

# Self-medication practices among Malaysian older adults during the COVID-19 pandemic

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## ABSTRACT

**Objective.** To assess the prevalence, patterns, and associated factors of self-medication among Malaysian older adults, and to investigate the impact of COVID-19 pandemic on self-medication.

**Methods:** Between January and June 2021, Malaysian older adults aged  $\geq 60$  years were invited to participate in this cross-sectional study. A self-administered questionnaire was used to assess self-medication knowledge, perceptions, and practices before and during the pandemic.

**Results:** Of 170 participants, 122 (71.8%) reported self-medication. Common reasons for self-medication were a perception that the condition was minor and previous experience with the same problem. The main symptoms managed by self-medication were sore throat (56.9%), fever (56%), and headache (53.2%). The most commonly used medications were paracetamol (79.8%), analgesic patches (52.3%), and cough medications (47.7%). Most participants were unaware of possible drug-drug/drug-food interactions involving their medications. 33.6% of participants changed their self-medication practices during the pandemic; 65% of them consumed more vitamins and supplements to boost their health.

**Conclusion:** Self-medication for minor ailments is prevalent among Malaysian older adults. Analgesics were the most commonly used medication. 33.6% of participants modified their self-medication practices during the COVID-19 pandemic; 65% of them consumed more vitamins and supplements to boost their health.

**Key words:** Aged; COVID-19; Malaysia; Self medication

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## INTRODUCTION

Self-care includes self-medication.<sup>1</sup> According to the World Health Organization, self-medication involves the use of medicinal products by consumers to treat self-diagnosed disorders or symptoms, or the intermittent or continuous use of medication prescribed by a physician for chronic or recurrent diseases or symptoms.<sup>2</sup> Self-medication can reduce the money and time spent on doctor visits. Factors associated with self-medication include previous

experience with the condition and a presumption that the condition is minor.<sup>3</sup> Easy access to over-the-counter (OTC) medications in pharmacies and retail outlets is a facilitator of self-medication.<sup>4</sup>

Self-medication is associated with potentially unhealthy consequences for both individuals and society. The adverse effects of drugs, drug-drug and drug-food interactions, treatment failure, incorrect or late diagnosis, and the selection of an incorrect treatment/regimen can lead to hospitalisation,

thereby increasing health burdens for individuals and governments.<sup>5</sup> The prevalence of self-medication reportedly ranges from 8.3% to 87% in developing countries,<sup>6</sup> and from 4% to 87% among older adults.<sup>7</sup> Self-medication by older adults is associated with higher risks, owing to the presence of multiple diseases, use of multiple medications, and age-related changes in pharmacokinetics and pharmacodynamics.<sup>7</sup> Older adults may have misperceptions about diseases and medications. For instance, they may consider it normal to experience mild ailments because of old age; they may also believe that analgesics, antibiotics, and herbal medicine are either harmless or effective treatments for diseases.<sup>8</sup>

According to the 2011 National Health and Morbidity Survey, most Malaysians tend to practise self-medication.<sup>9</sup> This study was conducted to assess the prevalence, patterns, and associated factors of self-medication among Malaysian older adults, and to investigate the impact of COVID-19 pandemic on self-medication.

## METHODS

This cross-sectional study was approved by the International Islamic University Malaysia Research Ethics Committee (IREC 2021-044). Informed consent for inclusion was obtained from each participant.

A 38-item questionnaire was adapted from previous studies that assessed self-medication in general or in older adults.<sup>10-14</sup> The questionnaire was reviewed by two experts in pharmacy research and then validated by five experts in clinical and social pharmacy; amendments were made to improve validity as necessary. The questionnaire was translated from English to Bahasa Melayu (BM) by a professional translator, in accordance with guidelines developed by Beaton et al.<sup>15</sup> The translator was blinded to the purpose of the questionnaire. The questionnaire was then back-translated from BM to English by another professional translator. The back-translated version was compared with the original English version by two pharmacy researchers who initially reviewed and validated the questionnaire; no significant differences were identified. The BM version was then validated by three pharmacy lecturers who were not involved in the validation

process of the original questionnaire; amendments were made to improve clarity and relevance as necessary.

