

# The role of parenthood in worry about overheating in homes and implications for energy use - two online survey studies from the UK and the US

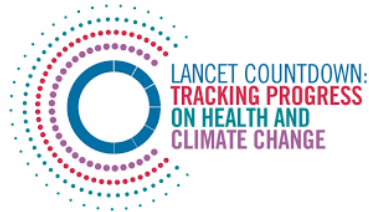
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20-06-2022



# Climate change is a (mental) health threat



Three new indicators are added to the 2021 report; incorporating considerations of mental wellbeing by tracking the effect of heat on expressed online sentiment; ...

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NEWSROOM ► POST

## Climate change: a threat to human wellbeing and health of the planet. Taking action now can secure our future



THE CLIMATE QUESTION

Listen now

### How is climate change affecting our mental health?

We often talk about the physical costs of climate change; the economic fallout, the effect on livelihoods and damage to the earth. But all of the changes to our world caused by global warming will have an effect on our minds, our mental health too.



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and Public Health*

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Article

## Climate Change and Mental Health: A Scoping Review

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# Overheating and its effects

- Increase in suicide rates (*Burke et al., 2018; Dixon et al., 2014; Thompson et al., 2018*),
- Increase in violent crime (*Cane et al., 2014; Hsiang et al., 2013; Tiihonen et al., 2017*)
- Higher mental distress (*Ding et al., 2016; Knapp et al., 2015; Obradovich et al., 2018*)
- **But:**
  - Largely using population based data.
  - Comparatively little is overheating in homes and mental health.

- No universally accepted definition and criteria for overheating in residential buildings
- 19% of UK bedrooms and 15% of living rooms overheat (*Lomas et al., 2021*)
- Projected to increase by 2050 (*Gupta et al., 2015*)
- 66% of US homes use central air-conditioning (*RECS, 2020*)
- Air-conditioning use projected to rise significantly (*Davis & Gertler, 2015*)

# The context of being a parent

## Risks for children

- Higher risk of Sudden Infant Death Syndrome (*Jhun et al., 2017; Son et al., 2017; Auger et al., 2015; but see Waldhoer & Heinzl, 2017*).
- Disrupted sleep (*Wailoo et al., 1990*).
- Greater health risk to children than adults because of physiologically reasons (*Ahdoot et al., 2015; Bunyavanich et al., 2003*).
- Increase in emergency department visits (*Xu, Hu, et al., 2014*).

## 'Risks' for parents

- Parents generally have high levels of concern for their children (*Reijneveld et al., 2008*).
- Particularly mothers concerned around childhood illness (*Mackenzie & Evers, 1986*).
- Women take on the larger share of parental leave and childcare duties (*Women & Equalities Committee - House of Commons, 2019*).
- 13% of women experience a mental disorder postnatally (*WHO, 2015*).



RQ1: Are parents / mothers more concerned about overheating?

RQ2: Are they more likely to use cooling (current / future)?



# Two online survey studies

## Data collection

- Two online survey studies conducted via Prolific platform.
- N = 1000 in the UK and US.
  - *Half participants parents.*
  - *Age range 25-44 years.*
- Main outcome variables
  - *Overheating worry ( $\alpha = 0.92$ ).*
  - *Likelihood to install / upgrade AC, get fans, install shading.*
  - *Number overheating actions.*
- Basic sociodemographic variables.
- Data collection in September 2021.

## Hypotheses

Overheating worry is higher...

- *Parents vs. non parents*
- *Fathers / non-parents*
- *Children (0-2 years)*

Parents use more actions against overheating...

