



**KNOWLEDGE OF MOTHERS REGARDING ADMINISTRATION OF MEDICATION IN  
CHILDREN AND DIFFICULTIES EXPERIENCED DURING MEDICATION  
ADMINISTRATION TO CHILDREN**

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**ABSTRACT**

**Background:** Administering medications to the children is a great challenge for the parents, caregivers as well as to the health professionals. Children are different from adults in many aspects related to medication administration such as taste preference, medicine related toxicity etc. Assessing the knowledge of parents regarding the administration of medications to their children as well as to know what are the difficulties faced by them while administering medications to the children may help in planning appropriate interventions. **Objective:** To assess the knowledge regarding administration of medication in children and difficulties experienced during medication administration to children among mothers. **Methods:** A quantitative approach with descriptive survey design was adopted. The study was conducted in selected paediatric OPD at a medical college hospital in Mangaluru. The study subjects were 100 mothers who are having children between the age of 0 to 12 years. A structured knowledge Questionnaire was used to collect the data. The data was analyzed using descriptive and inferential statistics. **Result:** The study result showed that maximum percentage of (35%) study sample were between the age of 25-35 years, 39% were Muslims and 30% had primary education, 63% belonged to nuclear family and 50% of subject had 2 children. The study revealed that 60% mothers had good knowledge, 39% had average knowledge and only 1% had poor knowledge regarding medication administration in children. The study reveals that, 60% mothers felt more difficulty to administer the medication is for children below 5 years, 70% mothers said that oral route is more difficult for administration of medication, 40% mothers said they find difficulty in administering correct dose to the child as physician prescribed, 50% of mother replied that the main problem facing while administering medicine to the children is that they vomit immediately after medicine administration. Approximately 30% of mothers expressed difficulty to store the medications out of the reach of children and 90% of mothers said that tablet form of medication is more difficult to give to children. The study found there is significant association between knowledge scores and age of the mother, Educational qualification and number of children where as no association was found between knowledge with religion and type of family. **Conclusion:** The study findings reveal that majority of mothers had good knowledge about medicine administration but they face few difficulties while administering medicines to their children. So the study suggests that child health nurses should take initiative to educate the mothers regarding medication administration to their children. Nurses should clearly explain parents about prescription and clarify all doubts of mothers regarding medication administration.

**KEYWORDS:** Knowledge, Medication administration, Mothers, Difficulties.

**INTRODUCTION**

Medicine is defined as a remedial agent that has the property of curing, preventing, treating, or mitigating diseases or which is used for this purpose.<sup>[1]</sup> Children differ from adults in many aspects of drugs administration such as medicine related toxicity and taste preference. It essential that paediatric medicines are formulated in such a way that they best suit a child's age, size, physiologic condition and treatment requirements<sup>[2]</sup>

If parents or care givers do not receive adequate instructions on medicine administration and overcoming the challenges may result in poor efficacy of the drug and / or increased risk for adverse reactions due to errors occurring while administering medicines.<sup>[3]</sup>

To ensure adequate treatment to children, different route of administration, dosage, forms and strength may be required.<sup>[2]</sup> Most common route of administration in

children include oral route as pills, liquid or tablet, rectal route as suppository, topical route by applying to skin, nasal sprays or pumps that deliver drug through inhalation, otic as drops into the ear, ophthalmic as drug, gel or ointment for the eye.<sup>[4]</sup> Parents who lack of knowledge on how to administer extemporaneous formulation in paediatrics can be a potential source of medication errors. Many parents feel the process of giving medication to the children is complicated and requires lot of skills and knowledge of medicine i.e. when to give, how much to give, how many times to give how to give etc.<sup>[5]</sup>

Medication error is being one of the causes for patient injury, hospitalisation and death among children, attending the root cause of medication error has more often been directed to the provider or health care system's contributing role in error during the prescribing, ordering, dispensing or administering of medicine. A large proportion of outpatient medication errors, however occur as a result of caregivers not administering a medicine as intended. Numerous studies have found low literacy to be significantly associated with poorer understanding of medication names, indications, instructions and adherence to treatment regimen. Other difficulties reported by parents for not being able to administer medication as prescribed include forgetting, discontinuing medication because symptoms have reduced, resistance of child and adverse of medication.<sup>[6]</sup>

A study showed that most commonly administered medicines at home setting are antipyretics(94.4%), decongestants(89.4%), and antibiotics(77.7%). The major source of medication information was instruction sheets. parents more commonly used dosing cups(43.6%) and droppers (32.9%) when administering liquid medication to children. Furthermore 12.3% of the children experienced Adverse Drug Effects(ADE). Only 48% of participants were provided information on ADEs, 15.1% were unsure about recommended method for administering medicine to children at home. Analysis of variance and post hoc tests showed that level of parental education and monthly income each had significant impact on participant understanding.<sup>[7]</sup> Another study found that among 5495 children between the age 0-14 years and of both sex, 8.2% had received over the counter (OTC) drug in the 2 weeks preceding the survey. Among the OTC drugs, medicine for cold (25.5%), Analgesics (30.3%), and antipyretics (22.8%) were the most commonly used. A study was conducted on medication error among adult and children with cancer in outpatient setting showed that medication error rates are high among adults and paediatric outpatient with cancer.<sup>[9]</sup> A study result revealed thatt 28% of subjects misunderstood medication instructions. The prevalence of misinterpreting instructions among subjects with adequate, marginal, and low literacy was 18%, 34%, and 43%, respectively. Common causes for misunderstanding included problems with dosage measurement (28%; i.e.,

tablespoon instead of teaspoon) and frequency of use (33%; ie, every 3 hours instead of every 6–8 hours).<sup>[6]</sup>

The most commonly occurring and preventable medical errors are the errors associated with medications. While comparing to the adult population, paediatric population is at higher risk for medication errors due to weight-based dosing calculations, fractional dosing (e.g., mg vs. Gm), and the need for decimal points.<sup>[10]</sup> An important components paediatric patient safety is medication administration. Medication need to be safe and effective. The aim of the present study was to understand what level of knowledge exists among mothers regarding medication administration and to find the difficulties, mothers experience during administration of medicines to their children.