The BM questionnaire was tested for validity and reliability in 20 Malaysian older adults aged  $\geq 60$  years with intact cognitive function; the reliability was high (0.749, Kuder-Richardson test). The final BM questionnaire comprised 30 items in five sections. Section 1 was a brief introduction of the research; section 2 collected social and demographic information; section 3 evaluated self-medication knowledge and practices regarding acute illness; section 4 assessed self-medication knowledge and practices regarding chronic diseases; and section 5 investigated changes to self-medication during the COVID-19 pandemic. The final questionnaire was distributed through social media using Google Forms between January and June 2021 to Malaysian older adults aged  $\geq 60$  years with intact cognitive function. The operational definition for self-medication was 'the use of a medication without consulting a healthcare professional'.

Data were analysed using the SPSS (Windows version 24; IBM Corp, Armonk [NY], US). The Kuder-Richardson test was used to assess reliability. The Shapiro-Wilk test was performed to determine the normality of continuous variables. Individuals who did and did not practise self-medication were compared in terms of participant characteristics (using the Chi squared test) and knowledge scores (using the Mann-Whitney *U* test or Kruskal-Wallis test).

## RESULTS

Between January and June 2021, Malaysian older adults aged  $\geq 60$  years were invited to participate. Of 170 Malaysian older adults participated, 122 (71.8%) reported self-medication (**TABLE 1**). The mean age of participants was  $66.6 \pm 5.9$  years; 65.9% of participants were women. Moreover, 71.3% of participants had at least completed high school; 61.2% of participants were living in a rural area; 16.4% of participants were working (employed or self-employed); and 42.3% of participants reported that their health status was fair or poor. Self-medication was not associated with any of the participant characteristics.

Of the 122 participants who reported self-

**TABLE 1**  
**Characteristics of participants (n=170)**

Characteristic	Self-medication*		p Value
	No (n=48)	Yes (n=122)	
Sex			0.89
Female	32 (66.7)	80 (65.6)	
Male	16 (33.3)	42 (34.4)	
Marital status			0.063
Married	41 (85.4)	83 (68.0)	
Single/widowed	7 (14.6)	39 (32.0)	
Highest education			0.37
No formal education	5 (10.4)	10 (8.2)	
Primary school	5 (10.4)	29 (23.8)	
Secondary school	17 (35.4)	46 (37.7)	
Diploma	7 (14.6)	11 (9.0)	
Bachelor's degree	10 (20.8)	20 (16.4)	
Postgraduate studies	4 (8.3)	6 (4.9)	
Employment status			0.085
Employed	1 (2.1)	4 (3.3)	
Self-employed	4 (8.3)	19 (15.6)	
Retired	35 (72.9)	71 (58.2)	
Homemaker	8 (16.7)	28 (23.0)	
Place of residence			0.239
Urban area	22 (45.8)	44 (36.1)	
Rural area	26 (54.2)	78 (63.9)	
Monthly individual income, Malaysian ringgit			0.074
<1000	13 (27.1)	57 (46.7)	
1001-3000	21 (43.8)	39 (32.0)	
3001-5000	13 (27.1)	17 (13.9)	
>5000	1 (2.1)	9 (7.4)	
Living with family members			0.83
Yes	44 (91.7)	113 (92.6)	
No	4 (8.3)	9 (7.4)	
Current smoker			0.307
Yes	3 (6.3)	14 (11.5)	
No	45 (93.8)	108 (88.5)	
Perceived overall health status			0.331
Excellent	2 (4.2)	5 (4.1)	
Very good	13 (27.1)	11 (9.0)	
Good	19 (39.6)	48 (39.3)	
Fair	12 (25.0)	44 (36.1)	
Poor	2 (4.2)	14 (11.5)	

