

Keeping children safe from harmful household products: a survey on safety practices in Croatia

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Household chemicals are a common cause of poisoning incidents in children under the age of six in Croatia (1). According to the 2017 annual reports of the Croatian Poison Control Centre (CPCC) regularly published in this journal, poisoning among infants and preschool children increased from 2015, and 2017 made 52% of all CPCC cases in the year 2017 (2).

With support of City Offices for Education and Health and permission of kindergarten principals, we conducted a survey with 138 parents of children attending public kindergartens in the city of Zagreb, Croatia to learn about how parents keep their children safe from household chemicals. Ethical approval was granted by the Ethics Committee of the Institute of Medical Research and Occupational Health, Zagreb, Croatia. Participants gave their written informed consent. All of the parents answered a questionnaire, which included questions about parents' age, sex, education, working status, their children's age and sex, parents' attitude about the child poisonings issue in the community, keeping household products safe, and other safety-related habits. The parents were also asked if they had contacted the CPCC before. Their replies were analysed with statistical software R, version 3.4.1. (3), using descriptive statistics, Pearson's chi-square test (or Fisher's exact test in case of expected cell frequencies <5), and Kruskal-Wallis test. Differences at a p-value <0.05 were considered statistically significant.

RESULTS

The general characteristics of the study participants are shown in Table 1. Most parents (N=130; 96%) completely or highly agreed that children poisoning caused by household products is a serious issue and that public awareness about it should be raised. Similarly, most parents (N=132; 97%) completely or highly agreed that parents have the most important role in preventing child poisonings. Eighty-four parents (62%) replied that they were familiar with safe ways of keeping potentially hazardous household

products away from children, 19 (14%) admitted to not to know enough about that, while 33 parents (24%) were undecided.

Parents with more than two children were more often familiar with the safe ways of keeping potentially hazardous household products away from children than those with one or two children (56% with one child, 58 % with two children, and 89% with more than three children; Fisher's exact test p=0.032). Most parents replied that they stored substances out of the reach of children (Table 2), which, according to Rosenberg et al. (4), shows that they are unaware that household products are the leading sources of poisoning in children. In addition, 29 % of the parents stated they sometimes stored cleaning agents, products for personal hygiene, cosmetics, and medications out of the original packaging. This practice could easily lead to poisoning, especially if the products are stored in food or beverage containers. Women reported this habit more often than men (34% vs 16%, respectively, chi-square test, p=0.045), which reflects their more frequent use of these products. Seventeen percent of the parents admitted to have

Table 1 Demographics of the study participants (N=138)

AGE (years), median (interquartile range, range)	38 (34–40, 24–55)
SEX, N (%)	
women	101 (73)
men	37 (27)
EDUCATION, N (%)	
primary school	0 (0)
secondary school	23 (17)
bachelor, master or doctoral degree or equivalent	115 (83)
EMPLOYMENT STATUS	
currently employed, N (%)	128 (93)
NUMBER OF CHILDREN (%)	
1	58 (42)
2	61 (44)
3	15 (11)
4	3 (2)
5	1 (1)

Table 2 Parental safety practices concerning common household products (N=138)

Type of product	Stored in child-proof compartments (key-locked or secured by child-proof lock) N (%)	Stored out of the reach of children N (%)	Stored in other places in the household N (%)
Cleaning agents*	15 (11)	98 (72)	23 (17)
Personal hygiene and cosmetic products*	5 (4)	108 (79)	23 (17)
Medications*	25 (18)	103 (76)	8 (6)
Other (batteries, cigarettes, thermometer, fire-starter cubes, etc.)	14 (10)	104 (75)	20 (14)

*Two participants did not answer these questions

sometimes kept products such as fuel, antifreeze, pesticides and rodenticides in the household. Our sample is urban population from the capital of Croatia, but this is percentage is likely to be higher in rural populations, considering that solvents, fuels, oils, and pesticides have more frequently been reported as the cause of poisoning among rural preschool children (5).

Only 38% of parents knew the names of the plants in their home and garden. Although exploratory ingestions of house and garden plants in young children rarely leads to severe poisoning, this finding reveals poor awareness and control of the potential sources of poisoning in households. Only four parents (3%) kept the CPCC number by their telephone or in the list of important numbers. Eleven parents (8%) had contacted the CPCC to seek advice about potentially harmful exposure, and most of them found the advice useful.

In conclusion, our survey has highlighted several issues important for future interventions: parents of preschool children need education about the safest ways of storing dangerous household chemicals and medication. Storing cabinets or drawers within a child's reach should be locked or secured with a childproof lock. A UK study (6) showed that parents of children who had a poisoning incident more often did not store medicines out of children's reach or put away medicines or household products after use than control parents.

Parents should also know about the 24-hour availability of the CPCC as a valid source of safety practice information and advice in cases of poisoning and keep its number ready in case of emergency (7).

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