

# Accidental Ingestion: The Role of the Grandparent

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## **Abstract**

*Aim: To quantify the extent of the involvement of grandparents in accidental ingestion in young children.*

*Design: Retrospective analysis of all admissions during 1997 to a paediatric ward of a district general hospital with a diagnosis of accidental ingestion.*

*Results: 65 cases were identified. Thirteen (20%) involved a grandparent as supervisor of the child or owner of the medicine/substance ingested. In the group where a grandparent was involved, 8 cases (61%) required activated charcoal compared to 17 cases (33%) in the group without a grandparent involved.*

*Conclusions: Grandparents may be involved in accidental ingestion in their grandchildren. This may be as the supervisor and/or owner of the medicine/substance ingested. We suggest that health visitors are encouraged to include the extended family in their accident prevention programmes.*

**Key words:** Accidental ingestion – Grandparents – Health visitors – Accident prevention

## **Introduction**

Suspected poisoning in children results in 40,000 attendances at accident and emergency departments in England and Wales each year<sup>1</sup>. Whilst most children require only a short period of observation, this often necessitates hospital admission. Each year there are a number of fatalities.

Many grandparents are involved in childcare. It has been shown previously that accidental poisoning in children is often linked to periods of psychosocial stress within their family<sup>2</sup>. It is possible that during such times, members of the extended family are called upon to offer practical help including childcare. Older relatives are more

likely to be prescribed medicines<sup>3</sup>. One could therefore hypothesise that accidental ingestion by a child is more likely to occur whilst in the care of an elderly relative than at other times.

In order to quantify the extent of older relatives' involvement in accidental ingestion in a paediatric population, we performed a retrospective review of all such referrals to a paediatric ward in a District General Hospital in South Wales.

## **Methods**

All admissions to the paediatric ward of East Glamorgan Hospital (now The Royal Glamorgan) during 1997, after suspected accidental ingestion

**Table 1. Types of substances potentially ingested**

	<b>Grandparent involved</b> <i>n</i> = 13 (%)	<b>No grandparent involved</b> <i>n</i> = 52 (%)
Medicines	9 (69)	37 (71)
Household products	3 (23)	13 (25)
Plants	1 (8)	2 (4)

were identified using the hospital's computerised admission record. Each set of case notes was then reviewed and a data retrieval proforma completed.

Data were collected on demographic details, the suspected substance ingested, the suspected amount, who the substance belonged to, the place of ingestion, the supervising adult, the length of hospital stay and any action required.

Subsequently, each case was allocated to one of two groups, according to whether or not a grandparent was involved. Involvement may have been with supervision of the child or as the owner of the medicine possibly ingested.

## Results

Sixty-nine cases were identified, 1 set of case notes could not be traced and three cases were incorrectly coded (two intentional overdoses, one child with gastro-enteritis). This left 65 sets of case notes for retrospective review. Of these, 36 (55%) were male and 29 (45%) were female. The mean age of all cases was 31 months (median 29 months, range 2–79 months). Thirteen (20%) cases were allocated to the 'grandparent involved' (GI) group. Fifty-two (80%) cases remained to be allocated to the 'no grandparent involvement' (NGI) group.

The mean age in the GI group was 27 months (median 27 months, range 2–56 months) compared with 32 months (median 29 months, range 11–79 months) in the NGI group.

For all cases studied, the ingested medicine/chemical belonged to a grandparent on 12 (18.5%) occasions. The additional case in the GI study group was of a 2 month old who was given 'Milton' from a feeding bottle by his grandmother, who did not realise that the bottle was being sterilised by the baby's mother.

In the GI group (*n*=13), the incident occurred in the grandparent's house in 10 cases, one case occurred in the child's home, one at a grandmother's friend's house and in one case the location was not recorded. In this group, 10 cases were being supervised by a grandparent, one by the child's mother, one by both parents and grandparents and one by the great grandmother.

The types of substances ingested in each of the two study groups was remarkably similar with medicines accounting for two thirds of poisonings in both groups (Table 1). There was a wide range of medicines involved in both groups with paracetamol (10 cases) and cough medicines (four cases) being the most common in the group where a grandparent was not reported to be involved. Neither of these medicines was involved in the ingestions where a grandparent was involved.

The mean length of hospital stay in the GI group was 11.8 hours (range 3–28 hours) compared with 11 hours (range 2–21 hours) in the NGI group. One child belonging to the NGI group was discharged against medical advice.

The most active intervention required out of all the cases was the administration of activated

**Table 2. The action required after admission in each study group.**

	<b>Grandparent involved</b> <i>n</i> = 13 (%)	<b>No grandparent involvement</b> <i>n</i> = 52 (%)
Activated charcoal given	8 (61)	17 (33)
Blood sampling	3 (23)	16 (31)
Special observations*	1 (8)	1 (2)
Special investigations**	2 (15)	2 (4)

\* Cardiac monitoring, pulse oximetry, regular blood pressure monitoring.

\*\* ECG, CXR.

charcoal. Eight (61%) of the 13 cases involving grandparents required the administration of activated charcoal in comparison to 17 (33%) of the 52 cases where a grandparent was not involved. Statistical analysis by Chi-squared showed no statistical difference ( $P > 0.1$ ). In the GI group 85% of cases required some form of specific investigation or treatment after admission as compared to 57% in the NGI group (Table 2).

## Discussion

The preponderance of males to females and the average age of the study group are similar to other published series<sup>4</sup>. At the time of this study the accident and emergency department did not have a short-term observation area for children. This may have influenced the type of referrals and may also account for the generally short period of stay. However, this does not detract from the fact that a large proportion of accidental ingestions in this study occurred whilst a child was under a grandparent's supervision. Also of importance was the greater demand for specific investigations and treatment in cases of grandparent involved accidental ingestion. Substances and quantities ingested by children while in the care of a grandparent may have the potential for greater toxicity<sup>5</sup>. A larger prospective study is needed to study this possibility.

Health visitors are regarded as having an important role in accident prevention due to their frequent contact with children and their parents, their access to family homes and their understanding of child development<sup>6</sup>. The health of the nation: key area handbook – accidents, emphasizes the role of health visitors in accident prevention<sup>7</sup>. Health visitors' advice regarding home safety has been demonstrated to be effective in encouraging parents to make changes to their homes<sup>8</sup>. A survey of health visitors' practices

showed that the activities they most commonly undertake are the identification of hazards in the home and the discussion of these with parents on home visits. In addition, advice on safety equipment is frequently given at the eight-month hearing test. Written information, which could be distributed to the wider family is given less often<sup>9</sup>. Discussion of accident prevention by health visitors with the extended family is not well described in the literature.

This study, though small, demonstrates the importance of the role of the grandparent in accidental ingestions in childhood. The majority of health visitors agree that most accidents are preventable. This majority believes it can play a pivotal role in the prevention of accidents in childhood<sup>6</sup>. We would recommend that health visitors include the extended family in their accident prevention programmes.

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