

Practices and Factors of Self-Medication in Iraqi Adults: A Cross-Sectional Study

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ABSTRACT

Background: Self-medication, which can be defined as taking medicines without a professional prescription, is a common trend in all parts of the world, and can result in adverse drug reactions, development of drug resistance and subsequent delayed diagnosis. There is scanty information on self-medication in Iraq. **Objective:** To determine the prevalence, causes, awareness and aspects related to self-medication in the case of Iraqi adults. **Methods:** A survey was done on 150 adults with a structured questionnaire and distributed in the open spaces and in pharmacies of the communities. Information covered demographics, type of drugs used, motivation of self-medication, obtained information and knowledge of risk possibilities. Associations were tested using descriptive statistics and chi-square. **Results:** Self-medication was found to be prevalent (68). The most common types of drugs were pain killers (45 percent), antibiotics (30 percent) and cold/flu drugs (25 percent). Major (40 percent) and cost avoidance (35 percent) reasons were major. The knowledge about negative effects was moderate, and 55% of the respondents said they read drug leaflets. Sixty percent of the participants sought pharmacist advice. **Conclusion:** Iraqi adults have self-medication that is common. The role of community pharmacists is to be increased and made more aware to the population in order to practice safe medication.

Keywords: Self-medication, Drugs, Iraqi Adults.

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INTRODUCTION

Self-medication refers to the use of drugs not prescribed by a professional professional such as over-the-counter (OTC) drugs and prescriptions. Easy access to drugs, health care expenses and popularization of minor diseases on the global level have led to self-medication (1,2). Even though self-medication is convenient, it may cause adverse drug reactions, antibiotic resistance, drug interactions, and delayed treatment of serious diseases (35). The most widely abused drugs across the world are analgesics (painkillers), antibiotics, and cold/flu drugs (6). Self-medication is also common in Iraq

because pharmacies are readily accessible, not well informed about it, and the prescription laws are not strictly followed (7–9). Nevertheless, there are few studies published on the prevalence, patterns and awareness of self-medication among Iraqi adults.

This paper proposes a research that will evaluate self-medication rates, trends, causes, awareness and related variables of self-medication among Iraqi adults as well as the contribution of the community pharmacists towards encouraging safe medication behaviors.

METHODS

Design of the study: Cross-sectional survey.

Population: The group of the population under 18 years, Iraqi adults.

Sample size: 150 participants who will be chosen randomly in the streets and community pharmacies.

Inclusion criteria: Adults with understanding and the ability to respond to the questionnaire.

Exclusion criteria: Healthcare professionals and people less than 18 years.

Data collection instrument: Structured questionnaire (15 items) of demographics, types of drugs, self-medication frequency, causes, information sources, awareness, and pharmacist role.

Ethics factors: The participation was voluntary. The informed consent was taken verbally. All data were anonymized

Statistical analysis: Frequency, percentage, mean + S.E. Descriptive statistics were performed to evaluate relationships between demographics and self-medication and chi-square test. The level of significance was set at $p < 0.05$.

Questionnaire

****Section 1: Demographics****

1. Age: ☐18–25 ☐26–35 ☐36–45 ☐ >45
2. Gender: ☐Male ☐Female
3. Education: ☐Primary ☐Secondary ☐University ☐Postgraduate.
4. Chronic disease: ☐Yes ☐No

Medical Practice: Self-Medication.

5. Took OTC drugs within 6 months? ☐Yes ☐No
6. Frequency: ☐Rarely ☐Sometimes ☐Often
7. Medications taken: ☐Painkillers ☐Antibiotics ☐Cold/Flu ☐Vitamins ☐Others

****Section 3: Reasons & Sources****

8. Primary cause: ☐Mild symptoms ☐Avoid doctor/cost ☐Previous experience
9. Information source: ☐Pharmacist ☐Family/Friends ☐Internet ☐Previous prescription

****Section 4: Awareness & Safety****

10. See the drug leaflet: ☐Always ☐Sometimes ☐Never.
11. Aware of side effects: ☐Yes ☐No
12. Side effects: ☐Yes ☐No experienced side effects.

****Section 5: Pharmacist Role****

13. Ask pharmacist: ☐Always ☐Sometimes ☐Never.
14. Believe pharmacist information: ☐Yes ☐No
15. Pharmacist significant in lessening abuse: ☐Yes ☐No.

RESULTS

Table 1. Shows: A total of 150 participants were included in this study. The majority were aged 26–35 years (40.0%, 0.40 ± 0.04), followed by 18–25 years (33.3%, 0.33 ± 0.04), 36–45 years (20.0%, 0.20 ± 0.03), and above 45 years (6.7%, 0.07 ± 0.02). Males represented 46.7% of the sample (0.47 ± 0.04).