- *To install / upgrade conditioning systems*

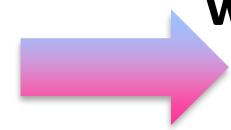
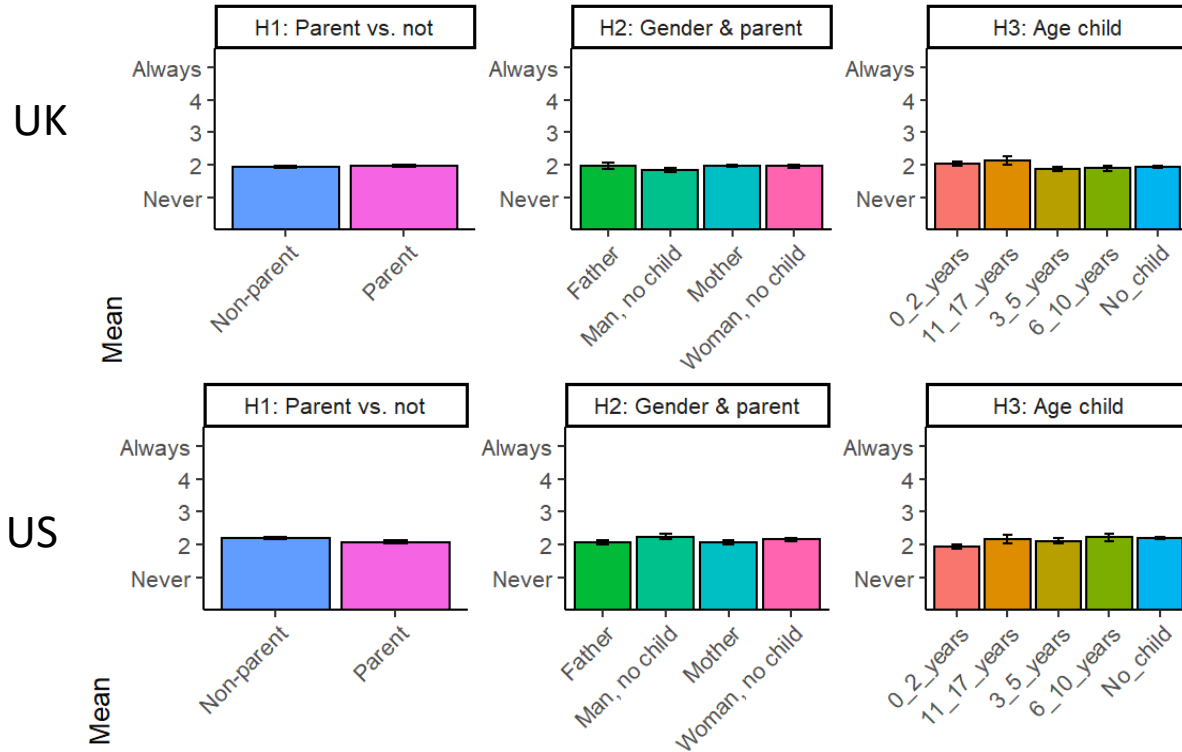
- *To buy electric fans (ceiling fans)*
- *To use external shading (horizontal blinds)*

Parents use more actions against overheating...

