

“EVALUATION OF PARENTAL PERCEPTION ABOUT SELF-MEDICATION AND OTHER MEDICINE USE PRACTICES IN CHILDREN”

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ABSTRACT

Background: Practice of parental self-medication in children needs to be evaluated as children are more vulnerable to adverse consequences of drugs. **Objectives:** To evaluate pattern of parental self-medication in children, assess parental knowledge and attitude about common medicine use practices in children and find factors influencing self-medication. **Methods:** This was a prospective, cross-sectional questionnaire based study carried out in 170 parents attending Pediatric OPD of a tertiary care teaching hospital with their child. Parents were interviewed using a self-designed, semi-structured questionnaire to get information about various aspects of parental self-medication in children. **Results:** Out of the total respondents 58.82% admitted to using medicines without consulting a doctor, in their children. Self-medication was found to be significantly more in children above five years ($p < 0.0001$) and in families having annual income less than INR 30000 ($p = 0.0188$). Awareness about dose/duration, precautions/contraindications about medicines used by self-medication was inadequate. Knowledge about common medicine use practices in children such as quantity in one teaspoonful, breaking a tablet into two, mixing medicines with food was poor. Fever (55), cough/cold (45) and loose motions (37) were commonly associated with parental self-medication in children while medicines commonly used by self-medication were analgesics/antipyretics (58) and medicines for respiratory symptoms (42). **Conclusion:** Lack of essential knowledge about medicines used by self-medication and incorrect knowledge about various common medicine use practices among parents is a serious matter when medicine use in children is concerned. Interventions targeted at improving awareness about these issues amongst parents involved in self-medicating their children need to be undertaken on large scale.

KEYWORDS: Self-medication in children, parental knowledge of medicines, pediatric self-medication, medicine use in children.

INTRODUCTION

Self medication is the treatment of common health problems with medicines approved as safe and effective for use without medical supervision. This practice is widespread around the world.^[1] The practice of self-medication assumes greater importance particularly when children are concerned. Children constitute a large percentage of the population in developing countries and are prone to many illnesses.^[2] Globally, drug utilization by children is of great concern as they are considered to be the vulnerable group as far as use of medicines is considered.

Various studies have evaluated self-medication patterns in children and reported higher rates of self-medication which was often inappropriate and parents were reported to have inadequate knowledge about self-medication.^[3,4] In a study from Saudi Arabia 53.8% of the parents practiced self-medication in their children while 95.7% of Sudanese parents self-medicated their children for minor ailments.^[3,4] Among various self-medication

options, the use of over-the-counter (OTC) medicines is the most prevalent.^[5] Self-medication has advantages such as convenience, time saving, money saving, reduction in governmental medical costs, if practiced appropriately for minor illnesses. The extent and pattern of self-medication would depend on the healthcare system within a particular country. Various factors are known to affect self-medication such as, existence of a universal health insurance policy, availability of medicines in public sector hospitals, OTC availability of medicines, socio-economic status of the population etc. In a study from Germany it has been reported that “higher the socioeconomic status of the children’s family, or higher the educational level of the children’s mother, the more OTC medicines the children were likely to receive”.^[6]

The first response by most families to many illnesses in their children has been found to be the use of non-prescribed drugs.^[3] Studies evaluating the pattern of self-medication in children are sparse in the Indian

population. In a study from India 58.91% mothers used medication in their children on their own, most commonly for cough and cold and analgesics, antipyretics were the commonest drugs used by self-medication(34.9%).^[7] Other studies have also reported analgesics, antipyretics and anti-inflammatory agents as the most commonly used and fever, cough and respiratory infections as the common conditions for which self-medication was practiced in children.^[8,9] Apart from pattern of self-medication in children, parental knowledge, attitude and practice about various other issues concerned with medicine use in children have been rarely evaluated. This is particularly important when medicines are used without professional advice as in self-medication, since children are considered more vulnerable to adverse consequences of inappropriate medicine use.

