

# Predictive Factors and Risk Behaviors of Self-Medication of Children by Parents

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## Abstract

Self-medication of children by their parents is a widespread practice, with a prevalence exceeding 80%. This cross-sectional study, conducted in January 2025 among 202 parents of children under 18 years of age, aimed to identify predictive factors and risky behaviors related to this practice.

Our results show that 81.5% of parents had already self-medicated their children, most often without being confident in their decision. Self-medication frequently starts very early, with 68% of parents initiating it before the age of two years and 38% before six months. The main sources of information were the Internet (50.5%), physicians (32%), and relatives (30%). The most frequently used medicines were paracetamol (80%), anti-inflammatory drugs (95%), corticosteroids (48%), and antibiotics (97.5%). Fever (95%), cough (68%), and pain (55%) were the main reasons for self-medication.

Risky behaviors included approximate dosage determination (based on age, previous prescriptions, or weight), combining drugs containing the same active ingredient, and exchanging measuring devices. Predictive factors significantly associated with self-medication were parental age (35–50 years), belief in the harmlessness of over-the-counter drugs, and fever as the main indication.

Self-medication is common but not always justified and exposes children to significant risks. Educational interventions, telemedicine, and informative brochures could help reduce these risks.

**Keywords:** Pediatric self-medication, Parental self-medication, Adverse drug reaction, Parental knowledge, Antibiotic misuse, Over-the-counter drugs (OTC)

## Introduction:

Self-medication is “the use, by individuals for themselves or for their relatives, on their own initiative and without the advice of a doctor, of medicines considered as such and having received Marketing Authorization (MA).”

The rate of self-medication in pediatrics is higher than 83% [1][2].

The free access to certain medicines in pharmacies promotes self-medication among adults, raising the question of whether children are also affected by this phenomenon. In fact, 40% of pediatric drug intoxications are due to misuse, 31.5% of which result from self-medication [3].

The purpose of this study is to determine the predictive factors and risky behaviors in self-medicating children by their parents.

**Materials and Methods:**

This is a descriptive cross-sectional study conducted through an online survey among parents of children under 18 years old in January 2025.

The questionnaires, strictly anonymous, were designed in such a way as not to influence parents in their responses. They included open and closed questions, with single or multiple choice answers.

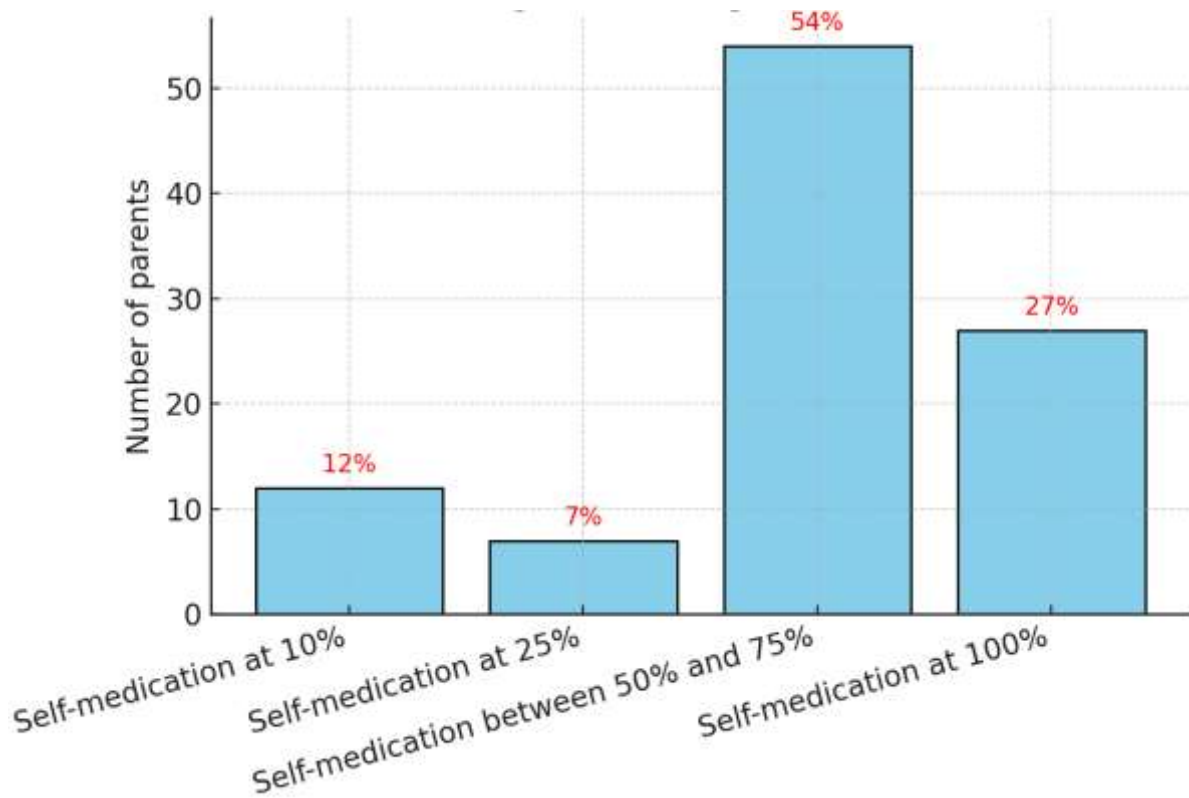
A total of 202 parents participated in our study.

