

Original Research

Self-Medication in the UAE: A Cross-Sectional Analysis of OTC Drug Use and Consumer satisfaction

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Abstract

Objectives: Self-medication with over-the-counter (OTC) drugs is a widespread practice that provides convenience and cost savings but also raises concerns about misuse and safety. In the United Arab Emirates (UAE), limited studies have assessed consumer satisfaction and self-medication patterns. Understanding these factors is essential for promoting safe and effective self-care practices. **Methods:** A cross-sectional survey was conducted among adult residents of the UAE (≥ 18 years) who had used OTC medications. A structured questionnaire assessed sociodemographic characteristics, medication usage patterns, sources of information, motivations for self-medication, and consumer satisfaction. Exclusion criteria included healthcare professionals and individuals with incomplete responses. Data were collected digitally using QR code-linked surveys, and statistical analysis was performed to examine associations between sociodemographic factors and OTC medication use. **Results:** Among 211 participants, 114 (54%) reported regular OTC medication use. Usage was higher among females ($n = 66$, 58%) compared to males ($n = 48$, 42%), and among employed individuals ($n = 71$, 62%). The most commonly used OTC medications were analgesics, antipyretics, and respiratory treatments. Healthcare providers were the primary source of recommendations ($n = 62$, 49%), followed by friends and relatives ($n = 44$, 35%). The primary motivations for self-medication included the ability to treat mild illnesses independently ($n = 85$, 23%), keeping OTC medications at home for emergencies ($n = 61$, 17%), and avoiding hospital visits ($n = 48$, 13%). Consumer satisfaction was high, particularly regarding effectiveness ($n = 93$, 82%) and availability ($n = 94$, 82%), though concerns about cost were noted, with 44% ($n = 49$) expressing dissatisfaction. **Conclusions:** OTC medication use is prevalent in the UAE, driven by accessibility, affordability, and consumer confidence. While satisfaction levels are generally high, concerns about affordability and potential safety risks highlight the need for targeted public health strategies. Healthcare professionals and policymakers should implement educational initiatives to ensure responsible self-medication practices and enhance patient awareness of potential risks.

Keywords: Self-medication, Over-the-counter (OTC) drugs, Consumer satisfaction, Medication safety, Healthcare accessibility

INTRODUCTION

Over-the-counter (OTC) medications, which are available without a prescription, play a crucial role in patient care. They enable individuals to self-manage minor ailments and can serve as alternatives or supplements to prescription medications^{1,2}. The use of OTC drugs is widespread globally, though prevalence rates vary by region. In the United States, around 81% of adults use OTC drugs as a first-line treatment for minor health issues, contributing to a market valued at over \$35 billion annually³. In Europe, OTC medications make up approximately 40% of total medication sales, with consumers frequently relying on pain relievers such as acetaminophen and ibuprofen⁴. In developing countries, usage rates range from 30% to 70%, influenced by key factors like health care accessibility and infrastructure⁵. Top OTC medication categories driving the pharmaceutical market include vitamins and minerals (64%), cough and cold remedies (60%), pain relievers (56%), and herbal products (53%)⁶.

The use of over-the-counter (OTC) medications provides several benefits, including reducing the need for doctor visits and lowering healthcare costs. However, inappropriate usage can lead to adverse reactions, drug interactions, overdoses, and other medication-related issues⁷. In the Middle East, OTC medications are widely used due to their easy accessibility and affordability. Several studies have reported a high rate of self-medication in various cities in the UAE^{8,9,10}. Expatriates in the region often turn to OTC drugs due to limited healthcare insurance coverage, and the desire for quick symptom relief. Analgesics and antipyretics are the most commonly purchased OTC medications in these regions^{8,9,10}. Despite the widespread availability of OTC medications, issues such as incorrect usage, lack of professional guidance, and insufficient awareness of potential side effects persist. A study by D.W. Kaufman found that up to 15% of individuals exceed the recommended maximum dosage of OTC pain relievers, such as ibuprofen¹¹.

Patient satisfaction with over-the-counter (OTC) medication use is generally high, primarily due to the convenience, affordability, and accessibility. A recent study on the safety and efficacy of over-the-counter (OTC) medications found that a significant number of Americans were either very satisfied or somewhat satisfied with these products⁵. Similarly, a study conducted in Australia revealed that 73% of customers trust the use of OTC products¹². In the United Arab Emirates, patient satisfaction with over-the-counter medications is strongly correlated with their perceived cost-effectiveness, ease of use,

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and capacity to treat minor ailments⁹.

