

ASSESSMENT OF PARENT'S KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING SELF-MEDICATION FOR THEIR CHILDREN

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ABSTRACT

Background:

Self-medication in children is a common public health concern. Parents often give medicines such as fever, pain, cough, and cold medicines, and sometimes antibiotics, without consulting a doctor. While this may save time and money for minor illnesses, it can lead to incorrect dosing, side effects, delayed treatment, and antibiotic resistance. Therefore, it is important to assess parents' knowledge, attitude, and practice (KAP) regarding self-medication in children.

Methodology:

A cross-sectional study was conducted from August 2025 to January 2026 among parents of children aged 0–12 years. Data were collected through face-to-face interviews using a structured and validated questionnaire. Out of 415 distributed questionnaires, 390 were completed and included in the study (response rate: 93.9%). Data were analysed using SPSS version 31. Descriptive statistics, the chi-square test, and Spearman's correlation were used. A p-value of less than 0.05 was considered statistically significant.

Results:

Among the 390 participants, 52.2% had good knowledge, 38.5% had moderate knowledge, and 9.3% had poor knowledge about self-medication in children. Most parents (84.1%) had a neutral attitude, and 76.9% showed moderate practice. Overall, 85.4% had moderate KAP, 13.1% had poor KAP, and only 1.5% had good KAP. Knowledge was significantly associated with educational status ($p < 0.001$). Practice was significantly associated with education and occupation.

Conclusion:

Most parents had adequate knowledge about self-medication in children, but their attitude and practice need improvement. Education played an important role in parents' knowledge and practice. Health education, pharmacist counselling, and awareness programs can help promote the safe and responsible use of medicines in children.

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INTRODUCTION

Self-medication refers to the use of medications by people to treat symptoms they recognize without consulting a licensed healthcare provider. The World Health Organization states that a fundamental component of providing high-quality healthcare is the prudent use of medications. However, the frequency of self-medication has persisted, particularly in low- and middle-income nations, due to reasons such as easy access to medicines, financial limitations, and restricted access to healthcare services ⁽¹⁾.

Self-medication, which uses both over-the-counter and prescription-only medications, is becoming more common across various demographics. Despite the fact that it is frequently thought of as a practical and affordable method for treating minor, inappropriate or excessive use can result in serious public health concerns ⁽²⁾. Potential consequences include adverse

drug reactions, delayed diagnosis due to masking of serious conditions, drug dependence, and the escalating threat of antimicrobial resistance ⁽³⁾.

Specifically, irrational antibiotic consumption promotes the development of resistant bacterial strains, thereby reducing treatment effectiveness, prolonging illness, and escalating both healthcare expenditures and the overall burden of disease worldwide. Beyond individual harm, these effects also place pressure on healthcare systems and affect community health outcomes ⁽⁴⁾. In children, self-medication may involve sharing medications within families or social groups, using leftover drugs from previous treatments, failing to follow prescribed instructions, or altering the recommended dose and duration of therapy ⁽⁵⁾.

SELF-MEDICATION IN CHILDREN

Children are particularly prone to medication-related errors because of their distinct physiological

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characteristics and the narrow margin between safe and toxic doses ⁽⁷⁾. In many cases, parents give medicines such as pain relievers, fever reducers, cough and cold preparations, and even antibiotics based on earlier prescriptions or advice from nonmedical sources ⁽⁸⁾.

Parents frequently administer medications using household spoons or cups instead of calibrated measuring devices, thereby increasing the likelihood of dosing errors and potential compromising treatment safety and effectiveness. Moreover, parental anxiety and the desire for rapid symptom relief may result in unnecessary or inappropriate medication use ⁽⁹⁾.

Collectively, these factors increase children's vulnerability to preventable complications, postponed diagnosis, and potential long-term health effects ⁽¹⁰⁾.

IMPORTANCE OF ASSESSING KNOWLEDGE, ATTITUDE, PRACTICE

Evaluating parents KAP regarding self-medication is crucial for identifying gaps that may contribute to unsafe behaviours ⁽¹²⁾. KAP assessments help detect misunderstandings, harmful practices, and obstacles that prevent timely medical consultation. The results of such evaluations provide essential evidence for designing targeted health education initiatives, intervention programs, and policy measures aimed at promoting rational drug use in children. Furthermore, periodic KAP assessments enable healthcare systems to track trends and evaluate the success of interventions focused on improving medication safety ⁽¹³⁾.

