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Fire safety for vulnerable groups: The challenges of cross-sector collaboration in Norwegian municipalities

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ABSTRACT

Vulnerable groups are found to be over-represented in fire fatalities statistics. In official Norwegian documents vulnerability is described as related to factors such as old age, reduced mobility or cognitive abilities, mental health problems, and substance abuse. As vulnerability to fatal fire is frequently related to residents' health and life situations, prevention work often exceeds the competencies and responsibilities of the fire department. Cross-sector collaboration is therefore required in order to reach the groups that are at risk. This paper reports from a qualitative interview study with representatives from municipal fire services, property management, housing administration, health and social care. The study explores the challenges experienced by service providers in achieving cross-sector collaboration on fire prevention for vulnerable groups. The findings describe challenges at three levels: 1) the national regulatory level represents an obstacle to local cross-sector collaboration, 2) the municipal level lacks strategies and arenas for cross-sector collaboration for fire safety, and 3) the professional level experiences conflicting values and norms, including uncertainties about professional boundaries. Organizational measures that support the fire services in their efforts to reach vulnerable groups must be targeted to all three levels and go beyond the boundaries of the fire services. The study contributes with a social scientific approach to fire prevention and contributes with new perspectives on fire safety for vulnerable residents.

1. Introduction

Groups that can be described as socially vulnerable are found to be over-represented in fire fatalities statistics, either due to increased risk for starting a fire or to problems identifying, managing, or evacuating from a fire. Fire statistics from the last ten years in Norway show that on average 56 individuals perish in fire every year. Norwegian reports describe largely the same patterns as other Western countries in terms of fire fatalities: unintentional domestic fires dominate the statistics and individuals considered in some way vulnerable are overrepresented [9,13,39]. The Norwegian Directorate of Civil Protection reports that 75% of the victims of fire can be described as vulnerable, most prominently from advanced age, the need for care, reduced functions, or from substance abuse. Individuals over the age of 70 years old have four to five times higher risk of perishing in fire compared to the rest of the population. Population projections estimate that the number of individuals over 70 years old will double by 2060 (Statistics Norway, ssb.no), and the demographic developments give reason for concern that the probability of residential fire might increase in the years to come. An aging population leads to greater health care needs, while government policies increasingly move health care services from institutions such as hospitals and nursing homes to the private residence [23,27]. Potentially vulnerable individuals are, in other words, increasingly living at home with health issues such as reduced mobility or weakened cognitive functions.

The Norwegian Fire and Explosion Prevention Act (2002) [33] provide the fire and rescue services permission to enter any building at any time. However, this permission requires that there is particularly high risk or immediate danger to life and health. This means that in most residential risk cases, the fire department must rely on other actors to identify both high-risk living situations and people who are in need of life safety assistance. This can be home care services that see an older resident at risk of starting a fire or with limited ability to evacuate in the case of fire; it can be home counselors who provide support for people with mental health problems or substance abuse; or it can be the chimney sweeper who identifies fire risk or evacuation problems for vulnerable residents that do not have other public services in the home. Reducing residents' vulnerability to perishing in fire is, in other words, a complex task because identifying risk situations require competence and effort from a variety of professions and sectors in society.

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This paper reports results from a study of local practices for the prevention of fatal fire among vulnerable residents in Norwegian municipalities [30]. The study takes a sociological approach and looks at organizational measures for fire prevention for vulnerable groups, specifically the need for cross-sector collaboration on fire safety: How do municipal service providers describe their experience with fire prevention for vulnerable groups, and what role does cross-sector collaboration play in their community? Fire prevention has been described as an area in great need for multidisciplinary perspectives and methods [16], both for illuminating local dynamics and for identifying potential variables for future quantitative studies. Kuligowsky (2016) [17] argues in a recent article for the integration of social scientific methods in the field of human behavior in fire. The current paper takes a qualitative approach to the phenomenon of fire prevention for vulnerable groups, addressing the preparedness period and the community perspective, with analysis of interview data from a range of different public service providers.

As a preamble to the paper, we discuss in the next sub-section the concept of vulnerability and the need for understanding this concept as more than simply a description of individual traits. Section 2 provides background to the study and a review of organizational approaches to fire prevention. Section 3 describes material and methods for the study, including the analytic model that has structured both data gathering and analysis; the Pentagon model. As results in qualitative research do not consist of finite numbers, but rather of interpretations and patterns in the data, we have combined the results and the discussion in a joined Section 4 in order to avoid excessive repetition. We include some recommendations for practice in this section before concluding and indicating possible implications for fire engineering and fire prevention work.