The nature and extent of self-medication varies in different cultural contexts and social and educational impacts may be greater than the influence of medical practice. The issue of self-medication in children is different as in majority of cases it is not the child who is self-medicating but the parents who are responsible for self-medicating their children. The relationship between parental attitudes and medication administered to their children has been mainly studied in some specific diseases like respiratory illness, fever, diarrhea and pain.^[10,11] Not much is known about how parental knowledge and attitude about medicines in general affect medicine use in children.^[11,12] Hence, this study was planned with the objectives of evaluating the pattern of parental self-medication in children, to assess parental knowledge and attitude about common medicine use practices in children and to find out factors influencing self-medication.

MATERIALS AND METHODS

This was a prospective, cross-sectional questionnaire based study which was initiated after approval of the institutional ethics committee. A total of 170 parents who

attended the Pediatric OPD of a tertiary care teaching hospital with their child were included in this study. Participants were briefed about the trial and informed consent was obtained from those willing to participate. They were interviewed by a direct face-to-face interview and the information obtained was entered in a semi-structured questionnaire to get the following details: demographic characteristics: gender, age, occupation, education, annual income and number of children. Second part of the questionnaire was designed to obtain the following information from parents which was concerned with use of medicines in their children without consulting a doctor i.e. by self-medication: practice of self-medication, medicines used by self-medication, symptoms for which self-medication is practiced, perception about self-medication, factors influencing self-medication, awareness about dose, adverse effects & precautions about medicines used by self-medication, knowledge about common medicine use practices in children.

Any event of use of OTC or prescription medicines without consulting a doctor was considered as self-medication.

The study instrument was a prevalidated questionnaire consisting of both open and close-ended items. The questionnaire was pre-tested in 5 participants and suitable modifications done. Parents were approached while they were waiting for doctor's consultation so that they did not need to spend additional time for this purpose. The data obtained was compiled and analyzed.

Data was expressed as counts and percentages for categorical variables. Chi square test was used to find the association between parental education, annual income, gender and age group of children and self-medication. P value less than 0.05 was considered statistically significant. Graph pad prism software version 5.01 was used to analyze data.

RESULTS

Table 1 shows the sociodemographic characteristics of the study population.

Table 1: Sociodemographic characteristics of the study population (n=170).

Variable	Number of respondents (n=170)
Parent:	
Father	35
Mother	135
Gender of children:	
Male	105
Female	65
Age-group of children:	
(< 1)year	30
(1-5) years	91
(5-12) years	49
Parents' education:	
Below higher secondary	148
Higher secondary & above	22
Parent's annual income:	

<30000	92
>30000	78
Parents' occupation:	
Housewife	127
Laborers	29
Government Employees	14

Total of 170 parents were approached out of which 100 (58.82%) admitted to using medicines without consulting a doctor, in their children. Self-medication was found to be statistically significantly more in children above five years ($p < 0.0001$) and in families having annual income less than 30000 ($p = 0.0188$). Gender of children and

parents' level of education were not found to have any association with self-medication. Only the 100 parents who admitted self-medicating their children were interviewed further about various aspects of self-medication. Table 2 shows parents' knowledge about various aspects of self-medication in children.

Table 2: Respondents' knowledge and practice about various aspects of self-medication in children (n=100).

Sr. No.	Question	Yes	No
1	Aware of dose/frequency of dosing/duration of treatment	34	66
2	Aware of ADRs/precautions	0	100
3	Aware about importance of completing course of medicines	30	70
4	Aware about generic and branded medicines	10	90
5	Consult a doctor if the symptoms are not relieved by self-medication	100	0
6	Inform chemist if the child is already on other medication for some other illness	45	55
7	Check the expiry date of medicines before use	22	78
8	Aware about how much is one teaspoonful	30	70

None of the respondents was aware about ADRs/precautions of the medicines they used by self-medication in their children. All the respondents mentioned that they consult a doctor if their child's symptoms are not relieved by self-medication. Only 22 respondents checked expiry date of medicines before use

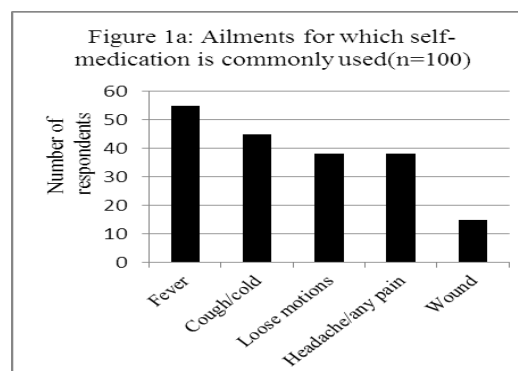
and 30 were aware about how much is one teaspoonful. (Table 2).

