German Red Cross
National Headquarters

German Red Cross

The Vulnerable Group “the Elderly and those Needing Care” during Crises, Large-scale Emergencies, and Disasters

Findings and Possible Solutions - Moving toward a Socio-spatial Approach to Civil Protection

Research Writings

Research Writings

The purpose of the Research Writings is to continuously publish the results of scientific research of the German Red Cross.
The Division for Research on Civil Protection at GRC National Headquarters launched an investigation of research requirements in 2012 spanning the entire organisation and involving all regional branches. During this process, three essential topic areas were identified as desirable research focuses: Resilience, societal development, and resource management.[1]

The Research Writings address these topics and offer impetuses for the continued strategic development of the organisation.

Research Publication Series – The Vulnerable Group "the Elderly and those Needing Care" during Crises, Large-scale Emergencies, and Disasters
Findings and Possible Solutions - Moving toward a Socio-spatial Approach to Civil Protection

This volume of the publication series takes a look at how the elderly and those needing care fare during crises, large-scale emergencies, and disasters. Previously, these vulnerable population groups have been largely ignored within disaster management. The initiative of the German Red Cross (GRC) and the leading research project KOPHIS have developed approaches for lessening the vulnerability of people needing care and assistance during crises, large-scale emergencies, and disasters as presented in this volume. The research project KOPHIS – Strengthening Contexts of People Needing Care and Assistance - was sponsored by the German Federal Ministry of Education and Research. In addition to the GRC, the Disasert Research Unit (DRU) of the Freie Universität Berlin, the International Center for Ethics in the Sciences and Humanities (IZEW) of the University of Tübingen, the Fraunhofer IAO of the University of Stuttgart as well as the Zentrum für Telemedizin (Center for Telemedicine, ZTM) Bad Kissingen were also involved.

This volume contains findings from practice and research on the extent to which vulnerable groups of elderly persons being cared for at home and people in need of care are affected by crises, large-scale emergencies, and disasters and what their special needs for care and disaster management are. In addition to research-based information, the formats used and approaches developed for KOPHIS are also presented.

---

[1] The colours are reflected in the respective cover picture.

Also available in English:

Strengthening of Community Resilience - The German Red Cross Disaster Services.
Recommendations for Action Based on Research Results.

The Vulnerable Group “the Elderly and those Needing Care” during Crises, Large-scale Emergencies, and Disasters

Findings and Possible Solutions - Moving toward a Socio-spatial Approach to Civil Protection

Legal information

Research Publication Series
The Vulnerable Group “the Elderly and those Needing Care” during Crises, Large-scale Emergencies, and Disasters
Findings and Possible Solutions - Moving toward a Socio-spatial Approach to Civil Protection

Issuer
Deutsches Rotes Kreuz e.V., Carstennstraße 58, 12205 Berlin, Germany

Publisher
DRK-Service GmbH, Berliner Straße 83, 13189 Berlin, Germany

Authors
Dr Heidi Oschmiansky, Annette Händlmeyer, Matthias Schulze, Matthias Max
Contact: forschung@drk.de, Websites: www.grc-research.de, www.kophis.de

Title photos
Jan Woitas/dpa; German Red Cross National Headquarters, Team 25

Print
strohmeyer dialog.druck GmbH, Hundsrückstraße 6, 37287 Wehretal-Langenhain

Set/layout
Claudia Ebel

Production/sales
DRK-Service GmbH, www.rotkreuzshop.de

Art. no. 02498

Citation format
German Red Cross (ed.) 2018: The Vulnerable Group “the Elderly and those Needing Care” during Crises, Large-scale Emergencies, and Disasters. Findings and Possible Solutions - Moving toward a Socio-spatial Approach to Civil Protection Berlin.

Contents

1 Introduction to the contents

The elderly and those needing extra care and nursing are currently given little consideration in disaster management. Experience from disaster management deployments clearly show that these groups are not given direct consideration and responders often are not aware of what their special needs for care are. The sixth volume of the "Research Writings" from the German Red Cross (GRC) therefore examines the target group "the elderly and those in need of care during crises, large-scale emergencies, and disasters" and their place in the German disaster management system. Here, the focus is on the elderly requiring care who are being cared for at home.

This volume in the publication series aims to help draw more of the attention of agencies and organisations with safety-related duties (BOS)[2] toward "elderly persons receiving care at home", to illuminate the needs of people requiring care and assistance, and to present proposed solutions. This is because neither research nor practical measures up to this point have considered this topic in detail. Reference is also made to two topics central to the future of disaster management: The ageing of society with the associated changes and challenges for the German disaster management system as well as an equal and network-based collaboration with the public health sector to manage crises and disasters, with particular consideration given to the increasing number of people receiving medical care at home. As a national aid society and charity organisation, the GRC has unique requirements for mediating[3] between the two areas.

The "Research in Civil Protection" carried out by the German Red Cross therefore ties in to the organisation's own findings and research needs. In 2012, a needs survey was carried

---

[2] in German: Behörden und Organisationen mit Sicherheitsaufgaben = BOS (f. ex. police, fire department, Federal Emergency Management Agencies of the Länder, the THW = Federal Agency for Technical Relief and relief organisations in civil protection such as the GRC

[3] The German Red Cross is a member of the International Red Cross and Red Crescent Movement and provides help to people in conflict situations, during disasters, as well as in health or social emergencies. With its 191 national societies, the International Red Cross and Red Crescent Movement constitutes the largest humanitarian organisation in the world. The Red Cross is uniquely oriented and differs from other governmental and non-governmental organisations in its conditions of recognition, membership in an international network, and the seven principles: Humanity, impartiality, neutrality, voluntary service, independence, unity, and universality. Furthermore, humanitarian law provides every Red Cross and Red Crescent society with a specific mandate (for details, see Richert 2007).

out across the entire organisation to find out which research topics and questions should be considered most important, based on experience (in the field). Those surveyed listed, among others, "the effects of demographic change on civil protection", "the strengthening of a population's ability to help itself", and "improved risk communication before and during emergencies" as topics that should be the focus of future research.

Furthermore, as part of the "Flood Work Group" established in 2013, the GRC provincial branches formulated concrete evaluation focuses based on direct experience from field work responding to the floods in 2013 in Germany (and other European countries). The work group made it clear that the already high number of people, which is expected to increase further in the future, needing care or assistance at home is a big challenge for responders. This was also confirmed in a survey of the 19 GRC provincial branches in the winter of 2016/2017 regarding vulnerable groups. Many of the people interviewed stated that, among others, the elderly and those needing care had more of a need for help in response situations. Some of the people surveyed stated that the numbers of people needing care at home, so those receiving home care, is increasing (see Heinrich 2017: 2ff.). The needs formulated by the operative units of the GRC served as a guide for these research activities and therefore also for this volume of the publication series.

Based on the organisation survey and findings from past field work, the German Red Cross was involved in initiating and leading the development of a research project aiming to support people needing care and assistance, and their friends and family during crises, which also took into consideration the described research needs of the GRC. The research project KOPHIS[4], which is an acronym for the German phrase meaning "Contexts for Supporting Persons Needing Care and Assistance", is being led by the GRC from 2016 to 2019 and is executed together with four other research partners from science and business.[5] KOPHIS was supported by the Federal Ministry of Education and Research as part of its research for civil safety. KOPHIS was the first research project nationwide to explicitly address the group of people needing care and assistance during crises and disasters. During this project, the participative research approach transformed the vulnerable population into participants and practically promoted socially-oriented networking of relevant actors to support the target

[4] www.kophis.de, www.sifo.de/files/Projektumriss_KOPHIS.pdf

[5] In addition to the GRC, the Disaster Research Unit (DRU) of the Freie Universität Berlin, the International Center for Ethics in the Sciences and Humanities (IZEW) of the University of Tübingen, the Fraunhofer IAO of the University of Stuttgart as well as the Zentrum für Telemedizin (Center for Telemedicine, ZTM) Bad Kissingen were also involved.

group in the model region. With this target group, the participative nature of the research, and the concrete networking activities, KOPHIS goes far beyond current discussions in civil protection[6] to interlace scientific demands with practical application. The collected articles from organisation partners of KOPHIS were published in a book of collected works.[7]

The elderly and those needing care at home are not a uniform group. Particularly when it comes to age, needs and personal resources can vary considerably, as can the social and economic conditions. It can, however, generally be assumed that the elderly and those needing care are particularly prone to injury and are highly vulnerable during crises or disaster situations. In disaster research, the term "vulnerability" has been under discussion for some years now. In the research project INVOLVE,[8] in which the German Red Cross is participating as a project partner, vulnerable people are defined as those who, for various reasons, are more exposed to the negative effects of a crisis or disaster than other populations might be (see Deutsches Rotes Kreuz 2017a: 7). For this publication in particular, a group-oriented understanding of vulnerability is used. The advantage of this is that the group defined in this way receives special attention in disaster management and supportive disaster management measures will also be implemented to help this group specifically (see the advantages and disadvantages of a group term Rhein 2017: 47). Throughout the rest of the text, we would therefore like to suggest the following definition, with consideration given to protecting the population.[9]

Vulnerability = susceptibility to injury

Within the context of crises, large-scale emergencies, and disasters, groups of people are considered vulnerable when they are, for various reasons, dependent upon other people on a regular basis and long-term for vital assistance and do not have access to resources for dealing with events.

---

6 The target group of KOPHIS as well as collaborations or networks were discussed at a conference in the autumn of 2017 (see Krüger 2018). These discussions are a welcome addition to endeavours aimed at further developing civil protection – especially within the context of demographic change. Such experiences and findings from KOPHIS aid involvement in more in-depth and expanded discussions and yield more practical information and measures.

7 See Krüger, Max 2019

8 The research project INVOLVE aims to reduce social vulnerability through volunteer involvement. The national headquarters of the German Red Cross released a research publication series as well as an English-language summary of the research publication series on the subject, see www.grc-research.de, by navigating to the INVOLVE project subsite.

9 In Germany, measures for protecting the population include civil protection ("Zivilschutz") as well as disaster management ("Katastrophenschutz").

According to the suggested definition, persons in need of extra care are considered vulnerable. This is because needing care – particularly as specified in the Long-Term Care Insurance Act (Social Benefits Statute Book XI, Section 14) – on a daily basis indicates that a person is dependent on support; meaning that persons needing care require assistance from others.[10]

The orientation of this GRC volume of writings on the vulnerable group of the elderly and those needing care corresponds to the Sendai Framework for Disaster Risk Reduction 2015-2030 by the United Nations. There it states that low-threshold, non-discriminatory, and inclusive participation of all people is essential to disaster risk reduction and that special attention should be given here to those who are disproportionately affected by disasters. Within the process, the perspective, age, gender, disabilities, and culture should be taken into account and integrated into all corresponding areas of policy and practice (see United Nations 2015: 10). Elsewhere in the document, it also states that people with life-threatening and chronic illnesses should be taken into consideration on national and local levels in all policy concepts and plans according to their specific needs, in order to manage their risks before, during, and after disasters (see United Nations 2015: 20).

