Caring for coping? How can medical and care facilities be supported in coping with extreme heat?

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INTRODUCTION

Hot summer days and heat waves have been increasing in number and length over the last decades and will further increase with ongoing climate change in Germany and in particular in urban areas[1]. Statistically, heat is the most lethal weather-related hazard in Europe[2,3]; however, public awareness is still low. Particularly vulnerable groups are the elderly or people with pre-existing medical conditions, but also young children[4]. Hence, the question arises, whether professionals working in medical facilities as well as care facilities for children and the elderly are prepared for future heat waves, and how they could be supported.

METHODS

A survey was conducted from September to November 2019 in three case study cities in Germany: Potsdam, Remscheid, and Würzburg. 105 out of 804 contacted facilities participated, among them 51 kindergartens, 14 elderly care facilities, 29 medical practices, and 11 pharmacies. The questions addressed, among others, risk perception regarding heat, reception of warnings, and information about and application of adaptation measures against heat.

RESULTS

Health risk perceptions

Overall, more than 70 % of the surveyed personnel see heat waves as the most relevant future environmental health risk (Fig. 1). This illustrates that medical and caring personnel is aware of heat-related health risks.

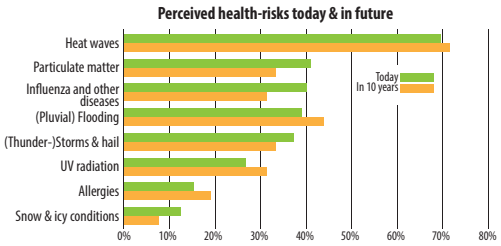

Figure 1: Perceived health risks today & in future.

Health risks today – wording:
"Select from the list the three events that you think pose the greatest health risks to the population in the city where you work."

Health risks in the future – wording:
"And what will the situation be like in 10 years: which three events will pose the greatest health risks?"

Reception of heat warnings

Heat warnings can help to take up adaptation measures timely and thus reduce health risks. Elderly care facilities are particularly well informed about heat warnings (almost 93%, see Fig. 2). The information is usually received via radio, television, or weather apps.
Around 80% of the kindergartens and care facilities would like to be specifically informed about heat warnings (preferably by e-mail), while 35-55% of medical practices and pharmacies would rather not like to receive targeted heat warnings.

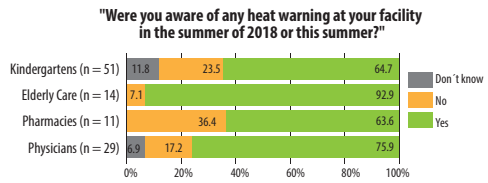

Figure 2: Answers to the question "Were you aware of any heat warning at your facility in the summer of 2018 or this summer?".

HEAT WARNING EXPERIMENT

In a quasi-experimental manner, half of the survey participants received a heat warning with recommendations for actions, half of the participants without further information. We were interested in how much such a differential warning influences the feeling of knowing what to do during a heat wave.

Wording of the heat warnings

Group 1:

"Official warning of HEAT for the city of Potsdam/ Remscheid/ Würzburg
Valid from: tomorrow 10:30 a.m.
Until: two days after tomorrow 7:00 p.m.
For the next three days an extreme heat wave with wind-chill temperatures of more than 35 °C is expected."

Group 2 – additional information:

"What can I do?

During a heat wave you should follow these three basic rules:
1. Avoid the heat.
2. Keep your home cool.
3. Keep your body cool and make sure that you have sufficient fluid and electrolyte supply.
If you are caring for people who need help or care, make sure that these three basic rules are also considered by them. If you or others experience unusual health problems such as cardiovascular problems, headaches, or vomiting, contact a doctor."

Results

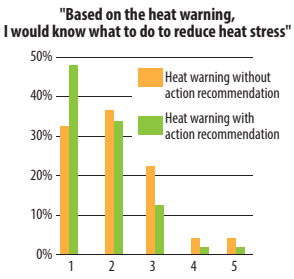

Figure 3: Overall agreement with the statement "Based on the heat warning, I would know what to do to reduce heat stress" (from 1 "I know very well" to 6 "I do not know at all").

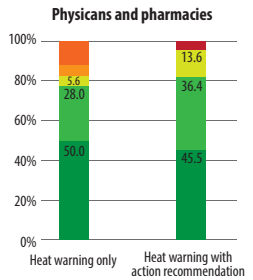

Figure 4: Agreement with the statement "Based on the heat warning, I would know what to do to reduce heat stress" among physicians and pharmacies (n = 40).

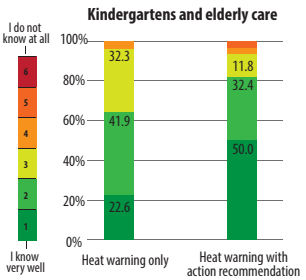

Figure 5: Agreement with the statement "Based on the heat warning, I would know what to do to reduce heat stress" among kindergartens and elderly care (n = 65).

Overall, comparing the experimental groups shows that the recommendations lead to a safer feeling about knowing what to do (Fig. 3). However, whereas medical personnel (physicians and pharmacies) knew very well what to do in both warning conditions (Fig. 4), care personnel (children and elderly care) knew much better what to do when they received specific action recommendations (Fig. 5, $p = 0.028$, $r = 0.272$ in a Mann-Whitney-U-Test).

CONCLUSIONS

The health risk posed by heat waves is known and is taken seriously. Yet, personnel of care facilities, especially kindergartens, would appreciate support in dealing with heat waves. Timely information about upcoming heat waves as well as specific action recommendations can help them to take proper actions. Therefore, municipalities should address social care facilities, for example when establishing coordinated heat action plans[5].

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