A descriptive cross sectional study on mothers self-medicating children

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(Key words: Self-medication, medicating children, educating mothers)

Abstract

Objectives To identify the reasons for self-medicating children, social circumstances of the mothers, symptoms or disorders treated and the medicines used.

Design A cross sectional descriptive study.

Method Study was done by visiting homes. An interviewer-administered questionnaire was used to gather data on self-medication of children below 12 years of age in the preceding three months. Data was analysed using SPSS and Stats Direct statistical software (version 2.3.2.)

Results 119 mothers satisfied the inclusion criteria for study and 85% had self-medicated their children. A physician prescribing the same drug for similar symptoms previously was the commonest reason given for self-medication. Only 89% of mothers knew that self-medication could be harmful. Most mothers involved in self-medication were unemployed. Headache was the commonest symptom and paracetamol the most commonly used drug.

Conclusions This study showed the importance of educating mothers on appropriate medication of children and having safe regulatory procedures for sale of drugs in developing countries.

Introduction

Currently self-medication is considered an important component of health-care systems that may save expenses if practised correctly. Recognizing the value of self-medication, World Health Organization (WHO) published guidelines for the regulatory assessment of medicinal products for use in self-medication. Self-medication involves the use of medicinal products by consumers to treat self-recognized disorders or symptoms or the intermittent or continued use of a medication prescribed by a physician for chronic or recurring diseases or symptoms and the medication use of family members, especially involving children and the elderly[1].

In some countries pharmaceutical drugs are divided into over-the-counter (OTC) drugs, that can be purchased by anyone without restrictions, and prescription-only drugs, that must be prescribed by qualified medical personnel because of the harmful consequences that may occur if improperly used. Giving the right dose at the right time interval is important to get the desired effect of a drug, to prevent overdosing and to avoid harmful interactions between drugs and between drugs and food. Attempts should be made to ensure appropriate use of medicines by recognizing the pattern of self-medication practices in different communities.

Drugs may work differently in children compared to adults due to age-related differences. Appropriate drug dose for a child should be decided according to age and body weight. Some drugs are not recommended for children. Administering drugs to children may need special devices such as droppers or dosing cups. Some of these specific devices come packaged with medicines especially formulated to be used in children. The knowledge on correct use of devices in administering drugs for children is important for mothers and using kitchen spoons and other household utensils, that vary in size and are not accurate enough to measure doses of medicines, can result in giving the incorrect dose of the medication. Due to these reasons mothers self-medicating children may be more dangerous than self-medication among adults. There is no data on the self-medication practices of Sri Lankan mothers for children's illnesses. Self-medication practices may vary depending on the availability of healthcare facilities. We chose to examine the self-medication practices of mothers during children's illness in an administrative area in Ragama, under an urban council, where there are adequate healthcare facilities including a Tertiary

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Hospital. The specific objectives of the study were to identify the symptoms or disorders treated by the mothers, medicines used, reasons for self-medicating children and social circumstances of the mothers who self-medicated children.

Methodology

A cross-sectional descriptive study was done in an administrative area of Ragama under an urban council in the Western Province of Sri Lanka, in the month of December 2000. Department of Census and Statistics has divided this administrative area into 17 units, consisting of 55 households each. Out of these 17 units 6 were randomly selected and mothers living in these areas, having children below 12 years of age, were invited to take part in the study. An interviewer-administered questionnaire was designed in the local language, Sinhala, to gather data from mothers by recall on medicating practices on children in the preceding three months. The clarity of the questionnaire was ensured by a pre-test carried out in an area not selected for the study. In this study "mothers self-medicating children" was defined as the use of allopathic or traditional medicines on children during self-recognised episodes of illness without consulting a qualified healthcare practitioner. Data was gathered by visiting house to house. Data was analysed using the statistical package for social sciences (SPSS) and StatsDirect statistical software (version 2.3.2).

Results

There were 330 households and 119 mothers having children below 12 years of age in the study area. All 119 mothers consented to take part in the study. 101 (85%) mothers reported self-medicating children at least once over the preceding three months. Table 1 shows the symptoms and disorders recognized by mothers as episodes of ill health in their children in the preceding 3 months, their frequency of occurrence and the mode of treatment.

