

REVIEW ARTICLE

Self-medication practices in Arab countries: prevalence, determinants, commonly used medications, and public health implications – a narrative review

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ABSTRACT

Self-medication (SM) is defined as the use of medication by the consumer to manage symptoms or disease without a prescription from a physician. SM is a widespread global practice, and it may offer temporary relief and reduce the burden on healthcare settings; Nonetheless, it has considerable implications and risks. The practice of SM and its patterns are varied from one population to another and are influenced by several factors. Based on our search, there is no previous review focused on SM in Arab countries; therefore, here, we highlighted and discussed SM regarding its prevalence, most used drugs, determinants, and implications to provide a comprehensive review on the current subject. The literature related to the current subject was obtained through an online search process. The eligible articles were reviewed and discussed under specific titles to cover our current subject. We found that SM was highly prevalent among Arab countries based on the available studies, regardless of the population under investigation, and the most commonly used medication for SM was analgesics. However, the determinants of SM were hard to determine due to the heterogeneity of the investigated determinants. Furthermore, there is a lack of literature in Arab countries regarding the implications and outcomes of SM.

Keywords: SM, prevalence, determinants, implications, Arab countries.

Introduction

Self-medication (SM) is defined by the World Health Organization (WHO) as the use of medication by the consumer to manage self-recognized symptoms or disease, or the continued or intermittent use of a medication prescribed by a physician for recurrent or chronic conditions or symptoms. Also, it includes the use of medication by family members, especially where the treatment of the elderly or children is involved [1]. SM is a widespread global practice; the ease of obtaining over-the-counter (OTC) drugs has contributed to the widespread of SM practice. Additionally, the convenience and cost-effectiveness of SM helped in spreading SM [2]. The most common agents administered via SM include painkillers, sleeping pills, herbals, home remedies, antibiotics, vitamins, and others [3]. SM may offer temporary relief and reduce the burden on healthcare settings; however, it has considerable implications and risks, including adverse

drug reactions, incorrect diagnosis, and antibiotic resistance [4].

The practice of SM and its patterns are varied from one population to another and are influenced by several factors, such as income, age, gender, education and medical knowledge [5]. A previous multinational cross-sectional study was conducted among the general population from ten Arab countries, included 7645 subjects. Nonetheless, it focused on the prevalence of SM during the COVID-19 pandemic. It was found that SM was a common practice among the Arab population,

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with more than one-half (62.7%) of participants reporting practicing SM during the COVID-19 pandemic. Egypt reported a prevalence of 72.1%, whereas Palestine had a low prevalence of 40.4%. The most commonly used drugs were analgesics (86%), antipyretics (65.1%), and vitamins (57.1%), while antitussives and antibiotics were the least reported, at 47.6% and 43.3%, respectively [5]. However, there is a lack of data regarding SM from Arab countries. Therefore, we present this narrative review to identify the prevalence, determinants, medications, as well as implications of SM among Arab countries during the last five years, from 2021 to the present.

Methods

PubMed, ScienceDirect, and Google Scholar were explored to obtain articles relevant to the current subject, using various keywords for the search procedure, including “SM, Prevalence, Practice, Arab countries, Determinants, Factors, Implications, Impact, Outcomes, Medications, and Agents.” The searching procedure was limited to articles published between 2021 and 2026 to focus on the recent publications. Among the obtained articles, duplicate articles, irrelevant titles such as those focused on non-Arab countries, and those published before 2021 and that appeared coincidentally were excluded after reviewing title and abstract of each article. The next step was checking the study to exclude non-original and/or qualitative studies, while including original quantitative studies. Articles from any Arab countries were eligible and included. Articles written in the English language and available for full text were considered eligible, whereas those written in other languages and/or not available for full text were excluded. The review was written under specific titles to cover the current subject; each author in this work discussed one or more titles. After finishing the article, each author reviewed the whole article.

Prevalence, Determinants, Commonly used Medications in Arab Countries

Saudi Arabia is the most Arab country concerned with SM and provided wide research and presented plenty of literature regarding this subject. Additionally, some countries conducted very few studies on this subject, and some countries did not even investigate or report any data regarding the current subject.

Saudi Arabia

One study published in 2026 focused on parents' practices regarding SM for their children and recruited 328 participants; it reported high SM prevalence among the parents, where 76% of parents reported providing their children medication with no prescription. More than one-half of the parents (63.9%) used synthetic medication. SM was mainly driven by the long waiting time at the clinic (58.2%) [6]. Another study published in 2026 focused on the central region of Saudi Arabia and enrolled 384 individuals. It was found that SM was a common health behavior, which was linked

with perceptions of minor illness, previous personal experience, convenience, and social influences [7].