This part of the research publication series is based on literature and internet research as well as discussions with experts and field reports. It serves as an introduction to the content of the topic and introduces the formats and solution approaches developed during the course of the KOPHIS research project. The article is divided into the following chapters: Starting with Chapter 2, information is first presented on the topic of age, need for care, and the ways in which this may uniquely affect the disaster situation. Chapter 3 showcases experience and challenges associated with the elderly needing care during crises, large-scale emergencies, and disasters. Chapter 4 utilises research to explore the question of how elderly people and those needing care being looked after at home can be supported during crises, large-scale emergencies, and disasters. Finally, Chapter 5 outlines the KOPHIS research project and in the final Chapter 6, the results are summarised giving consideration to a socio-spatial approach (“Sozialraumorientierung”) to civil protection.

[10] According to this definition, which is by no means exhaustive, other groups could also be considered vulnerable, such as children, people with physical, cognitive, or psychological disabilities or refugees. In contrast, people are not considered vulnerable when they are not regularly or permanently dependent on support or if they have material, social, physical, cognitive, or other resources for dealing with crises.

2 Advanced age and need for care – What does that mean for crises, large-scale emergencies, and disasters?

In the wake of the social and demographic change, the number of elderly people and those needing care that are being looked after at home is increasing. It is essential that disaster management adjusts to the associated challenges and changes associated with caring for the elderly. Both developments are illustrated in the following so that the unique influence on people needing care or their unique vulnerability during crises, large-scale emergencies, and disasters can be explained.

2.1. Development of the need for care

The aim is to first give an overview of the development of a need for care as well as the changes that have occurred in regards to caring for the elderly. This mainly involves illuminating the aspects that are significant when it comes to crises, large-scale emergencies, and disasters.

2.1.1. Social and demographic change

As the population ages in Germany, the number of people needing long-term care and who are dependent on support is constantly growing (see Table 1). In the year 2015, approximately 2.9 million people required care in the sense defined by the Social Benefits Statute Book XI, meaning that they were obtaining services through long-term care insurance. Two-thirds of them were women (64 percent).

The number of people needing care and assistance that do not (yet) qualify under the Long-Term Care Act, but who still require support, is much higher. It is estimated that this group of people amounts to a total between 4 to 5 million people (see Nowassadeck et al. 2016: 6). According to the Second Inclusion Act of the German Federal Government, a total of almost 12.8 million people may be affected by chronic illnesses and disabilities. This corresponds to almost 16 percent of the population (see Engels et al. 2016: 41f).

	1995	2015	2050
People needing care in millions	1.1*	2.9 Of these, number who are 60 or older: 2.5**	4.6***
Number of people suffering from dementia in millions****		1.5	2.9

(Sources: *Bundesministerium für Gesundheit not dated; **Statistisches Bundesamt 2017; ***Rothgang, Kalwitzki et al. 2016: 83; ****Deutsche Alzheimer Gesellschaft 2016

Table 1: Development of the number of people needing care

With advanced age, the risk of dementia increases. It can therefore be predicted that the number of people suffering from dementia will increase considerably as a result of the higher life expectancy and increasing number of elderly people (see Table 1).

The number of people needing care who live alone is also growing. According to a study 44 percent of people needing care lived alone in the year 2011. That was approximately twice as many as in the previous decade. Almost every fifth person needing care who lived alone said they had no one they were close to (see Naumann et al. 2014: 138).[11]

Increasingly more people needing care are dependent on social benefits. They mainly receive "long-term care aid" services under social benefits regulated under the Social Benefits Statute Book XII that are only granted when costs are not being covered by someone else, such as long-term care insurance. In the year 1999, almost 310,000 people were receiving long-term care aid. In the year 2015, there were almost 451,000 people depending on this kind of support. Of these people, almost every third person was living outside of an institution, so they were being cared for at home (see Statistisches Bundesamt 2015b: 5; internal calculation).

At a glance ...

- The number of people needing care will continue to increase dramatically.
- The number of people suffering from dementia will increase significantly.
- Increasingly more people needing care will live alone at home.
- Increasingly more people needing care will be using social benefits

[11] See also ZQP- press information from 07/05/2014: When a crisis occurs, people needing care who live alone are often left to their own devices.

This means that disaster management needs to be ready for an increasing number of people needing care with their special needs as well as people with dementia in the future. Here it is especially important to consider those who are living alone, being cared for exclusively through home care services, and may not even have any family, neighbours, or other support where they live. During crises or disasters, poverty can also be an additional risk factor for people needing care. It can, for example, limit their options for preparing ahead of time and stockpiling provisions (see Lorenz 2011: 40).

The developments described here were also confirmed by the survey of the 19 GRC regional branches on vulnerable groups and new forms of involvement during crises carried out from December 2016 to March 2017. Many of the people interviewed stated that, while responding to floods or severe regional storm events for example, there is increased need to aid (individual) people who are not well-connected socially. This applies to the elderly and those needing care, as well as single parents and people with a weaker social standing. Some of the survey participants felt this was necessary since they saw a "weakening" of classic social structures that previously would have been a source of self-help, such as friends, families, and neighbours. This also differed between rural and urban regions, with the "classic" social and aid structures being found more frequently in rural areas (see Heinrich 2017: 4f).

2.1.2. Changes within the field of elderly care

There are three main developments within the care of the elderly which are pertinent to disaster management and they are listed briefly below:

- Popularity of home care,
- heavy use of technology, and
- development of caregivers and family members providing care

The popularity of home care refers to the increased use of home care instead of care in an institution and/or the outsourcing of nursing, health-related, or social services from an institution to the realm of home care (see Schaeffer & Ewers 2001). The popularity of home care in long-term care is a major development for disaster management. If a crisis occurs, i.e. the deactivation of an unexploded bomb with the necessity to evacuate the surrounding area, it is important to take into account the people being cared for at home.

The principle "home care before institutional care" was codified in the Long-Term Care Insurance Act of 1995 and (further) promoted with the Long-Term Care Reorientation Act of 2012

and the Long-Term Care Strengthening Acts I and II of 2015 and 2016. Almost three in four people needing care in Germany are cared for at home, in keeping with the principle "home care before institutional care," and mostly by family members. This proportion has remained nearly the same since the 1990s (see Table 2). Considering the cost developments in the field of long-term care on the one hand, and the desire of many older people to live at home for as long as possible on the other, it is safe to assume that the vast majority of people needing care will continue to be cared for at home in the future.

	Number of people needing care being cared for at home		**Percentage of people being cared for at home out of all people needing care as defined by the Long-Term Care Insurance Act**
	Exclusively by family members (Receiving long-term care allowance)	**Partially or completely by nursing services**	
1999*	1.03 million	415,000	72 percent
2013**	1.24 million	616,000	71 percent
2015***	1.38 million	692,000	73 percent

Source: *Statistisches Bundesamt 2001; **2015a; ***2017

Table 2: Development of people needing care at home as defined by long-term care insurance

Accordingly, the number of home-based long-term care services has increased dramatically over the past few years, from approximately 600 to 13,300 services between 2013 and 2015. Approximately two-thirds of home care services (65 percent) are now being offered by private companies (see Statistisches Bundesamt 2017: 10).

Technology is playing an increasingly greater role in home care. On one hand, increasingly more people are now able to be cared for at home with serious and severe health issues, which previously would have required inpatient treatment and care. In some cases, this also applies for people who are periodically or permanently dependent on technical therapeutic support, such as in conjunction with breathing, dialysis, and infusion therapies. Therapy-related technologies are used to treat illnesses and also to monitor or maintain vital bodily functions, such as in the case of in-home infusion and transfusion therapy (see Ewers 2010: 317). People in need of care who receive care at home are often dependent on devices that require electricity to function, such as: a hospital bed with lifting mechanism, bath lift, stairlift, electric wheelchair, feeding pump with stomach tube, home respiratory equipment, inhalation device, home dialysis device, monitor, blood sugar device, insulin pump, home emergency calling or hearing aid with battery (see Geißler 2015: 13).

These therapy-related technologies can be differentiated from "environment-related technologies". These aim to make life at home safer and enhance quality of life in order to enable people needing care and assistance to remain in their own homes for as long as possible. One example of this is sensors that are designed to report falls. Finally, it is important to mention technologies for long-term care that assist nurses or care-taking family members with their work. Electronic care documentation is of central significance to the everyday working life of caregivers (see Sowinski et al. 2013: 22ff).

The increasing use of technology within the field of long-term care requires a dependency on electricity. Major power outages could quickly become life threatening, particularly for patients receiving intensive care at home who are absolutely dependent on technology. Patients receiving care at home might be receiving care aided by the following electricity-dependent devices, among others: respiratory device, pulse oximeter, aspirator, capnometer, oxygen concentrator, or liquid oxygen tank as well as a feeding pump (see Beusch 2017).

Another significant development within field of caring for the elderly for crises or disasters is the limited availability of professional caretakers. Most caretakers providing home care services (70 percent) work part-time (see Ehrentraut et al. 2015: 8) and are often under huge time constraints. On average, they take care of a comparatively large number of people needing care (see Theobald et al. 2013). There is also a caretaker shortage which is expected to increase in the future (see Bundesministerium für Gesundheit 2017). In addition to this is the fact that some regular caretakers in the nursing field have only limited German language skills.[12] According to a study, it is estimated that about 163,000 people from Eastern Europe live, sometimes irregularly, in the homes of people needing care as part of a so-called 24-hour care service and take care of them for a limited time. This is true for about eight percent of all households inhabited by a person needing care (see Hielscher et al. 2017: 95).

For disaster management, this means that the developments described could have an even more severe effect during a crisis, large-scale emergency, or disaster situations. It means that there may not be enough caretakers available. Or they may not understand the instructions given by responders due to their lack of German language skills.

[12] Due to the ever increasing shortage of nursing professionals, efforts have been initiated by the German Federal Government, among others, to recruit professionals from other countries (see, for example, Bundesministerium für Wirtschaft und Energie 2014). According to an earlier study, the percentage of people with immigration background working as nurses was at 18.3 percent, but this says nothing of their language skills (see Afentakis et. al. 2009: 31).

The GRC survey of regional branches concerning vulnerable groups also reveals that the increasing number of people needing care creates new challenges for assistance in the field. This means that older people are less likely to need (medical) first aid, for example, than general (medical) support (see Heinrich 2017: 3).

At a glance ...

- The number of people needing care being cared for at home is expected to continue increasingly.
- The increased use of technology in care indicates that people needing care are ever more dependent on electricity.
- Therapy-related technologies are increasingly allowing more people in need of acute medical care to remain in their own homes. For example, estimates assume that about 20,000 patients are being cared for at home.
- There is limited availability of caretakers for home care services and they also often work part-time. Some caretakers have limited German language skills. Home assistants from Eastern Europe live in some home care households, providing irregular 24-hour care services.

2.2. Vulnerability of people needing care

As outlined in Chapter 1, older people needing care are considered to be especially vulnerable during crises and disasters. Here it should not be overlooked, however, that older people and people needing care may have potential and resources available that could be helpful and valuable to them and others during crises, large-scale emergencies, and disasters. This means that a need for care is not the same as a general loss of abilities and resources. This is explained in more detail in Chapter 4.4. (involvement of the target group).