PROBLEM STATEMENT

Parents commonly administer antipyretics, analgesics, cough and cold remedies, and occasionally antibiotics without consulting healthcare professionals, often depending on past prescriptions, personal experiences, or informal advice. Such inappropriate self-medication practices may cause dosing errors, adverse drug reactions, concealed serious illnesses, delayed diagnosis, and the emergence of antimicrobial resistance ⁽¹⁴⁾. Knowledge deficits, misconceptions about drug safety, financial challenges, and the perception that self-medication saves time and money further contribute to unsafe home practices ⁽¹⁵⁾.

MATERIALS AND METHODS

STUDY DESIGN

A cross-sectional study. This design was selected because it allows data collected at one time from a specific population, making it possible to evaluate the relationships between knowledge, attitudes, and practices.

STUDY DURATION & SETTING

The study was carried out between August 2025 and January 2026, a period of six months. The study population comprised parents of children aged 0–12 years. The selected area was chosen based on accessibility, feasibility, and the presence of a diverse population. The community includes both urban and

semi-urban households with varied socioeconomic and educational backgrounds, making it appropriate for evaluating differences in parental awareness and behaviours related to self-medication.

INCLUSION CRITERIA

- Parents with at least one child in the age range of 0–12 years.
- Parents who have provided medications to their children without obtaining a physician's prescription.
- Parents who agreed to participate and provided written informed consent.
- Parents who were available and accessible during the data collection period.

EXCLUSION CRITERIA

- Healthcare professionals and their immediate family members should minimize professional bias.
- Parents unwilling to participate.
- Parents of critically ill children.

DATA COLLECTION PROCEDURE

Data were obtained through direct interviews with participants using a structured questionnaire that had been pre-validated. The objectives were explained before participation, and written informed consent was obtained from each participant. Each interview lasted approximately 10–15 minutes on average.

SAMPLE SIZE CALCULATION

The sample size was calculated using the Rao Soft online calculator, with a 50% response rate, 95% confidence level, and 5% margin of error. Sample size of 390 participants was determined.

DEVELOPMENT OF QUESTIONNAIRE

A structured questionnaire was developed to evaluate parents' KAP regarding self-medication. The questionnaire was developed after a comprehensive review of relevant literature and was modified to align with the local context. It was organized into four sections.

- **Section A:** Socio-demographic characteristics (age, gender, education, occupation, income, and residence).
- **Section B:** Knowledge related to self-medication and its potential risks.
- **Section C:** Attitudes toward medication use.
- **Section D:** Practices concerning the administration of medicines to children.

VALIDATION OF QUESTIONNAIRE

The questionnaire underwent evaluation by a panel of experts from the Departments of Pharmacology and Pharmacy Practice to establish content and face validity.

SCORING AND INTERPRETATION OF THE KAP

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Each component of the questionnaire was assigned a scoring system to assess and categorize the overall levels of KAP among participants.

KNOWLEDGE (11 ITEMS, YES/NO) YES → 1 POINT NO → 0 POINTS SCORING RANGE: 0–11 POINTS	ATTITUDE (11 ITEMS) STRONGLY AGREE = 5 AGREE = 4 NEUTRAL = 3 DISAGREE = 2 STRONGLY DISAGREE = 1 RANGE: 11–55 POINTS	PRACTICE (11 ITEMS) ALWAYS = 5 OFTEN = 4 SOMETIMES = 3 RARELY = 2 NEVER = 1 RANGE: 11–55 POINTS
INTERPRETATION: GOOD KNOWLEDGE = 8–11 (≥75%) MODERATE KNOWLEDGE = 5–7 (50–74%) POOR KNOWLEDGE = 0–4 (<50%)	INTERPRETATION: POSITIVE ATTITUDE = 41–55 (≥75%) NEUTRAL ATTITUDE = 26–40 (50–74%) NEGATIVE ATTITUDE = 11–25 (<50%)	INTERPRETATION: GOOD PRACTICE = 41–55 (≥75%) MODERATE PRACTICE = 26–40 (50–74%) POOR PRACTICE = 11–25 (<50%)

Final KAP Classification:

Good KAP → Above 75% of max score

Moderate KAP → 50–74% of max score

Poor KAP → Below 50% of max score

Participants were divided into three categories based on their total score: good, middling, and bad, indicating their KAP.