We used logistic regression to determine predictive factors and risky behaviors in self-medication of children by parents.

**Results:**

**General characteristics:**

A total of 202 parents participated in our study. 54% of parents self-medicate themselves at a rate between 50 and 75% (**Figure 1**).

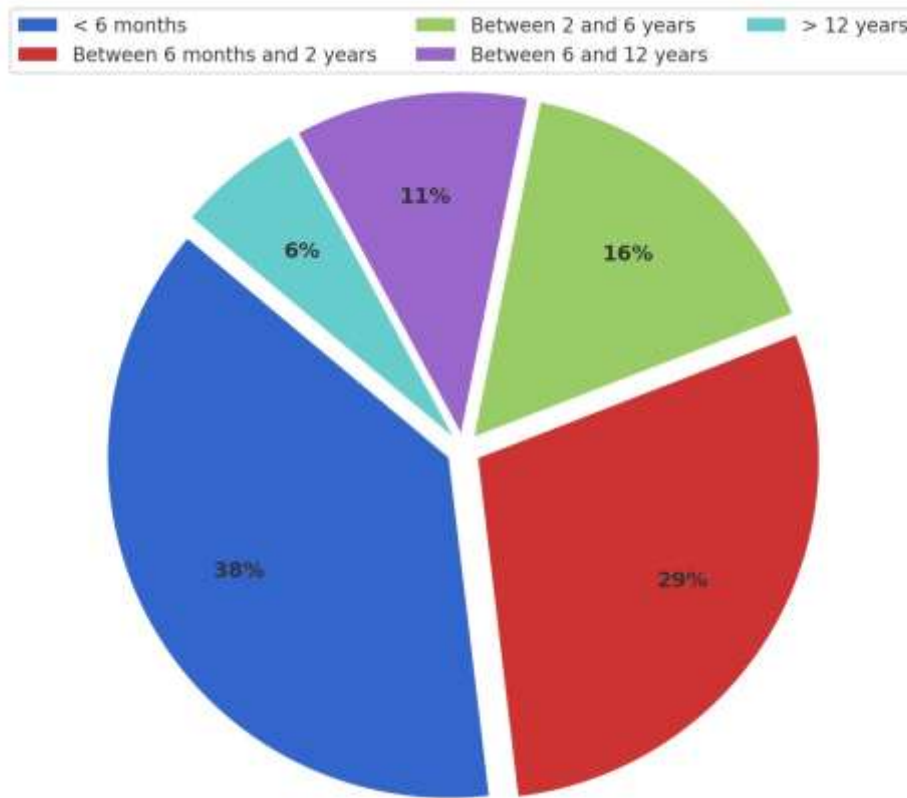


**Figure 1: Percentage of parents who self-medicate**

81.5% of parents have self-medicated their children at least once, of which 75.5% were not sure of themselves. Conversely, 18.5% of parents do not self-medicate their children, and 76% of these expressed fear and lack of experience regarding self-medication.