Table 1.
Symptoms and disorders recognized by mothers, their frequency of occurrence in three months and modes of treatment

Symptom/ Disorder Recognized	*Number of episodes*	*Number & % of episodes treated by only self-medication*	*Number & % of episodes treated by self-medication and medical consultation*	*Number & % of episodes treated only by medical consultation*
Common cold	55	32 (58%)	15 (27%)	8 (15%)
Cough	39	18 (46%)	11 (28%)	10 (26%)
Earache	5	1 (20%)	1 (20%)	3 (60%)
Excessive crying	7	6 (83%)	1 (17%)	0
Eye symptoms	10	2 (20%)	1 (10%)	7 (70%)
Fever	67	24 (36%)	29 (43%)	14 (21%)
Gastrointestinal symptoms	30	13 (43%)	13 (43%)	4 (14%)
Headache	25	17 (68%)	6 (24%)	2 (8%)
Muscle pain	12	7 (58%)	3 (25%)	2 (17%)
Skin rash	9	2 (22%)	4 (44%)	3 (33%)
Sore throat	7	3 (42%)	2 (29%)	2 (29%)
Urinary tract symptoms	4	0	2 (50%)	2 (50%)
Wheezing	14	4 (28%)	4 (28%)	6 (44%)
Others*	15	6 (40%)	3 (20%)	6 (40%)
TOTAL	299	135	95	69

**Others = Cuts, contusions after home accidents, insect bites and poor appetite.*

76.9% of the episodes (135+95) have been self-medicated by mothers solely or in combination with treatment by medical consultation. Headache was the commonest symptom for which mothers self-medicated children.

Table 2 shows the medicines used on children and the frequency of their use. Table 3 shows the reasons mothers reported as responsible for self-medicating children.

Table 2
Medicines used by mothers for self-medicating children and frequency of their use

Medicine	*Registered State of the Medicine for Sale in Sri Lanka: Prescription/OTC*[9]	*Frequency used (number of episodes of ill health for which each medicine is used)*
Registered Western Medicines		
Antibiotics: amoxicillin, ampicillin, erythromycin	Prescription	20
Antifungals: Clotrimazole (Candid cream)	Prescription	6
Anthelminthics: mebendazole (Vermox), Pyrantel pamoate (Combatrine)	Prescription	13
Beclomethazone	Prescription	2
Chlorpheniramine (Piriton)	Prescription	15
Cough syrups	Prescription/OTC	23
Eye drops	Prescription	3
Ear drops	Prescription	2
Methylsalicylate compound cream	OTC	10
Menthol compound rub	OTC	43
Oral rehydration salts (Jeevani)	OTC	11
Paracetamol	OTC	88
Salbutamol	Prescription	8
Gripe water	OTC	13
Others		
Asamodagam spirit (bottled herbal extract from Ayurvedic stores)		18
Coriander water (coriander seeds boiled water prepared at home)		52
	Total	327

Table 3
Reasons given by mothers for self-medicating children and number of mothers reporting each reason

Reasons	*Number of Mothers Reporting*
A doctor prescribed previously for similar symptoms	114
Influence of advertisement appearing in media	51
Friends or relatives advised	32
Pharmacist advised	24
Knowledge gained from educational programs in the media	17

Figure 1 shows what mothers reported on the potential danger of self-medicating children and frequency of each reporting.

Awareness of mothers on the potential danger of self-medicating children

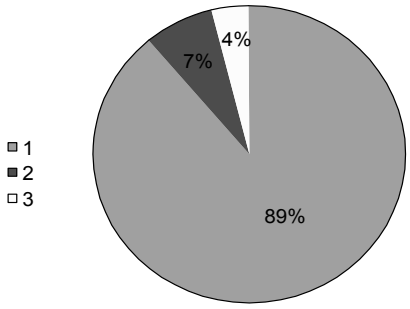

Figure 1 *The pie diagram shows what mothers (N=119) reported on self-medicating children. 1 = Can be Dangerous, 2 = Don't Know, 3 = Not Dangerous.*

Figure 2 shows the employment state of the mothers and frequency of self-medication among the employed and unemployed mothers. Unemployed mothers self-medicated their children more frequently than the employed.

Employment status of mothers

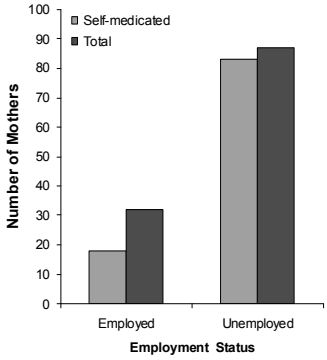

Figure 2 *The column chart shows employed (N=32) and unemployed (N=87) mothers as two pairs of columns. Black columns show the total number of mothers and the gray columns show the number of mothers who self-medicated in each group.*

Figure 3 shows the educational level of the mothers included in the study and the number of mothers at each educational level who self-medicated. The frequency of self-medicating children was 100% among the most educated group of mothers and the incidence of self-medication positively correlated with the level of education (Spearman's rank correlation coefficient, r=0.95 and p<0.05).