Elderly people needing care are often dependent on support in their everyday lives and are often at high risk during crises, large-scale emergencies, or disasters. But age alone does not determine whether a person is particularly vulnerable (see Geißler 2015: 11).[13] It can, however, play a role, since advanced age is associated with increased complications which have the potential to increase vulnerability, such as weakness, limited functionality, and limited sensory perception. A survey of the Robert Koch Institute shows that many elderly people suffer from

[13] See also Dugoni, Leimegger et. al. 2016: 20; see also Hackl 2017; see also Lorenz 2011: 67.

high blood pressure, arthritis, cardiovascular illnesses such as heart attacks or strokes, diabetes, and/or asthma (see Table 3). Many have impaired hearing and vision, and every tenth woman who is 75 years or older and almost 8 percent of men 75 years or older suffer from dementia. With advanced age, the probability of suffering from dementia increases dramatically. Of all people in their 90s and older, almost every third suffers from dementia (see Robert Koch Institut 2015: 413).

	Women 75 years or older as a percentage	Men 75 years or older as a percentage
High blood pressure	59.4	50.8
Arthritis	46.2	29.7
Cardiovascular disease (including heart attacks, strokes)	35.1	40
Diabetes	19.2	19.8
Asthma	7.6	8.8
Hearing (severe impairment or inability	13.1	4.6
Vision (severe impairment or inability)	10.9	10.4
Multimorbidity (two or more chronic disease occurring simultaneously)	81.7	74.2
Multimorbidity (five or more chronic disease occurring simultaneously)	34.6	25.9
Dementia-related disease in people 65 years or older[2]	10.8	6.9
Dementia-related disease in people 90 years or older[2]	29.2	44.2

Sources: Robert Koch Institut 2015: 412-415; Deutsche Alzheimer Gesellschaft 2016: 2

Table 3: Common diseases in old age

With advanced age, the probability of having multiple chronic illnesses, so multimorbidity, also increases. For example, four out of five women 75 years of age or older will have two or more chronic illnesses and at least every third will even have five or more chronic illnesses (see Table 3). The health-related, medical, and social care of elderly people with multimorbidity constitutes a special challenge.

In regards to people needing care who are cared for at home, particularly when they live alone, it is also important to consider that they often rely heavily on professional home care. Personnel from the home care service may come once, or even multiple times each day, to provide the respective services in the household of the person needing care. The provision of care services is at least partially dependent on timing, in order to maintain the health and well-being of

the person needing care (see Blättner et al. 2013). In a study on the effects of extreme weather events in Hesse, one of the aspects Blättner (2013) explains is that even a disruption of home care due to weather lasting half a day could lead to considerable problems. It is also important that the person needing care take their medication regularly: A short break in the medication therapy for patients with stable chronic heart failure, for example, could in some circumstances have a significant effect without the affected person even realising (see Leiner 2017).

In addition to the health problems that occur increasingly with age, social factors also play an important role in the vulnerability of people needing care. Their low financial resources not only limit their ability to prepare for crises, large-scale emergencies, and disasters, but they also have a direct effect on the person's living conditions, such as on their housing situation. As a result of this, for example, people needing care might (have to) live in socially precarious areas where there is hardly any interpersonal contact and there is a lack of neighbourly help. It is also possible that people needing care might only be able to afford to live in the most inexpensive residences – on the top floor of a high-rise building for example – where it might be more difficult to evacuate from.

Furthermore, there is mounting evidence in numerous research and research-based articles that the elderly are often overlooked in disaster and conflict situations and their requests are rarely processed by emergency programmes or planners (see Hutton 2008: 19).[14] This indicates that there is a form of age discrimination at work in disaster risk reduction and disaster management, which contributes considerably to the vulnerability of older people during crises and disasters.[15]

For disaster management, the possible repercussions of the increased vulnerability of people needing care are significant.[16] In summary, during a crisis or disaster, the previously mentioned aspects may result in

- Elderly people may have a harder time or be unable to hear or see warning signals due to their sensory impairments.
- Elderly people needing care may be less capable of processing information that may be pertinent to the disaster as a result of failing cognitive abilities

[14] See also Hartog 2014: 5; see also Dugoni & Leimegger 2016: 19.

[15] A report on age discrimination in various areas of policy areas, for example, the discriminatory handling of emergency risk reduction and hazard prevention in regards to the elderly during crises and disasters, in the case of the terrorist attacks on 11 September 2001 or Hurricane Katrina (see Ageism in America 2006: 85).

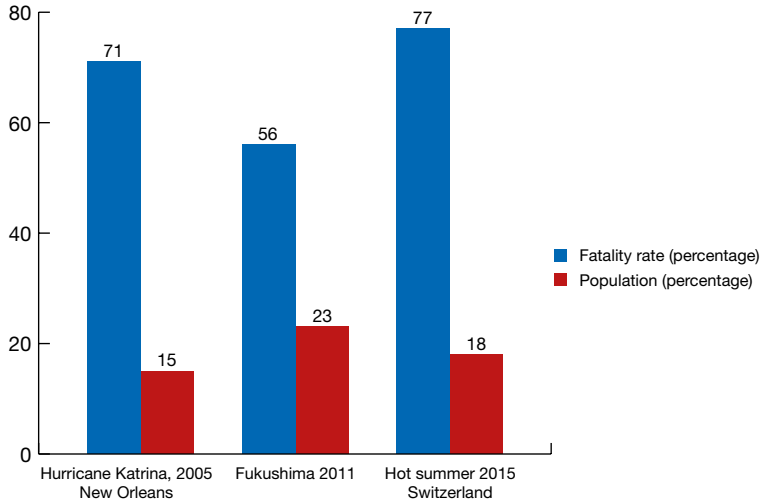
[16] See considering a situation involving a gas shortage Oschmiansky 2018.

- Elderly people are possibly not being able to independently reach safety or go to a gathering place due to mobility issues.
- Elderly people may be at high risk for not taking their medications safely or on time or under certain circumstances may (no longer) remember which medications they depend upon.
- People needing care who are dependent on often vital technical equipment operated by electricity such as respiratory or dialysis devices, feeding pumps, monitoring monitors, and insulin pumps, may quickly be faced with a life-threatening situation.
- People needing care are often dependent on (professional) care services that are, at least in part, time-sensitive and must be provided on time in order to maintain the health of the affected person.
- People needing care are sometimes dependent on special feeding arrangements and therefore must receive support for eating and drinking.
- Communication with people needing care who have dementia may be severely hindered. This can cause affected persons to become increasingly irritable and predisposed to aggression and challenging behaviour (see Isfort et al. 2012: 16). They may also be disoriented at times and have a tendency to run away, which could pose a special challenge at an emergency shelter, for example.
- People needing care are at an increased risk of experiencing emotional stress from unexpected events.
- Evacuating people needing care is associated with increased risks to their health.[17]

[17] Studies indicate that during the months following a disaster, the illness and mortality rate of elderly, frail individuals who have been evacuated rises (see Dosa et. al. 2012; Nomura et. al. 2016).

3 People needing care during crises, large-scale emergencies, and disasters: Experience and challenges

During crises and disasters, the elderly – and it is assumed this includes elderly people needing care – are frequently among the victims. International experience supports this. As shown in Figure 1, the percentage of elderly people who fall victim to disasters is considerably greater than the percentage of elderly people in the general population. In New Orleans, for example, of the 1330 deaths caused by Hurricane Katrina in 2005, approximately 71 percent were 65 or older, even though the older population (60 years and older) only composed 15 percent of the population there. During the disaster in Japan at Fukushima-Daiichi in 2011 (earthquake, tsunami, radioactive contamination), approximately 18,000 people (56 percent) died, of which



Sources:
Hurricane Katrina: Aldrich & Benson, 2008
Fukushima: HelpAge International et al. 2013
Switzerland Vicedo-Cabrera, Ragettli et al. 2016; Bundesamt für Statistik 2017

Figure 1: Percentage of disaster victims who are elderly and the percentage of elderly people in the general population

more than half were 65 years of age or older, while they only made up 23 percent of the population in the region. During the heatwave of 2015, elderly people made up 77 percent of the deaths, but they only made up 18 percent of the general population (see HelpAge International et al. 2013: 3ff).

First-hand experience of the special vulnerability of the elderly and people needing care and assistance during crises is also available for Germany: During the **Münsterländer Winter Storm in 2005**, there was a power outage for several days, and in some areas it was out for up to four days. Approximately 250,000 people were affected. A survey (see Menski 2008) of just 600 affected households indicates that the care of people needing care and assistance in this situation was considered by some people to be insufficient.

The floods in **Central Europe in August 2002** showed that, in regards to people needing care and assistance, there was a need to improve the training of disaster response personnel and improve the early warning system. During the floods, which had disastrous consequences for Central Europe, a total of 37 people died, with 19 of these being in Germany alone. It was especially severe in the provinces of Saxony and Saxony-Anhalt, where approximately 337,000 people were directly affected (see Deutsches Komitee für Katastrophenvorsorge 2003). The German Red Cross, which was involved in disaster response efforts and was responsible, among other tasks, for providing rescue services, evacuating hospitals, nursing homes, and retirement homes, setting up emergency shelters, and caring for the victims and responders, initiated an investigation of its work (see Luipold and Mildenberger 2003). Approximately 110 employees were surveyed for this. In regards to training, the people surveyed mentioned, among other things, that the aspects of care-taking and psychosocial support must be assigned more weight during training. These aspects turned out to be particularly important during the evacuation.

During the 2002 flood in Dresden, the population was notified of the upcoming evacuation exclusively by police speaking through a loudspeaker. It was thus impossible to reach some people who were deaf or hard of hearing. As there was no accessible early warning system, these people stayed behind in their dark residences to which the supply of electricity had been cut off (see Bachmann 2013).

The **floods in Central Europe in 2013** in Germany mainly affecting Bavaria, Saxony, and Saxon-Anhalt illustrated that the number of elderly people and those needing care are often underestimated for disaster management. Based on the number of emergency calls, the floods in 2013 were the greatest disaster following the Second World War in Germany. The

disaster alert was sent out in 50 districts and 9 percent of all available responders were deployed (see Richert 2017: 55). In this situation, evacuating elderly people in need of care who were being cared for at home was a particular challenge. As plans were made to evacuate people needing care from their residences and houses, the fact that there was no central record or list of where these people lived turned out to be a stumbling block. A lack of information resulted in unplanned assignments performed under time pressure and with considerable risks (see Brahms 2013, see Kneisel 2015).

During the most extensive evacuation effort in the Federal Republic of Germany in **Frankfurt am Main in 2017 due to a bomb diffusion**, which involved the evacuation of over 60,000 people, reaching people in need of care who were living at home was a huge challenge:

> It also took longer than expected to get people needing assistance out of the evacuation zone. It was "very infuriating and very cumbersome" according to a spokesperson from the fire brigade. Police and rescue workers would have had sufficient time and capacity to transport all of the persons needing assistance that morning, but they didn't have any information about them. "Only when we are no longer hearing from people in the zone can we give the go ahead."
> Source: Spiegel online from 03/09/2017: Evacuation of Frankfurt

Another evacuation for diffusing a bomb, this time in Berlin, in October 2017 showed that the information available about the specific needs of elderly people needing care and assistance in evacuation situations is still insufficient. Firstly, an emergency shelter set up for persons needing assistance was not structurally sufficient (the toilets were too small for wheelchairs and assistants) and it was over capacity very quickly due to the high number of people needing help. Secondly, communication problems with the police about the length of the assignment resulted in bottlenecks in the provision of medical care and medications.