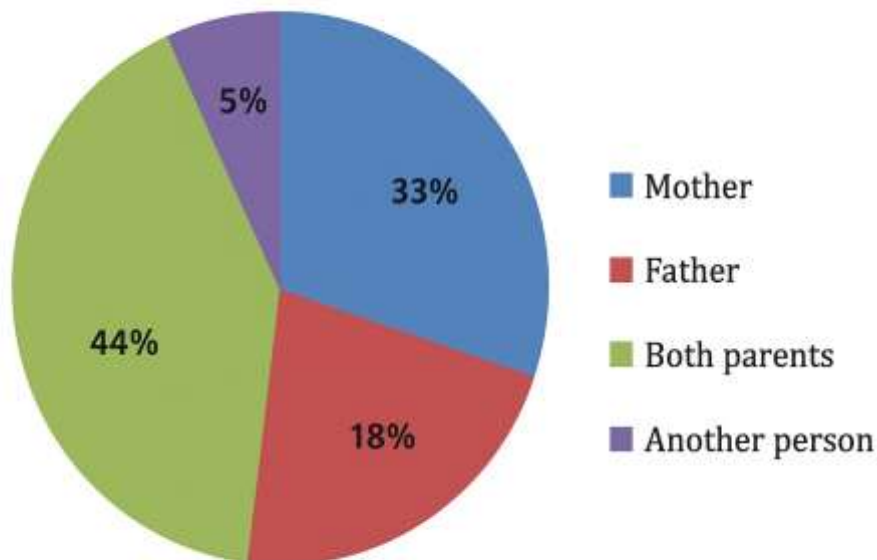
78% of parents who self-medicate their children believe that the fact they can buy an over-the-counter medicine in a pharmacy means that these medicines are harmless, without risk or danger. More than half (60%) do not read the medication leaflet before using it for the first time.

More than 68% of parents begin self-medivating their child before the age of 2 years, including 38% before the age of six months (**Figure 2**).



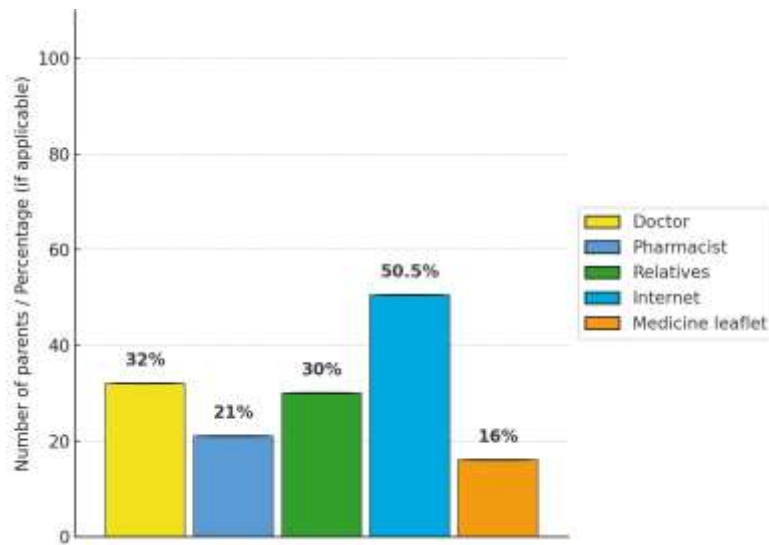
**Figure 2: Age of first self-medication in children**

33% of mothers are involved in the self-medication of children, both parents in 44% of cases, the father in 18% of cases, and 5% by another person (Figure 3).



