

## Abstract

When a domestic fire occurs, how well do people perceive and recall the fire hazards they encounter? Although much research has been conducted on threat or risk perception and memory for threatening stimuli, to the authors' knowledge no studies have systematically tested how well people perceive and recall the threat stimulus in a fire context. This is an important topic given that domestic fires are usually the main source of fire-related injuries and deaths, and human behaviour is believed to play a significant role in such outcomes. Moreover, eyewitness testimonies play a significant role in subsequent fire, insurance and coroner investigations. The current study – part of wider research on human behaviour in domestic fires, called LIFEID – sought to address the gap in knowledge by conducting an online experiment testing participants' (a) memories for the size of the flames and smoke witnessed in a mock kitchen fire, and (b) reported willingness to engage with the fire hazards. Participants' behaviours and attitudes in relation to other risky activities and control over events were also measured. The results revealed that accurate recollections of flame height and smoke volume can be obtained from members of the public, in certain cases. Accuracy was negatively impacted when the flames and smoke witnessed were larger in size. The size of the fire hazards also had an impact on participants' willingness to engage with the hazards, moderating the number who stated that they could have successfully extinguished the flames or would have entered the room with the smoke. Although there were signs that many participants recognised the risks posed by the larger hazards, a not inconsiderable number were still willing to engage with them. Being someone who takes greater risks in a health/safety domain and believing in one's ability to control what happens to oneself did not explain this finding. There is a clear need for a deeper investigation into people's perceptions of fire hazards in a domestic fire context and their associated behaviours and fire outcomes.

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