- *During normal summer day*
- *During heatwave*

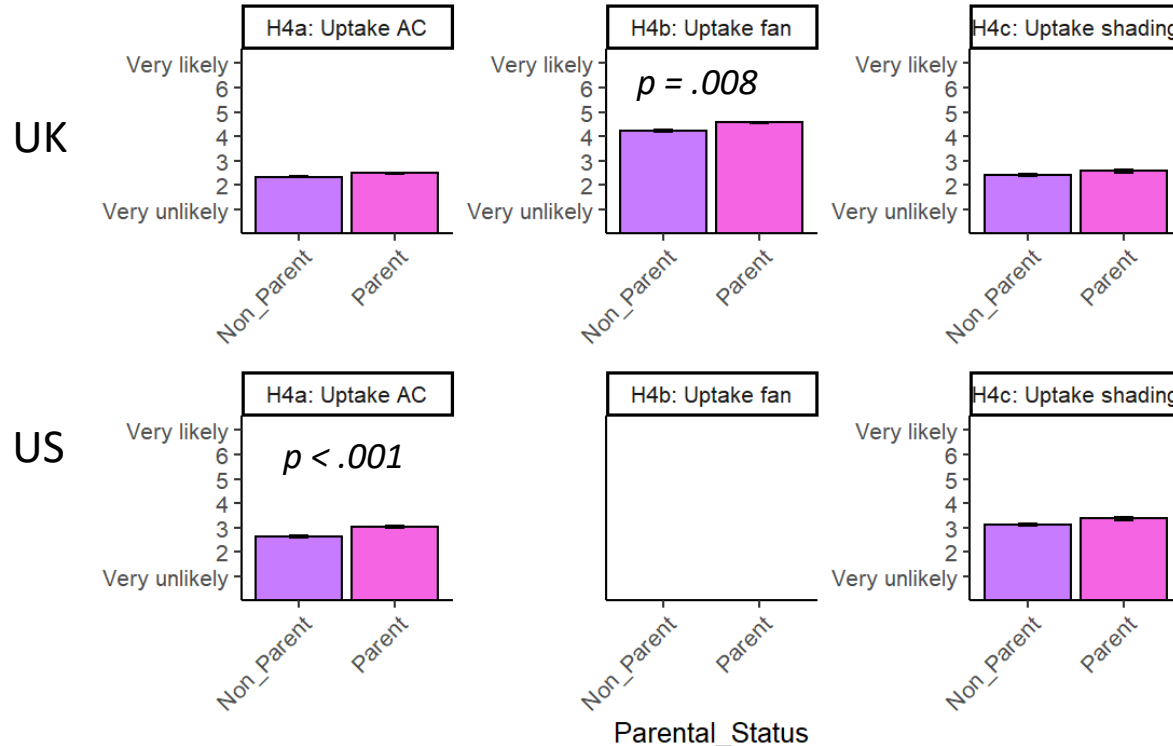
**Prespecified!**

# RQ1: Overheating worry & parental status



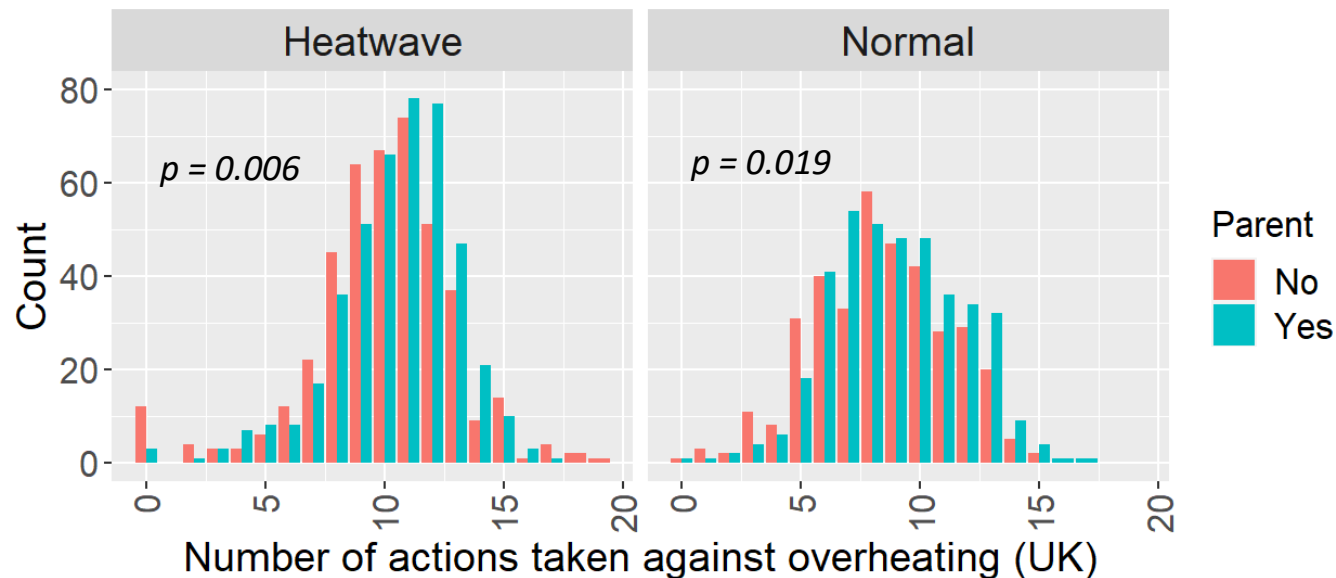
**No evidence for higher overheating worry in parents, mothers, and parents of young children.**

# RQ2: Future mitigation of overheating



**Limited evidence for more cooling uptake amongst parents**

## RQ2: Current mitigation of overheating



Only ~20% of respondents never experience overheating! (excluded for this analysis)