The experiences described here illustrate that too little is still known about the growing number of elderly people, some of whom need care and assistance, and their special needs for care in relation to disaster management and it is clear that disaster management is not yet sufficiently aware of their needs. There are also indications that some of the responders deployed for disaster management are not sufficiently trained in the needs of elderly people and those requiring care (see Knickmann 2016). This estimation is further supported by a survey of the responders of the GRC disaster services performed within the context of four regional conferences held across Germany and that was administered to a total of 128 responders

of the GRC assistance services. Taking into consideration the future of the disaster services, the participants also described the necessity of basic care-giving knowledge (see Deutsches Rotes Kreuz 2017b: 59).

> "In our ageing society, the communication with and care of the elderly is a central challenge for disaster services."
> Martin Bullermann GRC National Director of Stand-by Services, 14/02/2018

Furthermore, it must be taken into account that the existing resources for disaster management are limited. As a result, the fire brigade often lacks the necessary capacity in emergency situations to provide emergency care for people in need of care and assistance in addition to doing things such as clearing traffic routes (Hafner et al. 2013: 508f).

On the contrary, there is information indicating that disaster and emergency preparedness only plays a minor role in the care-taking industry. There are not, for example, any requirements for emergency power supply and for emergency plans at nursing homes. According to a survey on extreme weather events (see Capellaro & Sturm 2015), 62 percent of the inpatient and 55 percent of the partially inpatient care institutions surveyed stated that they had an emergency power supply or a contingency plan for a power outage. Contrastingly in the case of in-home care services, 60 percent of the caretakers indicated they had no contingency plan for a power outage at their client's residence.

It would seem that not everyone in the professional care-taking industry has an equal awareness of risk.

> "In the opinion of the experts surveyed, nursing homes generally are not at all prepared for the possibility of a longer-lasting and extraordinary damage scenario such as a large-scale long-lasting power outage [...]." (Hermann 2014: 14).

Furthermore, disaster management and the care-taking sector are not sufficiently systematically networked with one another considering the increasing number people needing care and assistance. This does not only apply to Germany. In Sweden, Palm (2000) revealed, for example, that responsibility for taking care of people needing care during a crisis situation was not clearly specified and the authorities and population had different viewpoints on the matter (see Palm 2009). This can cause gaps in care-taking services (see Lorenz 2011: 67f).

The following points can be defined in summary:

1. Elderly people needing care and assistance are often at a particularly high risk and are highly vulnerable during crises, large-scale emergencies, and disasters.
2. The number of people needing care and assistance – particularly those who are cared for at home – is underestimated during crises, large-scale emergencies, or disasters.
3. According to the responders, agencies, and organisations with safety-related duties, there are knowledge gaps during crises, large-scale emergencies, and disasters. Firstly: Where are elderly people needing care and assistance living? On the other hand: What do they need to be supplied with or what do they need in general?
4. Disaster management is not sufficiently adapted for assisting people needing care and assistance who live at home during crises, large-scale emergencies, and disasters.
5. The care-taking industry is established for everyday life and not for crises, large-scale emergencies, or disasters.
6. Disaster management and the caretaking industry are not sufficiently networked with one another.

4 How can people needing care who are being cared for at home be supported during crises, large-scale emergencies, and disasters?

The risk awareness of the population in regards to crises, large-scale emergencies, and disasters in Germany is generally seen as insufficient. The low sensibility limits the options open to authorities for informing the population and motivating preparatory measures and preparedness to help oneself and others (Birkhofer et al. 2011: 31).

A recent investigation done by Schulze, Schander, et al. (2018: 32-33) shows that it is very difficult for people needing care and assistance to imagine a crisis scenario such as a large-scale power outage in the winter and the possible consequences of these events for them. Of the people needing care who were surveyed for the study, only very few of them (16 percent) had given thought to the topic of extreme situations. Most of them have no concrete idea of what they would do in such a situation, or how they could be helped. This is one of the reasons that participants are not taking sufficient precautions.

Even those in the care-taking industry and in disaster management seem, as described in Chapter 3, to have given insufficient thought to the target group of the elderly and those needing care during crises, large-scale emergencies, and disasters thus far. Both sectors lack the necessary preparation to meet the challenges of supporting people in need of care being cared for at home during a crisis or large-scale emergency situation and they may not even be sufficiently aware of these challenges.

Responders and caretakers must be appropriately trained in disaster management or care-taking respectively in order to rescue and accommodate the elderly and those needing care during a crisis or disaster situation. As described in Chapter 3, experts and responders are advocating for care-related aspects to be given (more) attention in training. The survey of the 19 GRC regional branches also revealed that there is a considerable need for training and continuing education for internal personnel on the subject of how to support the elderly and those needing care (see Heinrich 2017: 7). In regards to preparing caretakers for disasters, Görres, Harenberg et al. (2012: 2f) see a significant need for action. The Nursing Care Act of

2003 does indeed require that information on disaster management be included in the curriculum for nurse training, but this is rarely the case in practice.[18]

4.1. "Strong partnerships" – collaboration between caretakers and elderly assistance, disaster management and communities

Aldrich and Benson (2008: 3) recommend developing "strong partnerships" between public health organisations, service providers that assist the elderly, and emergency responders in the interest of disaster preparedness. The death of so many elderly and chronically ill people in the wake of Hurricane Katrina in 2005 in the United States made it clear that there was a lack of adequate healthcare available to elderly and chronically ill people during and after the disaster. The health and elderly assistance sectors should therefore be included more in disaster management planning in order to improve coordination, communication, and activities in emergency situations. Disaster risk reduction plans can be most effectively developed in collaboration with a network of elderly assistance services. After all, these services know "their" clients and are able to identify those who need help eating or taking medications.

Fernandez, Byard et al. (2001: 71f) also emphasize collaboration between the local authorities, emergency relief, and the services used by the elderly such as meal delivery services, care-taking, transport services, etc. These organisations offer everyday services for elderly infirm people that could be helpful during a disaster. Some of these services also have lists of people needing care detailing specific needs and these lists could be utilised in case of emergency. The authors also discussed establishing a registration system that allows elderly people to register with their name, address, and information on their illnesses and specific needs. This basic data could then be linked with potential corresponding service offerings.
In order to enhance the safety of people needing care during extreme weather events, Capellaro and Sturm (2015: 59F) suggest that care establishments and services should come to agreements with one another as well as with hospitals and doctors. This makes it possible for other services, organisations, or hospitals to take over for individual services if they experience outages, or are hindered in some way from helping during an extreme weather event. As there is a lack of overarching, coordinating structures, the authors recommend that the healthcare

[18] The new general care training programme, which is set to launch in the year 2020 in Germany, should now enable all nursing students to take appropriate actions during crises, large-scale emergencies, or disaster situations.

authorities of the regional or urban administrations take charge of initiating and moderating the process of regional cooperation between health and care organisations.

4.2. The role of in-home care services or providers of in-home care

Whyte-Lake et al. (2015) emphasises the importance of the providers of in-home care understanding their role and significance during crises and disasters. Firstly, when there is a crisis or disaster, they will have to maintain their care services while taking into account that higher patient volumes can be expected in a disaster situation. It is possible, for example, that hospitals will release their non-acute patients needing care for home care early in order to make space for people who are seriously ill (see Wyte-Lake et al. 2015). On the other hand, providers of in-home care are responsible for ensuring that their customers are as well-prepared as possible in case of emergency. Preparing customers is increasingly one of the key components of the emergency management role providers of in-house care need to take on. Customers and caretakers should ultimately be aware of what support the person needing care can expect following a disaster. The authors recommend the following four disaster preparedness measures that providers of in-house care should take:

- Create a written contingency plan
- The employees' needs should be taken into consideration (caring for their families), by developing family contingency plans, for example.
- A standardised risk classification system that prioritises home care depending on the customer's needs.
- Consideration of the customer's specific needs, especially when they are dependent on electronic devices or certain medications

In order to prepare customers for disasters, Wyte-Lake et al. recommend, among other things, that providers of in-home care help customers to develop emergency and evacuation plans. This includes putting together an emergency information packet containing medical phone numbers (doctor, pharmacy) as well as the numbers of family and friends and current medications and subscription lists.

Fernandez, Byard, et al. (2001) also mention that disaster risk reduction planning is the responsibility of those who provide services for elderly people. These services should receive support from organisations in the disaster management industry for this. This includes a disaster management training for employees of such services.

For Germany, Capellaro and Strum (2015: 54ff) recommend requiring care organisations and nursing services to keep emergency plans on hand for disruptions in care due to extreme weather events. According to their survey, over 80 percent of the care organisations and services already have experience with such events and for them, the topic is very much anxiety-inducing. All the same, many of the organisations and services do not have corresponding emergency plans.

The study by Schulze, Schander, et al. (2018) shows that people needing care who are receiving home care from a service expect this service to help them in extreme situations as well. Only half of the people surveyed also expected care services to be able to handle such crisis or disaster situations. During the course of the study, the family members providing care were also asked to express their views on the skills of various actors. From their point of view, the care services were the most capable, followed by the authorities and aid organisations. 50 to 46 percent of the people surveyed assigned these actors the corresponding competences. Family members providing care saw themselves as being the least competent to handle a crisis situation (see Schulze, Schander et al. 2018: 50ff).

4.3. Personal and organised social networks

The research provides recommendations for personal networks as well as organised social networks possessing knowledge of where elderly people needing care live and that can organise help for these people during crises, large-scale emergencies, and disasters. While personal networks refer to the individual direct contacts of the person needing care (such as neighbours, family members, friends), organised social networks are considered to be networks in which representatives of various local organisations – which are relevant during crises, large-scale emergencies, and disasters – work together.

Fernandez, Byard et al. (2001: 71) see personal networks composed of family members and friends as a form of self-help that could possibly be the greatest resource for elderly, infirm people. The authors recommend developing corresponding checklists and pedagogical materials for this group and their families and friends that are then distributed to the social networks and communities. The checklists could also remind communities to check in on their elderly residents in case of a disaster and a community should set up special phone numbers for this target group.

In connection with this, the findings of the project "Katastrophenschutz-Leuchttürme" are of interest. The project investigates how and under which circumstances the population can be activated and recruited as partners for crisis and disaster management during crises, large-scale emergencies, and disasters. It examined the willingness of the population in three districts of Berlin to offer help during a major power outage. Ohder, Röpcke et al. (2014) determined that the willingness to help was extremely high. Concerning the increasing number of older people in society, the "KatLeuchttürme" project assumes that the help this population group might need during a crisis or disaster can only be provided by volunteer helpers. This led Geißler (2015: 73ff) to suggest an aid network of volunteer helpers who would go from door to door in their neighbourhood when a crisis or disaster occurs and pass on information pertinent to the crisis while also finding out how the people in these residences are faring. In her opinion, former employees from the healthcare industry would be good candidates for such a local aid network, since they possess the necessary specialised and social skills and have no professional duties to fulfil when a disaster occurs. The author also states that even people who are considered vulnerable themselves might be good helpers, since they have the necessary knowledge and are in the best position to draw attention to specific weaknesses in support provided to people in need of assistance.

