Understanding burn injuries in school-aged children to influence prevention: A 10-year review of trends at a UK Burns Unit

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Introduction

Burn injuries in childhood and adolescence carry substantial clinical, psychosocial and economic consequences for patients, families and the health service. Despite this, studies focusing on burn trends in school-aged children is lacking, with existing research either focusing on individuals aged five or below or defining the paediatric population as 0-18 year olds. Given the significant developmental and behavioural changes that occur during this demographic, understanding which mechanisms dominate, and in what settings they arise can add practical value alongside national reporting to allow for targeted prevention.

Purpose

This study aimed to describe and understand trends of burn injuries in school-aged children treated at a regional burns centre, providing insight into actions or interventions necessary to reduce incidence.

Methods

Researchers performed a retrospective review of anonymised data from the International Burns Injury Database (iBID) of paediatric patients admitted to our regional burns centre following a burn injury between 1st September 2014 and 1st September 2024. A target population of 'school-age' children was selected which encompassed patients aged 5-18 years old at the time of presentation. Age at time of injury was then used to group patients into categories aligning with the school Key Stage (KS) system. Analysis was descriptive using counts and percentages, with numbers being plotted on simple graphs to identify trends and changes.

Study Population

N = 2716 Children aged 5-18 years

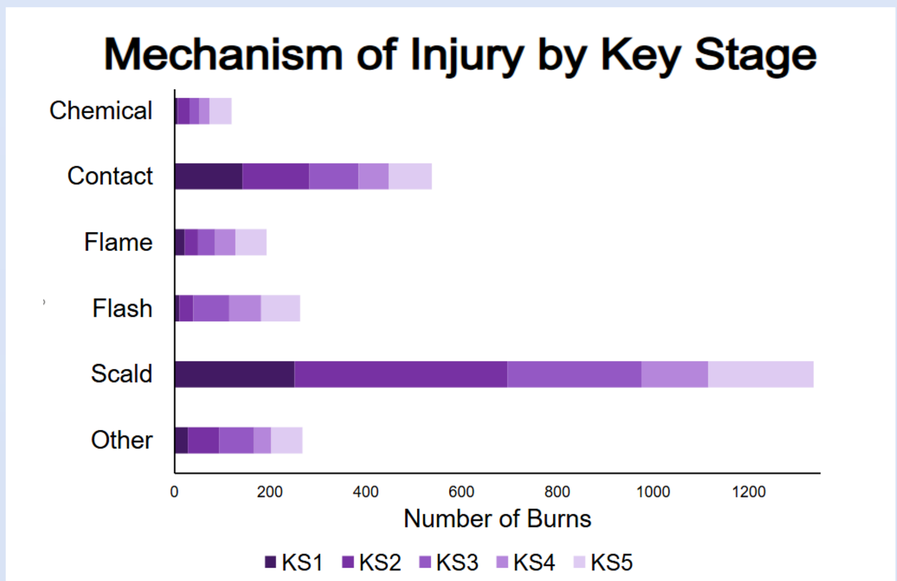