**Figure 3: Person who self-medicates the child**

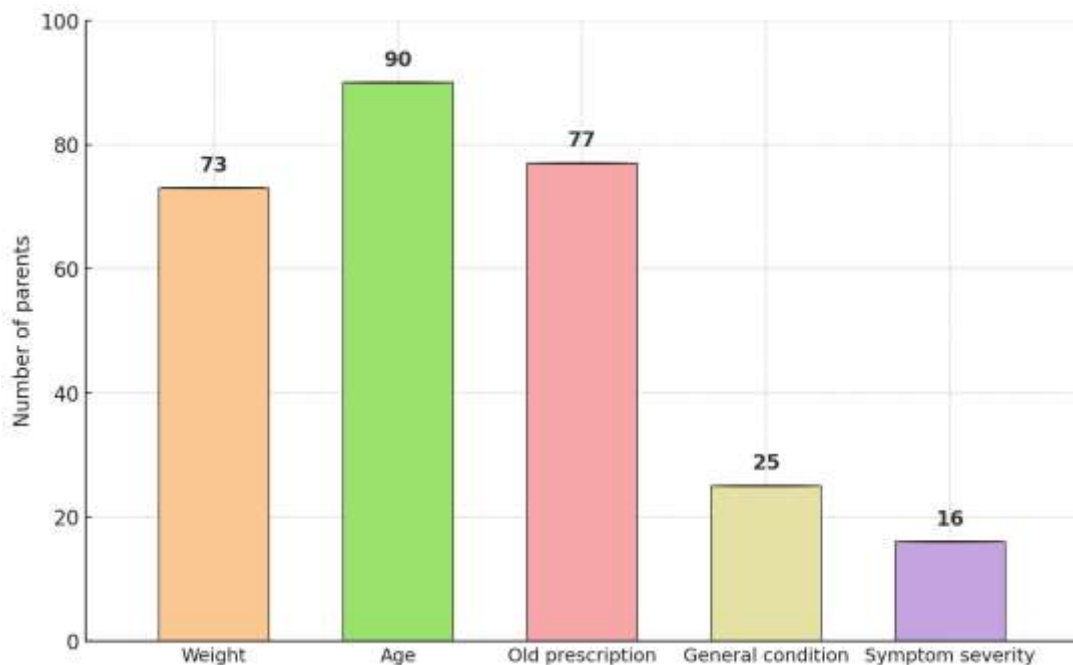
The main sources of information for parents are: The Internet (50.5%), the doctor (32%), and relatives (30%) (Figure 4).



**Figure 4: Main sources of parental information about medicines**

Among parents who self-medicate their child, 89% think that a self-medicated child is at risk: dosing error (16%), diagnostic error (41%), drug interaction (22%), and allergy (56%). Conversely, 11% of parents say there is no risk.

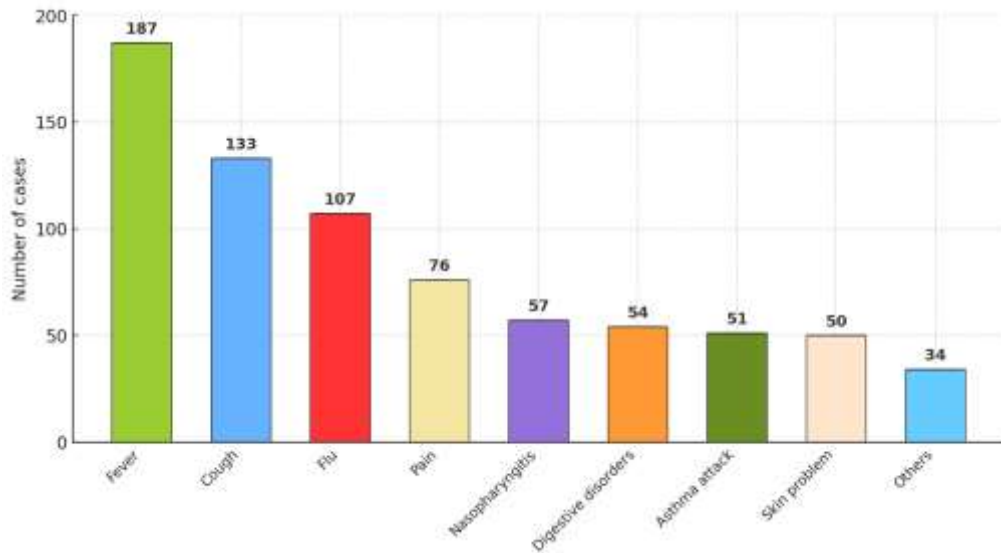
To determine the dose to administer, parents rely on the child’s age (90 cases), an old prescription (77 cases), weight (73 cases), general condition, and severity of symptoms in 25 and 16 cases, respectively (Figure 5).