Blättner, Georgy und Grewe (2013) also recommend organised social networks on-site that may be able to jump in when home care services are not able to support persons needing care for a time. Experts see such networks as an organised form of civic involvement in a person's neighbourhood. A city can participate in a network for supporting persons needing care and thus build structures for emergency prevention within the city. Blättner, Georgy, and Grewe refer to a communal network for supporting people needing care during storm events in Northern Hesse, with the participation of the mayor and deputy mayor as well as the local church, the volunteer fire brigade, the rural women's association, a citizen's network, and as well as care services. The resulting model project "Local Volunteer System (FvOS)" should mitigate bottlenecks in the provision of home care for persons needing care during storm events. As part of the project that ran until September 2018, volunteers were involved in establishing a support and networking structure for vulnerable people in crisis situations affected by climate change, in order to look after people needing care and assistance during a storm event and possible outage of home care services until responders arrive (see Regional Management Northern Hesse GmbH, not dated).

An interesting practical example from the social field concerning the expansion of personal networks could also be useful in considering crises: Since 2013, postmen in Jersey have been tasked with seeking out people in need of care and assistance and checking in on how they

are doing. The “Call & Check” programme was established since the volume of mail being delivered had gone down and the postman as a service provider has the ability to visit every residence or house. In addition to their delivery responsibilities, the postmen also ask about the person’s well-being, check whether they are taking their medications, and gather information for the corresponding caretakers or nurses while also inquiring about urgent worries or requests. If the customer has a special request, this is forwarded to the corresponding organisations, such as the doctor or a volunteer service. The postman can also deliver regular prescriptions (see Dickinson 2018: 112f). Postmen are also being trained as helpers for the old and infirm in France. Approximately half of the 73,000 French postmen have already completed such a training programme (see Brändle 2017).

4.4. Involvement of the target group

Within the literature, there are also articles addressing the resources and potential of the elderly and indicating that the elderly are also able to assist others during crises, large-scale emergencies, and disasters. Unlike younger people, older people have a lot of experience and are often able to consider their situation from a comparative and broad perspective. For the elderly people who returned to the hard-hit city of New Orleans in the United States after Hurricane Katrina in 2005 and survived, it was their ability to compare that made them more hardy and resilient against constant stress. They were able to evaluate their current situation against the background of the “other hurricanes” they had experienced or the fact that they had already lived through “hard times” (see Adams et al. 2011: 8).

After the earthquake in Canterbury, New Zealand in September 2010 or February 2011, it was also evident that many older residents displayed a high degree of resilience thanks to their life experiences and psychological resources. They concentrated on the needs of their families, friends, and neighbours and worked to support them. Many used the earthquake as a “learning experience” and developed contingency plan strategies. They were capable of maintaining some normal routines. There were neighbourhood support groups that directly cared for older people and were often led by “younger elderly people” (see Davey & Neale 2013: 5f).

In Bolivia, HelpAge is supported by the so-called “White Brigade”. This consists of older people who are trained in prevention and disaster response planning. They are responsible, among other things, for registering and identifying infirm elderly people and assigning volunteers from the community to care for these people directly. The White Brigades are also responsible for developing an emergency preparedness plan and participating in community

drills. They are prepared to identify the needs of elderly people and help them access humanitarian aid (see HelpAge International 2014: 21-25).

There is literature indicating that elderly people may be highly willing to assist in crisis situations in Germany as well. In the above mentioned study by Ohder, Röpcke et al. (2014) carried out as part of the KatLeuchttürme project, the willingness of the population to help during a crisis situation was investigated in Berlin. Particularly interesting was that people who themselves could be considered vulnerable, such as the elderly, migrants, and families with children showed an above-average willingness to help. Many of them were prepared to help others and even restrict use of their scarce resources in order to share them with others or even welcome strangers into their homes (see Ohder, Röpcke et al. 2014: 53ff).

Making Sense of Resilience for Disaster Management

Marco Krüger, International Centre for Ethics in the Sciences and Humanities (IZEW) of the University of Tübingen

Although resilience is a relatively new term in the realm of security studies and disaster management, its roots, especially in psychology and ecology date back several decades. Moreover, resilience is also commonly used in social work, criminology, engineering and urban planning – just to name a few (Bourbeau, 2018). The various disciplinary and theoretical roots of resilience result in a plurality of understandings of resilience that renders the concept to something that Stefan Kaufmann (2012: 110) calls a "boundary object". Such a "boundary object" is specific in its concrete context, yet abstract enough to be highly transferable to multiple issues. The perhaps most influential reading of resilience in disaster management is Crawford Holling's (1973, 1996) socio-ecological approach, in which he describes resilience as an adaptive capacity to a changing environment. Holling (1973: 21) argues that being resilient requires "to keep options open". This understanding of resilience is entrenched in complexity thinking, i.e., the idea that it is impossible to anticipate every possible cascade effect of an event. Rather, knowledge is always generated on a local level and needs to be contextualised (Chandler, 2014). Thus, as Mareile Kaufmann (2013: 60) puts it, "resilience governance re-distributes responsibilities – from government to municipalities, from national to local, from security authorities to the citizen". In fact, current resilience strategies tend to demand rather than to foster resilience (Krüger, in press). This has resulted in the widespread academic criticism that resilience would legitimise the withdrawal of the state, while responsibilising the single individual (Evans and Reid, 2014).

Notwithstanding this justified critique, disaster management can take advantage of resilience. Resilience, understood as the capacity to act, requires various resources, especially economic capital and social embeddedness but also societal inclusiveness. These capacities need to be granted rather than assumed, for example through redistribution, initiatives for social cohesion and the dismantling of impeding barriers, e.g. the lack of wheelchair ramps. Resilience requires fine-grained actions that necessarily acknowledges both, societal diversity and local contexts (Krüger, in press).

Building on these capacities, the debate of resilience needs to spark a societal discussion on an adequate distribution of responsibilities and duties. This process can lead to a societal deliberation of expectations as well as of the distribution of capacities. It renders demands, impairments and marginalisation visible, hence negotiable. This is the precondition for building resilience. Not by repeating the claim of the resilient society, but by substantially increasing capacities and remedying marginalisation. From this angle, resilience is not the withdrawal, but the active engagement of the state that aims at governing a complex and diverse society by fostering capacities, not only in the face of the catastrophic event, but also and primarily in daily life (Krüger 2019).

5 The KOPHIS research project in the Willich model region

To date, the needs of elderly people and those needing care being cared for at home have been given very little structured consideration within the context of disaster risk reduction and disaster management. The topic has been largely neglected, even within interdisciplinary debates over people needing care and assistance. This is where the research project "KOPHIS[19] – Strengthening the Contexts of People Needing Care and Assistance" comes in. KOPHIS addresses the question as to how the resilience of the group of people needing care and assistance can be strengthened for crises and disaster situations and in the process, concentrates on people being cared for at home. The term "resilience" refers to the ability of individuals and communities to recover from emergency situations. Prevention, as well as management and response to emergency situations, are the focal points of the definition of the German Red Cross (see Deutsches Rotes Kreuz 2014: 6).

The KOPHIS research project is innovative in several respects: Networking, a socio-spatial approach, and participation form the basis for the individual activities in the project.

5.1. Networking and the socio-spatial approach

KOPHIS does not make strengthening individual resilience a top priority. People needing care and assistance who are living at home are already hindered in daily life and are dependent on help. In order to strengthen the resilience of these people, it is therefore essential to involve their personal and social environment. The project therefore focuses on suitable strategies for networking within the social space ("Sozialraum") on-site and thus addresses another essential issue of the GRC organisation. Since the authorities and organisations with safety-related duties (BOS) do not have access to centralised information on the target group of people

[19] The KOPHIS research project is supported by the Federal Ministry of Education and Research from 2016 to 2019 as part of the "Research for Civil Safety" programme. KOPHIS is a collaborative project: In addition to the German Red Cross acting as the project coordinator, the Disaster Research Unit (DRU) of the Freie Universität Berlin, the Institute of Human Factors and Technology Management (IAT) of the University of Stuttgart, the International Centre for Ethics in the Sciences (IZEW) of the Eberhard Karls University of Tübingen, and the Zentrum für Telemedizin (Centre for Telemedicine, ZTM) Bad Kissingen GmbH are also involved.

needing care and assistance who are living at home, it is necessary for a multitude of actors from various areas[20] that previously existed and acted separately from each other for the most part to be brought together within a network.

- BOS: Agencies and organisations with safety-related duties (disaster management organisations, e.g. the fire department, Federal Agency for Technical Relief (THW), disaster management authorities, relief organisations in civil protection
- Care: Home care services, inpatient care institutions, nursing home, and
- civil society: other supporting organisations from civil society (e.g. meeting places, senior centres, neighbourhood initiatives, churches ...)

Such networks need to be set up before a crisis hits, so they will be completely ready for action should a crisis strike. In the model region for KOPHIS – the city of Willich in North Rhine-Westphalia (NRW) with approximately 51,000 residents – within the context of the KOPHIS project, a local support network was established within the social space bringing together actors from the areas of BOS, care, and civil society.

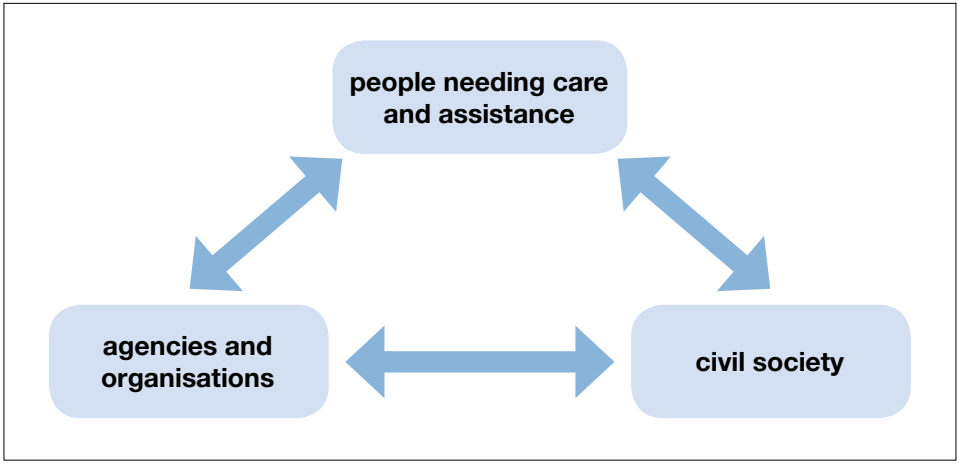


Figure 2: Networking in the KOPHIS project

[20] Within the context of the research project INVOLVE – "Initiate Volunteerism to counter Vulnerability" – sponsored by the Federal Ministry for the Federal Ministry of Education and Research, the GRC disaster services have already emphasised the importance of networking with "external" actors. At the same time, a call to action was formulated to build up or further develop the network, by maintaining regular contact or completing joint training for example (Deutsches Rotes Kreuz 2017b: 36f).