Despite the widespread use of OTC medications in the UAE, there is limited research assessing consumer satisfaction and patterns of self-medication. Understanding these factors will ensure safe and effective self-care practices. Given the high prevalence of self-medication, evaluating consumer behavior and awareness can help inform targeted public health strategies, improve patient education, and guide pharmacist policies to promote responsible OTC medication use.

METHODOLOGY

A cross-sectional survey-based methodology was used to assess the prevalence, patterns, and consumer satisfaction with self-medication using OTC drugs in the UAE. A structured questionnaire was developed to capture detailed insights into self-medication behaviors, reasons for use, sources of information, consumer awareness, and satisfaction levels.

The target population included adult residents of the UAE (≥ 18 years) who had used OTC medications in the past six months. Healthcare professionals, including pharmacists, physicians, and nurses, were excluded to minimize bias from professional knowledge. Additionally, individuals with incomplete medication use information, those without internet or social media access, individuals with cognitive dysfunction, and those unable to communicate in English or Arabic were also excluded from the study. Recruitment took place through pharmacies, healthcare centers, and community gatherings. The study employed a digital data collection approach using QR codes linked to an online survey, enabling participants to conveniently access and complete the questionnaire on both desktop and mobile devices. Before participation, individuals received a comprehensive briefing outlining the study's purpose, objectives, and significance. They were required to provide informed consent, ensuring their voluntary participation and understanding of the study's scope.

The survey instrument was structured into six distinct sections to comprehensively assess various aspects of OTC medication use. These sections included:

1. Sociodemographic characteristics (gender, nationality, education level, employment status, and monthly income)
2. Chronic and acute disease information, assessing the presence of pre-existing conditions and recent health issues.
3. General medication usage, capturing prescription and non-prescription medication habits.
4. OTC and herbal medication use, examining the frequency, types, and patterns of self-medication.
5. Reasons for and types of OTC and herbal medications used, exploring motivations behind self-medication and commonly used drug categories.
6. Satisfaction levels and perceived impact, evaluating consumer satisfaction, perceived effectiveness, safety concerns, and awareness.

The questionnaire was adapted from previously validated research instruments to ensure its relevance and comprehensiveness. To establish face and content validity, the survey underwent a rigorous evaluation process conducted by an expert panel consisting of two clinical pharmacists, a university professor with expertise in pharmacology and research methodology, a statistician proficient in survey-based research, and a layperson representing the public to assess clarity and readability. The questionnaire was translated into Arabic to cater to the diverse linguistic backgrounds of UAE residents. A parallel blind translation method was employed, wherein two master's students in pharmacy independently translated the survey, followed by reconciliation by a third reviewer to ensure accuracy and linguistic consistency.

To further refine the instrument, a pilot study was conducted among a sample of 10 participants who met the inclusion criteria. This preliminary testing assessed the reliability and validity of the survey items, identifying potential ambiguities, redundancies, or areas requiring further clarification. Based on participant feedback, modifications were made to enhance the comprehensibility, relevance, and user-friendliness of the questionnaire.

The study protocol was thoroughly reviewed and received formal approval from the Institutional Review Board (IRB) at Gulf Medical University (Ref. no. IRB-COP-STD-34-Sept-2024).

Statistical Analysis

Data analysis was conducted using IBM SPSS Statistics software (version 23). Descriptive statistics were used to summarize participant characteristics and OTC medication usage patterns. Categorical variables were analyzed using chi-square tests, while continuous variables were compared using independent t-tests or ANOVA where appropriate. A significance level of $p < 0.05$ was considered statistically significant.

RESULTS

Table 1 presents participants' sociodemographic and clinical characteristics concerning their use of OTC medications in the last 6 months. Among the 211 participants, females constituted the largest proportion of the total sample (67%), with 58% of them using OTC medications. Among different ethnic groups, Middle Eastern participants formed the majority (75%), with 80% of them reporting OTC medication use. Regarding employment status, the largest proportion of participants were employed (56%), and among them, 62% used OTC medications. In terms of income, participants earning between AED 5000-10,000 comprised the highest proportion (32%), with 32% of them using OTC medications. Household size distribution indicated that most participants lived in households with 4-8 members (63%), and 58% of them reported using OTC medications. Among the 130 participants taking medications, the largest proportion (50%) reported taking 2-4 medications, with 86% using OTC medications. Among participants with chronic diseases ($n = 77$), cardiovascular conditions were the most prevalent (13%), and 20% of them used OTC medications, followed by endocrine and metabolic disorders (9%), with 13% of affected participants using OTC medications.



