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Parents' Practices and Determinants of Self-Medication Among Children in Northern Saudi Arabia

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Abstract: **Objectives:** Self-medication (SM) practices are a serious public health problem because they lead to the inappropriate use of medications. It is a prevalent practice worldwide in both developed and underdeveloped countries. The study aimed to assess the patterns and determinants of parental SM practices for their children. **Subjects and Methods:** An observational cross-sectional study design was undertaken among parents at Arar City, the capital of northern Saudi Arabia. A well-structured questionnaire, constructed after reviewing the relevant literature, was utilized. The local bioethical committee at Northern Border University accepted and approved the research. **Results**: The study included 328 participants with a mean age of 33.9±11.5. Almost two-thirds (63.1%) were females, and the majority were married (73.2%). 76% of parents self-medicated their children, 58.2% for mild illnesses, and 63.9% used synthetic medication. The most commonly cited reason for self-medication was that the waiting time at the clinic is too long (58.2%). **Conclusion**: The substantially high prevalence of parental SM practice for their children in Northern Saudi Arabia should be viewed as an alarming issue. Because most parents have a limited understanding of diagnosis and illness, this may lead to treatment misuse and associated complications.

Key Words: Self-Medication, Parents, Children, Practices, Determinants, Saudi Arabia

INTRODUCTION

Self-medication (SM) refers to treating diseases without consulting a health professional. It is a significant global health challenge. It is beneficial when utilized correctly [1,2].

Children are a crucial target population that requires adequate medical care. Due to their underdeveloped immune systems, they are more susceptible to diseases such as fever, cough, diarrhea, and other self-limited medical disorders. Furthermore, the probability of a child dying before the age of five remains significant [3].

SM for children is an important source of concern across the world owing to their more vulnerable nature to drugs [2]. They rely on their parents to administer medicine. There may be significant differences in medication metabolism and excretion between children and adults. The pharmacokinetic properties of the medication vary with gender and age [4].

In both affluent and developing nations, most parents prefer to treat their children's common illnesses, such as coughs, colds, diarrhea, and fever, without consulting a professional [5]. Parents' SM for their children is associated with hazards such as incorrect diagnosis, prolonged usage, and improper dosing regimen [6]. Appropriate care of pediatric illnesses and promotion of suitable and safe drug administration for children are extremely vital to minimize childhood mortality and morbidity [7].

The prevalence of SM practices varies worldwide. In Jordan, the prevalence of SM among households was 53.1% [8] In the Middle East varies from 35.4% to 83% [9], Turkey 63.5% [10], Ethiopia 39% [11], Spain 22% [12], Palestine, 41.2% [13]In Saudi Arabia, research conducted in the Qassim region indicated that 67.8% of survey participants used self-medication for their children at least once a year [14].

There are various reasons for SM. Some of the key reasons are limited or no access to medical care, saving time, previous experiences, minor illnesses, emergencies, low cost,

recommendations by friends, and a sufficient awareness of medications [15]. Additionally, SM can be influenced by cultural, economic, and social factors [16]. Research carried out in Turkey found that the most prevalent grounds for SM behaviors were low-educated and unemployed mothers [10].

To our knowledge, no evidence exists on the prevalence of SM practice among parents for their children in the northern border region, Saudi Arabia. As a result, collecting data on SM in this region is critical for planning future management. Hence, the current study aimed to document the prevalence of SM practice of parents for their children, and to examine the determinants of such behavior.

METHODS

Study Setting and Design

An observational cross-sectional study design was undertaken among the parents at Arar City, the capital of northern Saudi Arabia, over the period from May 1, 2024, to December 31, 2024**.**

Sample Size

The sample size was calculated by using the following formula. $N = Z^2 (p)(1-p)/d2$. Where N = sample size, Z is the statistic corresponding to the confidence level (1.96), p = the expected prevalence of SM practice (67.5%) from the previous study [17], and d = precision (0.05). The expected sample size was 337. A total of 337 questionnaires were collected, with 9 eliminated due to incomplete answers, resulting in 328 participants, and a response rate of 97.3%.