**Figure 5: Criteria used to determine drug dosage**

**Main reasons for self-medication:**

Fever, cough, and pain represent the main reasons for self-medication in 95%, 68%, and 55% of cases, respectively (Figure 6).

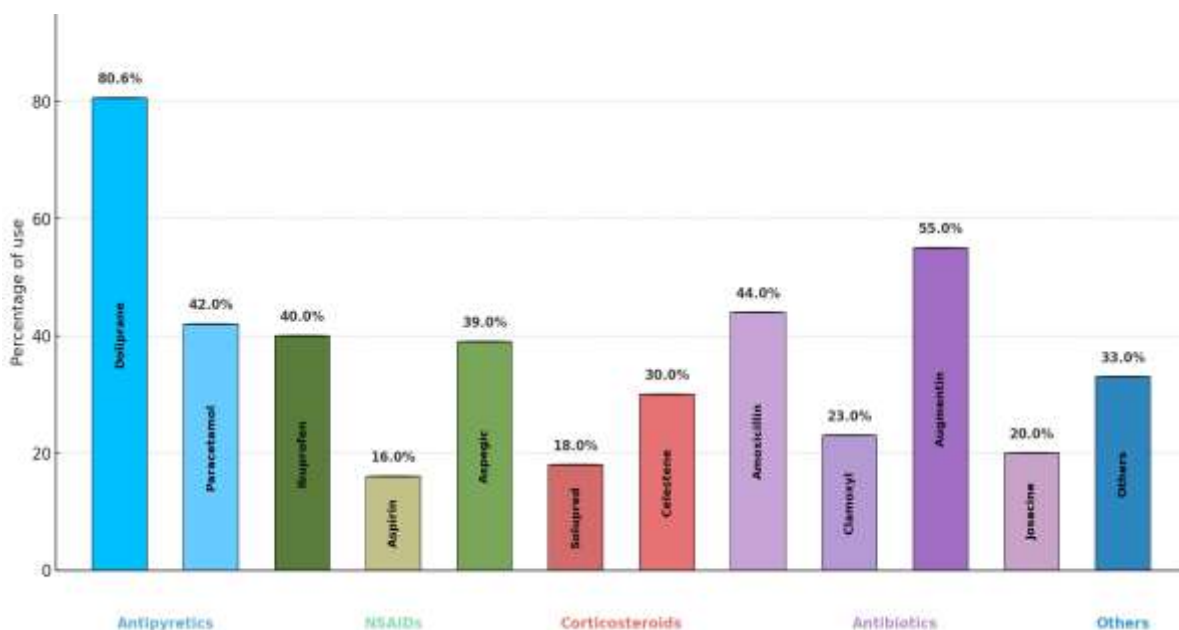


**Figure 6: Main reasons for self-medication**

**Main medicines used in self-medication:**

A list of 12 medicines was proposed to the parents surveyed, including both brand names and international nonproprietary names (INN), to reflect real practices as closely as possible.

More than 80% of parents use paracetamol, 95% anti-inflammatories (55% acetylsalicylic acid and 40% other nonsteroidal anti-inflammatory drugs [NSAIDs]), 48% corticosteroids, and 97.5% antibiotics (Figure 7).



**Figure 7: Main medicines used in self-medication**

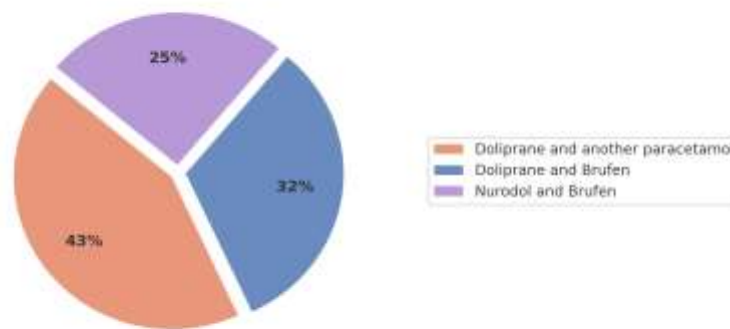
**Practices related to self-medication and drug combination:**

Nearly 58% of parents have already exchanged pipettes of different medicines.

In case of fever: 43% of parents use paracetamol, 38% aspirin, and 30% ibuprofen.