Table 1. Participants' sociodemographic and clinical characteristics		
Characteristics	Total, N (%)	OTC medication user, n (%)
	(N= 211)	(n= 114)
Gender		
Female	142 (67.29)	66 (57.89)
Male	67 (31.75)	48 (42.10)
Prefer not to say	2 (0.94)	0 (0)
Race/Ethnicity		
Middle East	159 (75.35)	91 (79.82)
South Asia	37 (17.53)	16 (14.03)
Southeast Asia	5 (2.36)	4 (3.50)
Others	10 (4.73)	3 (2.63)
Employment status		
Employed	118 (55.92)	71 (62.28)
Unemployed	23 (10.90)	10 (8.77)
Retired	19 (9.00)	17 (14.91)
Student	51 (24.17)	16 (14.03)
Monthly income		
Less than AED 5000	32 (15.16)	20 (17.54)
AED 5000-10000	67 (31.75)	37 (32.45)
More than AED 10000	46 (21.80)	31 (27.19)
No income currently	17 (8.05)	11 (9.64)
Prefer not to mention	49 (23.22)	15 (13.15)
Number of family members per household		
1 member	9 (4.26)	6 (5.26)
2-3 members	48 (22.74)	33 (28.94)
4-8 members	133 (63.03)	66 (57.89)
More than 8 members	21 (9.95)	9 (7.89)
Number of medications taken by participants (n= 130)		
1 medication	11 (5.21)	3 (2.63)
2-4 medication	106 (50.23)	98 (85.96)
5 or more	13 (6.16)	13 (11.40)
Chronic diseases diagnosed in participants (n= 77)		
Cardiovascular diseases (diseases such as hypertension, heart attacks, irregular heartbeats, heart block, etc.)	27 (12.79)	23 (20.27)
Endocrine and metabolic diseases (diseases such as high cholesterol, diabetes, obesity, vitamin D deficiency, etc.)	20 (9.47)	15 (13.15)
Neurological and psychiatric diseases (diseases such as	3 (1.42)	1 (0.87)
Autoimmune and chronic inflammatory diseases (diseases like SLE, arthritis, cervical disc disease, etc.)	5 (2.36)	5 (4.38)
Multi-system involvement	19 (9.00)	18 (15.78)
Miscellaneous	3 (1.42)	2 (1.75)

Abbreviations: AED- United Arab Emirates Dirham; OTC- Over-the-Counter; SLE- Systemic Lupus Erythematosus



Figure 1 illustrates the distribution of participants based on their medication usage in the last six months. Among the 211 participants, the largest group comprised those who took both prescription and OTC medications, accounting for 93 individuals (44%), indicating that the majority relied on a combination of these medications. This was followed by those who took no medications, (81 participants, 38%). A smaller proportion reported using only OTC medications (21 individuals, 10%), while the smallest group included those who took only prescription medications (16 individuals, 8%). This highlights that exclusive use of either OTC or prescription medications was comparatively less common.

The distribution of OTC medication burden in the past 6 months among the study population is displayed in Figure 2. Among the 114 participants who reported using OTC medications, the majority (75 individuals, 66%) took 2-4 OTC medications, highlighting a significant portion of the population managing multiple conditions or symptoms with non-prescription medications. Participants using only one OTC medication accounted for 31% (n = 36) of the group. A small proportion, 3% (n = 3), reported taking five or more OTC medications.

Table 2 presents consumer behavior and safety practices related to OTC medication use among participants in the last 6 months. Regarding sources of recommendation, nearly half of the participants (49%) reported receiving recommendations from healthcare providers, while friends and relatives

influenced 35% of respondents. Advertisements played a role in the decision-making process for 14% of participants. In terms of usage purposes, the most common reason for using OTC medications was to support overall health and wellness (35%), followed by managing an existing medical condition (30%). Additionally, 20% of participants used OTC medications to control other health issues. Motivations behind purchasing OTC medications varied, with the most frequently cited reason being the ability to treat mild illnesses independently (23%). Keeping OTC medications at home for emergencies was another key factor (17%). Traditional usage within families or among friends (13%) also influenced purchasing decisions. Adherence to label instructions or pharmacist recommendations was relatively high, with 52% of participants following them very closely and 21% adhering closely. However, 14% followed recommendations only moderately closely, while 6% and 7% of participants reported somewhat close and not very close adherence, respectively. Finally, the perceived occurrence of ADRs due to OTC medications was reported by 15% of participants, while the majority (85%) did not experience any ADRs.

