

# Determination of the risks of domestic accidents for the 0-6 age group in the Tuzluçayır Village Clinic neighborhood

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**SUMMARY:** Erkal S, Şafak Ş. Determination of the risks of domestic accidents for the 0-6 age group in the Tuzluçayır Village Clinic neighborhood. Turk J Pediatr 2006; 48: 56-62.

This study was planned and conducted based on the investigation of families living in the Tuzluçayır Village Clinic neighborhood to determine the risks of domestic accidents for the children aged 0-6 years. It was established that 66.0% of the rooms were furnished with sharp-edged furniture; 63.2% had open electrical sockets; 68.4% had slippery flooring; and 68.9% of the houses with balcony railings had rail openings wide enough for a child to pass through. We determined that 28.8% of the children aged 0-6 years had suffered a domestic accident during the last year.

*Key words:* accident, domestic accidents, childhood injury.

Because of advances in technology, changes in lifestyle, and developments in disease control, the number of childhood deaths due to epidemics has been reduced, while the number and importance of childhood accidents are increasing<sup>1</sup>. Recent surveys carried out in the United States have shown that the major causes of child deaths are accidental injuries<sup>2,3</sup>. Every year, 150,000 deaths stemming from various traumas are reported. One-fifth of these traumas pose major threats to children. One-fifth of the patients applying to hospitals in the United Kingdom are accidentally injured children<sup>4</sup>.

In addition, 25% of the patients applying to emergency rooms suffer from accidental injuries. The number of children aged between 1-4 years that die as a result of accidents is 15.5 per 100,000<sup>5</sup>. The number of deaths stemming from accidents for children aged 0 is relatively high in almost every country. The rate of accidental deaths starts to decrease between the ages of 1-4 years, decreasing to a negligible rate in children aged 5-14 years. In our country, the lowest level of accidents is observed in children aged 0, and although there is an increase in the number of accidents among the children aged 1-4, it decreases for the age group 5-14<sup>1</sup>.

This study was planned and conducted based on the investigation of families living in the Tuzluçayır Village Clinic neighborhood to determine the risk for domestic accidents in children aged 0-6 years.

## Material and Methods

The scope of this study covers families living in the Tuzluçayır Village Clinic neighborhood. There are 4,261 houses in the neighborhood. The Clinic's records were used to depict the families for the purposes of this study. The research was comprised of three parts: 1) In the first part, for the determination of the size of the sample groups, a sample size formula was used on the 855 families. In this report, the second and third parts of the study are used. In the second part of the study, 288 families out of 855 with children between the ages of 0-6 years were investigated. A questionnaire was used in order to determine the number of accidents suffered by children in the 0-6 age group during the last year, as well as to determine the risks pertaining to the occurrence of those accidents. During the investigations, it was observed that the children of 83 families of the 288 had suffered domestic accidents in the last year; therefore, the scope of the third part includes this group of families. The relevant

part of the questionnaire was directed to the mother in those families, as opposed to the children themselves, to obtain more reliable answers. This research is a cross-sectional study. Researchers applied the questionnaires after a one-week training regarding the questions to be asked. The data were collected between 10 June - 9 July 2002. The chi-square test was used in the statistical analyses.

**Results**

Regarding distribution of the women in this study according to education, 30.9% had either graduated from primary school or quit their education, 31.6% were graduates of secondary school, 31.3% were graduates of high school, and 6.2% had university degrees; 88.9% of the women were unemployed. Regarding their age distribution, 49.3% were between 18-29, 47.9% between 30-39, and 2.8% were 40 years or older. 41.7% of the women lived in a family of four, 38.2% in a family of five or more, and 20.1% in a family of three.

When the houses were analyzed in relation to accidental risk, it was determined that 66% of the rooms (living room, dining room, bedroom) were furnished with sharp-edged furniture, 63.2% had open electrical sockets,

68.4% had slippery flooring, and 59.7% of the rooms contained drugs within the reach of the children. In the houses where stoves were used, 99% lacked proper protection around the stove area, and 94.8% of the rooms had no electrical socket covers (Fig. 1). From Figure 2 it can be seen that 66.7% of the kitchens had slippery flooring, and that 52.8% contained drugs and 72.6% cleaning material within the reach of the children.

Figure 3 shows that 71.2% of the bathrooms had slippery flooring, 15.4% had a bathtub full of water, and 76.0% contained cleaning materials within the reach of children.

From Figure 4 it can be seen that 68.9% of the houses with balcony railings had rail openings wide enough for a child to pass through. The 51.3% of the houses with staircases also had rail openings wide enough for a child to pass through (Fig. 5).

