

A prospective study of self-medication pattern among children attending a tertiary care hospital

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Abstract

Introduction: Children comprise a large percentage of the population in developing countries and are prone to many illnesses. The response of many families towards illness of their children is use of drugs without a prescription. This type of self medication (SM) is regarded as an important component of primary health care in most countries. **Materials and Methods:** This descriptive study was conducted in the out-patient department of Pediatrics, Government Medical College, DODA. This hospital is one of the largest government funded hospital in south Asia. It functions as a tertiary care center receiving referrals from all over Chenab valley of the Jammu Kashmir Union territory and from the neighbouring state of Himachal Pradesh too. **Results:** Total of 11582 children attended Pediatric outpatient department of Pediatrics during the study period of one year Jan 2020 to Dec 2020, of which 2026 children attended the OPD on the designated days. Out of 2026 children, 501 were recruited of whom 124 were excluded as Caregiver of these children did not give consent for the study and had to be excluded. Overall, 377 children and their parents participated in the study. **Conclusion:** The prevalence of self-medication among children attending Out-patient Department of Pediatrics, Government Medical College, DODA was 32%. Fever, cough and cold are common complaints leading to self-medication and commonly used drugs are paracetamol, anti-cold medications and antibiotics. Previous prescription is commonly used to procure the drugs and previous experience on efficacy of the drug is the commonest reason. Self-medication is more common in older than younger children.

Key Words: Self medication, antibiotics, younger children.

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Introduction

Children comprise a large percentage of the population in developing countries and are prone to many illnesses. The response of many families towards illness of their children is use of drugs without a prescription. This type of self medication (SM) is regarded as an important component of primary health care in most countries[1].

SM increases the risk of adverse drug reactions, drug resistance, and masks the diseases especially in children. In Nigeria, the prevalence of SM among infants has been reported to be 47.6% [2].

WHO recognizes self-medication as an element of self-care. Self-medication is defined as the utilization of drugs to treat self-diagnosed disorders or symptoms or the irregular or continuous use of a prescribed drug for chronic or repeated diseases or symptoms[3]. In pediatric context, self-medication implies administration of medication by the care giver without medical consultation. Although over-the-counter (OTC) drugs are meant for self-medication and are of proven efficacy and safety, their improper use due to lack of knowledge of their side effects and interactions could have serious implications, especially in extremes of age[4].

The main problem with self-medication with antibiotics is the emergence of resistance.

Economic, political and cultural factors have contributed to the growth and spread of self-medication worldwide.

These include greater availability of drugs, irresponsible publicity, pressure to convert prescription only drugs to over-the-counter drugs, access to health-care, education of parents and their socio-economic status[5].

The prevalence of self-medication as stated by various studies done all over the world varies from a value as low as 25% to as high as 75%. Very few studies have been published regarding self-medication in Indian children[6]. There is not enough data on the common illnesses for which self-medication is resorted to, common drugs used, number of drugs used, source of acquiring these drugs and reason for self-medicating. The objectives of this study are to examine the prevalence and characteristics of self-medication and relation of demographic characteristics to self-medication in our children.

Materials and methods

This descriptive study was conducted in the out-patient department of Pediatrics, Government Medical College, DODA. This hospital is one of the largest government funded hospital in south Asia. It functions as a tertiary care center receiving referrals from all over Chenab valley of the Jammu Kashmir Union territory and from the neighbouring state of Himachal Pradesh too. The GMC DODA is one of the three New GMCs in Jammu Division catering to over 10 lakh people of Hilly Chenab valley, including Doda, Kishtwar, Ramban and Kathua district as health facilities in these districts have remained very poor earlier.

All children between one month and eighteen years of age who attended the OPD were considered eligible. Children who attended the OPD on two fixed days in a week at a fixed time were included. Children whose caregiver did not give consent were excluded from the study. Based on prevalence shown in previous study by National

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Institute of Nutrition, Hyderabad, India, with an alpha error of 1% and allowed error of 15%, a sample size of 377 was planned.

After obtaining informed verbal consent, the structured questionnaire was administered to the caregiver in local language and their response recorded. Name, age, sex, relationship of the caregiver to the child, area of residence (rural or urban), distance from the nearest 24 hours health facility-both government and private and socio-economic status as per the Modified Kuppusamy scale were noted for all respondents. Caregivers were questioned whether the child was self-medicated (by the parents/ care givers) in the preceding month. For those who replied in affirmative, details regarding the illness for which the drug was given, the drugs used, duration, source of drugs, reason for not consulting a doctor and adverse events if any, were noted.

Demographic and clinical variables were expressed in frequencies with their percentage. Prevalence of self-medication was expressed in proportion with 95% confidence interval. Association between demographic factors and outcome variable was analyzed using Pearson chi-square test and p-value less than 0.05 was considered significant.