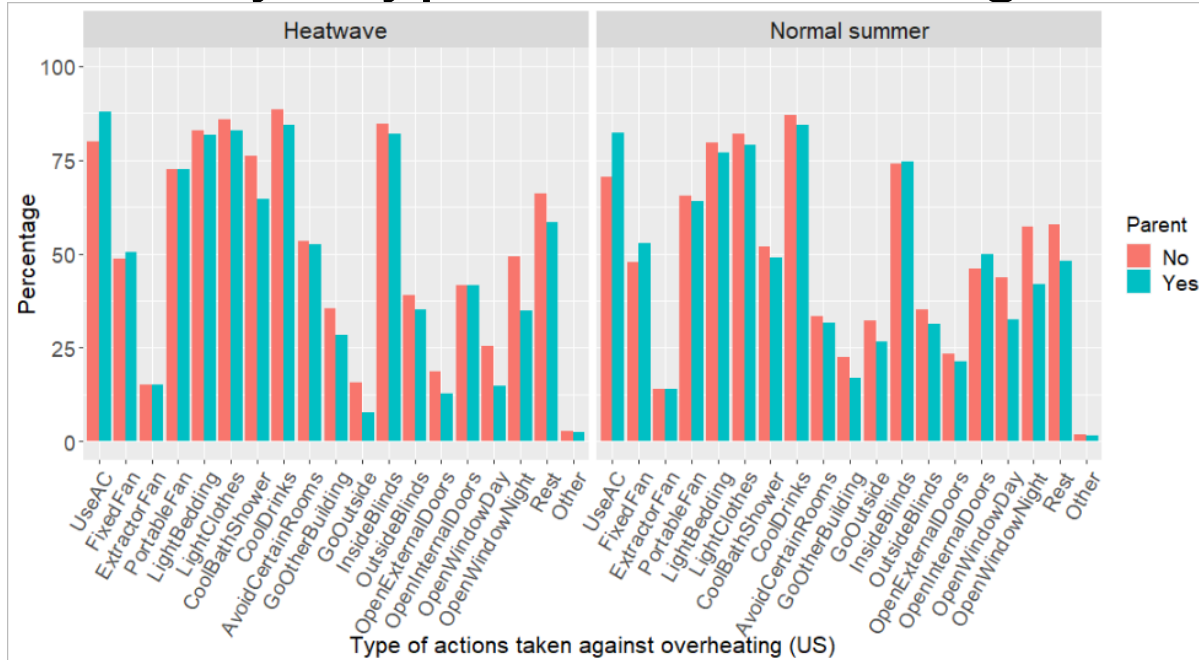
About 7% increase in number of actions (~0.5 action)



**Parents carry out more overheating actions than non-parents in the UK – but opposite pattern in the US!**



# Exploratory: Type of overheating actions



71% of non-parents vs. 82% of parents used AC in summer / 80% vs. 88% in heatwave.



Parents use more AC than non-parents in the US. Most effective mitigation action and hence fewer actions needed?

# Exploratory: Overlooked variables?

- 30% (UK) / 33 % (US) of parents with any overheating worry gave their children's health as a reason for being concerned about overheating.
- Mean overheating worry was significantly higher in parents who mentioned their children's health as a concern [Cohen's  $d \sim 0.45$ ].
- Having experienced overheating strongly related to overheating worry.

# Summary and outlook

## Summary

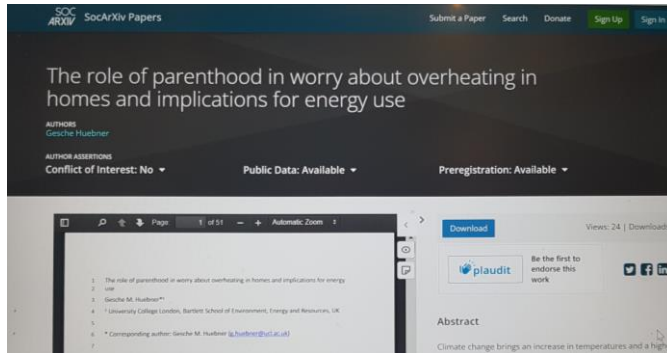
- No evidence for greater overheating worry amongst parents
- Some (limited) evidence for higher uptake of cooling.
- In the UK, parents engage in more overheating actions. In the US, parents use more AC.
- Strongest predictor for overheating concern is having previously experienced overheating!
- Health concern for children associated with more worry about overheating.

## Limitations


- Overlooked covariates?
- Not validated measure of overheating worry
  - Adapted from cancer and Covid worry
- Samples of parents and non-parents unequal
- Worry -> mental health?

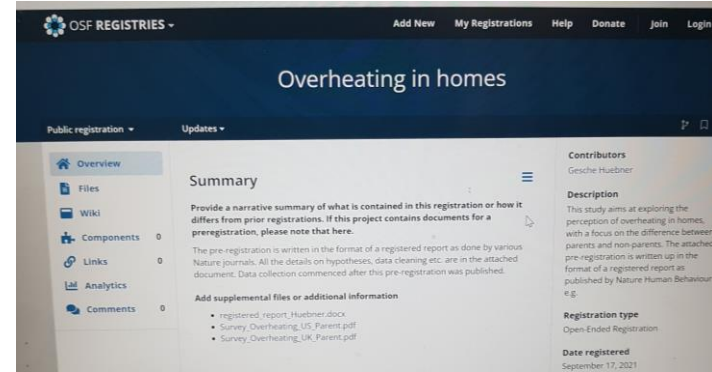
- Importance of transparent science.
- More research needed!

