

**International Conference on Environmental Psychology – ICEP 2021**  
**5.-8.10.2022, Siracusa, Italien**

## **Vortrag: Be warned and adapt: Exploring the impact of heat warnings on individual adaptive behaviour and testing a comprehensive model for protective action decision making**

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In recent years, heat waves have increased in numbers and in duration in Germany. Extreme heat poses a massive health threat, in particular if no or maladaptive behaviour is shown. In summer and autumn 2019, we conducted a household survey on individual perceptions of heat stress. In total, 1417 people from three medium-sized German cities participated via telephone or online. Based on the Protective Action Decision Model (PADM), which we adapted to heat stress, we analysed links between risk perception, environmental and social context factors, perceptions of social stakeholders, different heat warning formats, and adaptation behaviour/intention. Applying structural equation modelling we explored (1) the effect of different warning types on intended behavioural adaptation and (2) analysed the explanatory power of the PADM in the context of heat stress. As for heat warnings, adding action recommendations to a warning message significantly increased behavioural intentions. Further relevant environmental and social context factors are discussed, such as the regional temperature during the survey and the amount of green and blue areas in the respondents' residential area. Stakeholder perceptions, subjective preparedness, responsibility perceptions, threat and coping perceptions affect protective action decision making. Our analyses explain both impacts on adaptive behaviour and mal-adaptive or emotion-focused coping. The adapted PADM proved to be a useful framework for heat risk perceptions and behaviour. Our findings give insights in individual protective action decision making processes. We derive recommendations for tailored risk communication strategies to further foster risk awareness and household-level adaptation.

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## **Vortrag: The impact of current temperature and survey method on Heat Risk Perception and Climate Change Belief**

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Research on climate change and impacts of natural hazards, such as heat waves, on human health has increased in recent years. Different approaches are used to study people's attitudes and behaviour, but little is known about the extent to which the use of different methods or other environmental variables influence the results. Therefore, we examined differences between surveys in three German cities, compared survey methods and investigated the influence of environmental factors, in particular the experienced temperature on the day of the survey and the days ahead.

We conducted two surveys on individual perception of heat and heat stress as well as belief in climate change. In summer and autumn 2019, in total 1417 people from the three medium-sized German cities of Potsdam, Remscheid and Würzburg were surveyed via telephone or online. In summer 2020, 280 people were surveyed face-to-face in public parks in Potsdam. For statistical evaluation, ANOVAs, Chi-squared tests, and regression analyses were applied.

The perception of heat as a health threat, the knowledge about heat warnings and climate change belief differed depending on place of residence, survey method and temperature. Participants of the online survey showed higher scores of risk perception and climate change belief than participants of the telephone and face-to-face surveys. Increased temperature was associated with slightly higher levels of respondents' risk perception and climate change belief.

The finding that both survey method and environmental factors can influence survey results should be heeded when planning or interpreting and comparing studies.

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

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Extreme heat is a much underestimated health risk, which poses a threat especially to vulnerable groups such as the elderly or people with pre-existing medical conditions, but also young children. With heat waves occurring more often and lasting longer in Germany, medical facilities and care facilities for children and the elderly carry responsibility. Yet, are those facilities prepared?

In autumn 2019, we surveyed personnel of 105 German care and medical facilities, among them 51 kindergartens, 14 elderly care facilities, 29 medical practices, and 11 pharmacies. We wanted to find out how much they acknowledge heat as a risk and how they inform themselves about heat waves. Also, how they experience heat stress and adapt to it in their facility was of our interest. Furthermore, in a quasi-experimental manner, half of the participants received a heat warning with recommendations for actions, half of the participants without further information.

Overall, more than 70 % of the asked personnel sees heat as health risk. In particular care facilities wish to receive official heat warnings and coping information. Comparing the experimental groups shows that whereas medical personnel (physicians and pharmacies) knew very well what to do in both warning conditions, care personnel (children and elderly care) knew much better what to do when they received concrete action recommendations beforehand.

Personnel of care facilities, especially kindergartens, do not feel fully prepared to deal with heat stress and would appreciate support. Timely information about upcoming heat waves as well as concrete action recommendations can help them.