By focusing on networking within the social space, KOPHIS is also building upon the research results of the INVOLVE project and the identified need for linking the involved actors. Based on statements made by the experts interviewed as part of INVOLVE, field assignments were especially successful when actors in disaster management worked well together with other actors from areas such as healthcare and welfare, but also from the social space (such as churches, mayor, associations, neighbourhood initiatives) (see Deutsches Rotes Kreuz 2017a: 27). It would therefore be useful to promote and, whenever possible, institutionalise such networking of all actors involved. Disaster management should get involved in the existing network structures and may be able to help to support them.

In KOPHIS, comprehensive mapping of the social space in the model region of Willich formed the basis for networking the relevant actors. Based on this, a so-called "round table" was set up in the region as a networking tool.

Round tables

The support network in the model region of Willich was further developed by launching a round table that was held three times during the course of the project. Pertinent representatives from the agencies and organisations with safety-related duties, as well as representatives from the fields of care-taking, and civil society were invited from the social space to attend the "round tables" and engage in a discussion. The aim was to get to know one another better, develop a shared understanding of the needs of people needing care and assistance during crises, and ideally agree on closer collaboration in case of crisis. By establishing the "round table" within the context of the project, the foundation was laid for a permanent support network that could be further used by the representatives of the various organisations even after the end of the project.

During the first year of the project, exchange between various institutions was fostered and the necessity of networking was highlighted. Furthermore, the KOPHIS project was also introduced, together with the scenario assumed in the project,[21] stemming from the idea of building a permanent support network.

[21] During the project, the scenario of a "winter storm with power outage" was presented to the participants at the round table and during the dialogue forum (see below). This scenario is based on the real events of 2005 in Münsterland. When this happened, sustained snowfall broke power poles, which caused widespread power outages that lasted four days in some cases (Deutschländer & Wichura, 2006). The scenario aimed to highlight the effects of a power outage on people needing care and assistance who are living at home.

In the second year of the project, the preliminary results were presented and discussed. Emphasis was placed on the needs of the people needing care and assistance, as well as on the suggestions of the people involved for the solution options developed so far in order to inform and equip the support network while also raising awareness within the network. During this process, suggestions proposed directly during the course of the round table were accepted, as well as suggestions made after the event ended and the presented materials were made available.

The third round table, which marked the completion of the project in the model region, focussed on two fundamental aspects. The modified solution options were presented. The foundation was also laid for a concrete strategy to establish the solution approaches that were developed during the course of KOPHIS. At the end of the project, the city of Willich emphasised that KOPHIS has raised awareness in Willich that there is a need for corresponding concepts and that the actors in the care-taking industry also need to have a disaster plan in mind. The suggestions from KOPHIS should be further applied within the context of neighbourhood work.

5.2. Participation

Within the KOPHIS project, a participative process lasting for the entire length of the process was used to work with all participants to form appropriate approaches for increasing the safety of people needing care who are cared for at home during crises and disasters. This was the case for the described “round tables”, as well as the so-called dialogue forums, which allowed for the target group itself to get involved.

Dialogue forums

During the course of the project, a total of three events (“dialogue forums”) were held with the target group of people needing care and assistance as well as their (care-taking) family members and other people close to them. These “dialogue forums” intended to facilitate the participation of the target group. The first dialogue forum aimed to determine which needs and desires people being cared for and their family members have during crises. Building upon that, solution approaches were developed that were then presented to participants during the second dialogue forum and discussed with them. The final product was presented at the third dialogue forum. This procedure was helpful in developing target group-oriented offerings. Concrete determination of needs intended to increase the efficacy and acceptance of the

concepts developed and ensure transferability. The awareness of the topic that arose during the course of the project increased the success of the concepts and materials developed.

Within the context of KOPHIS, the GRC worked closely with the International Centre for Ethics in the Sciences (IZEW) of the University of Tübingen to develop several concepts and resources meant to support people needing care and assistance and the people close to them in preparing for and managing crises and disasters. It was possible to develop materials and concepts for appropriate awareness and prevention of disaster situations as well as solution approaches for the case that an event occurs.

	Support network	**People needing care and assistance, family members/ close friends**
Awareness raising	• Exchange within the context of network meetings/round tables • Concepts for building up and maintaining a support network	• Information and awareness-raising with the safety bingo game • Information and aid material
Prevention	• Coordination of communication and action processes	• Aid material, modularly combinable (including networking, specific emergency prevention)
Occurrence	• Recommendations for action	• Aid material

Table 4: Selection KOPHIS – Concepts and aid materials

These were examined successfully in a model region. Taking centre stage at the event was the "safety bingo game", which conveyed emergency prevention tips specifically tailored to the needs of people needing care and assistance with caretaking family members and interested persons in a playful way. The idea for a "preparedness bingo game" had originally been developed by the Netherlands Red Cross and was adapted by the German Red Cross for people in need of care. Participants were encouraged to think about how they and others could help during a crisis situation or even organise help. Further materials for the target group as well as the safety bingo game can be downloaded from the website: www.grc-research.de or www.kophis.de.

6 Summary: Moving toward a socio-spatial approach to civil protection

This volume of the research publication series describes the need for research and action in regards to the vulnerable group of the elderly and those needing care being cared for at home during crises, large-scale emergencies, and disasters. Demographic change, societal developments, and changes in the care structure are resulting in ever more elderly people, often living alone, and people needing care being cared for at home. During crises, large-scale emergencies, and disasters, they can be especially vulnerable and have specific needs for support, such as in taking medications or when they are dependent on devices to stay alive. Experiences from responding to crises have shown that it is often unknown where these people live and what their specific needs are. There is information indicating that disaster management in Germany is not yet sufficiently adapted for assisting people needing care and assistance who live at home during crises, large-scale emergencies, and disasters. It also appears that professionals in the care-taking industry are prepared mainly for everyday care, but are not sufficiently prepared for crises, large-scale emergencies, and disasters. Both areas – disaster management and care-taking – seemingly have not been systematically networked together up to this point.

Records of the GRC clearly show that the number of elderly people and people needing care who are being cared for at home during crises is constantly increasing and giving rise to new demands on assistance. During a survey, employees of the GRC indicated that care-taking and psychosocial assistance should be given more weight in training. A current survey of the 19 GRC regional branches also indicated a dramatic increase in the number of people needing care receiving home care who are dependent on power-dependent devices, such as home respiratory devices.

In order to strengthen the resilience of the elderly and those needing care during crises, large-scale emergencies, and disasters, there are research articles that recommend raising the awareness of the population and providing more information for them as well as training responders and caretakers. The great significance of home care services for vulnerable target groups during crises and disasters was also emphasised.

Within the research articles, recommendations were made to require care institutions and services to maintain contingency plans for providing care during a crisis. It was also recommended

that the home care and other services commonly used by the elderly (such as meal delivery and transport services) work more closely with the local authorities and emergency relief. These services have knowledge of their customers that is pertinent to their care and may be able to help directly in the case of a crisis and disaster.

As not all people needing care who live at home use home care services and other services, from a research perspective it is also important to get additional (civil) societal actors and organisations involved. Neighbourhood initiatives, elderly assistance associations, churches, or similar organisations and actors may have knowledge of where people needing care live who might need support during a crisis, large-scale emergency, or disaster. These organisations may also be able to provide assistance. This is the reason for research information targeting the development and promotion of organised networks within the social space with consideration given to crises, large-scale emergencies, and disasters. In the elderly assistance industry in Germany, discussions have been on-going for years about building networks between various local actors within the social space in order to provide better everyday support for the elderly and those needing care who are living at home and some of this has also been developed further.[22] In addition to socially organised networks, research articles also assign a great deal of significance to the personal networks of elderly people and those needing care – thus neighbours, family members, and friends – as a form of self-help and recommend the establishment of such support. Articles ultimately emphasise that the target group, so the elderly and those needing care, must be included in the development of solutions in order to increase acceptance and suitability.

In summary, it can be said that awareness-raising and training are important aspects for strengthening the resilience of the elderly and those needing care. From a research perspective, it is helpful when disaster management, the professional care-taking industry, and civil societal actors work together and local socially organised networks such as personal networks are supported. These findings and recommendations are acted upon and are further developed in the KOPHIS research project.

The project focusses on people needing care and assistance in private households for the very first time in the history of German disaster management. Transforming affected persons

[22] The ministry for health, emancipation, care and age of North Rhine-Westphalia has developed a master plan for designing neighbourhoods according to the requirements of elderly persons in order to foster self-determined living (see Ministerium für Gesundheit, Emanzipation, Pflege und Alter 2016).

into participants was the focal point of the research activities. The focus of KOPHIS relied particularly upon a socio-spatial approach, networking, and participation.

The participative approach of KOPHIS facilitated the involvement of the target group of people needing care and assistance who receive home assistance and their family members in project activities, and was implemented in the form of regular meetings to exchange ideas ("dialogue forums") in the model region of Willich. The aid materials and concepts developed during the course of KOPHIS were developed together with the target group. This procedure was aimed to increase the suitability and user-friendliness of the solutions and thus also increased the probability that they would be well-received by the population group of people needing care and assistance.

In the model region, networking within the social space was executed in the form of regular meetings to exchange ideas ("round tables") with representatives from agencies and organisations with safety-related duties, care-taking organisations, and civil society. The round tables offered participants the opportunity to develop a shared understanding of the special vulnerability of people needing care and assistance during crises and disasters, to exchange ideas on the participants' respective duties, and to plan for closer collaboration.

By networking in the social space and involving the target group itself as well as their immediate social environment, KOPHIS started down a new path towards a stronger socially oriented civil protection. A civil protection strategy that is more socially oriented provides local needs and resources - the community, the neighbourhood, or the village – with more consideration. These can evolve over time and must be analysed and adapted accordingly. Participative formats such as dialogue forums in Willich are helpful for this purpose. They facilitate analysis as well as the development of customised solutions. Within the context of socially-oriented civil protection, efforts are made to establish which high-risk or vulnerable populations groups are living locally, what they need during a crisis, and which local support structures are available or can be established. In order to identify these needs and resources, it is necessary for local day-to-day and disaster management structures to work together more closely – across department boundaries. Locally established networks, such as the round tables, are suitable for this. These also serve to strengthen social cohesion. Civil protection also has to be ensured within the social space, therefore it must be part of this.

7 Bibliography

Adams, V., Kaufman, S., Van Hattum, T., & Moody, S. 2011: Aging Disaster: Mortality, Vulnerability, and Long-Term Recovery Among Katrina Survivors. In: Medical Anthropology 30 (3), pp. 247-270

Afentakis, A. & K. Böhm 2009: Gesundheitsberichterstattung des Bundes, Beschäftigte im Gesundheitswesen, Heft 46, Robert-Koch-Institut. Berlin.

Ageism in America 2006: International Longevity Center – USA, Open Society Institute. Available online at: http://aging.columbia.edu/sites/default/files/Ageism_in_America.pdf (Status 13/03/2018)

Aldrich, N., & Benson, W. F. 2008: Disaster Preparedness and the Chronic Disease needs of Vulnerable Older Adults. In: Preventing Chronic Disease, Public Health Research, Practice and Policy, Volume 5: No. 1 January 2008.

