

## Self-medication practices in mothers with children under 5 years of age visiting tertiary care hospital

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### ABSTRACT

**Background:** Self-medication refers to the practice of individuals using medications to treat their own conditions. Improper utilization of medications without a prescription results in undesirable side effects, detrimental drug interactions, and the emergence of antibiotic resistance, which is becoming a growing problem in developing nations due to the rising burden of infectious diseases.

**Objective:** To find out the frequency of self-medication practices and the factors associated with it among mothers with children under 5 years of age.

**Methods:** This descriptive cross-sectional study was conducted at the outpatient Department of Pediatrics, Holy Family Hospital, Rawalpindi, Pakistan from March 2023 to June 2023. A total of 267 mothers with children younger than five were included in our study. Informed consent was obtained from mothers and maternal socio-demographic characteristics, self-medication knowledge, practice, motivation, and attitude were all documented. The data was analyzed using SPSS version 26. The association between self-medication and other factors was analyzed using Chi Square and Fisher's Exact tests. A p-value < 0.05 was considered statistically significant.

**Results:** Self-medication was practiced by 94.4% of the mothers. There was an association between maternal education level and self-medication practices (p=0.000). No association was found between employment status and self-medication practices (p=0.336). Fever was the most common illness for which mothers self-medicated their children (p=0.002).

**Conclusion:** Self-medication is common among mothers of children under 5 years of age and is associated with maternal education level, with the highest frequency among the uneducated mothers. Maternal awareness and knowledge regarding the hazards of self-medication is of profound significance.

**Key Words:** Self-medication, Awareness, Mothers, Children

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### INTRODUCTION

Self-medication is elucidated as "the use of medicinal products by the consumer to treat self-diagnosed illnesses or manifestations".<sup>1</sup> The World Health Organization (WHO) advisory committee on National Drug Policies in 1995 disclosed that self-

medication is widely practiced in both developed and developing countries.<sup>2</sup> However, in undeveloped and emerging nations, over-the-counter (OTC) drug abuse has grown more frequent. Injudicious use of self-medication is associated with a number of unfavorable outcomes; from inaccurate self-diagnosis to delayed prompt intervention, from under-dosage to over-dosage, from establishing antibiotic resistance to catastrophic drug reactions and dependency.<sup>3</sup>

Owing to the differences in body weight or surface area, infants and young children are particularly vulnerable to the effects of this practice.<sup>4</sup> There are several predisposing factors that indicate why the mothers would rather prefer to treat their children on their own; considering their ailment to be minor and does not warrant professional medical attention, the mother's lack of time to attend consultations, the high

cost of consultations, the mother reusing old prescriptions, the frustration with the long wait times at clinics and hospitals, and the reliance on the internet to research medications.<sup>5</sup> According to a study conducted in Rwanda, pediatric self-medication is a universal practice with a frequency of 77.9% i.e. 50.8% of the parents and care givers using modern self-medication only, 15.8% using traditional self-medication and 33.3% using both.<sup>6</sup>

Since it is a fairly frequent practice that has negative health repercussions for young children, its prevalence is not only high but also increasing, especially in poorer nations. Thus, it is necessary to develop regulations and interventions that prevent mothers from medicating their children on their own.

The objective of this study was to determine the frequency of self-medication practices and the factors associated with it among mothers with children under 5 years of age.

## METHODS

From March 2023 to June 2023, this cross-sectional study was carried out at the outpatient Department of Paediatrics, Holy Family Hospital, Rawalpindi, Pakistan. A sample size of 267 was calculated using Raosoft Calculator with 5% margin of error, 90% confidence level, and 50.8% reported frequency<sup>6</sup> with non-probability convenience sampling technique used.

The sample included mothers aged 20 to 35 years bringing their children who are less than five years of age to a Rawalpindi tertiary care facility for treatment of an illness that had occurred during the last 30 days. Mothers whose children were hospitalized for at least 5 days, mothers of children with chronic illness i.e. cancer, congenital heart disease, cerebrovascular disease, mental disorders, or hepatic diseases and mothers belonging to medical profession were excluded. An informed written consent was obtained from all the participants.

A questionnaire was used for data collection. For the convenience of participants, the questionnaire was written in English and Urdu and it required 5-10 minutes to complete. Mothers filled the questionnaire themselves; however, mothers who could not read or write were accompanied and forms were filled by interviewees. The questionnaire included a series of questions regarding the participant's personal and demographics information along with self-medication practices. It had two parts.

*First part* included the socio-demographic details of mothers i.e. age, education level (higher education, college, matric, primary or uneducated), employment status, number of children who are less than 5 years, and time required to reach a nearby healthcare facility/hospital.

*Second part* was related to the self-medication practices in mothers i.e. how often do they self-medicate their children and the ailments for which they self-medicate their children. Self-medication practices was categorized into: always (every time the child is ill, the mother uses self-medication; frequency is equal to or more than five times per month), sometimes (the mother self-medicates the child depending on her feasibility with a frequency of three to four times per month), rarely (mother mostly prefers health care consultation before using any medication, but once or twice a month she self-medicates the child). After the questionnaires were filled, they were collected and data was recorded for analysis.