When parents combine two medicines, 54% of them are “not always” sure that the combination is allowed, 20% are “generally” sure, and 37% are “always” sure. They claim to know it from the pharmacist (55%), the doctor (43%), or the leaflet (11%).

Two brands of paracetamol are combined by 43% of cases, and two anti-inflammatories by 25% of parents **(Figure 8)**.



**Figure 8: Association of two antipyretics**

**Discussion:**

The rate of self-medication in pediatrics is higher than 83% [1][2].

80% of 9-year-old children report being “sometimes” treated by their parents when they are sick [2].

Many studies have shown that the doctor, the medication leaflet, and the pharmacist are the main sources of information [4][5]. In our study, only 16% of parents referred to the leaflet.

An Australian study found that parents adapted the dosage for their child according to weight in 86% of cases, age in 84%, and severity of illness in 31% [6]. French parents relied on weight in 35% of cases, and on weight and age in 30% [7].

We found fever, cough, and pain as the main reasons for self-medication, consistent with the conditions most often treated in pediatrics [8].

Excessive parental concern during an episode of fever in their child explains the high rates of self-medication for childhood fever [9][10].

Reuse of previously prescribed medicines kept at home was found in 13% of parents of children under 15 years [5].

We found that more than 80% of parents use paracetamol, and 95% use anti-inflammatories, which is consistent with the literature (paracetamol in 97% and NSAIDs in 87%) [5]. Paracetamol is the leading analgesic. In France, 61 cases of severe gastrointestinal side effects associated with NSAID use in children were reported, 7% of which followed self-medication [11].

In our context, 97.5% of parents use antibiotics for their children through self-medication, which is much higher compared to the literature (11% in France). An American study showed that 85% of parents think it is harmful not to use antibiotics, while 55% are aware of the risk of resistance [12].

54% of parents know that rhinitis is viral in origin, but 46% believe in the effectiveness of antibiotics against rhinitis [13].

76% of parents use a nasal spray, 3.7% of whom use a spray contraindicated for their child’s age [14] [15]. 10% of parents have exchanged pipettes of different medicines, although this should not be done because, for the same weight indicated on the pipette, the quantity and concentration of medicine differ, leading to overdose risk [16].

In our study, two brands of paracetamol were combined by 43% of cases, and two anti-inflammatories by 25% of parents, which is higher than in the literature (21%) [5]. This shows that parents do not know the difference between the molecule name and the commercial name, confirmed by another study showing that 66% of parents referred to the medicine by its brand name, while only 8% used the INN [17].

In our study, we found a significant correlation ( $p < 0.05$ ) between three factors and children’s self-medication (Table 1). Risky behaviors included:

- Beginning self-medication before the age of 2 years in 68% of cases, of which 37.5% before six months.
- Main sources of information for parents: Internet (50.5%), doctor (32%), relatives (30%).
- To determine the dose, parents relied on age in 45.5% of cases, an old prescription in 39%, and weight in 37%.
- More than 80% of parents used paracetamol, 95% anti-inflammatories (55% acetylsalicylic acid and 40% other NSAIDs), 47% corticosteroids, and 97.5% antibiotics.
- 43% of parents had already exchanged pipettes of different medicines ( $p < 0.05$ ).
- When combining two medicines, 53.5% of parents were “not always” sure the association was allowed.
  - 68% of parents used anti-inflammatories as first-line treatment for fever.
- Two brands of paracetamol were combined by 42.5% of cases, and two anti-inflammatories by 24.5% of parents ( $p < 0.05$ ).

**Table 1: Predictive factors of children’s self-medication by parents**

Predictive factors of children's self-medication by parents	Percentage	Significance level
Parents' age between 35 and 50 years	44%	$p < 0.05$
The idea that buying an over-the-counter medicine is not a risk or danger	78%	$p < 0.05$
Fever is the main reason for self-medication	95%	$p < 0.05$

**Conclusion:**

Self-medication of children by their parents is a widespread practice; however, this practice is not always justified. It is evident that parents are not sufficiently informed about treatments (notably antipyretics and antibiotics). This highlights the importance of telemedicine and educational brochures concerning common illnesses (fever, cough, etc.).

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