Bachmann, W. 2013: Katastrophenschutz für hörbehinderte Menschen. Available online at: http://www.barrierefreiheit.de/katastrophenschutz_fuer_hoerbehinderte_menschen.html (Status 08/03/2018)

Beusch, R. 2017: Risikoanalyse von Beatmungswohngemeinschaften. Wie kann mit den Risiken in Beatmungs-WGs ungegangen werden? In: Brandschutz Deutsche Feuerwehrzeitung 11/2017, pp. 892-897.

Birkhofer, P., Bozkurt, H., Groeben, N., Hummel, K., Karpuzi, Ö., Lemp, C., et al. 2011: Maßnahmen zur Verbesserung der Selbsthilfefähigkeit der Bevölkerung im Katastrophenfall. Berlin, Ein Projekt im Auftrag der Senatsverwaltung für Inneres und Sport.

Blättner, B., Gregory, S., & Grewe, A. 2013: Sicherstellung ambulanter Pflege in ländlichen Regionen bei Extremwetterereignissen. In: Roßnagel, A. (ed.): Regionale Klimaanpassung. Herausforderungen – Lösungen – Hemmnisse. Umsetzungen am Beispiel Nordhessens. Universität Kassel, Kassel. pp. 267-296.

Bourbeau, P. 2018: On Resilience: Genealogy, Logics and World Politics. Cambridge: Cambridge University Press.

Brahms, B.-V. 2013: Zögerliches Verhalten bei Evakuierung. In: Volksstimme vom 12.07.2013.

Brändle, S. 2017: Der Postbote als Sozialarbeiter. In: Frankfurter Rundschau vom 01.09.2017. Available online at: http://www.fr.de/wirtschaft/arbeit-soziales/brieftraeger-der-postbote-als-sozialarbeiter-a-1343471 (Status: 08/03/18)

Bundesamt für Statistik (ed.) 2017: Die Bevölkerung der Schweiz 2016. Neuchatel.

Bundesministerium für Gesundheit (ed.) 2017: Pflegefachkräftemangel. Available online at: https://www.bundesgesundheitsministerium.de/index.php?id=646 (Status: 11/05/2017)

Bundesministerium für Gesundheit (ed.) not dated: Leistungsempfänger der sozialen Pflegeversicherung im Jahresdurchschnitt nach Leistungsarten. Available online at: http://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Statistiken/Pflegeversicherung/Leistungsempfaenger/Leistungsarten_ab1995.pdf (Status: 13/12/2016)

Bundesministerium für Wirtschaft und Energie 2014: Ausbildung junger Menschen aus Drittstaaten. Chancen zur Gewinnung künftiger Fachkräfte für die Pflegewirtschaft. Berlin.

Capellaro, M., & Sturm, D. 2015: Evaluation von Informationssystemen zu Klimawandel und Gesundheit. Band 2 – Anpassung an den Klimawandel: Strategie für die Versorgung bei Extremwetterereignissen. Bundesumweltamt, Umwelt & Gesundheit 04/2015. Berlin.

Chandler, D. 2014: Resilience: The Governance of Complexity. London/New York: Routledge.

Davey, J., & Neale, J. 2013: Earthquake Preparedness in an Ageing Society. Learning from the Experience of the Canterbury Earthquakes. Victoria University of Wellington New Zealand. Wellington: Report prepared for the Earthquake Commission, with funding from the EQC 2012 Beinnial Grants Programme.

Deutsche Alzheimer Gesellschaft e.V. (ed.) 2016: Informationsblatt 1: Die Häufigkeit von demenziellen Erkrankungen. Available online at: https://www.deutsche-alzheimer.de/fileadmin/alz/pdf/factsheets/infoblatt1_haeufigkeit_demenzerkrankungen_dalzg.pdf
(Status: 08/03/2018)

Deutsches Komitee für Katastrophenvorsorge e.V. (ed.) 2003: Hochwasservorsorge in Deutschland. Lernen aus der Katastrophe 2002 im Elbegebiet. Schriften des DKKV 29. Bonn.

Deutsches Rotes Kreuz e.V. (ed.) 2014: Der Resilienzansatz des Deutschen Roten Kreuzes. Stärkung der Resilienz durch die internationale Zusammenarbeit des DRK. Berlin.

Deutsches Rotes Kreuz e.V. (ed.) 2017a: Stärkung von Resilienz durch den Betreuungsdienst. Teil 1: Wissenschaftliche Erkentnisse zu Bedingungen für einen zukunftsfähigen DRK-Betreuungsdienst. Schriftenreihe der Forschung – Band 4. Berlin.

Deutsches Rotes Kreuz e.V. (ed.) 2017b: Stärkung von Resilienz durch den Betreuungsdienst. Teil 2: Die Sicht der DRK-Einsatzkräfte: Dokumentation der vier Regionalkonferenzen Betreuungsdienst. Schriftenreihe der Forschung – Band 4. Berlin.

Deutschländer, T., Wichura, B. 2005: Das Münsterländer Schneechaos am 1. Adventswochenende 2005. Klimastatusbericht 2005 DWD.

Dickinson, J. 2018: Call & Check: Ein sozialer Dienst. In: Pflegewelt Ausgabe 3 – Januar 2018, Sonderedition zur 4. Pflegekonferenz.

Dosa, D., Hyer, K., Swaminathan, S., Frang, Z., Brown, L., & Mor, V. 2012: To Evacuate or Shelter in Place: Implications of Universal Hurricane Evacuation Policies on Nursing Home Residents. In: Journal of the American Medical Directors Association (2).

Dugoni, A. Leimegger, M. et. al. 2016: Leitfaden Management sozialer Belange im Zusammenhang mit Notunterkünften SAMETS (Social Affairs Management in the Emergency Temporary Shelter, SAMETS). Available online at: http://sametsproject.eu/wp-content/uploads/sites/7/2016/06/SAMETS_Guidelin_DE.pdf (Status: 13/03/2018)

Ehrentraut, O., Hackmann, T., Krämer, L., & Schmutz, S. 2015: Zukunft der Pflegepolitik – Perspektiven, Handlungsoptionen und Politikempfehlungen. Friedrich-Ebert-Stiftung. Bonn.

Engels, D., Engel, H., & Schmitz, A. 2016: Zweiter Teilhabebericht der Bundesregierung über die Lebenslagen von Menschen mit Beeinträchtigungen. Teilhabe – Beeinträchtigung – Behinderung. Bundesministerium für Soziales. Bonn.

Evans, B. & Reid, J. 2014: Resilient Life: The Art of Living Dangerously. Cambridge: Polity Press.

Ewers, M. 2010: Vom Konzept zur klinischen Realität – Desiderata und Perspektiven in der Forschung über die technikintensive Versorgung in Deutschland. Pflege & Gesellschaft, H. 4, pp. 314-329.

Fernandez, L. S., Byard, D., Lin, C. C., Benson, S., & Barbera, J. 2001: Frail Elderly as Disaster Victims: Emergency management strategies. In: Prehospital and Disaster Medicine, pp. 67-74.

Geißler, S. 2015: Vulnerable Menschen in Katastrophen. Hilfebedarf von vulnerablen Bevölkerungsgruppen und Möglichkeiten der Unterstützung bei anhaltenden Stromausfall in Berlin. In: Analyse im Rahmen des Forschungsprojektes "Katastrophenschutz-Leuchttürme" als Anlaufstelle für die Bevölkerung in Krisensituationen. Hochschule für Wirtschaft und Recht Berlin. Berlin.

Görres, S., Harenberg, N., Magens, D., Sander, E., & Krieger, T. 2012: Rolle der Pflegeberufe bei internationalen Katastropheneinsätzen "Global Disaster Nursing". Ausgewählte Ergebnisse einer Nationalen Synopse. In: ipp Info-Ausgabe 10, Frühjahr 2012. Newsletter des Instituts für Public Health und Pflegeforschung. Available online at: http://www.ipp.uni-bremen.de/uploads/Downloads/IPP_Info/IPP_info_no10.pdf (Status 08/03/2018)

Hackl, C. 2017: PrepAGE – Katastrophenvorsorge und -management für die ältere Bevölkerung in der EU. Präsentation auf dem KOPHIS Verbundtreffen. Tübingen. 15.02.17.

Hafner, S., Roßnagel, A., & Weidlich, S. 2013: Rechtsfragen der Klimaanpassung in Hessen. In: Roßnagel, A. (ed.): Regionale Klimaanpassung. Herausforderungen – Lösungen – Hemmnisse. Umsetzung am Beispiel Nordhessens. Universität Kassel. Kassel. pp. 485-523.

Hartog, J. 2014: Disaster resilience in an ageing world - How to make policies and and programmes inclusive for older people. HelpAGE International. London.

Heinrich, C. 2017: Vulnerable Gruppen und neue Engagementformen. Ergebnisse einer Befragung der DRK-Landesverbände. Berlin.

HelpAge International, Japanese Red Cross College of Nursing & the National Council of YMCAs of Japan (ed.) 2013: Displacement and Older People. The Case of the Great East Japan Earthquake and Tsunami 2011. Suthep.

Henschke, C., Benz, S., Roßnagel, A., & Steffens, M. 2013: Umsetzungsverbünde als Werkzeug zum Management von Transdisziplinarität. In: Roßnagel, A. (ed.): Regionale Klimaanpassung - Herausforderungen - Lösungen - Hemmnisse - Umsetzung am Beispiel Nordhessens. Universität Kassel. Kassel. pp. 721-760.

Hermann, C. 2014: Die Schwächen stärken: Die Selbstschutz- und Selbsthilfefähigkeit von Alten- und Pflegeheimen. In: Notfallvorsorge 1/2014, pp. 9-14.

Hielscher, V., Kirchen-Peters, S., Nock, L., & Ischebeck, M. 2017: Pflege in den eigenen vier Wänden: Zeitaufwand und Kosten. Pflegebedürftige und ihre Angehörigen geben Auskunft. Hans-Böckler-Stiftung. Düsseldorf.

Holling, C. S. 1973: Resilience and Stability of Ecological Systems. In: Annual Review of Ecology, Evolution, and Systematics 4, pp. 1-23.

Holling, C. S. 1996: Engineering Resilience versus Ecological Resilience. In: Schulze, P. C. (ed.): Engineering within Ecological Constraints: Washington D.C.: National Acamdey Press, pp. 33–43.

Hutton, D. 2008: Older people in emergencies: Considerations for action and policy development. World Health Organisation. Genf.

Isfort, M., Gehlen, D., & Kraus, S. 2012: Menschen mit Demenz im Krankenhaus. Deutsches Institut für angewandte Pflegeforschung e.V. Köln.

Kaufmann, M. 2013: Emergent self-organisation in emergencies: Resilience rationales in interconnected societies. Resilience 1(1), pp. 53-68.

Kaufmann, S. 2012: Resilienz als >Boundary Object<. In: Daase, C., Offermann, P. & Rauer, V. (eds.): Sicherheitskultur: Soziale und politische Praktiken der Gefahrenabwehr. Frankfurt am Main: Campus, pp. 109–131.