## Ethical Approval

An ethical approval was taken from the Ethical Committee of Rawalpindi Medical University, Rawalpindi, Pakistan (Ref No: M-13-45-22) dated 15th June 2022.

## Statistical Analysis

SPSS version 26 software was used for data analysis. Frequencies and percentages were calculated for categorical variables. The association between self-medication practices and other factors was analyzed using Chi-square test. A p value < 0.05 was considered statistically significant.

## RESULTS

The study included 267 mothers visiting tertiary care unit with children under five years of age. About 94.4% of the mothers practiced self-medication (Table 1).

**Table 1: Frequency of self-medication practices among mothers**

Self-medication practices	n(%)
No	15 (5.6)
Yes	252 (94.4)

**Table 2: Self-medication practices across maternal age groups**

Maternal Age	n (%)
20-25 Years	40 (15.87)
26-30 years	159 (63.10)
31-35 years	53 (21.03)

Mothers aged 26-30 years practiced self-medication more than the other two age groups (Table 2).

There was an association between education level and how often mothers self-medicate (p-value=0.000); mothers who were uneducated were

more likely to self-medicate. However, employment status did not have an effect on self-medication practices (p-value=0.336) (Table 3). Fever was the most common ailment for which mothers self-medicate their children (p-value=0.002) (Table 4).

**Table 3: Association of self-medication practices with education level and employment status**

Self-medication practices	Education level					p-value	Employment status		p-value
	Higher Education n(%)	College n(%)	Matric n(%)	Primary n(%)	Un-Educated n(%)		Employed n(%)	Un-Employed n(%)	
Always (n=185)	3(1.6)	5(2.7)	69(37.9)	20(11.0)	85(46.7)	0.000 <sup>a</sup>	31(17.0)	151(83.0)	0.336 <sup>b</sup>
Sometimes (n=59)	4(7.4)	2(3.7)	25(46.3)	9(16.7)	14(25.9)		6(11.1)	48(88.9)	
Rarely (n=8)	5(31.3)	3(18.8)	1(6.3)	3(18.8)	4(25.0)		1(6.25)	15(93.75)	

<sup>a</sup>Fisher's Exact test was applied. <sup>b</sup>Chi-square test was applied. \*p-value<0.05 is statistically significant

**Table 4: Ailments for which mothers practice self-mediation in children**

Self-Medication practices	Colic and gas n(%)	Cough and cold n(%)	Vomiting and diarrhea n(%)	Fever n(%)	Others n(%)	p-value
Always (n=185)	1(0.5)	59 (32.4)	6 (3.3)	116(63.7)	0(0.0)	0.002*
Sometimes (n=59)	3(5.6)	17(31.5)	5(9.3)	29(53.7)	0(0.0)	
Rarely (n=8)	0(0.0)	10(62.5)	0(0.0)	5(31.3)	1(6.3)	

Fisher's Exact test was applied. \*p-value<0.05 is statistically significant

## DISCUSSION

Self-medication trends show striking variations with maternal age distribution. According to the results of this study, mothers between 26 to 30 years of age show highest self-medicating trends with a frequency of 63.10%. This study highlighted the association between self-medication practices and maternal education level. A significant association between maternal education level and self-medication practices was observed with people having less education being more likely to do it. People with no formal education (uneducated) are more likely to self-medicate, while people with a higher education (university degree) are less likely to do so. However, employment position does not have a significant impact on self-medication habits (p = 0.336), since there is no significant disparity in how often employed and unemployed people self-medicate. This strongly highlights the significance of maternal awareness programme and campaigns to be arranged for their education.

Self-medication is a customary practice that has influenced the people on a global scale. Mothers are

especially vulnerable to this hazardous vogue. A study conducted in Uganda highlighted the fact that the lack of health-care facilities in rural areas was associated with high mortality rates. This is mainly because people either opt for traditional medications or no treatment at all.<sup>7</sup> Maternal awareness is consequential in that perspective as it directly affects the health of children in their formative ages. A survey reported 76% of mothers had unsatisfactory knowledge regarding self-prescribing medicines.<sup>8</sup> Self-medication is a global concern. According to a survey done during COVID-19 pandemic on lactating mothers, 40.6 % mothers opted for non-prescribed medications based on the recommendations of the pharmacy staff.<sup>9</sup> A similar study was conducted on mothers in the Yogyakarta city Indonesia, with the overall frequency reported to be 58.82%.<sup>10</sup> Additionally, a survey conducted in Pakistan reported that on average, each community pharmacy sold 7.9 medicines without any prescription on daily basis, to an average of 5.5 customers.<sup>11</sup>

Mothers who practice self-medication are conventionally unaware of the fact that prescribing

medications without healthcare consultation can not only create antibiotic resistance but drug dependency too. Mothers in Pakistan, by no means, are second to any ethnic territory in practicing self-medication. According to the results of this survey, 94.4% mothers visiting tertiary care unit of Rawalpindi frequently practice self-medication on their children under 5 years of age.

