

# Drug dosing errors in outpatient paediatric patients at primary health-care centres in Nablus: a cross-sectional study

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## Abstract

**Background** Paediatric patients are highly sensitive to drug-related problems such as dosing errors. Some dosing errors are preventable with suitable strategies. The aim of this study was to assess the prevalence of drug dosing errors in outpatient paediatric patients who attended primary health-care centres in Nablus and to identify possible associated factors.

**Methods** For this cross-sectional study, we reviewed doctors' prescriptions for paediatric patients aged between 1 day and 12 years. The prescriptions were obtained from all primary health-care centres in Nablus. The drug dosing errors were defined as overdose, underdose, and inappropriate frequency or duration. The study was approved by the Institutional Review Board of An-Najah National University and the Palestinian Ministry of Health.

**Findings** 400 paediatric prescriptions were reviewed between August and December, 2015. The patients were prescribed 782 medications, including 29 different drugs. The most commonly prescribed drugs were paracetamol (30% of prescriptions), chlorpheniramine (17%), and amoxicillin (16%). 702 (90%) of 782 prescribed drugs were for oral use. Most prescriptions included either one error (32%) or two errors (31%). Of the 782 prescribed drugs, 168 (22%) were potential overdoses, 200 (26%) were potential underdoses, and 51 (7%) were drugs that should not have been prescribed in similar conditions according to age. 37 drugs were prescribed in a frequency that might be more than needed, whereas 231 drugs were potentially prescribed less frequently than needed. The duration of eight treatments was potentially more than needed, whereas 28 treatments had potentially shorter duration. The potential for inappropriate dosing errors was associated with weight ( $p=0.006$ ), age ( $p<0.001$ ), centre ( $p<0.001$ ), and number of drugs prescribed ( $p<0.001$ ).

**Interpretation** Medication dosing errors in young outpatient children in Nablus were common. Many variables were found to be associated with errors such as weight, age, number of medications prescribed, and the centre. Studies on the clinical effect of these potential errors and effective error prevention strategies are needed.

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### Contributors

RA-R and HA-Z contributed to the study design, data analysis, data interpretation, and the writing and revision of the Abstract. GA-S collected the data and participated in study design, data analysis and data interpretation. All authors have seen and approved the final version of the Abstract for publication.

### Declaration of interests

We declare no competing interests.

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