Klewer, J. 2017: Persönliche Notfallversorge bei angehenden Leitungskräften im Pflege- und Gesundheitswesen. In: HeilberufeScience 8 (1), pp. 23-32.

Kneisel, C. 2015: Das Deutsche Rote Kreuz im Katastrophenschutz in Deutschland. Eine ExpertInnen-Befragung am Fallbeispiel Sachsen-Anhalt zum Hochwasser 2013. Berlin.

Knickmann, A. 2016: Planung und Organisation: Evakuierung einer Pflegeeinrichtung. In: IM EINSATZ Oktober 2016, pp. 222-225.

Krüger, M. & Max, M. (eds.) 2019: Resilienz im Katastrophenfall. Konzepte zur Stärkung von Pflege- und Hilfsbedürftigen im Bevölkerungsschutz. Bielefeld: Transcript (in press).

Krüger, M. 2019: Building instead of imposing resilience: Revisiting the relationship between resilience and the state. International Political Sociology (in press).

Krüger, U. 2018: AKNZ-Fachkongress 2017: Betreuungswesen im Bevölkerungsschutz. In: IM EINSATZ. Zeitschrift für Einsatzkräfte im Katatsrophenschutz; Februar 2018, pp. 12-15.

Leiner, P. 2017: Herzinsuffizienz: Aussetzen der Therapie hat schnelle Folgen. Ärztezeitung vom 16.04.2017.

Lorenz, D. F. 2011: Kritische Infrastrukturen aus Sicht der Bevölkerung. Forschungsforum Öffentliche Sicherheit. Schriftenreihe Sicherheit Nr. 3. Freie Universität Berlin. Berlin.

Luipold, U. & Mildenberger 2003: Evaluierung des Hochwassereinsatzes des Deutschen Roten Kreuzes im August 2002. Abschlussbericht. Berlin. Unpublished.

Menski, U. 2008: Auswirkungen des Ausfalls kritischer Infrastrukturen auf den Ernährungssektor am Beispiel des Stromausfalls im Münsterland im Herbst 2005. Empirische Untersuchungen im Auftrag der Bundesanstalt für Landwirtschaft und Ernährung (BLE). Fachhochschule Münster. Münster.

Ministerium für Gesundheit, Emanzipation, Pflege und Alter des Landes Nordrhein-Westfalen 2016: Masterplan altengerechte Quartiere. NRW. Strategie – und Handlungskonzeptzum selbstbestimmten Leben im Alter. Düsseldorf.

Naumann, D., Schulze, E., Geyer, J., & Korfhage, T. 2014: Versorgungsformen in Deutschland. Untersuchung zu Einflussfaktoren auf die Nachfrage spezifischer Versorgungsleistungen bei Pflege- und Hilfebedarf. ZQP-Abschlussbericht. Berlin.

Neuschäfer, D. 2013: Anpassung an den Klimawandel in der ambulanten Pflege. In: Roßnagel, A. (ed.): Regionale Klimaanpassung. Herausforderungen - Lösungen - Hemmnisse - Umsetzungen am Beispiel Nordhessens. Universität Kassel. Kassel. pp. 323-349.

Nomura, S., Blangiardo, M., Tsubokura, M., Nishikawa, Y., Gilmour, S., Kami, M., et al. 2016: Post-nuclear disaster evacuation and survival amongst elderly people in Fukushima: A comparative analysis between evacuees and non-evacuees. Preventive Medicine (82), pp. 77-82.

Nowassadeck, S., Engstler, H., & Klaus, D. 2016: Pflege und Unterstützung für Angehörige. In: D. Z. Altersfragen, Report Altersdaten 1/2016. Berlin.

Ohder, C., Röpcke, J., Sticher, B., Geißler, S., & Schweer, B. 2014: Hilfebedarf und Hilfebereitschaft bei anhaltendem Stromausfall. Ergebnisse einer Bürgerbefragung in drei Berliner Bezirken. Available online at: http://www.kat-leuchtturm.de/assets/content/images/pdfs/Bericht%20B%C3%BCrgerbefragung%202014.01.16.pdf (Status: 08/03/2018)

Oschmiansky, H. 2018: Zu Hause versorgte Pflege- und Hilfsbedürftige in einer Gasmangellage und das Projekt KOPHIS. In: Bundesamt für Bevölkerungsschutz und Katastrophenhilfe (ed.): Tagungsband LÜKEX 2018, 2. Thementag. Bedeutung einer längerfristigen Unterbrechung der Gasversorgung für den Bevölkerungsschutz, pp. 60-67.

Palm, J. 2009: Emergency Management in the Swedish Electricity Grid from a Household Perspective. In: Journal of Contingencies and Crisis Management (17), pp. 55-63.

Pöpperl, T. 2016: Wie viele Medikamente nehmen Sie ein? Online available at: https://www.apotheken-umschau.de/Medikamente/Wie-viele-Medikamente-nehmen-Sie-ein-526169.html (Status: 08/03/2018)

Rauchhaupt von, U. 2017: Warum die Bomben aus dem Krieg noch so gefährlich sind. In: FAZ vom 5.5.17, Available online at: http://www.faz.net/aktuell/feuilleton/familie/wie-erklaere-ich-s-meinem-kind/kindern-erklaert-bomben-aus-dem-krieg-entschaerfen-15001319.html (Status: 27/03/2018)

Regionalmanagement Nordhessen GmbH (ed.) not dated: Freiwilligen-vor-Ort-System (FvOS).: Available online at: http://www.nordhessen-gesundheit.de/die-projekte/fvos/ (Status: 08/03/2018)

Reuber, W. 2017: Planerische Vorbereitung für einen möglichen Blackout im Hochtaunuskreis. Vortrag am 26.09.2017 in der Akademie für Krisenmanagement, Notfallplanung und Zivilschutz. Bad-Neuenahr-Ahrwell.

Rhein, S. 2017: Kapazitäten der Bevölkerung bei einem Stromausfall. Empirische Untersuchung für das Bezugsgebiet Deutschland. In: Bundesministerium für Katastrophenhilfe, Band 12 – Praxis im Bevölkerungsschutz. Bonn.

Richert, J. 2017: Dringender Gesprächsbedarf. Ehrenamt braucht neue Organisationsform. Behördenspiegel Oktober 2017. Berlin.

Richert, J. 2007: Das Rote Kreuz – eine Organisation sui generis. In: Informationsdienst 3-2007 Badisches Rotes Kreuz, pp. 8-10.

Robert-Koch-Institut (ed.) 2015: Gesundheit in Deutschland. Gesundheitsberichterstattung des Bundes. Kapitel 8: Wie gesund sind die älteren Menschen? Available online at: https://www.rki.de/DE/Content/Gesundheitsmonitoring/Gesundheitsberichterstattung/GBEDownloadsGiD/2015/08_gesundheit_in_deutschland.pdf?__blob=publicationFile (Status: 08/03/2018)

Rothgang, H., Kalwitzki, T., Müller, R., Runte, R., & Unger, R. 2016: BARMER GEK Pflegereport 2016. Schriftenreihe zur Gesundheitsanalyse, Band 42. Berlin.

Sävert, T. 2015: Vor 10 Jahren: Schneechaos im Münsterland. Available online at: http://wetterkanal.kachelmannwetter.com/vor-10-jahren-schneechaos-im-muensterland/ (Status: 22/10/2016)

Schaeffer, D., & Ewers, M. 2001: Ambulantisierung - Konsequenzen für die Pflege. GGW 1/2001, pp. 13-20.

Schecka, G. 2011: Welche Folgen hat ein mehrtägiger Stromausfall auf Altenpflegeheime? Analyse ausgewählter Altenpflegeheime in Berlin und Entwicklung von Handlungsempfehlungen. Hochschule für Wirtschaft und Recht Berlin. Berlin.

Schulze, K., Schander, J., Jungmann, A., & Voss, M. 2018: Bedarfe und Ressourcen Hilfe- und Pflegebedürftiger im Alltag und in Extramsituationen. Auswertung einer quantitativen Befragung in Willich. Freie Universität Berlin. Berlin.

Sowinski, C.; Kirchen-Peters, S. & Hielscher, V. 2013: Praxiserfahrungen zum Technikeinsatz in der Altenpflege (Stand November 2013), Kuratorium Deutsche Altershilfe. Available online at: https://www.boeckler.de/pdf_fof/91394.pdf (Status: 08/03/2018)

Spiegel online vom 03.09.17: Evakuierung in Frankfurt – Weltkriegsbombe ist entschärft. Available online at: http://www.spiegel.de/panorama/gesellschaft/frankfurt-am-main-weltkriegsbombe-ist-entschaerft-a-1165918.html (Status: 13/03/2018)

Statistisches Bundesamt (ed.) 2001: Kurzbericht Pflegestatistik – Pflege im Rahmen der Pflegeversicherung Deutschlandergebnisse 1999. Wiesbaden.

Statistisches Bundesamt (ed.) 2015a: Pflegestatistik 2013: Pflege im Rahmen der Pflegeversicherung. Deutschandergebnisse. Wiesbaden.

Statistisches Bundesamt (ed.) 2015b: Statistik der Sozialhilfe. Hilfe zur Plege. Wiesbaden. Available online at: https://www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/Soziales/Sozialleistungen/Sozialhilfe/BesondereLeistungen/Tabellen/Tabellen_BL_HilfePflege.html (Status: 20/01/2017)

Statistisches Bundesamt (ed.) 2017: Pflegestatistik 2015 – Pflege im Rahmen der Pflegeversicherung. Deutschlandergebnisse. Wiesbaden.

Steetskamp, I., & van Wijk, A. 1994: Stromausfall: Die Verletzlichkeit der Gesellschaft. Die Folgen von Störungen der Elektrizitätsversorgung. Rathenau-Institut, Universität Utrecth., Den Haag.

Theobald, H., Szebehely, M., & Preuß, M. 2013: Arbeitsbedingungen in der Altenpflege. Die Kontinuität der Berufsverläufe – ein deutsch-schwedischer Vergleich. Berlin: Edition Sigma.

United Nations 2015: Sendai Framework for Disaster Risk Reduction 2015 – 2030. Available online at: https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf (Status: 13/03/2018)

Vicedo-Cabrera, A. M., Ragettli, M. S., Schindler, C., & Röösli, M. 2016: Excess mortality during the warm summer of 2015 in Switzerland. In: Swiss Medical Weekly 12/2016.

Wyte-Lake, T., Claver, M., Dalton, S., & Dobalian, A. 2015: Disaster Planning for Home Health Patients and Providers. A Literature Review of Best Practices. In: Home Health Care Management & Practice 27 (4), pp. 247-255.

ZQP-Presseinformation vom 07.05.14: Alleinlebende Pflegebedürftige in Krisensituationen häufig auf sich gestellt. Available online at: https://www.zqp.de/wp-content/uploads/2014_05_07_PI_Alleinlebende_Pflegebeduerftige_in_Krisensituationen_haeufig_auf_sich_gestellt.pdf (Status: 16/01/2018)

8 List of Figures and Tables

German Red Cross

www.DRK.de

German Red Cross

Carstennstraße 58
12205 Berlin
Germany
www.drk.de

SPONSORED BY THE

Federal Ministry of Education and Research

KOPHIS

Art.-Nr. 02498