

Oral Abstracts

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ADMINISTRATION OF OVER-THE-COUNTER MEDICATION TO CHILDREN AT HOME AND ACCURACY OF ORAL LIQUID MEASURING DEVICES- AN OBSERVATIONAL STUDY

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Objectives: To identify accuracy of measuring over the counter medication for children and to assess accuracy of oral liquid measuring devices

Method: The study population was mothers of children age 1 to 5 years of age. Participants were selected by using stratified random sampling method from 2 rural areas. Mothers were asked about preferable dosage form of paracetamol for the child. Then mothers were asked to demonstrate measuring of paracetamol for their child if the child has fever. Mothers were allowed to use any measuring devices they normally use for measuring liquid paracetamol.

Mothers were then provided with 3 different dosing instruments including measuring cup, calibrated spoon and dropper and asked to measure 5ml Paracetamol liquid formulation.

Results: Measuring cup (71%, n=94) associated with the paracetamol package was the most common measuring device, followed by syringe (n=7), calibrated spoon (n=1) and household spoons (n=3). Only 45 mothers (34%) measured accepted dose. Majority 44% (n=59) of measurements were under dose while 15% mothers made excessive dose. 5 mothers (4%) made suprathereapeutic dose and 4 mothers (3%) made subtherapeutic dose. There is a significant difference between correct dose according to the child weight and the measured tablet ($p=0.0080$) and paracetamol syrup ($p<0.0001$) dose measured by mothers. 56% of mothers were made excessive dose when measuring tablet for the child while 51% of mothers who used cup for measuring syrups made under dose. All the mothers who used household spoons made under dose and sub therapeutic dose. The highest (43%) accurate dose measurements were done by using syringes.

Table 1. Dosing Errors by instruments

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Instrument Type	Mean ml (SD)	Dosing Error Category, No. (%)		
		No error	Small error	Large error
Dosing cup	4.868 (0.6714)	80 (60)	52 (39)	1 (1)
Calibrated spoon	4.147 (0.5532)	39 (29)	94 (71)	(0)
Syringe	4.856 (0.4652)	115 (86)	17 (13)	1 (1)

No error indicates within 10% of the recommended dose; small error, greater than 10% to 49% deviation from the recommended dose; and large error, greater than 49% deviation from the recommended dose

Measuring cups were the most accurate device followed by syringe ($p = 0.3797$). The highest dosing error was made by calibrated spoons and the error was significantly higher than measurements made by dosing cup and syringe. (Measuring cup vs Calibrated spoon < 0.0001 while Syringe vs Calibrated spoon < 0.0001).

Conclusion: Dosing cup was the most common measuring device used by mothers to measuring liquid medications. Mothers measured syrup accurately than tablet dosage form. Subjects were more likely to measure an acceptable dose with an oral syringe when compared with a dosing cup. A large proportion of study participants were unable to measure an accurate dose with calibrated spoon. Some mothers measured suprathereapeutic paracetamol doses and this may lead to paracetamol toxicity if they consistently administered suprathereapeutic doses for their child. Educational intervention should be implemented to address the importance of accuracy of dose measurements and selection of appropriate dosage form and dosing devices.