The usage patterns of OTC medications among participants in the last 6 months are presented in Table 3, highlighting the frequency of consumption across different medication classes. Antitussives, expectorants, and decongestants were most widely used, with 40% of participants using them often and 35% using them always, reflecting common use for respiratory

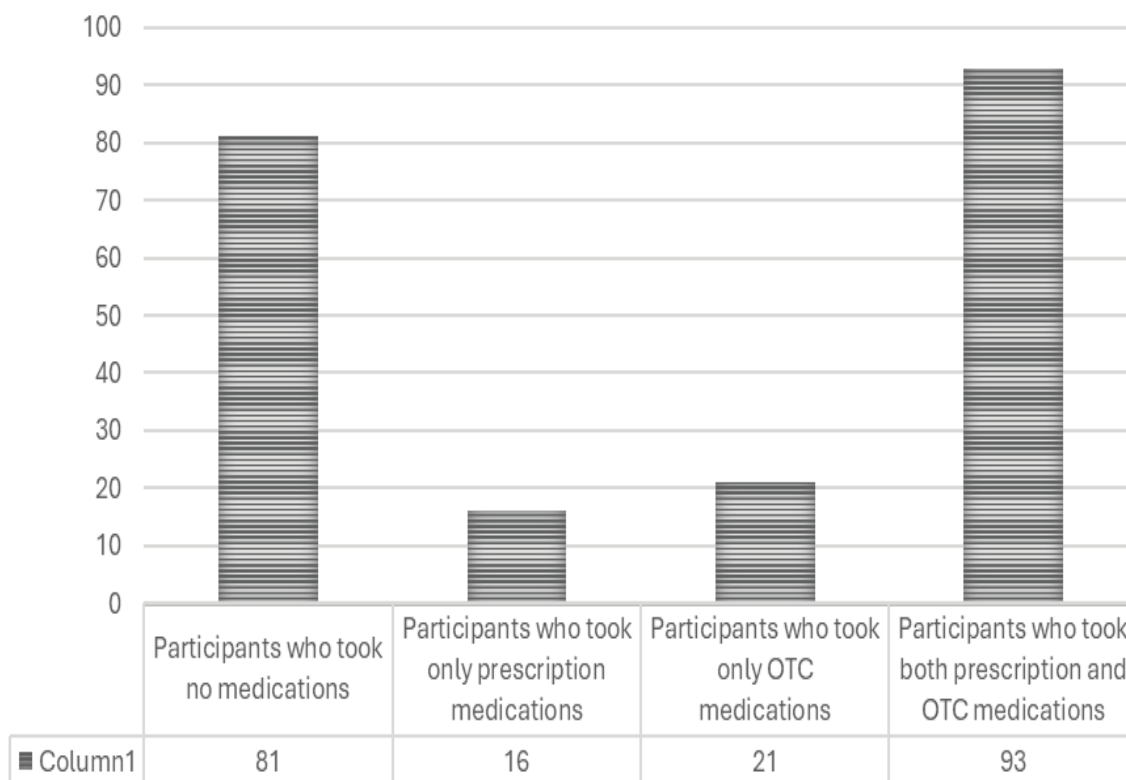


Figure 1. Prevalence of medication usage among participants



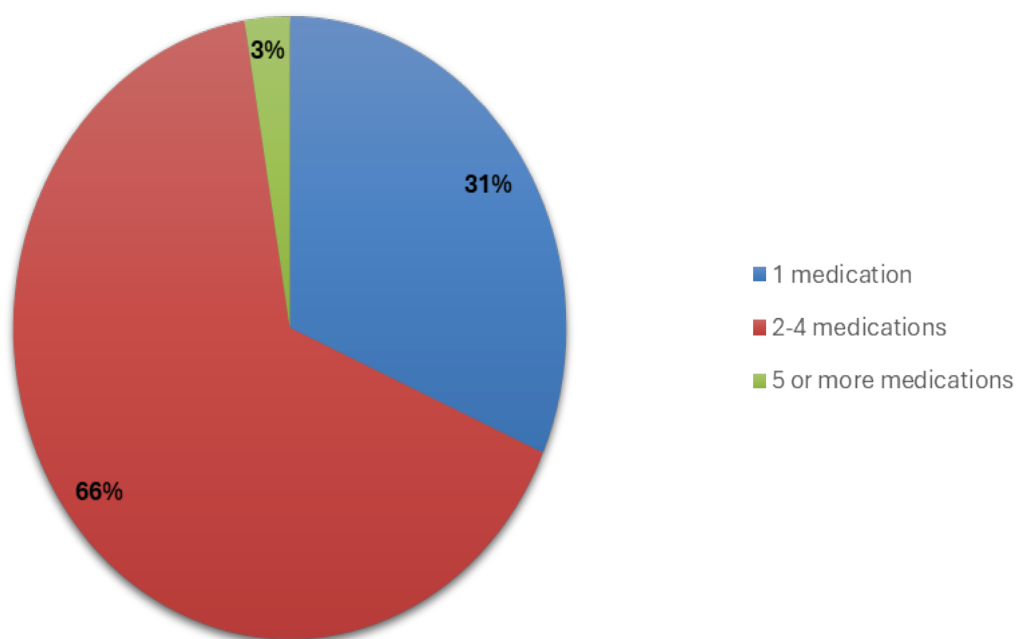


Figure 2. OTC medication burden among participants

Characteristics	Frequency (%) (n= 114)
Source of recommendation for taking OTC medications*	
Recommended by healthcare providers	62 (49.20)
Recommended by friends or relatives	44 (34.92)
Advertisements	17 (13.49)
Self-recommended based on professional expertise	3 (2.38)
Usage purpose of taking OTC medications*	
Supports overall health and wellness	80 (34.48)
Aids in managing an existing medical condition	70 (30.17)
Assists in controlling other health issues	47 (20.25)
Helps in preventing the onset of diseases	35 (15.08)
Motivations behind purchasing OTC medications*	
Mild illnesses can be treated independently	85 (23.16)
Important to keep at home for emergencies	61 (16.62)
Traditionally used by family members or friends	48 (13.07)
Preference to avoid visiting the hospital	48 (13.07)
Considered safer than alternative medications	45 (12.26)
Believed to be more effective than other forms of medication	41 (11.17)
More affordable compared to other products and services	39 (10.62)
Adhere to label instructions or pharmacist recommendations when using OTC medications	
Very closely	59 (51.75)
Closely	24 (21.05)
Moderately closely	16 (14.03)



Somewhat closely	7 (6.14)
Not very closely	8 (7.01)