All respondents who practiced self-medication obtained the medicines from the chemist shop or used left-over medicines from previous prescriptions.

Table 3: Respondents' attitude about various aspects of self-medication in children (n=100).

Sr. No.	Question	Yes	No
1	Rely on the claims made in medicine advertisements	0	100
2	New medicines are better than older ones	79	21
3	Costly medicines are better than cheaper ones	85	15
4	Any medicine can be mixed with food before administering to a child	74	26
5	Use of vitamins, tonics, other nutritional supplements is essential in children	84	16
6	Can break any tablet into two if you have to use half a tablet	84	16
7	It is proper to reuse an older prescription for similar complaints in a child	46	54
8	Self-medication with any medicine is safe in children	21	79

All the respondents opined that one should not rely on the claims made in medicine advertisements. Seventy-nine respondents believed that new medicines are better than older ones, 85 thought that costly medicines are better than cheaper ones, while 84 respondents believed that use of vitamins, tonics, other nutritional supplements is essential in children. (Table 3) Eighty percent of the respondents were not sure whether any medicine used in adults can be safely used in children or not.



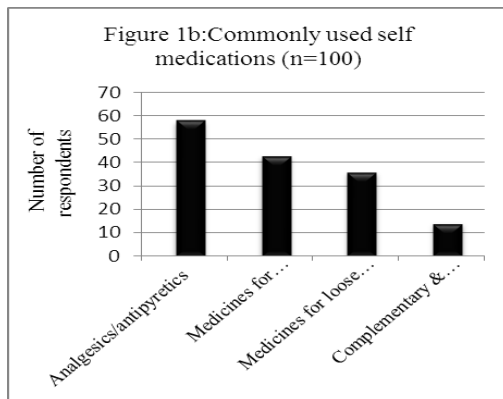


Figure 1a shows that fever (55), cough/cold (45) and loose motions (37) were the common symptoms for which parents self-medicated their children. Figure 1b shows that medicines commonly used by self-medication were analgesics/antipyretics (58), medicines for respiratory symptoms (42) and medicines for loose motions (36). Fourteen patients also reported use of medicines from complementary and alternative systems of medicine which included Ayurvedic, homeopathic medicines and home remedies such as ginger juice, ginger tea and basil leaves for cough and cold.

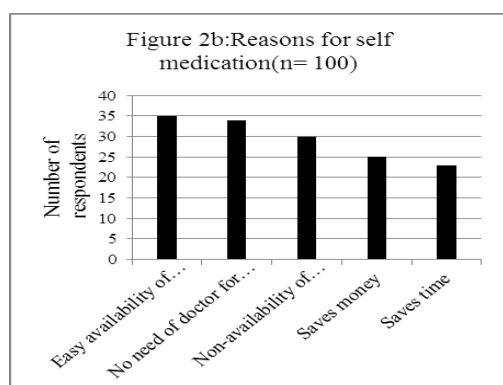
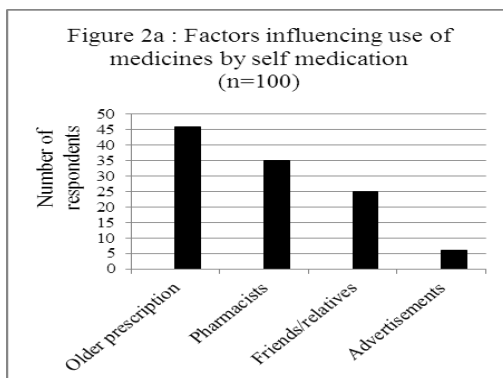


Figure 2a shows that use of medicines in children was most commonly influenced by older prescription (46), pharmacist (35), advice from friends or relatives (25) and advertisements (6). Figure 2b shows that easy availability of medicines without prescription (35), no need of doctor for minor ailments (34), non-availability of medicines in government hospital (30), money-saving (27) and time-saving (23) were the major reasons for self-medication.