In 2025, one Saudi study focused on SM of antibiotics among 523 adults, and it was found that SM of antibiotics was reported by 42.1%. Usage of antibiotics based on SM was linked with lower knowledge regarding antibiotics [8]. Nonetheless, the study did not investigate the most used antibiotics and lacked the implications of SM of antibiotics among the participants.

A study published in 2025 and conducted on 387 adult patients in Riyadh revealed that SM prevalence was 82.3%. Painkillers were the most commonly used medications (65.6%). The determinants of SM included long waiting times (51.10%) and reliance on previous prescriptions (44.10%) [9].

Another Study published in 2025 and focused on SM with anxiety drugs among the population included 807 participants; it was discovered that 24.6% reported using antianxiety medication without a prescription [10]. The study lacked investigating the factors linked with SM using anxiety drugs.

One study recruited 391 university students in Riyadh and published in 2024 found a high prevalence of SM (81.6%). The most used medications were painkillers (84.0%), vitamins (42.0%), and eye drops (32.9%) [11]. Similarly, another study published in 2023 conducted on 210 students from Taiba University reported a high SM prevalence of 87.1%, with painkillers being the most used agents (80%) [12].

A study included 1671 participants recruited from different Saudi regions and published in 2023 reported a high prevalence of SM of 75.5% [13]. In Al-Baha, a study on 850 subjects of the general population discovered SM practice among 48.7%. Analgesics were the most common agent used (29.1%), followed by vitamins and minerals (16.2%). SM was linked with several factors, including age and educational status [14].

In 2022, one study from Dammam enrolled 1226 individuals and reported that SM prevalence exceeded fifty percent, where 59% of the subjects reported SM. Additionally, SM was linked with several demographics, including age, gender, education, health insurance, and having a chronic illness [15]. The study did not focus on the medications administered by the subjects. Another study published in 2022 and enrolled 611 residents reported SM practice among 52.9%, with painkillers being the most used medications (75.9%), followed by multivitamins (25.5%). The main factor that predisposed to practice SM was distance to healthcare [16].

The Saudi studies revealed diversity in assessing SM, where the studies investigated the prevalence of SM among different populations, in different regions of Saudi Arabia. However, some studies focused on one investigation, such as prevalence, and did not report the factors linked with SM or the most used medications. The Saudi studies revealed high prevalence of SM practice



165 regardless of the population under study. However, the
166 determinants of SM were various due to the variations
167 between studies regarding the investigated factors.

168 **Egypt**

169 A study published in 2026, conducted on 1128 medical
170 students, found that SM prevalence was 66.6%. SM was
171 linked with delaying healthcare-seeking (AOR 1.54)
172 and experiencing barriers to healthcare access (AOR
173 1.31). However, the study did not report the medication
174 used [17]. A study from Egypt published in 2025 and
175 conducted on 252 medical students reported that the
176 prevalence of SM was 71%. The main determinant of
177 SM was medical knowledge from self-experience and
178 studies (55.9%). The most used agents were analgesics
179 (92.4%), and half of the students took antibiotics for
180 SM [18]. One study focused on the general population
181 in Egypt and was published in 2024 and included
182 1630 Egyptian individuals and revealed that SM was
183 reported by 62.8% of the participants. The most used
184 medications were painkillers (60.74%) followed by
185 antibiotics (32.13%) and antipyretics (28.61%). The main
186 driver of SM was having simple or minor symptoms
187 (59.08%) [19]. The studies from Egypt seem to focus on
188 university students, especially medical students, with
189 less concern regarding the general population. The
190 prevalence of SM in Egypt is high, and the most used
191 agents were painkillers. However, there is heterogeneity
192 regarding the determinants of SM.

193 **Libya**

194 One study published in 2025 and included 180 Libyan
195 university students discovered a prevalence of SM of
196 75.6%. Practicing SM was linked with female gender,
197 easy access to medications, advice from family and
198 friends, and avoiding doctor visits [20]. However, the
199 medications used were not investigated. Another study,
200 published in 2025 and enrolling 121 medical students,
201 reported a higher prevalence of SM of 82.6%, with
202 analgesics being the most used drug (51.2%), followed
203 by vitamins (31.4%). The determinants of SM among the
204 students were mainly pharmacist advice (43.8%), prior
205 medical knowledge (32.2%), and recommendations
206 from family (12.4%) [21]. In 2023, one study from Derna
207 enrolled students of medical technology and reported
208 SM prevalence of 64.72%; the prevalence was associated
209 with female gender, and the most commonly used
210 medications were antipyretics and analgesics [22]. One
211 study focused on Libyan patients and was published
212 in 2022 and enrolled 160 subjects. Less than one-half
213 reported SM (46%), and the main cause of practicing SM
214 was experience with the condition (45%) [23]. In Libya,
215 the great focus was directed to university students with
216 varied focus on the assessed items; some studies did
217 not report the determinants, and some did not report
218 the used medications.