Sampling Tool

A well-structured questionnaire, constructed after reviewing the relevant literature, was utilized (17-20)**.** It was initially written in English, then translated into Arabic, and back-translated into English by a multilingual expert. The questionnaire's content validity was reviewed and confirmed by a panel of pediatricians and family medicine professionals at the College of Medicine, Northern Border University. A pilot study with a convenient sample of twenty participants was employed for the clarity, relevance, and simplicity of the questions, and the item's text and layout were slightly modified as a result of the feedback. The findings of the pilot were not included in the results. The tool was composed of three parts:

- The 1st section focused on the respondents' sociodemographic characteristics (age, sex, marital status, education, occupation, and number of children)
- The 2nd part contained questions related to the pattern of SM practices
- The final part asked questions concerning the rationale for SM

Sampling Method

After receiving ethical approval, we conducted a web-based survey through social media platforms (WhatsApp and Snapchat) to enroll participants. We discussed the research objectives and obtained consent for participation at the beginning of the questionnaire. Data privacy and confidentiality were maintained throughout the study procedure.

Statistical Analysis

The data were collected, processed, and analyzed using IBM SPSS Statistics (Version 26). Quantitative data were presented as frequencies and percentages, and numerical data were provided as means and standard deviations. For categorical data, either the Chi-squared test (χ^2) or Fisher's exact test was utilized. 5% was used as the statistical level of significance.

Inclusion and Exclusion Criteria

The research only included parents over the age of 18 years old, who had at least one child and were willing to participate. Parents without children or unwilling to participate were omitted.

Ethical Clearance

The research was accepted and approved by the local bioethical committee at Northern Border University (HAP-09-A-043) with no. (50-24-H) dated 7/5/2024.

RESULTS

Table 1 shows the demographics of the sample. The survey involved 328 respondents with a mean age of 33.9±11.5, slightly less than half (48.5%) were unemployed and aged between 18-30 years. Almost two-thirds (63.1%) were females, the majority were married (73.2%), and nearly a third had more than three children.

Figure 1 demonstrates the overall SM practices among the participating parents. The majority of participants (249,76%) self-medicated their children.

Table 2 depicts the participants' self-medication behaviors. Less than sixty percent (58.2%) utilized SM for mild illnesses, and nearly two-thirds (63.9%) utilized synthetic medication. Over one year, SM practice by the parents for their children showed varying frequencies (20.5% more than 4 times, 8.4% four times, 21.7% three times, 22.9% twice, 21.7% once, and 4.8% never).

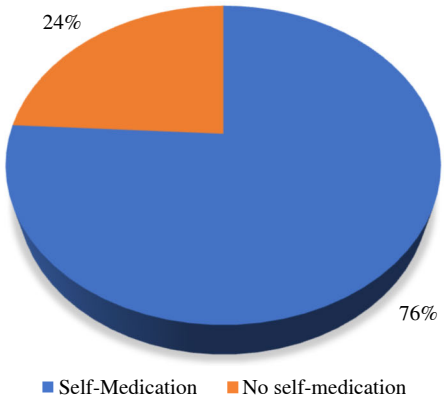

Figure 1: SM Practices among the Respondents Studied

Table 1: Sociodemographic Characteristics of the Surveyed Respondents

Items		No	Percentage
Age	18-30	159	48.5
	30-50	133	40.5
	≥50	36	11
Sex	Male	121	36.9
	Female	207	63.1
Marital status	Married	240	73.2
	Divorced	50	15.2
	Widowed	38	11.6
Educational level	Intermediate or less	20	6.1
	Secondary	78	23.8
	University	204	62.2
	Post-Graduate	26	7.9
Occupation	Unemployed	159	48.5
	Governmental	110	33.5
	Private	48	14.6
	Retired	11	3.4
Number of children	One	89	27.1
	Two	70	21.3
	Three	63	19.2
	More than three	106	32.4

Table 2: Pattern of Self-Medication Practices among the Studied Parents

Items	No no=249	Percentage
When did you use self-medication?		
Mild symptoms	145	58.2
Moderate symptoms	104	41.8
What kind of treatment?		
Synthetic Medicine	159	63.9
Herbal treatment	90	36.1
How many times have you self-medicated your children in the previous year?		
One	54	21.7
Two times	57	22.9
Three Times	54	21.7
4 times	21	8.4
More than 4 times	51	20.5
Never	12	4.8
Did you know the correct dosage for children?		
Yes	220	88.4
No	29	11.6
Did you follow the full course of treatment?		
Yes	190	76.3
No	59	23.7
Did you know about the adverse effects of the medications used?		
Yes	155	62.2
No	94	37.8
Did you read the medication's pamphlet?		
Yes	149	59.8
No	100	40.2
What did you do if the child's illness did not improve following self-medication?		
Go to the hospital	148	59.4
Go to a private clinic	47	18.9
Consult a community pharmacist	19	7.6
Search internet	9	3.6
Seeking advice from friends and/or relatives	19	7.6
Continue self-medication	7	2.8

Most of the participants were aware of the correct medication dose (88.4%), knew the full course of treatment (76.3%), slightly more than sixty percent were aware of the medication side effects (62.2%), and around sixty percent read the medication pamphlets (59.8%), and went to the hospital if there is no improvement (59.4%).