STATISTICAL ANALYSIS

Collected data was analysed using SPSS software version 31.0.1.0 (build 49). The distribution of the data was assessed through a normality test. Frequencies, percentages, mean ± standard deviation (SD), and median were calculated. Inferential statistical techniques were employed to identify associations and differences among the study variables. A p-value less than 0.05 was regarded as statistically significant. Depending on the distribution pattern identified in the normality test, either parametric or non-parametric tests were used.

ETHICAL CONSIDERATIONS

Research protocol was submitted to the institutional ethics committee, and conducted in compliance with standard ethical principles to ensure confidentiality, and promote voluntary participation. The protocol was approved by IRB of Geethanjali College of Pharmacy (Ref. No.: GCPK/PD25/15).

RESULTS

RESPONSE RATE

A total of 415 questionnaires distributed, 390 were successfully completed and corresponding to a rate of 93.9%. All collected questionnaires were complete and met the criteria for statistical analysis.

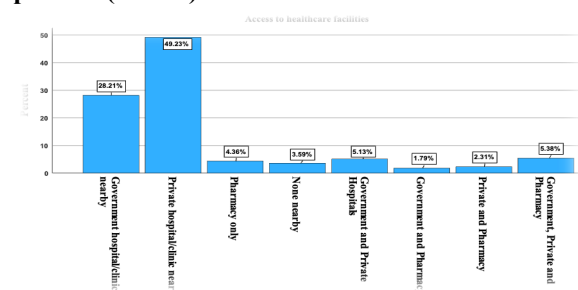
DISTRIBUTION OF DATA

Of the 390 respondents, 52.2% possessed good knowledge, 38.5% showed moderate knowledge, and 9.3% had poor knowledge concerning self-medication. Regarding attitudes, most parents (84.1%) maintained a neutral outlook toward self-medication practices. In terms of practice, 76.9% of respondents fell within the moderate category. Overall assessment revealed that 85.4% of participants had a moderate level of KAP, highlighting the necessity for enhanced educational initiatives aimed at encouraging safer medication practices among children.

SOCIODEMOGRAPHIC CHARACTERISTICS

The study sample consisted of 390 parents, all of whom submitted complete responses, with only minimal missing data observed across the study variables. The participants reflected a broad spectrum of sociodemographic characteristics, including varying levels of education, employment status, income categories, and residential settings. Educational levels ranged from no formal schooling to higher education, with a considerable proportion having completed secondary or tertiary education. A majority of respondents were employed, and household income levels were distributed across low-, middle-, and high-income groups. Furthermore, most participants reported access to healthcare facilities, indicating adequate availability of medical services within the study area. The wide variation in sociodemographic attributes suggests that the sample was sufficiently diverse and appropriate for assessing KAP.

Table 1: Socio-demographic characteristics of parents (N=390)



Variable	Category	Frequency (n)	Percentage (%)
Relationship with the child	Father	135	35
	Mother	255	65
Educational level	No formal education	44	12
	Primary	91	23
	Secondary	133	34
	Tertiary	122	31
Occupational status	Employed	254	65
	Unemployed	136	35
Age group of child	<1 year	15	4
	1-5 years	154	39
	6-12 years	221	57
Monthly household income	Low	42	11
	Middle	298	76
	High	50	13
Place of residence	Urban	189	48
	Semi-Urban	108	28
	Rural	93	24
Marital status	Married	373	96
	Single Parent	17	4

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Graph 1: Access to healthcare facilities

KNOWLEDGE REGARDING SELF-MEDICATION IN CHILDREN

52.4% of parents demonstrated good knowledge regarding self-medication in children, while 38.6% had moderate knowledge and 9.0% had poor knowledge. However, notable gaps were identified in areas such as accurate dose calculation, proper disposal of unused medicines, and reliance on previously prescribed drugs without professional advice. A statistical analysis found a substantial correlation ($p < 0.001$) between parents' knowledge levels and educational status, with higher educational attainment being positively correlated with better knowledge. Additionally, caregivers of older children exhibited a better understanding of self-medication practices, emphasizing the importance of education in ensuring safe medication use among children.

