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Knowledge, Attitude, and Practice of Self-Medication in Syria

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Abstract*: This study aimed to assess knowledge, attitudes, and practices regarding self-medication among Syrians, with a focus on identifying factors and perceived risks associated with this behaviour. The online questionnaire was conducted between October 2023 and March 2024, yielding 103 valid responses. The questionnaire consisted of four sections: demographic information, self-medication behaviour, sources of information and motivation, and perception of risk. A vast majority (89.3%) of participants self-medicated, with 35% doing so more than five times in the past six months. The most used drugs were painkillers (86.4%), vitamins (31.1%), and herbal remedies (23.3%). Headaches, toothaches, allergies, and colds were the illnesses most frequently treated at home. Despite relatively high knowledge levels regarding side effects (79.6%) and prescription requirements (83.5%), over half of the participants (54.4%) chose to use antibiotics without consulting a medical professional. The primary sources of information were personal experiences (72.8%) and recommendations from pharmacists (47.6%). Although participants recognised risks, such as side effects (69.9%) and antibiotic resistance (37.9%), this knowledge did not consistently translate into safer practices. Self-medication is very common among Syrians, particularly among young, urban residents. There is a coexistence of reasonable awareness levels with ongoing unsafe practices due to behavioural and systemic factors. Interventions targeting educational programs and improving access to professional healthcare services are necessary to promote responsible self-medication and reduce potential harms.

***Keywords*: Self-Medication, Knowledge, Practice, Survey, Syria.**

Abbreviations:
OTC: Over-The-Counter

I. INTRODUCTION

Self-medication behaviour is an emerging public health problem in the developed [1] and developing world [2]. Over the past few decades, there has been a significant increase in the use of over-the-counter (OTC) medications [3], along with prescription drugs [4], without prior consultation with a doctor [5]. This trend raises serious concerns about healthcare access [6], patient independence [7], and evidence-based drug utilization [8].

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The World Health Organization has reported that self-medication may lead to delayed diagnoses [9], drug abuse [10], and severe risks to both public [11] and personal health outcomes [12], particularly through the rise of drug-resistant microorganisms [13]. While responsible self-treatment is sometimes advocated for managing minor illnesses [14], the unrestricted use of medications without expert advice can have disastrous consequences [15]. These may include improper self-diagnosis [16], dangerous drug interactions [17], incorrect dosages [18], and a heightened risk of abuse [19] and dependence [20].

Various factors determine self-medication [21], such as socioeconomic status [22], cultural values [23], medical history [24], and unrestricted medication access [25]. Additionally, misinformation on internet forums [26] and poor regulation in certain areas exacerbate the issue. In situations of economic stress [27] or inadequate healthcare infrastructure [28], such as in Syria [29], self-medication is particularly prevalent [30]. The combination of financial hardship [31], limited access to specialist treatment [32], and widespread crises have compelled patients to rely on personal judgment [33] or recommendations from non-clinicians to manage their health issues [34]. Occasionally, pharmacists [35], family members [36], or television advertisements replace consultations with healthcare professionals [37]. Understanding knowledge, attitudes, and practices related to self-medication is crucial to developing specific health policies [38] and educational interventions [39]. Evidence from international [40] and regional studies have identified significant knowledge gaps among the general population regarding the risks associated with uncontrolled medication use [41]. In an Indian study, nearly 68% of participants reported occasional self-medication practices, with most lacking proper knowledge about potential side effects or contraindications [42]. The current study aims to assess the knowledge, attitudes, and practices related to self-medication in Syria. The socio-demographic, psychological, economic, and cultural determinants of self-medication behaviours will be evaluated.

II. METHODS

This six-month research project was conducted between October 2024 and March 2025, utilising a structured online survey developed using Google Forms. The study aimed to assess the knowledge, attitudes, and practices related to self-medication among Syrians. Recruitment was achieved through convenience sampling, utilising popular social media platforms such as Facebook and WhatsApp to access various segments of the population, particularly young adults and university students.