Table 3 highlights the rationales for parental SM of their children. The most commonly stated reason for SM was that the waiting time at the clinic is too long (58.2%), followed by familiarity with child's condition based on the symptoms (53%), having enough knowledge (39%), insufficient health provider (38.2%), too expensive medical care (34.5%), inaccessible clinic (34.5%), and poor attitude of the health care provider (26.9%).

Table 3: Reasons for Self-Medication Practices among Research Participants

Items	No	Percentage
The waiting time at the clinic is too long		
Agree	145	58.2
Disagree	49	19.7
Neutral	55	22.1
Familiarity with the child's condition based on the symptoms		
Agree	132	53
Disagree	58	23.3
Neutral	59	23.7
I am knowledgeable enough.		
Agree	97	39
Disagree	102	41
Neutral	50	20.1
Lack of an adequate health care provider		
Agree	95	38.2
Disagree	102	41
Neutral	52	20.8
Consultation costs are too expensive.		
Agree	86	34.5
Disagree	138	55.5
Neutral	25	10
The closest clinic is too far away.		
Agree	86	34.5
Disagree	133	53.5
Neutral	30	12
Poor attitude of healthcare personnel		
Agree	67	26.9
Disagree	135	54.2
Neutral	47	18.9

Table 4: The Association of SM Practices and Demographic Characteristics of the Respondents Studied

Items		SM no (%) No = 249	No SM no (%) No = 79	p-Value
Gender	Female	170(68.3)	37(46.8)	0.001*
	Male	79(31.7)	42(53.2)	
Marital status	Married	197(79.1)	43(54.4)	<0.0001*
	Divorced	41(16.5)	9(11.4)	
	Widowed	11(4.4)	27(34.2)	
Education	Intermediate or less	14(5.6)	6(7.6)	0.5*
	Secondary	61(24.5)	17(21.5)	
	University	152(61)	52(65.8)	
	Post-Graduate	22(8.8)	4(5.1)	
Occupation	Unemployed	116(46.6)	43(54.4)	0.1©
	Governmental	90(36.1)	20(25.3)	
	Private	33(13.3)	15(19)	
	Retired	10(4)	1(1.3)	
Number of children	One	52(20.8)	37(46.8)	
	Two	50(20.1)	20(25.3)	<0.0001*
	Three	50(20.1)	13(16.5)	
	More than three	97(39)	9(11.4)	

*Chi-squared test, © Fisher's exact test

Table 4 displayed the association between SM practices and demographic features of the studied respondents. SM practices were significantly higher among females (68.3%) compared to males (31.7%) ($p = 0.001$), married individuals (79.1%) compared to divorced (16.5%) and widowed (4.4%) ($p<0.0001$), and those having more than three children compared to those having three or fewer ($p<0.0001$).

DISCUSSION

SM is using drugs to treat illnesses without contacting a medical professional. Improper SM practices are a growing public health concern [8]. The study aimed to investigate the patterns and determinants influencing parents' SM practices of their children.

In terms of the prevalence of SM practice among the investigated parents, the majority practiced SM (76%), approximately two-thirds used synthetic medication(63.9%), more than half (58.2%) used SM in mild illnesses, around thirty percent practiced SM four or more times per year, the vast majority (88.4%) were aware of the correct dosage, (76.3%) followed the full course of treatment, 62.2% were aware of the drug side effects, 59.8% read the medication pamphlets, and 59.4% sought advice from the hospital if there was no improvement.

This study affirms earlier studies that SM among parents is quite widespread in Saudi Arabia, Such as in AL-Qassim region, 86.1% of the parents used SM

practices, 35% practiced four or more times per year, 86% for mild conditions, and 59.3% sought hospital medical advice if there was no improvement [19]. Eldalo *et al.* in their study across different parts of Saudi Arabia revealed that 86.7% utilized SM, with 95% treating mild illnesses [20].

In Jordan, a qualitative study found that practically all participant parents self-medicated their children largely for minor diseases [21]. In the same country, Al Sheha *et al.* observed a 54% prevalence of SM among households [8].