Perceived occurrence of ADRs due to OTC medications	
Yes	17 (14.91)
No	97 (85.08)

Abbreviations: ADRs- Adverse Drug Reactions; OTC- Over-the-Counter

*Participants selected multiple options

Table 3. Usage pattern of OTC medications among participants

OTC medication class	Always	Often	Occasionally	Never
Antipyretics, analgesics, and anti-inflammatory drugs	36 (31.57)	44 (38.59)	19 (16.66)	15 (13.15)
Antitussives, expectorants, and decongestants	40 (35.08)	45 (39.47)	22 (19.29)	7 (6.14)
Multivitamin and micronutrient supplements	33 (28.94)	45 (39.47)	27 (23.68)	9 (7.89)
Phosphodiesterase inhibitors and aphrodisiac formulations	0 (0)	2 (1.75)	11 (9.64)	101 (88.59)
Drugs for gastrointestinal disorders	15 (13.15)	30 (26.31)	58 (50.87)	11 (9.64)
Phytopharmaceuticals and botanical extracts	23 (20.17)	35 (30.70)	44 (38.59)	12 (10.52)
Sedative-hypnotics and anxiolytic agents	1 (0.87)	15 (13.15)	35 (30.70)	63 (55.26)

Abbreviations: OTC- Over-the-Counter

Participants selected multiple medication class

symptoms. Among the antipyretics, analgesics, and anti-inflammatory drugs, 39% of participants reported using them often, followed by 32% who used them always, indicating frequent reliance on these medications for pain relief and inflammation management. Similarly, multivitamin and micronutrient supplements were another commonly used OTC category, with 39.47% of participants taking them often, while 28.94% reported always using them. In contrast, sedative-hypnotics and anxiolytic agents had minimal utilization, with 55.26% of participants reporting never using them, and only 0.87% using them always. Phosphodiesterase inhibitors and aphrodisiac formulations were the least frequently used category, with the vast majority (88.59%) never using them, and only 1.75% reporting occasional use.