One hundred three valid and completed questionnaires were gathered and used for final analysis. Each response was tabulated and analyzed using descriptive statistical methods. Percentages and frequencies were calculated for all the categorical variables.

III. RESULTS

A. Demographic Data of Participants

One hundred three participants completed the survey Table 1. The sample consisted mainly of females (72.8%), with males accounting for 27.2%. The most representative age group was 18–25 years (48.5%), followed by 36–45 years (20.4%), and 26–35 years (14.6%). The majority resided in urban areas (80.6%), while 19.4% came from rural settings. Of 43.7% were students, 36.9% were self-employed, and 19.4% were employees. Only 30.1% came from a medicine or pharmacy background, while 69.9% came from non-health backgrounds. These characteristics define a young, largely urban, and non-clinical group —precisely the kind to survey public attitudes and behaviours toward self-medication.

Table-I: Demographic Characteristics of Participants

Demographic Characteristics	Percentages % (number)
Gender	
Female	72.80%
Male	27.20%
Age (years)	
>18	0.00%
25-18	48.50%
26-35	14.60%
45-36	20.40%
>45	14.60%
Residence	
Urban	80.60%
Rural	19.40%
Occupation	
Student	43.70%
Employee	19.40%
Private Sector	36.90%
Medical/Pharma Background	
Yes	30.10%
No	%69.90
Year	
First	15.70%
Second	%9.80
Third	17.60%
Fourth	%21.60
Fifth	%29.40
Internship	%5.90

B. Self-Medication Practices

Table 2 presents overwhelming evidence of the widespread practice of self-medication among Syrians. A staggering 89.3% of the subjects had practised self-medication, and a large percentage (35%) had practised it more than five times in the past six months. This frequency was representative of a habitual problem pattern. Interestingly, 54.4% of the respondents preferred to take antibiotics without a prescription, which in public health discourse is a cause for alarm as it leads to resistance to antibiotics. This is even though 83.5% of the respondents claimed to know if a medicine should be prescribed, and 79.6% knew the potential side effects of their self-purchased drugs. Furthermore, 63.1% believed self-medication to be safe, implying that there is a discrepancy between what is known and perceived risk. Regarding the correct use of drugs, 49.5% of respondents always read the drug information label, or sometimes read it. Surprisingly, 1.0% never read the label, indicating a slight but notable lack of health literacy practice. These results reveal a paradox: while responders possess sufficient knowledge regarding medication safety and prescription regulation, it does not necessarily translate into safer self-medication behaviour. This highlights the need for targeted educational interventions to bridge the gap between knowledge and practice, particularly in the context of antibiotic stewardship and risk awareness [43].

Table-II: Data on Self-Medication Practices

Question	Percentage (%)
Do you practice self-medication?	89.30%
Frequency in the past 6 months	
Once	12.60%
Twice	18.40%
3 times	15.50%
4 times	7.80%
5 times	10.70%
More than 5 times	35.00%
Do you prefer antibiotics in self-medication?	
Yes	54.40%
No	55.60%
Do you read the drug label before use?	
Yes	49.50%
No	%41.50
Sometimes	49.50%
Never	1.00%

C.Drugs Used and Symptoms Treated

Table 3 presents a more detailed breakdown of the types of drugs individuals use most often for self-medication and of the range of symptoms that prompt such behaviour. Most participants (86.4%) used the most commonly used category of painkillers, most likely due to their relative accessibility and favourable perception in terms of safety. Other widely cited drugs included nutritional supplements (31.1%), herbal remedies (23.3%), and cold and flu medications (25.2%), reflecting a trend of self-medication for non-life-threatening or chronic diseases. Unusually, even medications of more judicious use [44], such as antihistamines (22.3%), anti-ulcer drugs (9.7%), and oral contraceptives (1.9%) were cited, reflecting indiscriminate and uninhibited use of drugs.