♀ **48.1%** (n=1305) Female

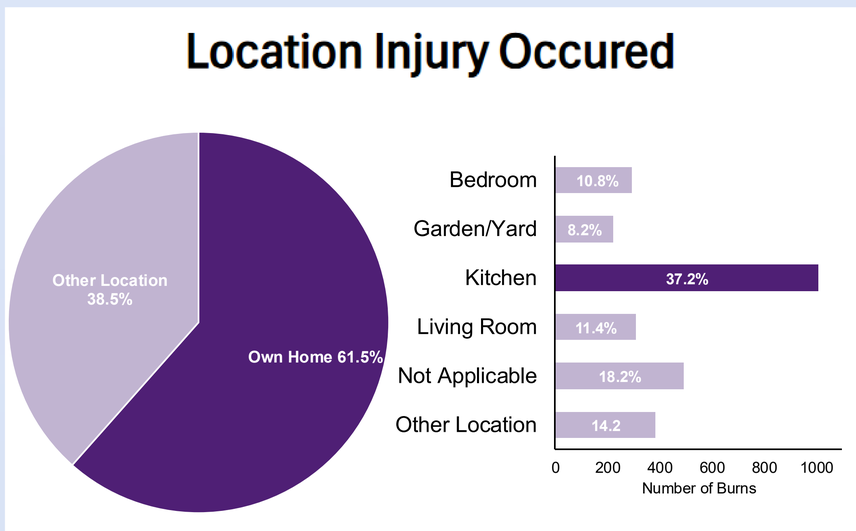
♂ **51.9%** (n=1411) Male

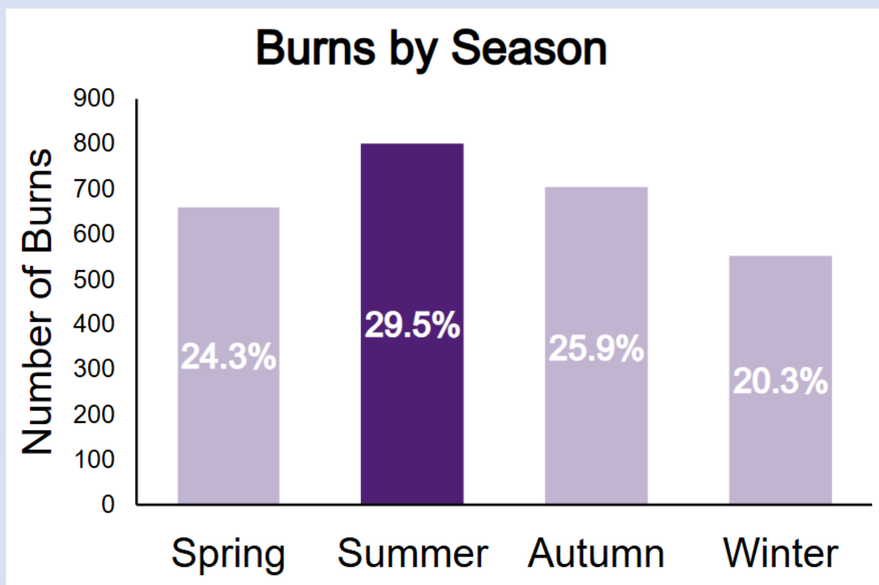
11.9 years = median age

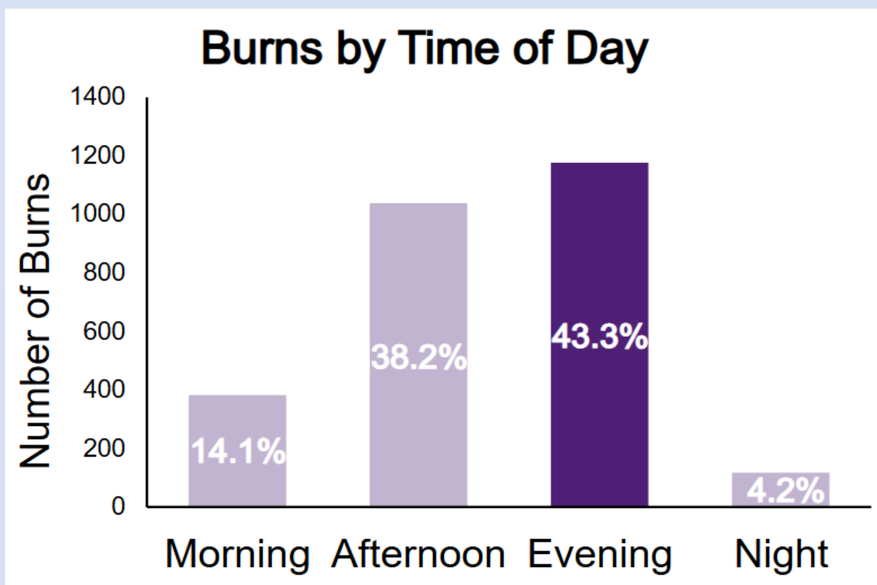
Results

- **Scalds** were most common mechanism at **49.2%** (most frequent in KS2 at 26.8%)
- Flash and flame injuries contributed to a larger proportion of presentations from KS3 onwards
- Injuries were typically associated with **recreational activities** like play (38.9%) or food preparation (19.0%)
- **61.5%** of burns occurred in the **child's own home**
- **37.2%** of incidents happening in the **kitchen**
- Median length of time taken to heal was **8 days**
- Presentations peaked in **summer** (29.5%) and in the **evening** (43.3%)
- Outcomes included only **one patient death** over the 10-year period









Discussion & Conclusion

Burn injuries in school-aged children are common. Although scalds represented the most frequent cause, mechanism of injury was found to be influenced by age, sex and season. The temporal variation may reflect increased patient exposure to hazards during these periods as they align with school-holidays or increased time at home. These trends support the need for tailored prevention in the form of targeted safety campaigns and education that extends beyond early childhood and adapts across the school years - especially ahead of summer with focus on activities occurring outside of school hours.

Additional research efforts should be made focusing on school-aged children to further understand nuances in behaviour and factors contributing to burn injuries. This could aid the development of actionable prevention efforts from burn service data.

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