The analysis of participant satisfaction with OTC medications in the last 6 months is presented in Table 4. Regarding cost, a significant proportion of participants expressed dissatisfaction, with 11% being extremely unsatisfied and 33% unsatisfied, indicating concerns about affordability. However, 22% reported being satisfied, and 11% were extremely satisfied with OTC medication pricing. In contrast, effectiveness was positively rated, with the majority of respondents expressing satisfaction. Approximately 58% of participants were satisfied, while 24% were extremely satisfied. Only 2% reported dissatisfaction. Similarly, consumer perceptions of safety reflected high satisfaction levels, with 54% satisfied and 25% extremely satisfied with OTC medications. A small fraction, 2%, reported dissatisfaction with safety concerns. Regarding availability, OTC medications were widely accessible to consumers, as reflected by 54% of participants expressing satisfaction and 28% being extremely satisfied with their accessibility. Only 1% were extremely unsatisfied, and 2% were unsatisfied, indicating minimal concerns about access.

The association between sociodemographic and clinical characteristics and OTC medication use is presented in Table 5. A significant association was observed between gender and OTC medication use ($p = 0.0009$), with a higher proportion of females using OTC medications, suggesting greater self-medication practices or healthcare-seeking behaviors among women. Race and ethnicity did not show a statistically significant association with OTC medication use ($p = 0.1083$). Employment status emerged as a key determinant of OTC medication use ($p < 0.0001$), with employed individuals being the most likely to use OTC medications, possibly due to busy work schedules that limit access to healthcare services, leading to a preference for self-medication as a convenient alternative. Monthly income also showed a statistically significant association ($p = 0.0032$), with participants earning AED 5,000 or above more frequently using OTC medications, potentially due to better affordability and accessibility. Household size did not demonstrate a strong association with OTC medication use ($p = 0.0765$). The total number of medications taken was also a strong determinant ($p < 0.0001$), as the majority of OTC users reported taking 2-4 medications, suggesting that individuals on multiple medications may seek OTC options for managing additional symptoms, self-treatment, or minor ailments. In terms of clinical characteristics, no statistically significant association was observed between OTC medication use and chronic diseases diagnosed in participants ($p = 0.0829$).

DISCUSSIONS

Self-medication with over-the-counter (OTC) medications is a prevalent practice worldwide, offering individuals a convenient and cost-effective means of managing minor ailments. This study provided a comprehensive assessment of



Table 4. Participant satisfaction with OTC medications

Category	Extremely unsatisfied	Unsatisfied	Neutral	Satisfied	Extremely satisfied
Satisfaction with cost of OTC medications	12 (10.52)	37 (32.45)	28 (24.56)	25 (21.92)	12 (10.52)
Satisfaction with effectiveness of OTC medications	1 (0.87)	2 (1.75)	18 (15.78)	66 (57.89)	27 (23.68)
Satisfaction with safety of OTC medications	2 (1.75)	2 (1.75)	20 (17.54)	62 (54.38)	28 (24.56)
Satisfaction with availability of OTC medications	1 (0.87)	2 (1.75)	17 (14.91)	62 (54.38)	32 (28.07)

Abbreviations: OTC- Over-the-Counter

Table 5. Association between participant sociodemographic and clinical characteristics and use of OTC medications

Characteristics	OTC medication user, n (%)	OTC medication non-user, n (%)	p-value*
	(n= 114)	(n= 97)	
Gender			
Female	66 (57.89)	76 (78.35)	0.0009
Male	48 (42.10)	19 (19.58)	
Prefer not to say	0 (0)	2 (2.06)	
Race/Ethnicity			
Middle East	91 (79.82)	68 (70.10)	0.1083
South Asia	16 (14.03)	21 (21.64)	
Southeast Asia	4 (3.50)	1 (1.03)	
Others	3 (2.63)	7 (7.21)	
Employment status			
Employed	71 (62.28)	47 (48.45)	0
Unemployed	10 (8.77)	13 (13.40)	
Retired	17 (14.91)	2 (2.06)	
Student	16 (14.03)	35 (36.08)	
Monthly income			
Less than AED 5000	20 (17.54)	12 (12.37)	0.0032
AED 5000-10000	37 (32.45)	30 (30.92)	
More than AED 10000	31 (26.31)	15 (15.46)	
No income currently	11 (10.52)	6 (6.18)	
Prefer not to mention	15 (13.15)	34 (35.05)	
Number of family members per household			
1 member	6 (5.26)	3 (3.09)	0.0765
2-3 members	33 (28.94)	15 (15.46)	
4-8 members	66 (57.89)	67 (69.07)	
More than 8 members	9 (7.89)	12 (12.37)	
Number of medications taken by participants			
1	3 (2.63)	8 (8.24)	0
02-Apr	98 (85.96)	8 (8.24)	
5 or more	13 (11.40)	0 (0)	
Chronic diseases diagnosed in participants			
Cardiovascular diseases (diseases such as hypertension, heart attacks, irregular heartbeats, heart block, etc.)	23 (20.27)	4 (4.12)	0.0829
Endocrine and metabolic diseases (diseases such as high cholesterol, diabetes, obesity, vitamin D deficiency, etc.)	15 (13.15)	5 (5.15)	
Neurological and psychiatric diseases (diseases such as	1 (0.87)	2 (2.06)	