In Egypt, many studies have been conducted regarding SM practices, including those by Ghazawy *et al.*, who reported a73%prevalence [22], Farahat *et al.* (72%) [23], Ali *et al.* (57%) [24], and Abd Elsamad *et al.*, who observed that almost all participating mothers utilized SM for their children, and more than half (54.2%) knew the adverse effects of the drug used [25].

In Pakistan, Khalil *et al.* discovered that 90% of parents used SM for their children, primarily for minor ailments including fever, cough, and vomiting, and 94.9% of them visit a physician if their medical condition is not resolved [26] In Latin America, the observed prevalence was 77.4% [27], in Kenya, it was 76.9% [28], in Romania, a comparable web-based survey demonstrated that the prevalence of SM was 70%, mostly for mild conditions like fever, cough, and vomiting, and 51% were aware of the likelihood of bad consequences of the medications they used [29].

A survey done in Italy found that 69.2% of respondents' parents had used SM for their children without a prescription from their physician at least once in their lifetime [5]. in India, a hospital-based survey found that 64% of parents self-medicated their children [30]. Furthermore, El Sheshtawy *et al.* in Egypt reported that in the case of no improvement, 50% of the participants contacted a community pharmacist, whereas only 8.3% visited a physician [31].

Variations in reported prevalence can be attributed to the differences in population characteristics between studies, the definitions used, the recall period looked at, the region chosen, the methodology used, the role of local culture, and the expected role of health practitioners [32].

Concerning the rationale for parental SM of their children, the most stated reason was too long waiting time at the clinic (58.2%), followed by awareness of my child's condition based on the symptoms (53%), having enough knowledge (39%), insufficient health provider (38.2%), too expensive medical care (34.5%), inaccessible clinic (34.5%), and poor attitude of the health care provider (26.9%).

According to the results of a similar survey in Saudi Arabia, the most commonly indicated reason for SM was long waiting time (78.8%), followed by familiarity with the child's condition (64.2%), cost of treatment (53.5%), insufficient health care provider (38.8%), adverse attitude of the health care provider (33.3%), and inaccessible health facility (32.3%) [20].

Similar research done in Egypt demonstrated that 37.5% of participants thought the illness was simple and easy to treat; they were continually concerned about the high cost of medical care for their children, and 26.7% used SM based on their experience [25].

A qualitative study conducted in Jordan showed that the reasons given most often for SM by parents were the following: they believe the illness is simple and can be treated, based on previous experience, governmental hospitals are usually congested, physicians do not give each child enough attention, and there is a long waiting time at the clinic [21].

In Romania, 74% of parents used SM because they were familiar with their children's symptoms, 62.1% owing to time restrictions, and 59.7% due to limited access to health-care facilities [29].

According to qualitative research conducted in Pakistan, the most commonly cited reasons for SM were lack of trust in health care personnel (90%), financial issues (67%), time constraints (42%), awareness of the child's symptoms (37%), and poor communication practices of the health care providers (25%) [33] Furthermore, Gohar *et al.*, in the same country, revealed that more than two-thirds of participants' parents employed SM for their children (77.2%), and almost one-third reasoned from their experience (35%) [34].

Study Limitation

The current study has some limitations. First, some age groups and social factors were underrepresented in the sample due to their lack of internet access and non-use of social media, which may have limited its generalizability. Second, the questionnaire was self-administered; therefore, bias in recall might have occurred due to the research design. Finally, the descriptive study design used failed to detect the cause-and-effect relationship.

CONCLUSION

The significantly high prevalence of parental SM practice for their children in Northern Saudi Arabia should be regarded as a worrying issue. Because most parents have an inadequate understanding of diagnosis and illness, this may lead to treatment misuse and subsequent complications. The current study highlights the need for comprehensive programs and further research to enhance rational medication use.

REFERENCES

[1] Carrera-Lasfuentes, P. *et al.* "Medicine consumption in the adult population: influence of self-medication." *Atención Primaria*, 2013.

[2] Sen Tunc, E. *et al.* "Evaluation of parents' knowledge, attitudes, and practices regarding self-medication for their children's dental problems during the COVID-19 pandemic." *BMC Oral Health*, 2021.

[3] Maphalle, L.N.F. *et al.* "Pediatric tuberculosis management: a global challenge or breakthrough?" *Children*, 2022.

[4] Sezer, T.A. *et al.* "Rational use of medicines in primary school children in Turkey: attitudes and behaviors of parents." *International Journal of Caring Sciences*, 2022.

