

The mental health inequalities of extreme heat: a national survey of perceptions, vulnerability, and trust in information sources

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**The mental health inequalities of extreme heat: a national survey of perceptions,
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Abstract

Extreme heat is an increasing public health concern, yet its mental health impacts and unequal distribution across the population remain under-recognised, particularly in temperate climates. We conducted a nationally representative survey of 2,937 adults in Great Britain during a 2025 heatwave to examine perceptions, experiences, and adaptation behaviours. While only 9% reported experiencing mental health impacts, a substantial proportion experienced symptoms consistent with reduced wellbeing, including sleep disruption (64%), exhaustion (49%), irritability (34%), and difficulty concentrating (21%). Individuals with pre-existing health conditions reported greater vulnerability, including increased isolation and behavioural disruption. Trust in information sources was highest for healthcare services, yet social media was most frequently used despite lower levels of trust. Over half of respondents perceived government responses as out of touch. Our findings suggest that heat-related mental health inequalities are significant in Britain and highlight the need for improved public recognition, trusted communication and targeted adaptation strategies.

Climate change is increasing the frequency, duration, and intensity of extreme heat events globally, including in regions with traditionally mild climates. Summer 2025 was the hottest on record in the UK, following several consecutive years of unusually high temperatures (Met Office, 2025).

The physical health impacts of extreme heat are well established. Elevated temperatures are associated with dehydration, heatstroke, cardiorespiratory morbidity, and excess mortality (Ebi et al., 2021). A growing body of research demonstrates that extreme heat also has a significant impact on mental health (Thompson et al., 2023). High ambient temperatures have been linked to increased psychiatric hospital admissions (Liu et al., 2021), higher suicide rates (Thompson et al., 2018), and worse health outcomes for individuals with pre-existing mental illness (Meadows et al., 2023). While these impacts were initially documented in traditionally hot regions, our recent work has also revealed heat-related increases in mental health service use in the UK (Chukwusa et al. 2026).

Beyond clinical outcomes, extreme heat can also affect population wellbeing. Following the record-breaking July 2022 heatwave, almost half of individuals surveyed in the UK reported that the heat had negatively affected their wellbeing (Kirkcaldy et al., 2025). Additionally, survey data from the Avon Longitudinal Study of Parents and Children (ALSPAC) identified associations between extreme heat and poorer mood, sleep disruption, and reduced productivity at work and home (Godwin et al., 2025). These findings suggest that the mental health impacts extend beyond clinical crises to everyday functioning during periods of very hot weather.

The impacts of extreme heat on mental health and wellbeing are not evenly distributed. Climate change has been recognised as a ‘threat multiplier’, capable of exacerbating pre-existing health and social inequalities (Lawrance et al., 2022; Torales et al., 2026). Emerging evidence suggests that vulnerability to mental health impacts of extreme heat is influenced by clinical factors (e.g., prior mental or physical health diagnoses; Lavigne et al., 2022; Baecker et al. (2026a)), sociodemographic characteristics (e.g., socioeconomic status; Corvetto et al., 2024), and living conditions (e.g., access to green spaces; Park et al., 2024). However, there is limited nationally representative research in Great Britain (GB) about how extreme heat and

its consequences are perceived and experienced, how this varies across disadvantaged groups, and how perceptions and experiences influence adaptive behaviour and policy preferences.

As periods of very hot weather become more frequent, adaptation can no longer be treated as a future concern. Public health messaging and policy guidance such as heat-health plans have traditionally focused on physical health impacts, potentially contributing to under recognition of psychological impacts (Stewart-Ruano et al., 2025).

While structural and policy-level changes are essential, effective adaptation to heat also depends on individual-level responses. Yet, a survey following the UK September 2023 heatwave found that, even when the majority of the public were aware of the heat-health alerts, only a third reported implementing adaptive measures (Godwin et al., 2025). Even when receiving alerts, people may interpret hot weather positively and may not see themselves as vulnerable to its negative health impacts. Previous research suggests that perceived vulnerability to heat may influence the adoption of protective behaviours or advice seeking (Erens et al., 2021).