Our research showed that 28.8% of children aged 0-6 years had domestic accidents during the last year. The children in the 3-4 age group accounted for the highest percentage, at 35%, of the domestic accidents. Girls had the highest accident rate (38%) for the 3-4 age group, whereas the highest rate for boys (36.4%) occurred in the 5-6 age group ( $p>0.05$ ).

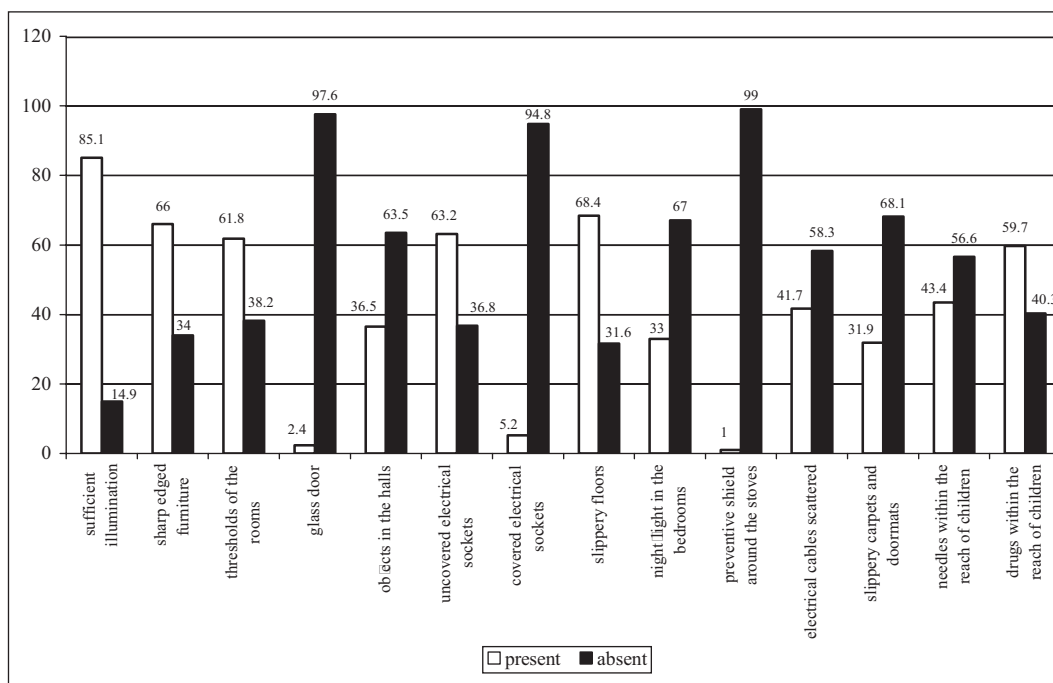


Fig. 1. Distribution of the risk factors in relation to living, dining and bedrooms.

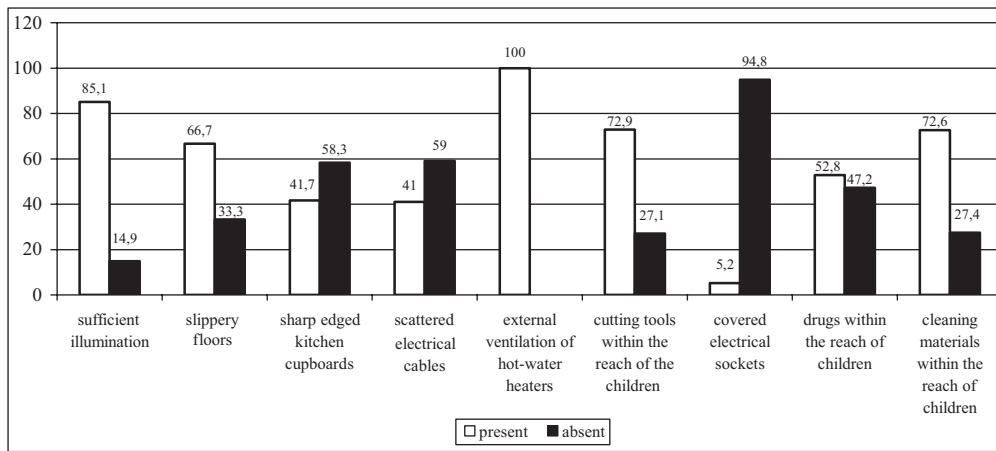


Fig. 2. Distribution of the risk factors in relation to kitchens.