Results

Total of 11582 children attended Pediatric outpatient department of Pediatrics during the study period of one year Jan 2020 to Dec 2020, of which 2026 children attended the OPD on the designated days. Out of 2026 children, 501 were recruited of whom 124 were excluded as Caregiver of these children did not give consent for the study and had

to be excluded. Overall, 377 children and their parents participated in the study.

Mean age of children included in our study was 3.86 years. Male to Female ratio was 1.52: 1. 315 (84%) children were from rural areas and 62(16%) were from urban areas. 187 (49.6%) children had a 24 hours government health facility within 2 kilometers from their residence and 265 (70%) had a 24 hours private health facility within 2 kilometers from their residence. 4 children belonged to high socio economic class while 106 and 269 belonged to middle and lower class respectively.

Out of 377 children included in the study, 120 had been administered self-medication by caregivers in the past month which means a prevalence of self-medication is 32% (95% confidence interval 28% - 35%).

Most common illness for which self-medication was resorted to was fever in 92 children (77%) followed by cough and cold in 72 children (60%). Most commonly used drug was paracetamol which was used in 83 children (70%). Paracetamol was used as the only drug in 44 children (37%) and in combination with some other drug(s) in 39 children (33%). Cough and cold medication was used by 32 children (27%) and antibiotics by 24 children (20%) common drugs used for self-medication in children are shown in Figure 1. Single drug was used by 74 children (62%) and multiple drugs were used by 45 children (38%). Mean drug used per patient was 1.5. Mean duration of self-medication was 2.5 days.

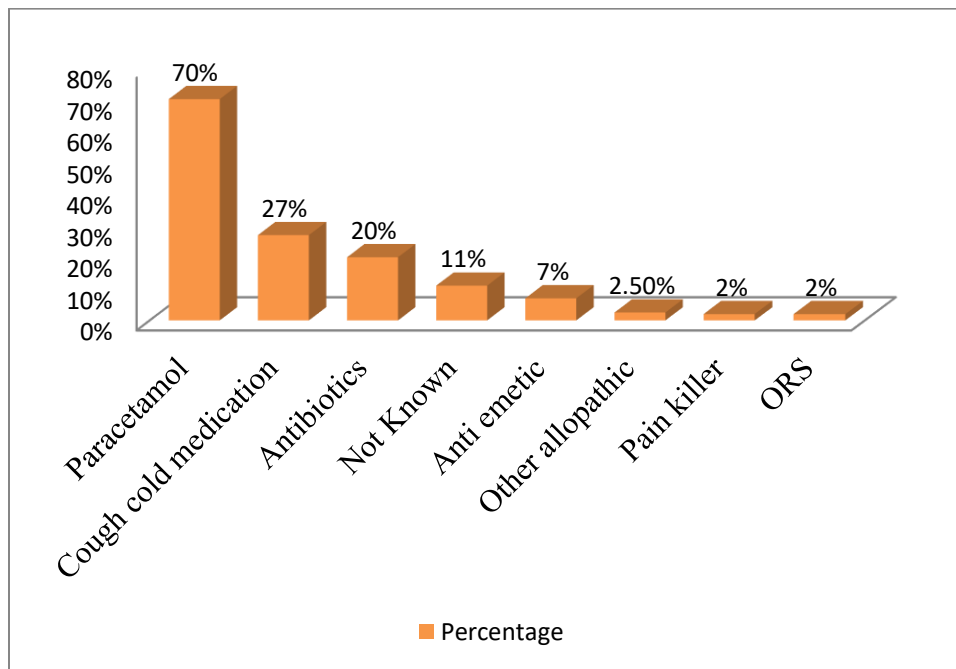


Fig 1: Drugs used for self-medication

Table 1: Uni-variate analysis of demographic factors and self-medication

Demographic characteristics	Groups	Self medicated	Not-Self medicated
		Number (%)	Number (%)
Age	1 month-1 year	20 (21)	75 (79)
	1-5 years	57 (32)	120 (68)
	5-10 years	33 (38)	53 (62)
	10-18 years	10 (48)	11 (52)
Sex	Male	69 (30)	158 (70)
	Female	50 (34)	99 (66)
Residence	Rural	100 (32)	215 (68)
	Urban	20 (32)	44 (68)
Distance (from nearest hospital)	<2 km	56 (30)	131 (70)

	>2 km	64 (33)	126 (67)
Socio economic scale	Upper class	1 (25)	2 (75)
	Middle class	38 (36)	68 (64)
	Lower class	81 (30)	188 (70)

When the association between the demographic factors and self-medication was analyzed by univariate analysis, it was found that only age had a statistically significant association with self-medication ($\chi^2 = 18.5$, $p = 0.001$) (Table 1). Prevalence of Self-medication increased with increasing age.

