have led the elderly to arbi-

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trarily use drugs [4]. Studies suggested that the elderly lack the necessary knowledge about the adverse effects of self-medication; thus, they must acquire sufficient knowledge to change behavior [5]. Despite the importance of pharmaco-epidemiological studies, such studies were not found in critical conditions. Due to the aging trend of the population of the country, the present study aimed to investigate factors related to the arbitrary use of drugs for COVID-19 prevention in the elderly.

## 2. Methods and Materials

This descriptive and cross-sectional study was performed on 360 elderly (aged >60 years). Based on self-reported data, the selected elderly had no acute physical or cognitive problems.

The samples were identified by a random cluster sampling method. They were determined from the population areas of 16 comprehensive health centers in Sabzevar City, Iran; the city was divided into 4 regions. Two centers were randomly selected per region. Then, a sample size appropriate to the number of the elderly per center was selected from each center. Given the special conditions of COVID-19 and the impossibility of face-to-face communication, the researcher used the WhatsApp platform to form a group among the elderly; accordingly, the required data were collected remotely. In addition to completing the online questionnaire, the research units were requested to mention the names of the drugs used or to send a picture of the drug package. The questionnaire included a section where informed the elderly that they could leave the study freely.

To collect the necessary data, a demographic form and a researcher-made questionnaire were used. These tools examined the self-medication status of the elderly during

the last 3 months in the COVID-19 crisis. The explored elderly's self-medication status consisted of 21 items, including the history and type of self-medication during the COVID-19 pandemic (4 items), awareness of the type of medication (3 items), self-medication situations (7 items), and medications used to prevent COVID-19 (7 items). The items were answered on a 5-point Likert-type scale. The validity of the questionnaire was confirmed by the content validity method and its face validity was also approved as desirable. The reliability of the questionnaire was determined by the internal consistency reliability method and its Cronbach's alpha coefficient was measured as 89%. Descriptive statistics and Chi-squared test were used to evaluate self-medication and qualitative variables. The obtained data were analyzed using SPSS at a significance level of 0.05. This research was approved by the Ethics Committee of Sabzevar University of Medical Sciences (Code: IR.MEDSAB.REC.1399.020).

## 3. Results

The study sample included 152(44.5%) males and 190(55.5%) females; the Mean±SD age of the study participants was 66.2±5.67 years. Moreover, 57.3% of the study samples were married and 42.7% were single. Furthermore, 29.8% of the study participants were illiterate, 54.5% had an elementary education, and 15.7% had a high school diploma or higher. Besides, 31.3% of the study samples were retired, 21.6% were self-employed, and 47.3% were unemployed. Additionally, 30.4% of the study subjects used no health insurance, 52.7% used regular insurance, and 16.9% used supplementary insurance.

The Chi-square test data indicated a significant relationship between self-medication, and education and insurance coverage ( $P<0.05$ ). However, this test presented a signifi-

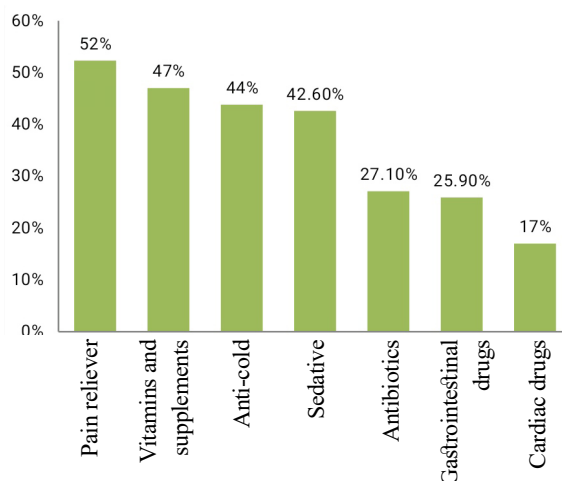


Figure 1. The frequency of drugs used for self-medication among the explored elderly in the COVID-19 pandemic