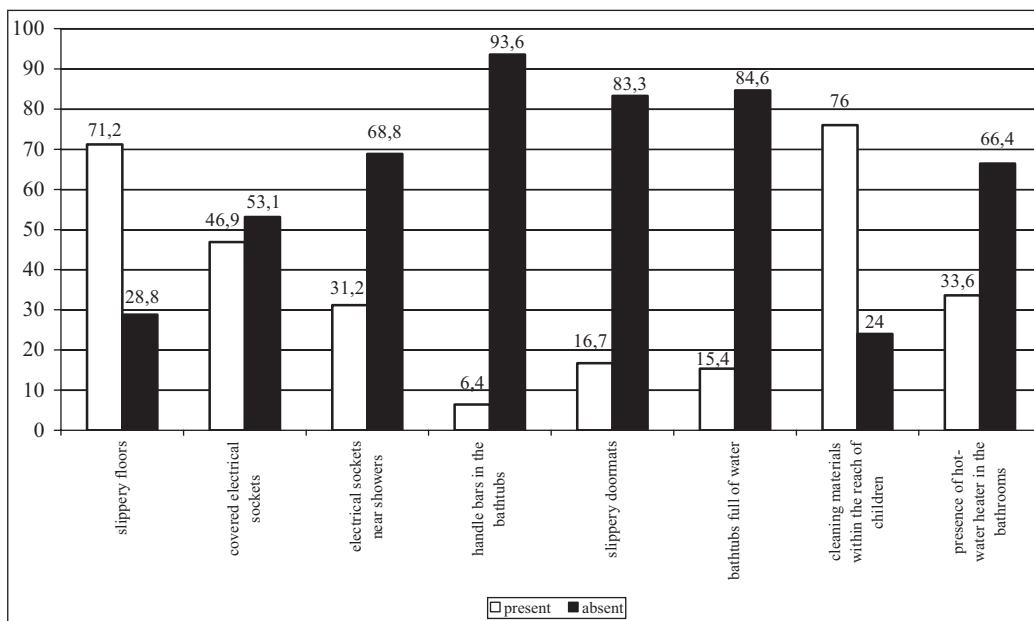


Fig. 3. Distribution of the risk factors in relation to bathrooms.

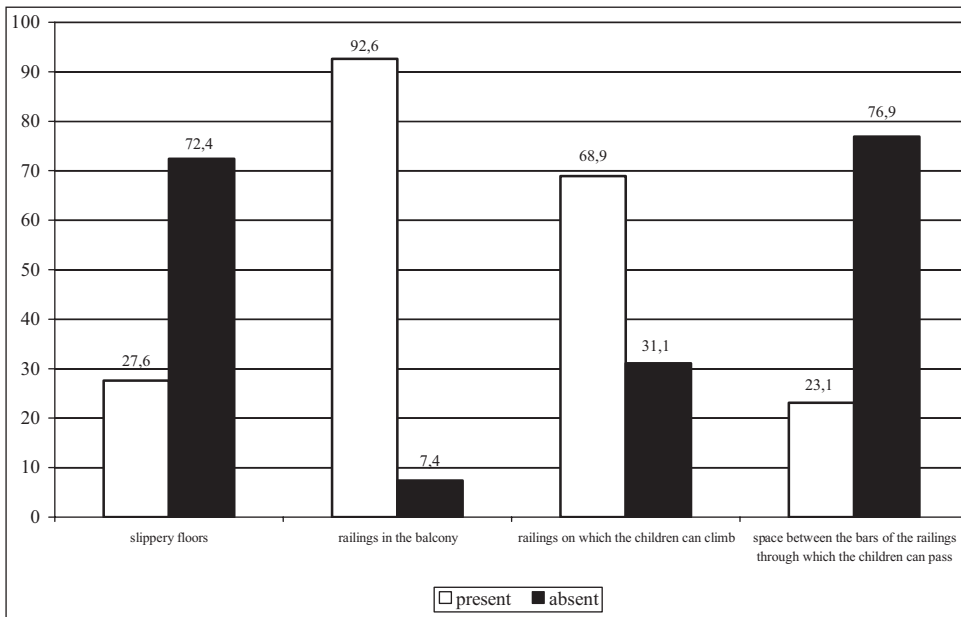


Fig. 4. Distribution of the risk factors in relation to balconies.