### SUBJECT AND METHOD

A quantitative research approach with descriptive survey design was adopted for the study. The study was conducted in selected paediatric OPD at a Medical College Hospital in Mangaluru, Karnataka, India. The variables under study were – Knowledge of mothers regarding administration of medication in children, and difficulties experienced by mothers during administration of medication to their children. The population under study were mothers who are having children under the age of 12 years. Among those fulfilled the sampling criteria, 100 mothers were selected as study subjects. The tool used for the study was structured knowledge questionnaire developed by investigators which consisted of 3 parts. First part was demographic proforma of study subjects, second part was multiple choice questions on knowledge regarding administration of medication in children and the third part was open ended questions regarding difficulties experienced by study subjects while administering medicines to their children. The tool was validated by giving it to the experts and reliability score found was 0.7 which was calculated by Chronbach's alpha. Data was collected after taking informed consent from the study participants and the data was analysed using descriptive and inferential statistics.

### RESULT

The study result showed that Majority of participants (35%) were between the age 25-35 years. Majority (39%) belonged to Muslim, (25%) had primary education, (63%) belonged to nuclear family, and 50% mothers had 2 children.

Data in figure 1 shows the knowledge scores of mothers regarding medication administration in children. Which reveals that 60% mothers had good knowledge, 39% had average knowledge and 1% has poor knowledge. The mean knowledge score was  $21.29 \pm 4.7$  with mean percentage 71%.



**Fig 1: Distribution of sample according to the knowledge score.**

Regarding the difficulties experienced by mothers in relation to medicine administration to their children, 60% of mothers expressed that it is most difficult to administer medicine for children those who are below 5 years of age. Approximately 40% mothers said that they have difficulty to administer correct dose to the child as prescribed by physician and 50% of mother replied that vomiting after administration is the major problem they experience. About 30% of mothers expressed the difficulty to store the medications out of the reach of children and 90% of mothers said that tablet form of medication is most difficult to give to children.

Table 1 shows that there is significant association between knowledge scores and age of the mother, Educational qualification and number of children where as no association was found between knowledge with religion and type of family.

**Table 1: Association between Knowledge with Demographic Variables**

N=100

| Sl. No | Demographic variable      | Chi square | P value |
|--------|---------------------------|------------|---------|
| 1      | Age                       | 64.08      | 0.00*   |
| 2      | Religion                  | 27.64      | 0.06    |
| 3      | Educational qualification | 57.21      | 0.01*   |
| 4      | Type of family            | 24.62      | 0.59    |
| 5      | Number of children        | 66.08      | 0.00*   |

P<0.05;\*= significant

## DISCUSSION

The study was undertaken to assess the knowledge of mothers regarding administration of medication in children and difficulties experienced during medication administration to children at Paediatric OPD at selected hospital in Mangaluru. The result shows that maximum percentage of (35%) were between the age of 25-35 years. 39% were Muslims and 30% had primary education, 63% belonged to nuclear family and 50% of subject had 2 children. The demographic findings of present study is consistent with a study conducted at Hyatabad town, Peshawar to detect knowledge, attitude and practices of parents regarding antibiotic use in children. In this study majority (270%) were below 40 and 33.5% had post graduation.<sup>[11]</sup>

Knowledge about medication administration among mothers, the present study reveals that 60% mothers had good knowledge, 39% had average knowledge and 1% had poor knowledge regarding medication administration in children. The findings of the study are consistent with a 2 month cross sectional study conducted to assess the parents or caregivers knowledge towards medicine administration in paediatrics in Lisbon. In this study the mean level of knowledge parents was 53.7%. The lowest level of knowledge was 10.7%.<sup>[12]</sup>

In order to know the difficulties experienced by mothers during medication administration in children, the study reveals that, 60% mothers feels that "under 5 years children have more difficulty to administer the

medication, 70% mothers said that oral route is more difficult for administration of medication, 40% mothers say that they have difficulty to administer correct dose to the child as physician described, 50% of mother replied that the main problem facing while administering medicine to the children is they will vomit after administration. 30% of mothers feel difficulty to store the medications out of the reach of children and 90% of mothers said that tablet form of medication is more difficult to give to children. A similar descriptive cross sectional study was conducted in children's Hospital outpatient clinic, where the study was aimed to determine parents experience and problems with administering medication to their children at home and study findings revealed that 50% of parents feels that liquid medication is more difficult to administer and 54% parents said that whose children refused to take tablet or liquid medication.<sup>[13]</sup>

## CONCLUSION

The study findings reveal that majority of mothers had good knowledge about medicine administration but they face few difficulties while administering medicines to their children. So the study suggests that child health nurses should take initiative to educate the mothers regarding medication administration to their children. Nurses should clearly explain parents about prescription and clarify all doubts of mothers regarding medication administration.

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