Discussion

In this study, prevalence of self-medication was found to be 32% which is similar to the 37% prevalence observed in the study conducted by NIN, Hyderabad, India. Our results are also similar to a 25% prevalence of self-medication observed in German study, the largest one with a sample size of 17,450 children. Some studies show prevalence as high as 50-70%. Previous studies have shown that self-medication is more common with the educated and affluent[7]. The fact that our study population mainly belonged to lower socio economic class, could be responsible for lower rate of self-medication in our subjects. Further, self-medication may be considered as an indirect indicator of quality of health care services and hence prevalence of self-medication is low in our region due to better access to health care[8].

Fever, cough and cold were the most common symptoms that were treated by self-medication in this study which is similar to many studies.

Commonest drug used for self-medication was paracetamol followed by anticold medications and antibiotics. This is in agreement with other studies. Usage of paracetamol by the caregiver for bringing down the temperature of a febrile child is acceptable and advisable. Usage of antibiotics as self-medication is strictly condemnable as it leads to emergence of antibiotic resistance. Though some anticold medications are approved for sale over-the-counter, their use in young children has resulted in many complications including death and hence they are approved by FDA for use in children more than 2 years only[9]. However, cochrane review states that the evidence for efficacy of anticold medicines is weak. Hence their use has to be discouraged, though not condemned. More than one drug was used for self-medication in a sizeable number of children. Not many studies bring out whether patients resort to monopharmacy or polypharmacy. Average duration of 2.5 days observed in our study is similar to that observed in other studies. The observation that children of older age were more commonly self-medicated than younger children, is supported by other studies. Other demographic factors like sex, area of residence-urban and rural, distance from nearest health facility and socioeconomic class did not have a statistically significant association with self-medication. This may reflect the perspective that the factor underlying self-medication is the attitude rather than necessity.

As previously stated, WHO recognizes self-medication as an element of self-care and defines the role of pharmacists in self-medication. The joint statement by International Pharmaceutical Federation and the World Self-Medication Industry encourages responsible Self-medication by listing responsibilities of pharmacists and manufacturers of non-prescription medicines. Responsible self-

medication is where the patient is provided all necessary information about the medicine and uses only non-prescription drugs for self-medication. Only when responsible self-medication is practiced it will not be a menace to the society[10].

Further, educational interventions aimed at young mothers and adolescents can decrease the misuse of prescription-only drugs. Strict enforcement of rules at pharmacy level is required to prevent over-the-counter sale of prescription-only drugs. These measures can go a long way in decreasing undesired self-medication.

Conclusion

The prevalence of self-medication among children attending out-Patient Department of Pediatrics, Government Medical College, DODAI is 32%. Fever, cough and cold are common complaints leading to self-medication and commonly used drugs are paracetamol, anti-cold medications and antibiotics. Previous prescription is commonly used to procure the drugs and previous experience on efficacy of the drug is the commonest reason. Self-medication is more common in older than younger children.

References

- Shveta S, Jagmohan S: A study of self medication pattern in Punjab. Indian Journal of Pharmacy Practice 2011; 4(2):42-6.
- Rajput MS, Mathur V, Yamini S, Nai RV: Pharmacoepidemiological study of self medication in Indore city. Indian Journal of Pharmacy Practice 2010; 3:25-31.
- Kayalvizhi S, Senapathi R: Evaluation of the perception, attitude and practice of self medication among business students in 3 select cities, south India. International Journal of Enterprise and Innovation Management Studies 2005; 1(3):40-4.
- James H, Shailendra S, Khalid H, Khaja AL, Ootom S, Sequeira RP: Evaluation of the Knowledge, Attitude and Practice of Self-Medication among First-Year Medical Students. Medical Principles and Practice 2006; 15:270-27.
- Dineshkumar B, Raghuram TC, Radhaiah G, Krishnaswamy K: Profile of drug use in urban and rural India. Pharmacoeconomics 1995; 7(4):332-46.
- Balamurugan E, Ganesh K: Prevalence and Pattern of self medication use in coastal regions of South India. British J Medical Practitioners 2011; 4(3):435-38.
- Mabrook M: Self-medication with Antibiotic in Children in Sana'a City, Yemen. Oman Medical Journal 2010; 25; 41-3.
- Brogen AS, Shantibala K, Rajkumari B, Laishram J: Determination of sex-ratio by birth order in an urban community in Manipur. Indian J Public Health 2009; 53(1):13-7.
- Kaushal J, Gupta MC, and Jindal P, Verma S: Self-medication patterns and drug use behavior in housewives belonging to the middle income group in a city in northern India. Indian Journal of Community Med 2012; 37:16-19.
- Saeed AA: Self-medication among primary care patients in Farazdak Clinic in Riyadh. Social Science Medicine 1988; 27(3):287-9.

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