

Chapter 1

Introduction

Between 2005 and 2009, fire departments from the U.S. reported an average of 590 fires annually in day-care centers [2], having an annual average of 8 civilian fire injuries and \$4.5 million in direct property damage. The majority of fires occurred between 6:00 a.m. and 3:00 p.m. and the primary cause involved cooking equipment (64 %).

Fire incidents in educational properties happen every year. In 2004, there was a school fire in Kumbakonam, India where 87 children died and 27 were injured, because the thatched roof caught fire [3]. The firefighters and the rescue operators were impeded by the lack of access into the three story building, which had only one entrance and a single flight of stairs. In 2009, a daycare center fire occurred in Mexico where 47 young children lost their lives because of the flame spread from a nearby storehouse which didn't have any appropriate security measures [4].

Building codes' and fire regulations' primary aim is to prevent human losses. The objective of this current international project was to determine at what age children are considered to be capable of self-preservation and also to investigate the fire safety and evacuation measures for day-care centers. The study was conducted in USA, Denmark, Canada, Germany, France, Spain and Romania.

The following research questions form the basis of the study:

- At what age can the majority of children be expected to understand and follow simple instructions?
- At what age can the majority of children be expected to walk?
- At what age can the majority of children be expected to walk down the stairs?
- How do the fire safety installations, number of fire drills and ratio between staff and children differ between the different countries?

A literature review on the evacuation of young children, children psychology, national regulations for fire safety and the educational system in the countries where the questionnaire was distributed are presented in the next section. This is followed by a presentation of the method applied when developing the questionnaire. The results are presented and discussed and conclusions are drawn.