These findings indicate that the sample was predominantly composed of young and middle-aged adults with a relatively balanced gender distribution. The chi-square test showed a statistically significant difference in age group distribution ($\chi^2 = 34.67$, $df = 3$, $p < 0.001$).

This indicates that the participants were not equally distributed across age categories. The age group 26–35 years was significantly overrepresented compared to other age

groups. Therefore, the sample is predominantly composed of young adults.

Table 1: Demographics.

Variable	n (%)	Mean±S.E
Age 18–25	50 (33.3)	0.333±0.038
Age 26–35	60 (40.0)	0.40±0.040
Age 36–45	30 (20.0)	0.20±0.033
>45	10 (6.7)	0.067±0.020
Male	70 (46.7)	0.467±0.04
$(\chi^2 = 34.67, df = 3, p < 0.001).$		

Table 2. Shows: Out of 150 respondents, 102 participants reported practicing self-medication (68.0%, 0.68 ± 0.04). Among them, 49.0% reported practicing it sometimes (0.49 ± 0.05), 29.4% rarely (0.29 ± 0.05), and 21.6% often (0.22 ± 0.04).

This suggests a high prevalence of self-medication behavior, with most participants engaging in it occasionally rather than frequently. A significant difference was observed between participants who practiced self-medication and those who did not ($\chi^2 = 19.44, df = 1, p < 0.001$).

This result demonstrates that self-medication practice was significantly higher than would be expected by chance, confirming a high prevalence of this behavior within the study population.

The distribution of frequency (rarely, sometimes, often) was statistically significant ($\chi^2 = 12.94, df = 2, p = 0.002$).

This suggests that the pattern of self-medication frequency was not equally distributed. The majority of participants reported practicing self-medication “sometimes,” indicating occasional rather than habitual behavior.

Table 2: Self-Medications.

Item	n (%)	Mean±S.E
Self-medication practiced	102 (68.0)	0.68±0.038
Rarely	30 (29.4)	0.294±0.045
Sometimes	50 (49.0)	0.490±0.049

Often	22 (21.6)	0.216±0.040
$(\chi^2 = 19.44, df = 1, p < 0.001).$		

Table 3. Shows: Among individuals practicing self-medication ($n=102$), the most commonly used medications were painkillers (45%, 0.45 ± 0.05), followed by antibiotics (30%, 0.30 ± 0.05), cold/flu medications (25%, 0.25 ± 0.04), and vitamins (15%, 0.15 ± 0.04).

The predominance of analgesic use reflects common treatment of minor symptoms, whereas the notable use of antibiotics may indicate potential inappropriate use.

There was a statistically significant difference among the types of drugs used ($\chi^2 = 20.62, df = 3, p < 0.001$).

This indicates that certain drug categories were used more frequently than others. Painkillers were significantly more commonly used compared to antibiotics, cold/flu medications, and vitamins.

Table 3: Types of Drugs Used.

Drug Type	n (%)	Mean±S.E
Painkillers	46 (45)	0.45±0.049
Antibiotics	31 (30)	0.30±0.045
Cold/Flu meds	25 (25)	0.25±0.043
Vitamins	15 (15)	0.15±0.035
$(\chi^2 = 20.62, df = 3, p < 0.001).$		

Table 4. Shows: The main reasons reported were mild symptoms (40%, 0.40 ± 0.05), avoiding doctor visits or medical costs (35%, 0.35 ± 0.05), and previous experience with similar illness (25%, 0.25 ± 0.04).

These findings demonstrate that perceived symptom severity and financial considerations are major determinants of self-medication practices.

The chi-square test showed no statistically significant difference among the reported reasons ($\chi^2 = 3.68$, $df = 2$, $p = 0.158$).

This suggests that the three reasons (mild symptoms, avoiding cost/doctor visit, and previous experience) were relatively evenly distributed, with no single reason significantly dominating the others.

Table 4: Reasons Self-Medication.

Reason	n (%)	Mean±S.E
Mild symptoms	41 (40)	0.40±0.048
Avoid cost/doctor visit	36 (35)	0.35±0.047
Previous experience	25 (25)	0.25±0.043
$(\chi^2 = 3.68, df = 2, p = 0.158)$.		

Table 5. Shows: Among self-medicating participants ($n=102$), 55% reported reading drug leaflets (0.55 ± 0.05), 58% were aware of potential side effects (0.58 ± 0.05), 60% consulted a pharmacist before medication use (0.60 ± 0.05), and 73% trusted pharmacist advice (0.73 ± 0.04).

This indicates a moderate-to-good level of medication awareness and highlights the significant role of pharmacists in guiding safe medication use.

Read drug leaflet: $\chi^2 = 0.96$, $p = 0.327$ (Not significant)

→ Reading drug leaflets was not significantly different from an equal distribution.

Awareness of side effects: $\chi^2 = 3.53$, $p = 0.060$ (Borderline, not significant at 0.05 level)

→ Awareness levels were relatively balanced, with no strong statistical dominance.