1.1. Defining vulnerability

Traditionally, the field of fire prevention has had a strong emphasis on technical approaches, focusing on the state and functions of buildings and on the technical measures taken for detecting fire, for safe evacuation, and for fire protection. With increased focus on the risks related to vulnerable groups, the "state and function" of the *residents* are being included in the assessments of risk and fire prevention measures. The concept of vulnerability has entered the field of fire prevention, and there is increased focus on the capabilities of individuals and groups in society to manage issues related to life safety. There is a tendency in policy documents in Norway to treat fire vulnerability as a function of individual traits [30]. Also in the field of fire prevention, vulnerability is frequently described as an individual's ability to identify fire risk and prevent a fire, to manage a fire outbreak, or to evacuate in the case of fire [29]. From a social scientific perspective, this approach has serious limitations as the impact of both the physical surroundings as well as the individual's social and organizational environment are often overlooked. We will provide some examples.

In some cities in Norway, the acute lack of social housing services is of great concern because it leads to vulnerable groups being allocated housing that does not provide adequate life safety adapted to their needs. It is not simply the risks represented by mental health problems or substance abuse that create vulnerability to fire in this case; it is also the community's ability to mitigate risk at a social level, through political and organizational measures such as adequate social housing. Similarly, we see that the categorization of assisted living buildings for elderly residents in Norway has consequences for fire safety. Officially and legally these buildings are defined as private residences, but many municipalities in Norway now have local regulations that define these in line with institutions, as so-called A-objects, meaning that they are considered to have increased risk of fire or that a potential fire will cause loss of many lives. This local categorization has very specific fire prevention consequences as it results in more frequent inspections, installation of sprinkler systems, etc. Residents of these buildings are therefore, despite individual physical or cognitive limitations, not particularly vulnerable to perishing in fire compared to other groups with the same individual capabilities but different housing conditions.

The organization, politics, and resources of the local community are, in other words, relevant for what we can call *social vulnerability* (see [38] for a discussion of social vulnerability related to natural hazards). Bankoff et al. (2004:2) stress that "[s]ocial processes generate unequal exposure to risk by making some people more prone to disasters than others, and these inequalities are largely a function of the power relations operative in every society." Vulnerability should, in other words, be seen as *socially produced* through political priorities, policies and regulations, institutional structures, and professional decision making – not simply as a function of individual capabilities. This is important to keep in mind when fire prevention for vulnerable groups is discussed.

In the case of fatal fire, a model of vulnerability needs to take into account both the individual factors (such as mobility and cognitive functions), the physical environment (such as the technical state of the residence or the presence/absence of technical fire preventive measures), and the social and organizational factors (such as socio-economic aspects, social networks, the presence/absence of care services, etc.). This is illustrated in Fig. 1 below.

From a sociological perspective, the social and organizational surroundings are important, both as a *context* for understanding the risks associated with individual traits but also as potential *risk factors* in themselves. It is not simply physical or cognitive impairment that represents a risk for perishing in fire for older residents, also social isolation can be seen as a risk and as a factor that creates vulnerability. The presence of family, friends, or neighbors, the access to services in the home, participation in social events or voluntary organizations, etc. are all factors that might greatly affect an individual's vulnerability to fatal fire. With an isolated focus on the individual's capability to manage fire and fire risk, we risk missing important aspects that contribute to creating vulnerability in society. Factors on the different levels must be seen in relation to each other and not as independent variables. Similar social dimensions have been studied in disaster research (see f. ex. [4,8]). However, there are few studies on these aspects in fire prevention.

2. Background: cross-sector collaboration for fire prevention

Norway consists of more than 400 municipalities that range in population from 200 inhabitants to 650.000 (the capital, Oslo). The municipalities are highly diverse in terms of demographic profile, organizational structure, and available resources. Equally diverse are the fire and rescue services, in terms of ownership, management, and organization. Some municipalities own and run their own fire and rescue services, while others collaborate with neighboring municipalities about all or parts of the services (see Table 1).

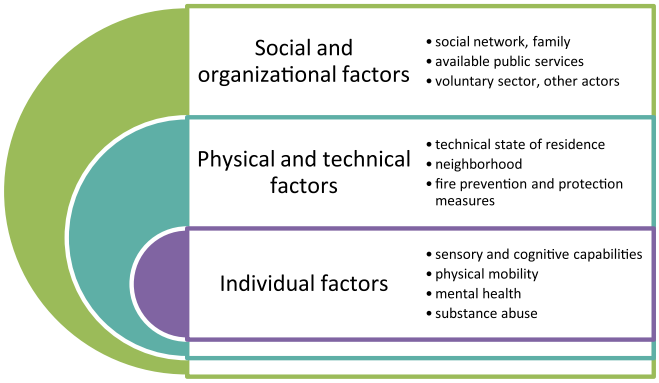

Fig. 1. Factors affecting vulnerability to fatal fire.