Table 2: Knowledge regarding self-medication among parents (N = 390)

Variable	Response Category	Frequency (n)	Percentage (%)	P-value *
1. Have you ever heard of the term "self-medication"?	N Y	100 290	26 74	<0.001*
2. Do you know that self-medication can cause any risk in children?	N Y	90 300	23 77	<0.001*
3. Have you ever received information about safe medicine use for children from a healthcare professional?	N Y	90 300	23 77	<0.001*
4. Do you know	N Y	54 336	14 86	<0.001*

Number of children	1	140	35.90	
	2	198	50.77	
	3	44	11.28	
	4	7	1.79	
	7	1	0.26	
Access to healthcare facilities	Government (1)	110	29	
	Private (2)	192	49	
	Pharmacy only (3)	17	4	
	None nearby (4)	14	4	
	1,2	20	5	
	1,2,3	20	5	
	1,3	8	2	
	2,3	9	2	
that dosage for children different from adults?				
5. Are you aware of the correct dosage requirements for common medicines for children?	N Y	147 243	38 62	<0.001*
6. Do you think the safest way to dispose of unused or expired medication is to return it to a pharmacy?	N Y	195 195	50 50	1.000*
7. Do you believe it is safe to give a child medicine	N Y	203 187	52 48	<0.418*

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that was previously prescribed?				
8. Do you think antibiotics can effectively treat a common cold or flu?	N Y	145 245	37 63	<0.001*
9. Do you think the following qualifies as self-medication? a) Using leftover medicines without a doctor's advice b) Buying medicines without a prescription c) Using herbal remedies without medical advice d) Adjusting a prescribed dose without consulting a doctor	N Y	212 178	54 46	<0.085*
10. Do you usually determine the correct	N Y	87 303	22 78	<0.001*

dosage of medication for your child by the following? (Answer Yes/No for each) a) Reading the package insert or label b) Following a doctor's previous prescription c) Asking a pharmacist d) Relying on your own experience e) Asking friends or family				
11. Do you think public awareness campaigns about self-medications are helpful?	N Y	53 337	14 86	<0.001*

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Table 3: Descriptive statistics of total Knowledge level score among parents ATTITUDE TOWARDS SELF-MEDICATION IN CHILDREN

The majority of participants (84.1%) exhibited a neutral attitude toward self-medication in children, whereas 10.3% demonstrated a negative attitude and only 5.6% expressed a positive attitude. Many caregivers recognized that over-the-counter medicines can cause adverse effects and acknowledged the risks of using drugs without prescriptions. At the same time, a considerable proportion viewed self-medication as time-saving and cost-effective, reflecting conflicting perceptions. Although higher education showed a slight trend toward more favourable attitudes, it was not significant. Overall, attitudes appear to be shaped by factors beyond formal education, emphasizing the need for targeted awareness and counselling interventions.

Table 4: Attitude towards self-medication among parents (N = 390)

Variables	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	p-value*
1. Self-medication is safe for children if parents have prior experience with the illness.	38(8.3)	76(19.5)	126(32.3)	136(34.9)	14(3.6)	<0.001*
2. It is acceptable to use leftover medicines for a	48(12.3)	108(27.7)	119(30.5)	103(26.4)	12(3.1)	<0.001*

		Frequency		Percent		Valid %		Cumulative %	
Valid	Poor knowledge	36		9.3		9.3		9.3	
	Moderate knowledge	150		38.5		38.5		47.8	
	Good knowledge	204		52.2		52.2		100.0	
	Total	390		100		100.0			
child if the symptoms are the same as before.									
3. I give my child medicine based on information I find on the internet.	143(36.7)	143(36.7)	64(16.4)	34(8.7)	6(1.5)				<0.001*
4. I am confident in my ability to decide the correct medication for	67(17.2)	184(47.2)	92(23.6)	34(8.7)	13(3.3)				<0.001*