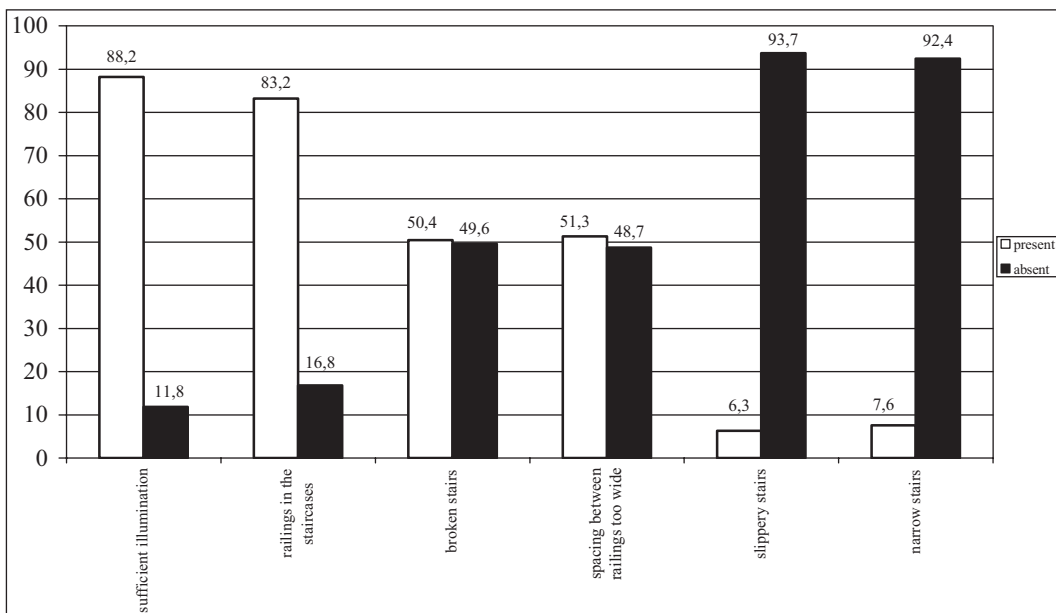


Fig. 5. Distribution of the risk factors in relation to stairs.

When the children who suffered domestic accidents were analyzed in relation to their mothers' educational backgrounds, it was observed that the children of the mothers who only had a primary school education or who had quit school accounted for 55.1% of the accidents. As the educational level of a mother increased, the number of domestic accidents decreased ( $p < 0.001$ ).

Accidental falls accounted for 35% of all accidents among the children. Figure 6 illustrates that 34% of the girls suffered from poisoning, and 39.4% of the boys from falls.

As Figure 7 shows, although the major cause of accidents in children aged between 0-6 months (100%) and 7-12 months (80%) was either direct or hot water burns, accidental poisonings were the major cause of accidents in the 1-2 (40%) and 3-4 (48.3%) age groups, and accidental falls in the 5-6 age group (48.1%). 43.4% of the accidents occurred in summer and 36.1% of these at noontime.

We established that 38.6% of the children had accidents in the living room and 19.3% in the kitchen. All accidents that occurred at the entrance, in the bathroom, on the balcony,

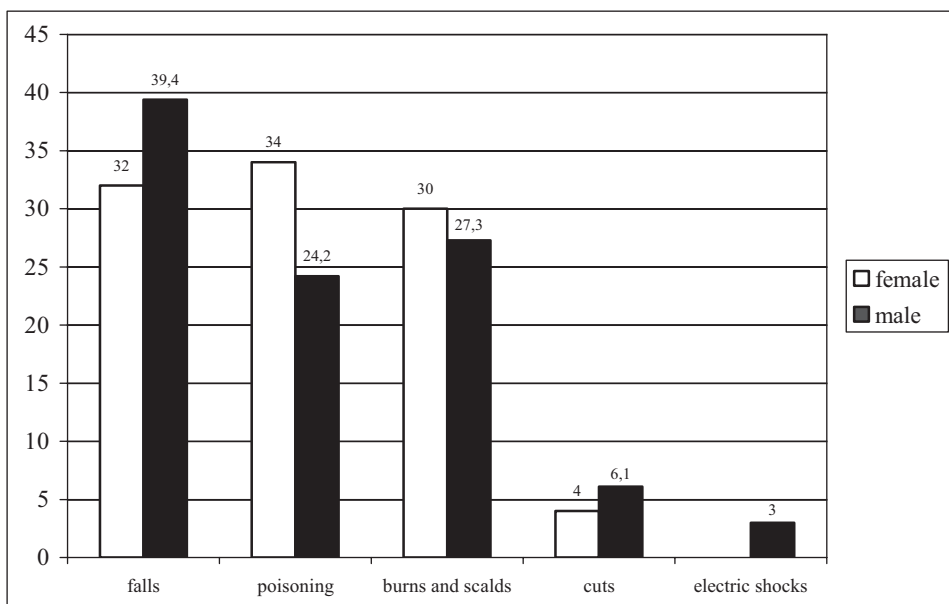


Fig. 6. Distribution of the accidents in relation to type of the accident and sex of the children.