DISCUSSION

Most of the studies on self-medication in children have investigated the use of medicines by children themselves.^[6,12] Few studies have evaluated parental attitude and practice towards self medicating their children.^[3,4,7] In this study apart from evaluating parental attitude and practice towards self medicating their children, we also examined parental knowledge about common medicine use practices in children. Amongst the total respondents 79.41% were mothers which indicates that mothers are more involved in dealing with health problems of their children. This does not necessarily indicate fathers' ignorance or lack of interest in their child's health but may be because most of the respondents belonged to low socio-economic background, hence, fathers did not afford to lose their wages since almost half a day is spent in taking the child to a health care facility. Almost 58 percent of the respondents admitted to using medicines without consulting a doctor, in their children. Different studies have reported highly variable rates of parental self-medication in children varying from 43% to 95.7%.^[13,4] In the U.S., 70% of illnesses among preschoolers were treated with non-prescription medicines.^[14] The reasons for such huge variation may be numerous including different methods used for collecting information, availability of free medical care for children in the public sector hospitals in some countries,^[5] parents' concern about safety of medicines used by self-medication, high cost of medical care. Parents may at times be apprehensive to reveal the use of medicines by self-medication in their children which may also affect the prevalence rate reported. Even cultural, social and educational factors have been shown to affect self-medication.^[3]

Parental self-medication was found to be significantly more in children above five years. This maybe because parents are more concerned about self-medicating smaller children considering them more vulnerable to adverse consequences of medicines. Lower income was another factor predisposing to self-medication. This maybe because self-medication saves money spent on doctors' consultation. This finding is in contrast to that reported in a study from Germany in which parental self-medication in children was found to be higher in families with higher household income.^[6] Though we did not find any association between parental education and self-medication, higher educational level of mothers has been reported to be closely associated with self-medication in children in other studies.^[5,6]

Majority of the respondents were not aware about the dose, frequency of dosing, duration of treatment, adverse effects, precautions of medicines that they used in their children. A study from the United states reported that 71% of caregivers inappropriately used non-prescription medicines for their children.^[15] Another study from UK found that parents were generally unaware of potential side effects of OTC medicines because they believed that

“over-the-counter medicines are not strong and were unlikely to harm their child,”.^[16] A study from Japan also reported lesser awareness about adverse effects of non-prescription medicines among participants.^[5] This is a matter of great concern since children are more vulnerable to adverse consequences of drugs particularly if used incorrectly.

Awareness about importance of completing course of medicines was poor among the respondents. This is particularly serious in case of antimicrobial drugs as incomplete course of therapy may contribute to development of drug resistance. Most of the respondents were not aware about generic and branded medicines. It is important to have this knowledge particularly in resource limited settings, since people can then demand for generic medicines or cheaper brands of medicines which they are using by self-medication in their child. Poor knowledge about quantity in one teaspoonful is also a serious matter since most of the time liquid formulations are prescribed to children and that to by measure of teaspoonful. Lack of this knowledge may result in under dosing or overdosing, both of which are associated with adverse consequences.

A widely prevalent misconception was observed that newer and costly medicines are better than older and cheaper ones and that use of vitamins, tonics, other nutritional supplements is essential in children. This finding is significant and needs to be addressed. It is important to remove this misconception since parents may tend to spend more money on buying costly medicines and vitamins and tonics even if they do not have enough resources. This is particularly important for patients attending a government hospital as most of them are from poor socioeconomic background. They may not afford to buy newer and costly medicines but they may do so by compromising on some other basic necessities since people usually give highest priority to health, particularly of children.

It is also a matter of great concern that most of the parents believed that any medicine can be mixed with food before administering to a child and any tablet can be broken into two if you have to use half a tablet. Bioavailability of many medicines is reduced by food, hence using these medicines with food may result in loss of efficacy. Similarly, breaking enteric-coated, sustained-release, delayed release or other specialized dosage forms of tablets which do not disintegrate in the stomach will result in poor absorption of the tablet and consequently poor effect. Hence, it is very essential that when chemists dispense medicines they provide information about proper use of these. Consumers/patients also need to be made aware that they should seek all the information about medicines which they are using, from a pharmacist. Pharmacists can play an important role to help educate consumers/patients, especially since a large number of people do not pay

attention to written information provided with medicines.^[17]