In terms of health issues treated through self-medication, headache was the symptom most frequently cited by far (70.9%), followed by toothache (40.8%), allergy (29.1%), and cold/cough (28.2%). The findings demonstrate that respondents self-medicate for frequent, chronic complaints without seeking consultation with doctors. However, self-treatment for more chronic illnesses like gastrointestinal illnesses (13.6%), heartburn/ulcers (14.6%), and even infection (6.8%) shows risky behaviours that could lead to misdiagnosis or ineffective treatment. Of interest is the observation that 4.9% of the respondents claimed not engaging in self-medication at all, pointing out minority adherence to professional medical therapy.

Overall, the table is a measure both of high levels of use of over-the-counter and alternative medicines for routine complaints about health and of a disturbing trend towards self-treatment of potentially serious illness. This trend reflects the need for better public education on the limits and risks of unregulated drug use [45].

Table-III: Drugs Used and Treated Symptoms

Item	Percentage (%)
Drugs Used in Self-Medication (past 6 months)	
Painkillers	86.40%
Fever reducers (antipyretics)	29.10%
Antihistamines (for allergies)	22.30%
Cough syrups	17.50%
Cold/flu medications	25.20%
Anti-ulcer drugs	9.70%
Anti-diarrheal drugs	7.80%
Laxatives	5.80%
Oral contraceptives	1.90%
Antiemetics	8.70%
Ear/nose/eye drops	17.50%
Topical medications (for skin)	18.40%
Nutritional supplements (vitamins)	31.10%
Herbal remedies	23.30%
Symptoms Treated with Self-Medication	
Headache	70.90%
Fever	22.30%
Cold and cough	28.20%
Allergy	29.10%
Gastrointestinal disorders (diarrhoea, constipation, vomiting)	13.60%
Body aches	20.40%
Toothache	40.80%
Heartburn/ulcers	14.60%
Skin conditions/acne	14.60%
Menstrual problems	14.60%
Insomnia	9.75%
Hemorrhoids	2.90%
Infection	6.80%
Contraception	0.00%
I do not practice self-medication	4.90%

D. Information Sources, Motivations, and Risk Awareness

Table 4 putlines the cognitive and behavioural determinants of self-medication, including information sources, motivational drivers, and perceived risks. Statistics show that personal experience was the most frequently cited information source (72.8%), followed by guidance from doctors or pharmacists (47.6%). Paradoxically, over a fifth of respondents (22.3%) relied on non-prescription doctor guidance, illustrating informal access to professional expertise. The relatively minor contributions of media (13.6%), friends (15.5%), and family (18.4%) suggest that social and mass communication media play a role in awareness. Still, they are often preceded by perceived individual acquaintance or professional encounter. Regarding motivations, the primary reason was that the disease did not warrant a doctor's visit because it was not considered severe enough (51.5%), a motivation aligned with efforts to conserve time and resources. This was closely followed by the lack of quick symptom relief (44.7%) and previous positive experience with self-medication (41.7%). Money also came into play, with 32.0% citing cost-saving, and 31.1% saving time as reasons. Less frequent but important factors were restricted access to healthcare (14.6%), privacy concerns (11.7%), and shame in discussing symptoms (4.9%), suggesting psychosocial and system barriers to professional treatment. Despite the overall popularity of self-medication [46], most participants were concerned about the risks associated with it. Unforeseen side effects came on top (69.9%), followed by antibiotic resistance (37.9%) and risk of concealment of life-threatening diseases (27.2%). The minority but essential issue (17.5%) was that the symptoms would become even more severe without medical supervision. These findings reflect a double reality: although individuals are primarily influenced by precedent and convenience, they are not entirely risk-blind. This more nuanced perspective suggests that public health interventions must emphasize the dangers of self-medication [47]. It also provides formal guidance on when and how self-care can be safely done [48]. Encouraging proper use and increasing health literacy might bridge the gap between patient autonomy [49] and care safety [50].