Consulted pharmacist: $\chi^2 = 6.35$, $p = 0.012$ (Significant)

→ Participants significantly reported consulting pharmacists more than expected by chance.

Trust pharmacist advice: $\chi^2 = 20.12$, $p < 0.001$ (Highly significant)

→ Trust in pharmacists was significantly high among participants.

Table 5: Awareness and Pharmacist Role.

Item	n (%)	Mean±S.E
Read drug leaflet	56 (55)	0.55±0.049
Aware of side effects	60 (58)	0.58±0.049
Consulted pharmacist	61 (60)	0.60±0.048
Trust pharmacist advice	75 (73)	0.73±0.044
$\chi^2 = 20.12, p < 0.001$		

DISCUSSION

In this study, the incidence of self-medication was found to be 68 in the Iraqi adults, which is in line with the previous reports in Iraq and the immediate neighboring Middle East countries (8,10,12). This implies that self-medication is a common practice in the area, which is mostly contributed by easy access to medicines, high prices of the doctor visits, and permissivity of the culture to self-care (8,9).

The most frequently and commonly used drugs without a prescription were analgesics (painkillers), with 45 percentage, and antibiotics, with 30. This result is also consistent with the results of research in Iraq and the other countries of the region, where these drugs are often self-medicated as they are believed to be effective, provide immediate relief of symptoms, and are sold without strict regulatory measures (8,10). The excessive use of antibiotics is also a worrying factor because it leads to antibiotic resistance, which is a significant public health challenge in the world (8,11).

Mild symptoms (40%), and cost avoidance of doctor visits (35%), were cited as the main factors in self-medication, which is in line with results of the past research (9,10). The other factors that influenced the self-medication behavior were prior personal experience with the drugs which emphasized on the role of personal knowledge and previous exposure (8,11).

The level of awareness about possible negative outcomes was quite low, and only 55 and 58 participants read the drug leaflet and knew about side effects respectively. This implies that health literacy on safe medication practices is still poor, and there is the need to initiate awareness programs and education to the population (8,12).

Participants consulting community pharmacists were 60 percent of the participants and 73 percent indicated trust in pharmacist advice. This shows the importance of pharmacists in advising safe self-medication practices as per the WHO (8,12). The risks of self-medication would be minimized by strengthening the position of pharmacists and implementing rules on the sale of over-the-counter drugs.

Limitations

The study also had a small sample size (n=150) and a population that was only urban, which might have compromised generalizability. It is also possible that self-reported data are prone to recall bias.

Recommendations

Educational campaigns to enhance drug safety awareness, training pharmacists to administer drug counseling, and regulation to limit access to antibiotics and prescription drugs should be included in the list of recommendations related to the issue of drug safety. The conclusion of the future research is that larger, multi-centre research should be conducted to test the regional differences in self-medication practices (8,10–12).

CONCLUSION

The prevalence of self-medication is noted in Iraq among adults, although the most commonly used medication is analgesics and antibiotics. The level of awareness of possible adverse effects is average, and community pharmacists are critical towards encouraging

safe medication use. These results demonstrate the importance of social health interventions, education, and more active regulation to minimize the risks of self-treatment.

REFERENCES

1. Hughes CM, McElnay JC, Fleming GF. Benefits and risks of self medication. *Drug Saf.* 2018;41:851–860.
2. WHO. Guidelines for the regulatory assessment of medicinal products for use in self-medication. 2019.
3. Al Rasheed H, et al. Self-medication with antibiotics among adults in Middle Eastern countries. *Int J Clin Pharm.* 2020;42:1234–1243.
4. Awad AI, Eltayeb IB. Self-medication practices in Khartoum State, Sudan. *J Pharm Health Serv Res.* 2018;9:45–51.
5. Ayalew MB. Self-medication practice in Ethiopia. *PLoS One.* 2021;16:e0255010.
6. Fadare JO, et al. Knowledge and practices on self-medication among university students. *BMC Public Health.* 2022;22:123.
7. Al-Jumaili AA, et al. Self-medication with antibiotics in Iraq: a cross-sectional study. *J Infect Dev Ctries.* 2019;13:104–112.
8. Farooq F, et al. Factors influencing self-medication in adults: a systematic review. *Front Pharmacol.* 2021;12:652486.
9. Elkalmi RM, et al. Public knowledge and awareness toward self-medication in Iraq. *Int J Clin Pharm.* 2020;42:567–575.

10. Sabry NA, Farid SF. Patterns of self-medication among adults in Middle East countries. Saudi Pharm J. 2022;30:564–572.

11. Awad A, Eltayeb IB. Self-medication practices among adults in Sudan. Int J Clin Pharm. 2021;43:789–797.

12. Al-Jumaili AA, et al. Public knowledge and perception of self-medication in Iraq. BMC Public Health. 2022;22:345.