Fever, cough, cold and loose motions were the commonest symptoms for which parents self-medicated their children. Most of the other studies on parental self-medication in children have also reported fever, cough and cold as the common symptoms for using medicines without consulting a doctor.^[3,4,7] Medicines commonly used by self-medication were analgesics, antipyretics, medicines for respiratory illness and medicines for loose motions. Analgesics and antipyretics followed by medicines for respiratory illness were the most commonly used medicines by self-medication in children in other studies as well.^[8,9] Apart from these, other studies also mentioned antimicrobials as the other commonly used medicines by self-medication. Surprisingly in this study none of the respondents mentioned use of antimicrobials. The probable reason for this might be that people are not aware about the category of the medicines that they are using. It is likely that medicines for respiratory illness and loose motions may include antimicrobials as well. Ailments such as common cold, upper respiratory tract infection and diarrhea are usually of viral origin and self-limiting but it is well documented that these ailments are often inappropriately treated with antimicrobials.^[7] This is particularly true in a country where most of the antimicrobials are available without a prescription. Hence, it is very likely that respondents may be giving antimicrobials to their children, even when not needed without being aware of the same and also about the fact that it is important to complete the entire course of therapy with these drugs. Such inappropriate use of antimicrobials has the potential to harm not only the individual patient but also the society at large, due to emergence of antimicrobial resistance which has almost become a global pandemic.^[18]

Most common factor influencing use of medicines by self-medication was older prescription for similar complaints. Similar finding has been reported in other studies.^[19] This is not a correct practice as similar symptoms may not always be indicative of the same disease. Parents need to be aware about this, particularly while using medicines in children, without a prescription. This practice can be curtailed if dispensing medicines on a prescription is strictly regulated as is the practice in most of the developed economies where the number of times a prescription can be refilled is mentioned and after dispensing medicines the pharmacist endorses the same on the prescription.^[20,21] Pharmacists were the other factor influencing use of medicines without prescription. A study in Ireland found that consumers' choice of OTC medicines was most frequently influenced by a recommendation by a pharmacist.^[22] In a study from Japan 67.2% of participants agreed with the statement “The chemist is a good source of advice/information about minor medical problems,”.^[5] Though pharmacists are one of the reliable sources of drug information, it has

been observed that most of the times consumers do not seek the required information about medicines from the pharmacists and even pharmacists do not provide the same on their own. Many of the problems due to inappropriate use of medicines can be overcome if the dispensing pharmacists play their role as required.

Easy availability of medicines without prescription, no need of doctor for minor ailments, non-availability of medicines in government hospital and time/money saving were the major reasons for self-medication. Similar factors were reported to influence self-medication in children in a study from Vietnam.^[11] Many previous studies have also reported that the most common reason for self-medication was that the ailments were too minor to see a doctor.^[23,24] It is important for parents to know that though self-medication has advantages, at times using medicines without professional advice may result in adverse consequences particularly in pediatric patients since they are more vulnerable to adverse effects of drugs. Since most of the respondents were from poor socio-economic background they would prefer to take their child to a government hospital rather than self-medicating, but since medicines are not always available in government hospitals people tend to obtain them directly from the chemist shop. This is possible since most of the medicines are easily available without a prescription and this also saves time and money spent on doctors' consultation.

An encouraging finding was that all the respondents consulted a doctor if the symptoms were not relieved by self-medication and majority of them did not rely on the claims made in medicine advertisements.

One of the limitation of our study was the cross-sectional design used, since it is difficult to make any causal inferences in such type of design. Secondly, this study utilized a sample of parents attending the OPD of a tertiary care hospital, hence, generalizability of the study results would be questionable. Nevertheless, this study highlights parental unawareness about various common medicine use practices in children which has not been explored before indicating a serious need of interventions to increase awareness among parents.

To conclude, lack of essential knowledge about medicines used by self-medication and incorrect knowledge about various common medicine use practices among parents is a serious matter particularly when medicine use in children is concerned. Interventions targeted at improving awareness about these issues amongst parents involved in self-medicating their children need to be undertaken on large scale. Since dispensing pharmacists are one of the key factors influencing self-medication, they can play a major role in improving parental knowledge about medicines dispensed by self-medication.

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