Table-IV: Information Sources, Motivations, and Risk Awareness

Item	Percentage (%)
Sources of Information about Self-Medication	
Personal knowledge	72.80%
Pharmacists or pharmacy staff	47.60%
Doctors (without prescription)	22.30%
Relatives	18.40%
Friends	15.50%
Media (TV, internet, etc.)	13.60%
Motivations for Practicing Self-Medication	
The illness is not severe enough to visit a doctor	51.50%
Quick relief from symptoms	44.70%
Previous successful experience	41.70%
Saving money	32.00%
Saving time	31.10%
No nearby hospital	14.60%
Privacy	11.70%
Embarrassment from discussing symptoms	4.90%
Perceived Risks of Self-Medication	
Unexpected side effects	69.90%
Antibiotic resistance	37.90%
Hiding a serious illness	27.20%
Symptom worsening	17.50%

IV. DISCUSSION

This study examined the knowledge, attitudes, and practices related to self-medication among Syrian residents, with a particular focus on young adults, students, and individuals from both medical and non-medical backgrounds. The findings offer a comprehensive understanding of how self-medication is approached in a context characterised by economic constraints, limited access to healthcare, and deeply ingrained cultural behaviours. A notable 89.3% of participants reported engaging in self-medication, with over a third (35%) doing so more than five times in the The past six months. This suggests a regular and established behaviour, rather than

occasional use. The practice was not confined to minor discomforts; many individuals administered antibiotics (54.4%) without medical guidance, despite being aware of prescription regulations (83.5%) and potential side effects (79.6%). This highlights a significant gap between knowledge and actual practice. Painkillers, fever reducers, and even herbal remedies were frequently used. Most participants reported treating conditions such as headaches, toothaches, allergies, and cold symptoms. This aligns with global findings showing that individuals prefer to manage frequently recurring but seemingly non-serious conditions on their own [51]. However, the use of prescription-based medications like hormonal contraceptives [52] and anti-ulcer drugs [53] without physician oversight raises concerns regarding misuse [54] and possible long-term effects [55]. Participants expressed various motivations for self-medication. 51.5% stated that their illness did not require a doctor's visit, and 44.7% sought quick symptom relief. Cost-saving [56] and time-saving factors [57] were also influential, reflecting how systemic barriers [58], such as overcrowded clinics [59], healthcare costs, and time constraints, encourage people to bypass formal healthcare channels [60]. Interestingly, awareness of potential risks did not deter the behaviour. Nearly 70% recognized that self-medication might lead to unexpected side effects, and over one-third (37.9%) acknowledged its role in antibiotic resistance. Despite this, the pattern persists, suggesting that while health literacy may be present, behaviour change requires both structural and cultural shifts. The predominant reliance on personal knowledge (72.8%) and pharmacists' advice (47.6%) further illustrates the informal healthcare network filling the gaps left by institutional care. The limited impact of media (13.6%) on participants' awareness emphasizes the need for more effective and targeted public health campaigns.

V. CONCLUSION

This study highlights the widespread prevalence of self-medication in Syria, particularly among young adults and urban residents. Although most participants demonstrated a fair level of knowledge regarding medications, including side effects and prescription requirements, this did not translate into safe practices. The tendency to rely on personal experience, pharmacists, or informal advice instead of medical consultation underscores systemic challenges in healthcare accessibility and trust. The results call for urgent intervention on multiple levels. First, enhanced public education campaigns should focus not only on increasing awareness but also on modifying attitudes and behaviours, particularly regarding the use of antibiotics. Second, empowering pharmacists with protocols for responsible guidance could serve as a practical checkpoint in the informal medication network. Lastly, improving access to primary healthcare services, particularly in underserved areas, may reduce reliance on self-directed treatments. By addressing individual behaviour and structural barriers, Syria can move toward a more responsible and informed culture of self-care. These findings offer valuable insights for policymakers and healthcare educators seeking to design effective and sustainable interventions that promote the safe and appropriate use of medication.

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