# More?

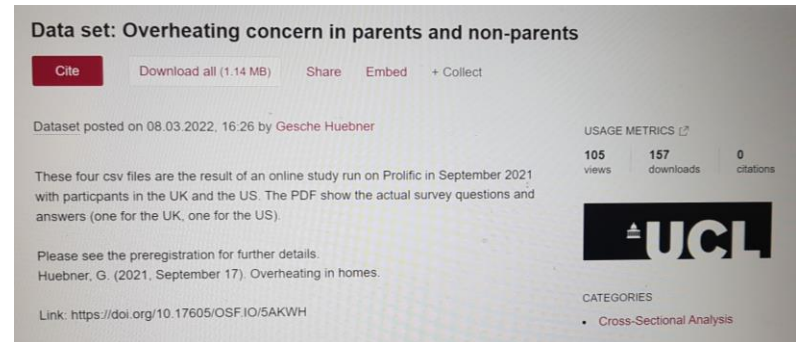


<https://osf.io/preprints/socarxiv/3kvs7/>

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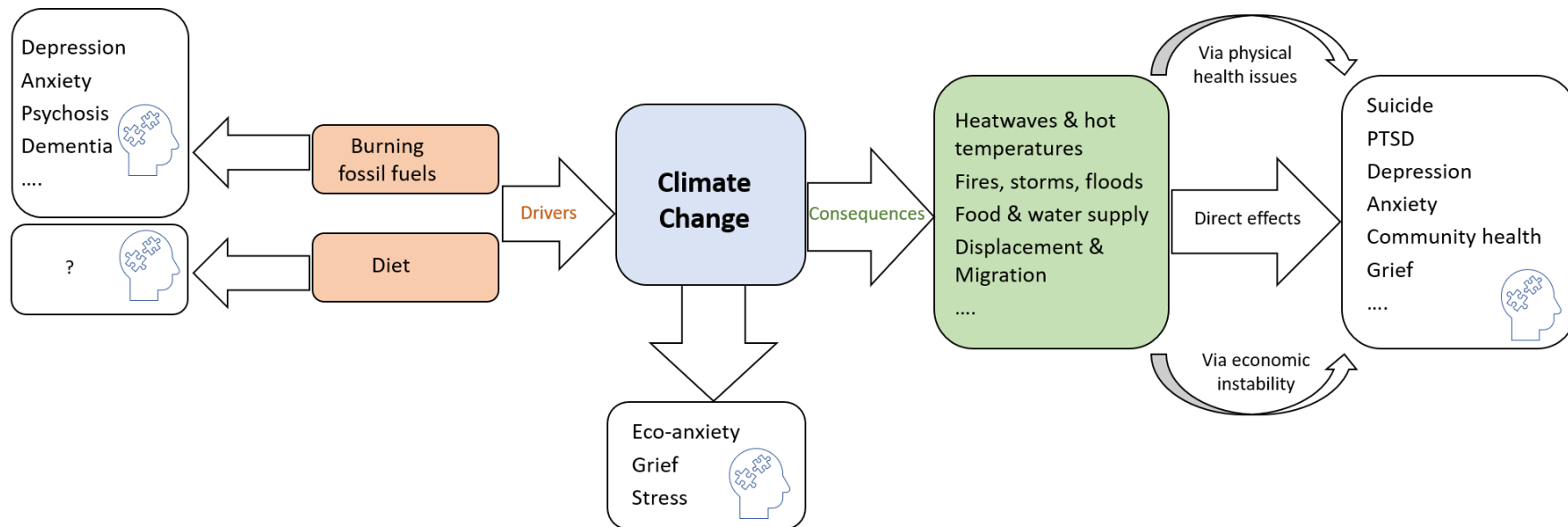



<https://osf.io/5akwh>



<https://doi.org/10.17605/OSF.IO/5AKWH>

# How does climate change impact mental health?



 This symbol indicates mental health effects.

# Assessing overheating worry

Items to assess overheating worry

During this summer, how often have you thought about your home overheating?

During this summer, has thinking about your home overheating affected your mood?

During this summer, has thinking about the possibility of your home overheating affected your capacity to perform your “everyday activities”?

How often do you worry about the possibility of your home overheating?

Is being worried about your home overheating an important problem for you?

To what degree does the possibility of your home overheating worry you?



# Assessing future cooling

Hypothesis	Country	Outcome variable	Exclusion criteria
4a	UK	In the next three years, how likely are you to get an air conditioning system (portable or fixed) for your home?	Already have one
4a	US	In the next three years, how likely are you to get an air conditioning system (portable or fixed) for your home? OR in the next three years, how likely are you to upgrade the air conditioning system you have in your home?	None
4b	UK & US	In the next three years, how likely are you to get external shading for your home, e.g. external shutters, an awning or a tree?	Renters
4c	UK	In the next three years, how likely are you to get an electric fan / additional electric fans for your home?	None