

not overlooking work safety issues. All the experiments were carefully documented using video and thermal imaging.

Results The tests revealed both the usefulness of agile extinguishing methods and their limitations. Also, several best practices for different extinguishing methods were defined. The new, agile extinguishing methods can clearly improve Fire & Rescue response as the actual scene can be reached much faster than in the past.

Conclusions Fire & Rescue services can improve their level of service by a choice of extinguishing method. This will also affect the extent of damage to both victims of an incident as well as buildings and other material.

106 RESEARCHING CHILDREN'S EXPERIENCE OF TRAUMATIC EVENTS; EXPLORING CHILD BEHAVIOUR IN DWELLING FIRES

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Background Understanding child behaviour during injury-risk events supports development of injury prevention education and interventions, but asking children to recall events may cause distress. We found an absence of published evidence on child-reported behaviour in accidental dwelling fires. Therefore we aimed to develop methods to; identify and recruit families who had an accidental fire at home; enable families to tell their stories with minimal distress, and test the feasibility of such methods for a future study.

Methods Consultation with frontline, educational and strategic staff in the Devon and Somerset Fire and Rescue Service (DSFRS), parents, young people, the mother of a burned child and working with a clinical psychologist and ethics committee Chair informed the development of methods for family identification, recruitment and participation. The DSFRS identified dwelling fires in the previous 12 months and sent study information inviting families to contact the research team.

Results Leaflets sent to 218 households resulted in 8 enquiries (3.7% response) and 3 families recruited (1.4% participation). Families were more likely to engage if contacted 3–6 months after the fire than if >6 months. Five parents and 6 children took part. Face-to-face interviews included a meeting with the parents alone to learn about the fire and negotiate arrangements for the children's interview, conducted later that day, led by a psychology researcher. Art materials enabled children's storytelling and strategies provided to stop the interview if children became distressed. Support for families and researchers after the interviews was required.

Conclusions Engaging families in qualitative studies of potentially distressing injury-risk events requires extensive preparation, flexibility and negotiation. Examples of materials and learning from this study will be presented and may be applicable to other injury research studies where hearing the voice of the child is paramount.

107 DIFFERENCES IN DETERMINANTS AMONGST INDIVIDUALS REPORTING RESIDENTIAL FIRES IN SWEDEN— RESULTS FROM A CROSS-SECTIONAL STUDY

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Background Whilst determinants for fire mortality and morbidity are well documented, the determinants of residential fires, regardless of outcome, are less known. This study aimed to investigate socio-demographic differences between households having experienced a fire and those who had not.

Method Using a cross-sectional study design, a questionnaire was sent to a stratified sample ($n = 20,000$) of the Swedish population regarding if the household had experienced a fire during the past 5 years. Pearson's χ^2 -test was used to test for bivariate associations between residential fires and socio-demographic covariates, and log-binomial regression models were applied to obtain covariate-adjusted risk ratios.

Results Significant factors associated with an increased risk of residential fires were a high education level, being born outside of the Nordic countries and having children 6–12 years living at home. A significant decreased risk was observed amongst elderly and those living in rented, multi-family houses.

Discussion There seems to be a lack of agreement between determinants for fires and for fire mortality. This would indicate that the risk of fire mortality per residential fire is greatly increased for certain groups and that the increased risk of fire mortality is not due to a more common occurrence of fires.

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108 MEASURING THE EFFECTIVENESS OF FIRE PREVENTION

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Background Evaluation of the effectiveness of public undertakings has become more and more important during the last decades. This is a major concern also in the field of fire safety. Yet, little progress has been made since the 1970's and there still is no consensus on the proper way to measure the effectiveness of fire prevention programs.

In Finland, fire prevention has for long been a notable part of the rescue service. Lately, fire department databases, data collecting processes and standards have improved, and much work has been done to collect relevant information concerning fire prevention impacts, risk variation of target groups and condition variables related to accidents. However, more tenable measures and better knowledge on the causal effects of the programs are still needed.

Methods The data consist over 350,000 observations of different fire prevention initiatives in six regions and over 800,000 buildings covered by regional fire departments between 2008 and 2014. In addition, data collected from the national accident