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my child without professional help.							8. I would prefer to self-medicate my child if visiting a doctor is expensive or time-consuming	64(16.4)	153(39.2)	77(19.7)	76(19.5)	20(5.1)	<0.001*
5. Over-the-counter medicines can cause side effects in children.	37(9.5)	54(13.8)	100(25.6)	166(42.6)	33(8.5)	<0.001*	9. If a medicine worked for my child once, I believe it will work again for the same symptoms.	27(6.9)	92(23.6)	112(28.7)	133(34.1)	26(6.7)	<0.001*
6. Using medicines or antibiotics without a prescription can lead to resistance or other health problems.	21(5.4)	53(13.6)	77(19.7)	161(41.3)	78(20.0)	<0.001*	10. Self-medication is an effective way to save time and money.	81(20.8)	124(31.8)	92(23.6)	79(20.3)	14(3.6)	<0.001*
7. I would prefer to self-medicate my child if the illness seems minor.	21(5.4)	89(22.8)	107(27.4)	138(35.4)	35(9.0)	<0.001*	11. A doctor's	10(2.6)	29(7.4)	64(16.4)	100(25.6)	187(47.9)	<0.001*

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advice is more reliable than a pharmacist's advice regarding my child's health.						
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Table 5: Descriptive statistics of total attitude score among parents

PRACTICE OF SELF-MEDICATION IN CHILDREN

Self-medication was commonly practiced occasionally, mainly for minor illnesses. Although more than half of caregivers avoided using antibiotics without a prescription, some admitted to giving medicine without consulting a healthcare professional. The majority of respondents adhered to fundamental safety practices, such as verifying medication expiration dates and ensuring proper storage. The majority showed a moderate level of self-medication practice. Practice levels were significantly associated with educational status, with higher educational attainment correlating with safer medication practices. Occupational status was also significant, with employed caregivers demonstrating better practices.

Table 6: Parents practices regarding self-medication for children (N = 390)

Variables	Response category	Frequency (n)	Percent age (%)	P-value *
1. I give my child medicine without consulting a doctor.	Never Rarely Sometimes Often Always	105 86 164 29 6	26.9 22.1 42.1 7.4 1.5	<0.001*
2. I give my child medicine for fever without consulting	Never Rarely Sometimes Often Always	60 83 152 77 18	15.4 21.3 39.0 19.7 4.6	<0.001*

		Frequency	Percent	Valid %	Cumulative %
Valid	Negative attitude	40	10.3	10.3	10.3
	Neutral attitude	328	84.1	84.1	94.4
	Positive attitude	22	5.6	5.6	100.0
	Total	390	100.0	100.0	
g a doctor.					
3. I give my child medicine for cough or cold without consulting a doctor.	Never Rarely Sometimes Often Always	61 78 146 84 21	15.6 20.0 37.4 21.5 5.4	<0.001*	
4. I give my child medicine for diarrhea or vomiting without consulting a doctor.	Never Rarely Sometimes Often Always	154 85 109 35 7	39.5 21.8 27.9 9.0 1.8	<0.001*	
5. I give my child medicine for pain (headache, stomach ache, etc.) without consulting a doctor.	Never Rarely Sometimes Often Always	150 75 124 33 8	38.5 19.2 31.8 8.5 2.1	<0.001*	

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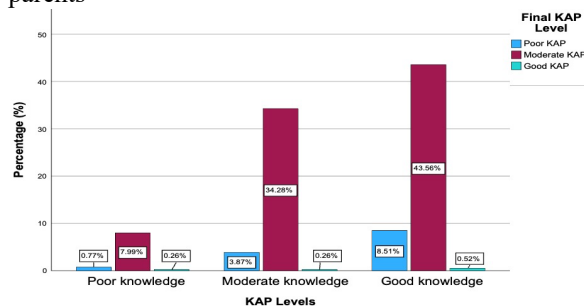
6. I give my child antibiotics without a prescription.	Never Rarely Sometimes Often Always	202 74 59 33 22	51.8 19.0 15.1 8.5 5.6	<0.001*
7. I check the expiry date before giving medicine to my child	Never Rarely Sometimes Often Always	16 17 20 51 286	4.1 4.4 5.1 13.1 73.3	<0.001*
8. I store medicines safely out of children's reach.	Never Rarely Sometimes Often Always	10 16 14 53 296	2.6 4.1 3.6 13.6 75.9	<0.001*
9. When my child is ill, I consult a doctor before giving medicines.	Never Rarely Sometimes Often Always	6 37 102 102 143	1.5 9.5 26.2 26.2 36.7	<0.001*
10. I give medicine to my child without consulting a doctor because medical consultations are costly	Never Rarely Sometimes Often Always	172 73 100 33 12	44.1 18.7 25.6 8.5 3.1	<0.001*
11. Have observed side effects or adverse reactions in my child from medicines given without a	Never Rarely Sometimes Often Always	226 68 61 18 17	57.9 17.4 15.6 4.6 4.4	<0.001*

prescription.				
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Table 7: Distribution of practice levels among parents