[5] Garofalo, L. *et al.* "Self-medication practices among parents in Italy." *Biomed Research International*, 2015.
[6] Ruiz, M.E. "Risks of self-medication practices." *Current Drug Safety*, 2010.
[7] Mohammed, N. *et al.* "Determinants of antibiotics misuse by mothers in children under five." *IOSR Journal of Nursing and Health Science*, 2019.
[8] Al Shehade, S.A. *et al.* "Self-medication practice among householders in Amman: prevalence and factors." *Journal of Pharmaceutical Research International*, 2020.
[9] Khalifeh, M.M. *et al.* "Self-medication misuse in the Middle East: a systematic review." *Pharmacology Research and Perspectives*, 2017.
[10] Karatas, Y. *et al.* "Parental self-medication and associated factors in children." *Journal of Pharmaceutical Health Services Research*, 2023.
[11] Abay, S.M. and Amelo, W. "Assessment of self-medication practices among health science students in Ethiopia." *Journal of Young Pharmacists*, 2010.
[12] Niclos, G. *et al.* "Factors associated with self-medication in Spain." *International Journal of Pharmacy Practice*, 2018.
[13] Sa'ed, H.Z. *et al.* "Parental knowledge, attitudes, and practices towards self-medication for children." *Journal of Asia Pacific Family Medicine*, 2019.
[14] Al Shammari, R.O. and Al Enizy, R.J. "Parents awareness about the use of self-medication in children." *International Clinical Medical Case Reports Journal*, 2023.
[15] Selvaraj, K. *et al.* "Prevalence of self-medication practices in urban Puducherry." *Perspectives in Clinical Research*, 2014.
[16] Araia, Z.Z. *et al.* "Self-medication practice among students in Eritrea." *Journal of Pharmaceutical Policy and Practice*, 2019.
[17] Mirdad, O.A. *et al.* "Over-the-counter medication use among parents in Saudi Arabia." *International Journal of Environmental Research and Public Health*, 2023.
[18] Alenazi, K. *et al.* "Parents' attitude and practices regarding the use of over-the-counter medicines for children." *Annals of Medical and Health Sciences Research*, 2021.
[19] Alsuhaibani, R. and Alsuhaibani, M. "Self-medication among Saudi children by parents." *Majmaah Journal of Health Sciences*, 2020.
[20] Eldalo, A.S. "Saudi parents' attitude and practice about self-medicating their children." *Archives of Pharmacy Practice*, 2013.
[21] Mukattash, T.L. *et al.* "Parental self-treatment of children in Jordan." *Journal of Pharmaceutical Health Services Research*, 2019.
[22] Ghazawy, E.R. "Self-medication among adults in Minia, Egypt." *Health*, 2017.
[23] Farahat, T. *et al.* "Self-medication among attendants to a family health center." *Menoufia Medical Journal*, 2016.
[24] Ali, M.M. "Self-medication among attendants to family health units in Sohag." *Journal of Environmental Studies*, 2022.
[25] Mostufa Abd Elsamad, M. *et al.* "Knowledge, attitude, and practices of mothers regarding self-prescribing medication." *Egyptian Journal of Health Care*, 2023.
[26] Khalil, M.A. *et al.* "Parental perceptions and practices regarding self-medication among children in Southern Punjab." *Child Care in Practice*, 2023.
[27] González-López, J.R. *et al.* "Self-medication in adult Latin American immigrants in Seville." *Acta Paulista de Enfermagem*, 2012.
[28] Owour, I. *et al.* "Perceptions influencing self-medication with antibiotics among households in Kenya." *American Journal of Public Health Research*, 2015.
[29] Tarciuc, P. *et al.* "Patterns and factors associated with self-medication among the pediatric population in Romania." *Medicina*, 2020.
[30] Seth, S. *et al.* "Parent-directed use of over-the-counter medications among pediatric patients." *Journal of Research in Pharmacy Practice*, 2022.
[31] Mohamed El Sheshtawy, O. *et al.* "Self-medication practices among mothers having children under five years." *Egyptian Journal of Health Care*, 2019.
[32] Mathewos, T. *et al.* "Self-medication practice among adults in Ethiopia." *International Journal of Infection Control*, 2021.
[33] Haq, I.U. *et al.* "Parental perspectives on self-medication for children under five in Pakistan." *Frontiers in Pediatrics*, 2025.
[34] Gohar, U.F. *et al.* "Self-medication trends in children by parents." *Journal of Developing Drugs*, 2017.