Medication abuse is a frequently occurring phenomenon when people self-medicate themselves. The uncovered facts of this research can drastically support physicians, chemists, and other medical professionals comprehend the frequency with which patients self-medicate. They may use this data to educate patients and make changes to prescribing practices to reduce the risk of damage.

A study highlighted the high prevalence of self-medication practice among pregnant women, thus focusing on the significance of preventive measures and proper counseling.<sup>12</sup> Self-medication has drastically influenced the people of Pakistan. A study conducted on University students of Karachi showed that the frequency of self-medication was high in the educated youth (76%) and majority were aware of its adverse effects.<sup>13</sup> A study was conducted in Abu Dhabi also highlighted this trend of self-medication with a frequency of 56%.<sup>14</sup>

Maternal education is crucial in curtailing this hazardous trend of self-medication. A study conducted on pediatric patient caregivers of two general teaching hospitals in the city of Bogotá, Colombia showed that higher parental education, both in mothers (OR 0.56, 95% CI 0.40-0.79) and fathers (OR 0.62, 95% CI 0.43-0.89) was associated with less self-medication practices.<sup>15</sup> This clearly signifies that if proper educational campaigns are conducted, this rising trend of self-medication among Pakistani mothers can be effectively terminated.

Research on self-medication habits among mothers of young children attending a tertiary care facility in Rawalpindi is anticipated to spark significant discussion on a number of pertinent issues. This study provides light on how often self-medication is practiced among mothers in Rawalpindi. Researchers may talk about how frequently mothers use self-medication, the kinds of ailments or symptoms they typically address, and the motivations behind their choice. Such studies could provide information on mothers' levels of awareness and expertise on the

proper administration of medications to children. A survey conducted in Romania signifies that parents responded negatively to self-medicating practice without any medical consultation. This highlighted the importance of health awareness campaigns in that regard.<sup>16</sup> The sources of information mothers rely on, the veracity of their knowledge, and the possible risks connected to incomplete comprehension of dosages, adverse effects, and contraindications may all be highlighted in research work. By shedding light on the prevalence and factors associated with self-medication, healthcare professionals, policymakers, and stakeholders will be able to develop targeted interventions aimed at enhancing healthcare-seeking behaviors, promoting proper medication usage, and ensuring the well-being of children.

It is crucial to examine the self-medication practices of women with small children who attend a tertiary care facility in Rawalpindi in order to comprehend the patterns and implications of this phenomenon. In order to improve neighborhood child health outcomes, the study's findings will have an impact on educational initiatives, healthcare policies, and public health initiatives. It is important to keep in mind that not every source will provide reliable or accurate information. Self-medication can be useful, but it also has a number of hazards. Mothers should be cautious about potential side effects, drug interactions, inefficient dosages, and hiding underlying medical conditions. Additionally, using some medications or substances while nursing or pregnant may not be safe.<sup>17</sup>

Nonetheless, the present study has the potential to provide significant contributions in terms of data and insights to the current body of literature on self-medication practices, specifically focusing on mothers with small children in Pakistan. The outcomes of this study hold substantial implications for multiple disciplines within the realms of healthcare and public health. Nevertheless, it is of utmost importance to analyze the findings within the confines of the study's constraints and take into account additional variables that could potentially impact the prevalence of self-medication behaviors among diverse people and environments.

Gaining a comprehensive understanding of the self-medication practices employed by mothers with young children might yield useful insights regarding their healthcare-seeking behaviors and the prevalence

of self-treatment for common diseases. The provided data possesses the potential to assist public health professionals and policymakers in formulating precise interventions and educational initiatives aimed at fostering suitable healthcare practices and mitigating the hazards linked to self-medication.

## CONCLUSION

Self-medication is highly common among Pakistani mothers. Its frequency is highest among the uneducated mothers. It is of profound impact to institute maternal awareness and educational campaigns regarding the hazards of self-medication.

## Limitations of the study

This study was limited in scope as it was conducted in a single setting, hence the findings cannot be applied to the entire population. The possibility of recollection bias should not be ignored. Since this study was cross-sectional, it does not allow for the evaluation of self-medication based on seasonal variations. Only the self-medication pattern during the most recent illness was documented. The cross-sectional study design prevented the establishment of a cause-and-effect link between the variables. Since the analysis relied on self-reported data and potential sampling biases, it is important to consider the possibility of mothers' both understating or underplaying their responses.

## Future Recommendations

Future studies should adopt a multi-center approach, whether utilizing a group-based design or not.

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**AN:** Data collection, interpretation of data for the work, manuscript drafting, critical review, and approval of the final version to be published

All Authors agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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The data are available from the corresponding author upon reasonable request.



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