Table 8: Distribution of final KAP levels among parents

Graph 2: Distribution of final KAP levels among parents



Graph 3: Comparison of KAP levels among individuals

DISCUSSION

Present study indicate that majority of participants exhibited moderate overall knowledge, attitude, and practice (KAP) levels (85.4%). This suggests that while parents possess a basic understanding of medication use, their comprehension of safe and rational self-medication practices remains incomplete. Although knowledge levels were comparatively satisfactory, this awareness was not consistently reflected in appropriate practices. The discrepancy between knowledge and behavior implies that awareness alone may not be sufficient to influence behavioral change. Factors such as convenience, easy access to pharmacies, prior experience with similar illnesses, and the perception that certain conditions are minor may contribute to the continued practice of self-medication among parents.

Nevertheless, gaps were identified in specific areas, including accurate dose calculation and the reuse of previous prescriptions. These findings indicate that although parents recognize the potential harm of inappropriate medication use, they may lack adequate practical medication literacy. The frequent reliance on past prescriptions for managing new episodes of illness suggests a misconception that similar symptoms always correspond to the same condition. This behavior may stem from a limited understanding of pediatric pharmacotherapy and the assumption that a previously effective medicine will consistently produce the same therapeutic outcome.

Parents with higher educational attainment demonstrated comparatively safer medication practices, possibly due to improved ability to interpret

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medication labels, comprehend dosage instructions, and identify potential adverse effects. Higher education may also enhance awareness of antimicrobial resistance and strengthen trust in healthcare professionals.

The predominance of a neutral attitude (84.1%) reflects uncertainty and mixed perceptions among parents. While many acknowledged the potential risks of self-medication, they simultaneously perceived certain benefits, such as reduced time expenditure and lower financial burden. In resource-limited or developing settings, prolonged waiting times, consultation fees, and limited accessibility to healthcare facilities may further encourage self-treatment. Therefore, self-medication practices may not always result from ignorance but may also reflect structural and accessibility challenges within the healthcare system.

Self-medication was most frequently reported for minor ailments such as fever, cough, cold, and pain, which parents commonly perceived as manageable at home. Fever, in particular, prompted early administration of antipyretics, often driven by parental anxiety—commonly referred to as “fever phobia.” In many instances, medications were administered promptly to prevent perceived complications, even when professional medical consultation may not have been necessary.

CONCLUSION

This study assessed the KAP related to self-medication among parents and caregivers of children. The results demonstrate that a considerable proportion of participants possessed adequate knowledge, particularly regarding the correct pediatric dosing, potential adverse reactions of self-medication. However, deficiencies persisted in critical areas such as accurate dose calculation, reuse of previous prescriptions, and proper disposal of unused medications.

Despite satisfactory knowledge levels, attitudes toward self-medication were predominantly neutral, reflecting uncertainty and mixed perceptions. Although many caregivers recognized the potential risks of over-the-counter medicines, a significant proportion continued to consider self-medication a convenient and cost-effective alternative to professional healthcare. This neutrality highlights the absence of firmly established beliefs regarding safe medication practices and underscores the need for structured health education programs.

With respect to practice, most respondents demonstrated moderate self-medication behaviours. While positive practices—such as checking expiration dates and storing medicines safely—were commonly reported, certain unsafe behaviours persisted. These included administering medications without professional consultation for common childhood

illnesses and occasional non-prescription use of antibiotics.

Educational status showed a significant association with knowledge and practice levels, with higher education correlating with safer medication behaviours. Occupational status was also significantly related to practice patterns. However, attitude did not exhibit strong associations with most sociodemographic variables, suggesting that improved knowledge does not automatically translate into appropriate attitudes or behaviours.

In summary, adequate knowledge alone is insufficient to ensure rational self-medication practices in children. Comprehensive health education programs, pharmacist-led counselling, and community-based awareness initiatives are essential to promote appropriate medication use, timely medical consultation, and prevention of irrational drug practices. Enhancing caregiver education and active engagement is essential for promoting safe medication practices and protecting paediatric health.

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