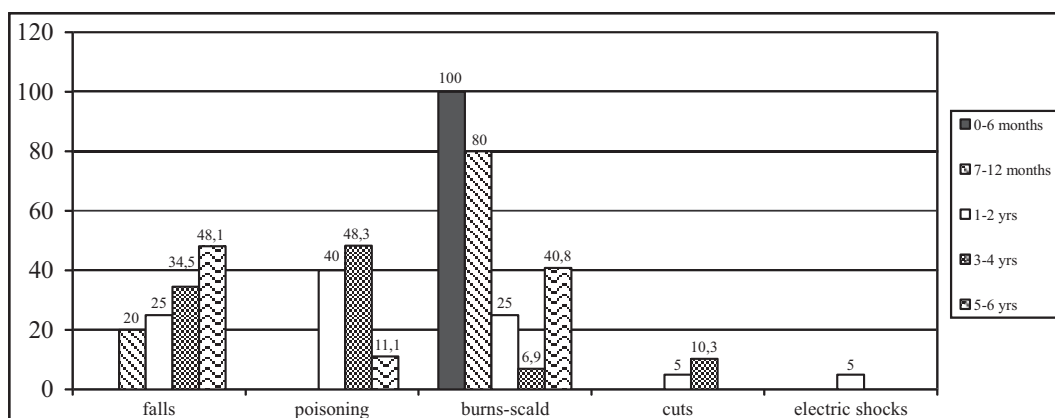


Fig. 7. Distribution of the accidents in relation to type of the accident and age of the children.

or in the gardens were due to falls. Accidents in the kitchens (31.2%) were due, at equal rates, to burns or poisoning. Poisoning in the bedroom constituted 66.7% and burns in the living rooms 65.7% of the accidents.

Of the children who had accidents, 55.4% did not apply to any institution, 43.4% applied to medical centers, and 1.2% applied to bonesetters. 72.3% of the children completely recovered, and 27.7% had residual scarring.

### Discussion

This study revealed that 66.0% of the rooms in houses in the Tuzluca Village Clinic neighborhood had furniture with sharp edges and 63.2% had open electrical sockets, in 72.9% of the houses cutting instruments were stored within the reach of the children in the kitchen, and in 68.9% protective railings were wide enough for a child to pass through. These findings show that the risks of accidents exist, especially for small children. Furthermore, our results demonstrate that 28.8% of the children aged 0-6 experienced domestic accidents in the past year. The children of the mothers whose education level is primary school or lower constitute the largest affected group, at a rate of 55.1%. As the educational background of the mother increased, the number of domestic accidents decreased ( $p < 0.001$ ). This reflects the importance of the educational level of the family, and especially of the mother, in securing the child's environment and preventing domestic accidents<sup>6,7</sup>.

Among the children who suffered from domestic accidents, children aged 3-4 were most affected, at a rate of 35%. Falls accounted for the highest rate of accidents in the 0-6 age group at 35%. These findings are in agreement with the findings of the studies carried out by Laffoy<sup>8</sup>, and Kopjar and Wichizer<sup>9</sup>.

Although accidental burns were the major cause of accidents for children aged 0-6 months and 7-12 months, causes were poisonings for the age groups of 1-2 and 3-4, and accidental falls for the age group of 5-6. These findings are parallel to those of the studies carried out by Achibong<sup>10</sup> and Hjern<sup>11</sup>.

Our investigations also revealed that 43.4% of the accidents occur in the summer months and that 36.1% of these occur at noontime. One

possible explanation for the occurrence of a significant portion of accidents during summer may be that doors, windows, and access to balconies are frequently left open.

In this research, 38.6% of accidents happened in the living room. This result may be related to the presence of several risk factors in the living room, and because children spend most of their time in those rooms. However, Laffoy's<sup>8</sup> and Erkal and Şafak's<sup>12</sup> previous studies identified the kitchen as the site where the largest percentage of accidents occurred.

All accidents occurring at the entrance, in the bathroom, on balconies and in the gardens were related to falls; accidents in the kitchens were due to either burns or poisoning at equal rates, and accidents in the bedroom were from poisoning. These results showed similarities with the data obtained by Erkal<sup>13</sup>.

Of the children who suffered accidents, 43.4% applied to medical centers, and 1.2% applied to bonesetters. Since more than half of the children were not taken for proper care, these results highlight the importance of families being sufficiently educated about first aid.

We suggest that an educational program be conducted through the media aimed at families and especially mothers regarding improvement in environmental conditions and the reduction/elimination of risk factors, and on the cause and outcome of accidents and methods of their prevention. We also recommend that further similar studies be conducted nation-wide.

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