Autoimmune and chronic inflammatory diseases (diseases like SLE, arthritis, cervical disc disease, etc.)	5 (4.38)	0 (0)	
Multi-system involvement	18 (15.78)	1 (1.03)	
Miscellaneous	2 (1.75)	1 (1.03)	

Abbreviations: AED- United Arab Emirates Dirham; OTC- Over-the-Counter; SLE- Systemic Lupus Erythematosus

*Chi-squared test or Fisher's exact test

Bold text indicates $p < 0.05$ which is statistically significant

OTC medication use and consumer satisfaction among adult residents of the UAE, highlighting key factors influencing self-medication behaviors and common medication choices. Our findings revealed that 54% of participants reported using OTC medications regularly within the last six months, indicating a significant prevalence of self-medication. These results are in line with previous studies on the high rates of self-medication in the UAE and other Middle Eastern countries^{7,8}.

The findings from this study align with global research on self-medication patterns while also highlighting region-specific influences such as cultural norms, employment status, and household size in the UAE. One study reported that 51% of UAE adolescents regularly used OTC medications, with nationality emerging as a significant predictor. UAE nationals were nearly three times as likely to self-medicate compared to South East Asian peers⁹. Similarly, another study conducted in 2022 identified nationality as a key factor for OTC use among university students. Healthcare students of UAE nationality were significantly more likely to self-medicate compared to their expatriate peers¹⁰. This study found that females comprised the majority of the sample (67%), with 58% of them reporting OTC medication use in the past six months. These findings align with several international studies, which have consistently reported higher self-medication rates among women^{9,10,13,14}. Income and employment have a big impact on OTC use. OTC medication use was more common among those with jobs (62%) and those making between AED 5000 and 10,000 (32%). Similarly, studies from other regions report a positive correlation between income and OTC medication use, indicating that affordability plays a role in self-medication behavior⁷. This pattern of middle-income groups engaging in self-medication more frequently than lower- or higher-income groups is also observed in China¹⁵. The affordability of OTC medications, coupled with limited insurance coverage for minor ailments, likely contributes to self-medication in this income bracket. In contrast, lower-income individuals in some countries have been found to rely on traditional remedies rather than OTC medications due to financial constraints¹⁶. The findings in the UAE suggest that economic affordability and health insurance have a significant impact on self-medication decisions. However, other factors are less likely to contribute to this behavior.

Regarding the sources of recommendation, the finding that one half of the participants received recommendations from healthcare providers is consistent with previous studies that emphasize the critical role of healthcare professionals in guiding patients on OTC medication use¹³. However, the influence of family and friends suggests that individuals also

seek informal advice from trusted sources, reflecting the social aspect of health decision-making. Regarding the purpose of OTC medication use, the most common reasons were to support overall health and wellness (35%) and manage existing medical conditions (30%). This is consistent with the findings of a study which reported that individuals in Nigeria frequently use OTC drugs for preventive health or managing minor symptoms¹⁷. Additionally, motivations for purchasing OTC medications varied, with 23% of participants indicating the desire to treat mild illnesses independently. A similar finding has been reported in other studies¹⁷. In contrast, a study conducted in India highlighted that time-saving and cost-efficiency were major driving factors behind OTC medication purchases¹⁸.

According to the research results, more than three-quarters of the participants frequently used antipyretics, analgesics, and anti-inflammatory medications, making them the most often used over-the-counter pharmaceuticals. This is consistent with worldwide patterns, as over-the-counter painkillers continue to rank among the most popular items^{9,10,11,13,14}. In contrast, a significant demand for over-the-counter drugs to treat respiratory disorders was indicated by the widespread use of antitussives, expectorants, and decongestants. This tendency may be explained by the seasonality of colds and flu as well as the ease of access to these drugs.