\* Data are presented as No. (%) of participants

medication, 10.9% practised it less than once yearly, 55.5% practised it 2 to 3 times per year, 22.7% practised it once every few months, and 10.9% practised it almost weekly. The main illnesses/symptoms managed by self-medication were sore throat (56.9%), fever (56%), and headache (53.2%), followed by muscle pain (37.6%), abdominal pain (33%), and joint pain (31.2%). The most commonly used medications were paracetamol (79.8%), analgesic patches (52.3%), cough medications (47.7%), and sore throat medications (36.7%) [TABLE 2]. 44.5% of participants used medications available at home, 65.5% of participants purchased medications from pharmacies, and 37.3% of participants purchased medications from convenience stores. The most common source of self-medication information was personal experience (41.8%), followed by advice from a relative (33.6%), advice from a friend (16.4%), advertisements (5.5%), and self-learning (2.7%).

In 110 participants who provided their reasons for self-medication, the most common ones were non-serious health problems (40.9%), good results in previous self-medication (40.9%), certainty regarding medication safety (40.0%), and previous experience with the same health problem (33.6%) [TABLE 3].

**TABLE 2**  
**Types of medications used in 122 participants who practised self-medication**

Medication	%*
Paracetamol	79.8
Analgesic patches	52.3
Cough medications	47.7
Sore throat medications	36.7
Skin creams/ointments	34.9
Antidiarrheals	33.9
Eye/ear drops	17.4
Non-steroidal anti-inflammatory drugs	16.5
Antacids	11.0
Laxatives	8.3
Antiallergy medications	8.3
Nasal preparations	4.6
Other medications	5.4
Antibiotics	2.8

\* Participants can select any applicable medications

The 110 participants were asked six questions regarding self-medication (TABLE 4); each correct answer was given one point. The median knowledge score was 4. Only 27 (24.5%) participants reported experiencing adverse effects after self-medication;

sedation, dizziness, and abdominal disturbances were most common.

Of the 77 participants with chronic diseases, 16 (14.5%) reported practising self-medication and adjusting dosage or frequency without consulting their physicians; 52.7% of those 16 participants discontinued their medications when they were symptom-free.

Only 37 (33.6%) participants completed the section regarding changes (decrease or increase) in self-medication practices during the COVID-19 pandemic (TABLE 5).

## DISCUSSION

Approximately 71.8% of participants reported self-medication during the COVID-19 pandemic, which is a slightly larger proportion than the 63.5% reported among Malaysian adults<sup>13</sup> but a smaller proportion than the 88.5% reported among Indian older adults<sup>11</sup> and the 83% reported among Iranian older adults.<sup>14</sup> However, a longitudinal study from Australia showed that only 33% of participants practised self-

**TABLE 3**  
Reasons for self-medication in 110 participants who completed this section

Reason	No. (%) of participants*
Urgent problem	25 (22.7)
Advice from friends, family, or neighbours	44 (40.0)
Unable to attend a clinic	13 (11.8)
Doctor visits are expensive	6 (5.5)
Non-serious health problems	45 (40.9)
Previously experienced the same health problem	37 (33.6)
Good result in previous self-medication	45 (40.9)
Insufficient time for a doctor visit	9 (8.2)
No health insurance	6 (5.5)
Certainty regarding medication safety	44 (40.0)
Lack of confidence in doctors for diagnosis and treatment	0 (0)

\* Participants can select any applicable reasons

**TABLE 4**  
Knowledge regarding self-medications in 110 participants who completed this section

Question	Yes*	No*
1. Do you know if the medications you use without a prescription should be taken with or without food?	84 (76.4)	26 (23.6)
2. Do you know how many times to take these medications?	93 (84.5)	17 (15.5)
3. Do you check the expiration dates of medications before use?	93 (84.5)	17 (15.5)
4. Did you know that certain medicines should not be taken with other medicines/herbal medicines/traditional medicines?	62 (56.4)	48 (43.6)
5. Did you know that some medications should not be taken with certain foods?	61 (55.5)	49 (44.5)
6. Have you ever prescribed/advised anyone to take these medications?	49 (44.5)	61 (55.5)