**Table 1.** Reasons for self-medication during COVID-19 pandemic in the studied elderly

Variable	No. (%)
Prevention of coronavirus	101 (52.3)
Avoid going out (home quarantine)	99 (51.5)
Unable to afford a visit or pay for medication	53 (27.4)
Previous experience of taking the drug	49 (25.3)
Recommended by others, pharmacy, media	45 (23.3)
The lack of insurance coverage	33 (17)
Mild symptoms	32 (16.5)
Easy access to medicines (available at home, cheap drugs, over-the-counter sales in pharmacies)	30 (15.5)
Disbelief in common treatment methods	21 (10.8)
Staying away from physicians' offices	14 (7.2)
The lack of knowledge about the arbitrary adverse effects of the drug	12 (6.2)
Not having enough time to visit a physician	10 (5.1)

cant relationship between gender, occupation, and marital status, and self-medication ( $P>0.05$ ).

The collected results revealed that the rate of arbitrary drug use during the COVID-19 pandemic in the elderly equaled 193(56.4%). Despite self-medication in more than 50% of units of this study, only 13.3% of them had the minimum necessary drug information (drug name, classification, uses, & adverse effects). Moreover, 53.8% of the research units provided drugs from home and 46.2% from pharmacies. Furthermore, 98(50.7%) of the explored elderly used drugs in the form of tablets or capsules, 25.3% used syrups, 11.9% used ampoules, and 11.9% used other forms of drugs. The type of knowledge of most of them about self-medication based on the category of drugs was 39.1%; the same rate for sending a package photo of the drugs was 37.7%, and 23.2% of the samples mentioned the name of the drug used.

In evaluating the conditions and situations of self-medication in the examined elderly, 43.4% related to joint and muscle pain, 42% neurological diseases, 41.9% pseudo-corona symptoms, 31% weakness and lethargy, and 21% headache. The prevalence of gastrointestinal conditions and cardiovascular disorders were 20% and 12% in the study subjects, respectively. The highest drug classes in arbitrary use in the research units were analgesics, tonics, anti-colds, and sedatives, orderly (Figure 1).

The main reasons for the arbitrary use of the drug during the COVID-19 pandemic in the elderly who reported

self-medication respectively concerned COVID-19 prevention, as the most common cause (52%), followed by self-medication for other reasons, such as home quarantine and avoiding going out, not affording a physician visit, previous experience in the use of drugs, and others' advice (Table 1).

#### 4. Discussion and Conclusion

The present study results suggested that approximately 1.2 of the explored elderly practiced self-medication during the COVID-19 pandemic; thus, they felt at risk of contracting the coronavirus. Reducing the fear of the elderly by raising awareness and providing accurate information about COVID-19 is essential by creating a campaign in public and virtual media. Self-medication has also been reported in the educated and uninsured elderly. It is recommended that those in charge of drug supply take all considerations, including refraining from dispensing over-the-counter drugs and providing training on the arbitrary use of drugs in old age when purchasing drugs. Due to the possible problems and risks due to arbitrary drug use in the COVID-19 pandemic, it seems necessary to provide special training programs for the elderly in healthcare centers. Therefore, it is recommended that the authorities take action to reduce this problem to raise the elderly's awareness.

## Ethical Considerations

### Compliance with ethical guidelines

This research was approved by the Ethics Committee of Sabzevar University of Medical Sciences (Code: IR.MEDSAB.REC.1399.020). All ethical principles are considered in this article. The participants were informed about the purpose of the research and its implementation stages. They were also assured about the confidentiality of their information and were free to leave the study whenever they wished, and if desired, the research results would be available to them.

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### Authors' contributions

Conceptualization, supervision, writing – review & editing: Narjes Heshmatifar, Fatemeh Borzooe; Methodology, review: Arezoo Davarinia Motlagh Quchan, Zohreh Mohammadzadeh Tabrizi, Sajad Moradi; Data collection: Leila Moayed; Data analysis: Sedighe Rastaghi.

### Conflicts of interest

All authors declare no conflict of interest.

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