219 **Jordan**

220 One study published in 2026 and included 1269
221 university students reported SM prevalence of 45.3%,

with antipyretics being the most used medications 222
(46.9%) [24]. A study included 1218 Jordanian individuals 223
and published in 2024 reported that SM was prevalent 224
among 56.9% of the participants. Practicing SM 225
was associated with age of 36–40 years, age ≥50 226
years, married and divorced, employed, and having 227
chronic illness. However, the study did not report the 228
medications used for SM [25]. 229

United Arab Emirates (UAE) 230

A study from the UAE published in 2026 enrolled 400 231
individuals of the general population and reported 232
SM prevalence of 78%. SM was significantly linked with 233
chronic illness [26]. However, the medications used were 234
not reported. In 2025, another study reported a similar 235
prevalence rate among residents, with SM prevalence 236
of 77.4%, antipyretics (92.7%), and analgesics (68.8%) 237
were the most common drugs used. The predictors of 238
SM included family structure, education level, absence 239
of a doctor in the family, and lack of health insurance 240
[27]. 241

Iraq 242

One study from Iraq published in 2025 and included 243
500 participants reported SM prevalence of 73.4%, 244
and analgesics were the most used medications. 245
Headache (64.6%) and common cold and flu (57.2%) 246
were the major causes for SM [28]. Another Iraqi study 247
from another region in Iraq was published in 2025 and 248
included 150 adults and reported SM prevalence of 249
68%, where painkillers (45%) and antibiotics (30%) were 250
used, whereas cold drugs were reported by 25% [29]. 251
In Iraq, the great focus was on the general population; 252
however, the studies did not focus on the determinants 253
and factors related to SM. 254

Other countries 255

There are some countries that have reported few 256
studies regarding SM, including Morocco, Tunisia, Syria, 257
Yemen, Sudan, and Oman. In 2026, one study from 258
Morocco enrolled 457 medical students and discovered 259
a high SM prevalence of 83.59%. SM practice was 260
linked with the year of study; being in the sixth and 261
seventh year increased the odds of SM by more than 262
twofold (OR 2.12). The most used medications included 263
paracetamol, which is an analgesic (94.5%), followed by 264
antibiotics (50.5%) and non-steroidal anti-inflammatory 265
drugs (NSAIDs) (50%) [30]. 266

One study from Tunisia published in 2024 and focused 267
on cardiovascular patients by enrolling 150 subjects 268
discovered a high prevalence of SM with a rate of 96%. 269
The most frequently administered medication was 270
paracetamol (100%), followed by antibiotics (56.94%), 271
and then antitussives (47.92%) [31]. The prevalence of 272
SM among cardiovascular patients was the highest 273
among all the other populations and among other 274
countries. Another Tunisian study was published in 2023 275
and focused on antibiotic administration enrolled 752 276
patients and medical students and reported a high 277
prevalence of 71.68% of SM, with no significant variation 278



between SM prevalence among students and patients. Amoxicillin was the most commonly used antibiotic by patients (67.6%) and medical students (74.5%), with no considerable variance [32].

In 2022, one study from Syria enrolled 453 adults; SM was reported by 67.3% of the participants, with analgesics, antipyretics, and antibiotics being the most used medications. SM was significantly linked with monthly income, age, and living place [33]. However, there were no other determinants for SM reported.

In 2024, a study from Yemen enrolled 385 participants; the prevalence of SM was also high, and it was prevalent among 69.9%. The most common reason for SM was time-saving (66.9%), followed by cost-saving (50.9%) [34]. However, the study lacked reporting the most used medications by the subjects.

One study from Sudan published in 2023 focused on SM of antibiotics among 1492 subjects; it was found that 71.3% used antibiotics via SM, and the main causes for SM were convenience (63.3%) and cost-saving (34.8%), with amoxicillin/clavulanic acid (32.5%) being the most used antibiotic [35].

One study from Oman, published in 2022 and focused on medical students by enrolling 212 students, found that more than one-half of the students (63.2%) practiced SM. Additionally, SM was related to younger age, female gender, OTC drugs, and mildness of the symptoms [36]. However, the study did not investigate the medications used by the participants.