Distribution of mothers according to their educational level and number of mothers self-medicating in each group

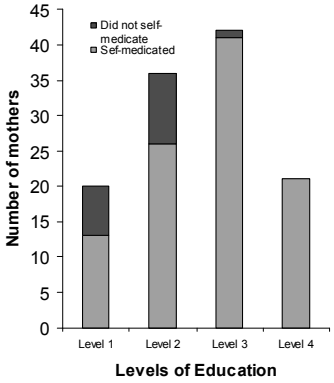

Figure 3. *Each stacked column as a whole shows the number of mothers who have achieved different levels of education: Level 1= Never been to school-Grade 4 (N=20), Level 2= Grade 5- Grade 9 (N=36), Level 3 =Educated up to/passed G.C.E. O/L (N=42), Level 4= Passed G.C.E. O /L and Educated above G.C.E. O /L class (N=21). The lower gray portion of each stacked column shows the number of mothers who self-medicated. The incidence of self-medication and the level of education positively correlated (r = 0.95 and p< 0.05).*

Figure 4 shows frequency of self-medicating mothers according to number of children a mother had. Frequency of self-medication positively correlated with the number of children (Spearman's rank correlation coefficient r=1 and p<0.05) and incidence of self-medication was significantly lower among mothers having one child compared with mothers having two or more children (analysis of variance, P<0.05)

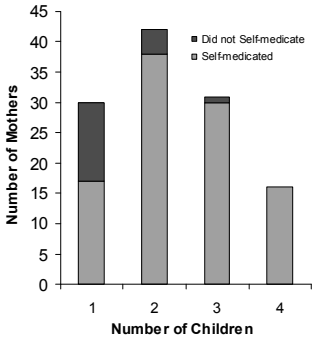

Figure 4. *Each stacked column as a whole shows the total number of mothers with a different number of children, 1=1child (N=30), 2 = 2 children (N=42), 3=3 children (N =31), 4= 4 children (N=16). The lower gray portion of each stacked column shows the number of mothers who self-medicated. The incidence of self-medication and the number of children positively correlated (r = 1 and p< 0.05).*

Discussion

Mothers self-medicated, treated by medical consultation or combined the two practices during episodes of children's ill health. A study from Nepal has shown a 59% prevalence of self-medicating illness episodes of young adults in a 6-month period[2] while an Ethiopian study, which assessed self-medication among adults and self-medicating children, has reported 27.2% prevalence[3]. The prevalence of mothers self-medicating children below 12 years is comparatively high in the sample with 76.9% of illness episodes been self-medicated by mothers and 85% of mothers being engaged in self-medicating children.

Practice of self-medication on children in combination with treatment given by doctors, as seen in this study, can result in harmful drug interactions and overdose unless mother gives an accurate drug history to the doctor. This practice will also make it difficult to manage adverse reactions, if they occur, due vto difficulty bin identifying the drug responsible.

Headache, common cold and cough are commonly self-medicated in many communities[3,4] and this study showed that children were also commonly self-medicated for the same conditions. Allopathic medicines registered as prescription only, OTC, as well as traditional medicines, has been used in self-medicating children. Paracetamol was the commonest drug used in children. Cases of paracetamol poisoning reported in Sri Lankan children were following self-medication by mothers[5]. These results show the importance of educating mothers having young children on the appropriate use of paracetamol, as there are numerous advertisements on different brands of paracetamol in the media, which may confuse the mothers.

As seen in this study, use of prescription-only drugs in self-medication has been observed in several other developing countries as well, due to the availability of prescription only drugs OTC in developing countries[6,7]. Use of antibiotics in children without a proper indication, as seen in this study, may result in development of hazardous bacterial resistance. As a result of using prescription drugs in self-medicating children, important adverse reactions may be under reported as they may not be reported to the doctor through the guilt of the mother. On the other hand, the use of traditional medicines whose efficacy and toxicity is not well known scientifically could also be dangerous.

The low severity of the symptoms of illness is frequently reported as a reason for self-medication in the literature[3,7]. However this study showed that a "doctor prescribing the same drug for similar symptoms previously" was the commonest reason for mothers self-medicating children. Only 89% of the mothers knew that self-medicating children can be dangerous.

Unemployed mothers self-medicated their children more than the employed in this sample. However with the increase in the level of education the prevalence of self-medicating children increased. Majority of mothers in this sample were educated up to G.C.E. Ordinary level class or less and there were mothers who had never gone to school as well who self-medicated their children. This, too, is a serious concern with regards to the type of drug information they would have had in practising self-medication. Incidence of self-medicating children increased with the increase in the number of children a mother had probably associated with mothers' experience with an older child leading to the practice. Parents, especially mothers, seem to play a very important role in caring for sick children. Mother seems to be the person deciding the mode of treatment for sick children. A study done in Netherlands has shown that parents managed 67-99% of children's health problems without medical consultation[8]. The findings of our study suggests the importance of educating the mothers on appropriate use of drugs in children as well as the governments of developing countries

formulating and implementing legislations regarding the sale of drugs, preventing the prescription drugs been used in self-medication.

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