The significant use of multivitamin and micronutrient supplements is consistent with the growing trend of self-care and preventive health measures. Many individuals take these supplements as part of their wellness routines, aiming to boost overall health, despite potential concerns over the efficacy and necessity of such supplementation. This finding aligns with the increasing global trend of preventive health practices, where people turn to OTC supplements to enhance their daily nutritional intake^{19,20}. On the other hand, the minimal use of sedative-hypnotics and anxiolytic agents (55.26% never used them) suggests that individuals are more cautious with medications that have sedating effects, likely due to concerns over their potential for dependency or side effects.

The analysis of participant satisfaction with OTC medications highlights concerns about affordability, with 44% of participants expressing dissatisfaction with pricing, including 11% who were extremely unsatisfied. This dissatisfaction likely stems from the financial burden of regularly purchasing medications. However, studies on the switch from prescription (Rx) to OTC medications have shown potential benefits in terms of cost savings for healthcare systems. Such switches can reduce healthcare costs by eliminating the need for prescription drug purchases, lowering the frequency of



doctor visits to obtain prescriptions, and reducing emergency room visits or hospitalizations, as patients gain easier access to safer and effective treatments²¹. In contrast, satisfaction with the effectiveness of OTC medications was much higher. A substantial majority of participants (82%) reported being satisfied or extremely satisfied with the effectiveness of the medications they used, with only 2% expressing dissatisfaction. This finding underscores the general confidence consumers have in OTC medications for managing common ailments and suggests that, for the most part, individuals perceive these medications to meet their health needs effectively. A similar trend of trust was observed in an Australian study. Similarly, satisfaction with the safety of OTC medications was also high, with 79% of participants either satisfied or extremely satisfied with the safety of the medications they used. A high perceived effectiveness and safety of OTC medications was observed in a study conducted in Canada as well⁶. Availability was another area in which participants expressed high levels of satisfaction. Over 80% of participants (54% satisfied and 28% extremely satisfied) reported that OTC medications were easily accessible, with only 3% expressing dissatisfaction. This suggests that OTC medications are widely available in retail outlets, pharmacies, and other distribution channels, contributing to their popularity as an accessible healthcare option.

Limitations and Future Research

This study has certain limitations that should be considered when interpreting the findings. First, the use of self-reported data may introduce recall bias, as participants might not accurately remember their OTC medication usage patterns or reasons for self-medication. Additionally, social desirability bias may have influenced responses, particularly regarding adherence to recommended dosages and safety precautions.

Second, a notable limitation of this study is the exclusion of individuals without internet or social media access, as well as those who do not speak English or Arabic. This criterion may introduce selection bias by systematically excluding certain subpopulations. As a result, the findings may not be fully generalizable to the broader population. Future studies should aim to include a more diverse demographic representation to capture variations in self-medication practices across different regions and socioeconomic backgrounds.

Furthermore, while this study identified key factors influencing OTC medication use and consumer satisfaction, a more in-

depth qualitative approach could provide further insights into underlying motivations, decision-making processes, and risk perceptions among consumers. Longitudinal studies are also needed to assess changes in self-medication trends over time and evaluate the long-term impact of public health interventions aimed at promoting responsible OTC medication use. Finally, future research should explore the role of pharmacists and other healthcare providers in supporting responsible self-medication, with an emphasis on enhancing consumer awareness regarding medication safety, affordability, and appropriate use. Their involvement can significantly impact the safe and effective use of OTC medications, making this an important area for continued investigation.

CONCLUSION

This study highlights the widespread use of over-the-counter (OTC) medications in the UAE, with high consumer satisfaction driven by accessibility and perceived effectiveness. However, concerns about affordability and potential safety risks remain significant. Given the frequent reliance on self-medication, healthcare providers should play a greater role in educating consumers about the safe and appropriate use of OTC drugs, particularly for individuals with chronic conditions. Additionally, policymakers should consider implementing public health initiatives to promote responsible self-medication practices. Future research should further explore the long-term impact of OTC medication use and assess strategies to improve consumer awareness and medication safety.

AUTHORS' CONTRIBUTIONS

HA: Conceptualization, data acquisition, data analysis and interpretation, project administration, writing article draft, review, editing, and approval of the final version to be submitted. JL: Conceptualization, data acquisition, data analysis and interpretation, project administration, writing article draft, review, editing, and approval of the final version to be submitted. VM: data analysis and interpretation, project administration, writing article draft, review, and editing.

CONFLICTS OF INTEREST

None

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