The few studies from the previous Arab countries revealed great heterogeneity in the assessed items, including prevalence, medication used, and determinants, where some studies focused on specific items and ignored the others. Additionally, it was found that there is a great focus among Arab countries on university students, especially medical students, rather than the general population. Therefore, the findings cannot be generalized to any Arab country or Arab countries, as there is a focus on a certain population. However, the prevalence of SM was discovered to be high with varied high proportions, regardless of the included population, revealing high practice of SM among the Arab countries, with analgesics being the most used medications. However, the determinants of SM displayed great variability between the different studies.

Implications of Self-medication

The appropriate usage of SM has a positive impact on patients and healthcare systems [37]. SM can effectively address minor conditions and illnesses that do not require interventions [9]. SM allows patients to manage their health condition and consequently raises self-empowerment. Also, it is convenient to prevent and relieve minor conditions. In terms of the healthcare system, SM reduces wasting medical resources on minor conditions and reduces the workload on the

healthcare services [37]. SM can also have economic benefits for the healthcare systems, patients, and third-party payers such as insurance companies and governments [38].

Nonetheless, it was revealed that improper SM practice can put patients at risk of severe consequences such as adverse reactions, antimicrobial resistance, and comorbidities [5]. In developing countries such as some Arab countries, SM leads to prolonged suffering, drug dependence and reactions, and masking the diagnosis and sometimes chronicity of the disease [18].

A great concern of SM is the misuse of oral opioids for pain management; such misuse can lead to severe side effects, including adverse drug reactions, drug toxicity, and food-to-drug interactions [9]. There are severe risks related to SM, including drug interactions, where many individuals are unaware of the interactions between drugs when taken together. SM without knowledge regarding such interactions can result in dangerous effects. Incorrect diagnosis is another risk of SM and occurs when one illness is mistaken for another. A wide range of diseases can share several manifestations such as fever, fatigue, and headache; therefore, inaccurate diagnosis may lead to administration of incorrect medication, which can worsen the condition or delay the essential medical care. Drug resistance is another risk related to SM and misuse of antibiotics. Drug resistance is a major public health concern, and this phenomenon occurs when antibiotics are taken improperly, such as in the wrong dosage or without completing the full course; bacteria can develop resistance, making future infections harder or impossible to treat. Toxicity and overdosing are another consequence of SM; some individuals think that administration of a greater dose will lead to faster recovery, but this can result in poisoning or toxic buildup in the body. Allergic reactions can be caused by taking medications without guidance, and such reactions may range from mild rashes to severe anaphylaxis, which is a life-threatening condition requiring prompt medical care. Abuse and dependence are another implication of SM, where some drugs, such as sedatives and antianxiety medications, may cause addiction, which results in additional health complications [39].

Regarding implications of SM in Arab countries, no study could be found focused on that subject. Additionally, none of the studies investigated the prevalence of SM highlighted the implications of SM nor even investigated the implications as a second objective. This highlights the need for comprehensive national studies to be conducted in Arab countries to identify the implications of SM, especially as SM prevalence is high among Arab countries.

Conclusion

Generally, there is high prevalence of SM in Arab countries from which the research articles were



available, regardless of the population under investigation. The great focus was directed to university students, especially medical students, and the prevalence of SM was also high among medical students. The most commonly used medication for SM was analgesics. However, the determinants of SM were hard to determine due to the heterogeneity of the investigated determinants. Furthermore, there is a lack of literature in Arab countries regarding the implications and outcomes of SM.

Limitations, Strengths, and Recommendations

This narrative review involves some limitations that are related to the nature of the included studies. First, the findings of the studies could not be well criticized due to the nature of the studies. Second, there was heterogeneity in the studies regarding the determinants of SM; therefore, we could not determine the determinants of SM. Additionally, the studies did not report the implications of SM. Furthermore, several Arab countries did not report any studies between 2021 and 2026, and the great focus in the literature was directed to university students, which may result in bias in the findings. Another limitation also the possible language and availability bias as we included English and full-text articles only. However, this narrative review provided some strengths, including the declaration of gaps in the literature regarding the current subject and discussing the subject for each Arab country as possible and as available in the literature. Therefore, further comprehensive and national studies are recommended to report the national prevalence of SM and its implications in each Arab country and to establish a meta-analysis for such research. Additionally, the implementation of pharmacist-led counseling and antimicrobial stewardship is significant in reducing SM. Furthermore, public education, medication-literacy programs, and improved access to primary care would help reduce SM.

List of Abbreviations

OTC	Over-the-counter
SM	Self-medication
UAE	United Arab Emirates
WHO	World Health Organization

Conflict of interest

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Consent to participate

Not applicable.

Ethical approval

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