\* Data are presented as No. (%) of participants

**TABLE 5**  
Change in self-medication during the COVID-19 pandemic in 37 participants who completed this section

Statement	Yes*	No*
I consumed more vitamins and supplements to boost my health	24 (64.9)	13 (35.1)
I consumed medications/supplements to prevent contracting COVID-19	7 (19)	30 (81)
I bought medications to help treat COVID-19 in case of contraction	2 (5.4)	35 (94.6)
I depended more than usual on personal experience or a friend's experience when buying medications because I avoided doctor visits to reduce my risk of contracting COVID-19	9 (24.3)	28 (75.7)
I reduced my consumption of nonprescribed medications to avoid harm	10 (27)	27 (73)

\* Data are presented as No. (%) of participants

medication with OTC drugs.<sup>16</sup> Nonetheless, cross-sectional survey-based studies tend to detect higher rates of self-medication than longitudinal studies do.

Analgesics were the most commonly used self-medication by older adults in previous studies.<sup>7,11,14</sup> In contrast, cough and sore throat medications were most commonly used in the present study. The differences are presumably because the present study was conducted during the COVID-19 pandemic when older adults may have been more likely to seek treatment for respiratory symptoms. In Turkey during the COVID-19 pandemic, cold medications were the second most commonly used drugs for self-medication among older adults.<sup>17</sup>

Reasons for self-medication included a perception that the ailment involved was minor, as well as previous successful experience with self-medication. Friends' or relatives' recommendations also played an important role.<sup>13,14,17</sup> Because of the potential risk of sharing misinformation, greater effort is needed to promote the safe use of self-medication through prior consultation with a pharmacist.

In the present study, most participants were aware of the correct dosage, frequency, and expiration date of their self-medications; these findings are consistent with those in a Turkish study, which reported that most participants were familiar with instructions regarding their medications and routinely checked expiration dates.<sup>17</sup> However, about half of our participants were unaware of potential drug-drug or drug-food interactions. Importantly, some OTC medications have harmful drug-drug and drug-disease interactions.<sup>7</sup>

Most participants with chronic diseases did not use self-medication for their chronic conditions. However, more than half of them reported discontinuation of chronic medications when their symptoms improved. These results are consistent with the finding of poor medication adherence among older patients in Malaysia.<sup>18</sup>

During the COVID-19 pandemic, fear of infection led to an overall increase in self-medication.<sup>19</sup> Among older adults seeking COVID-19 vaccination in Turkey, 47% reported self-medication; 20% of these adults sought to avoid infection.<sup>17</sup> In the present study, 33.6% of participants modified their self-medication

practices during the COVID-19 pandemic; 65% of them consumed more vitamins and supplements to boost their health. In contrast, 27% of participants reduced their consumption of OTC drugs during the COVID-19 pandemic.

Limitations of the present study include its small sample size, cross-sectional design, and use of self-reported data. Additionally, there was potential sampling bias because the use of Google Forms may have excluded older adults who were unfamiliar with that tool.

## CONCLUSION

Self-medication is common among Malaysian older adults to manage minor ailments such as headache, fever, and sore throat. Analgesics were the most commonly used medication. 33.6% of the participants modified their self-medication practices during the COVID-19 pandemic; 65% of them consumed more vitamins and supplements to boost their health. Awareness campaigns may help to reduce the prevalence of self-medication among older adults.

## CONTRIBUTORS

All authors designed the study, acquired the data, analysed the data, drafted the manuscript, and critically revised the manuscript for important intellectual content. All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

## CONFLICTS OF INTEREST

All authors have disclosed no conflicts of interest.

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## DATA AVAILABILITY

All data generated or analysed during the present study are available from the corresponding author on reasonable request.

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