Access to, and trust in, information sources may also influence how people understand and respond to periods of very hot weather. During heatwaves, people may turn to official government websites, healthcare providers, traditional media, or social networks for guidance. However, patterns of information seeking and levels of trust in these sources remain underexplored. Identifying where and how people seek advice is important for informing effective heat-health communication strategies.

Understanding how extreme heat is perceived and experienced across Britain, in particular by populations already vulnerable to poor health, is essential to inform and strengthen equitable climate adaptation. Yet, robust evidence on the experience of disadvantaged groups during periods of extreme heat remains limited. To address this gap, we conducted a survey in Great Britain in summer 2025 to investigate the public's mental wellbeing, perceived vulnerability, policy preferences, and information-seeking behaviour during a heatwave. Specifically, we explored three research questions: (1) To what extent do people perceive summers to be

becoming hotter, and how concerned are they about the potential mental health impacts of extreme heat? (2) Do these perceptions and concerns differ between individuals with and without pre-existing health conditions? (3) What sources of information do people use during heatwaves, and how much do they trust these sources?

Results

Sample characteristics

Table 1 presents the demographic characteristics of the 2,937 respondents included in the sample. Notably, 8.8% of respondents reported a mental health condition, 18% reported a physical health condition, and 9% said they had both physical and mental health conditions, with the rest reporting no long-term condition (62.1%) or preferring not to say (2.2%).

Table 1 Sample Demographics, full sample n = 2,937

Variable		Percent of respondents (weighted)
Age groups	18-24	9.16
	25-34	17.23
	35-44	16.27
	45-54	17.04
	55-64	16.12
	65-74	12.86
	75+	11.33
Gender	Female	47.05
	Male	52.88
	Other	0.07
Region	North East England	4.14
	North West England	11.44
	East Midlands	7.51
	East of England	9.58
	Greater London	13.46
	South East England	14.20
	South West England	8.87
	Wales	4.87
	Scotland	8.62
	Yorkshire and the Humber	8.43
	West Midlands	8.86

Ethnicity	White	84.44
	Mixed or multiple ethnic groups	2.18
	Asian or Asian British	5.03
	Black, Black British, Caribbean or African	7.81
	Other ethnic group	0.51
	Prefer not to say	0.02
Health status	Physical health condition	17.97
	Mental health condition	8.79
	Both physical and mental health conditions	8.99
	No existing condition	62.07
	Prefer not to say	2.18
Education level	Below degree level qualifications	55.46
	Degree level or above	44.54
Housing tenure	A house or bungalow	81.25
	A self-contained flat, maisonette or apartment	15.32
	A room or rooms (e.g. bedsit or flatlet)	1.63
	Other (please specify)	0.83
	Prefer not to say	0.96

Perceptions of rising temperatures and concern about mental health impacts

Overall, most respondents (78%) perceived summers to be becoming hotter, with 35% reporting that temperatures are significantly hotter than 10 years ago. Despite this, perceptions of the impact of hot weather on day-to-day life were mixed. Approximately half of respondents (49%) felt ambivalent about the effects of hot weather, while 19% reported generally positive impacts, 22% generally negative impacts, and 7% declared no impact.

Expectations for future coping were similarly divided: 38% believed that managing hot weather would become more difficult over the next five years, 39% expected it to remain the same, and 20% expected things will become easier.

Respondents reported relatively low levels of concern about the health impacts of very hot weather. Fewer reported concern about the impacts on their own physical health (43%) and mental health (35%) compared to concern for trees, plants, and wildlife in green spaces (62%).

Concern for one's own physical and mental health was broadly similar to concern for others. However, almost two thirds of respondents (63%) did not see very hot weather as a threat to

their own mental health, which was higher than the proportion who were not worried about the mental health of friends and family members (58%).

Only 9% of respondents said they were ‘very worried’ about the impact of hot weather on their mental health. Similarly, only 9% reported experiencing problems with their mental health during periods of very hot weather. In contrast, a substantial proportion of respondents reported symptoms consistent with reduced wellbeing during hot weather (Figure 1). These included difficulty concentrating (21%), feeling unmotivated (29%), feeling irritable (34%), feeling exhausted (49%), feeling uncomfortable (58%) and difficulty sleeping (64%).

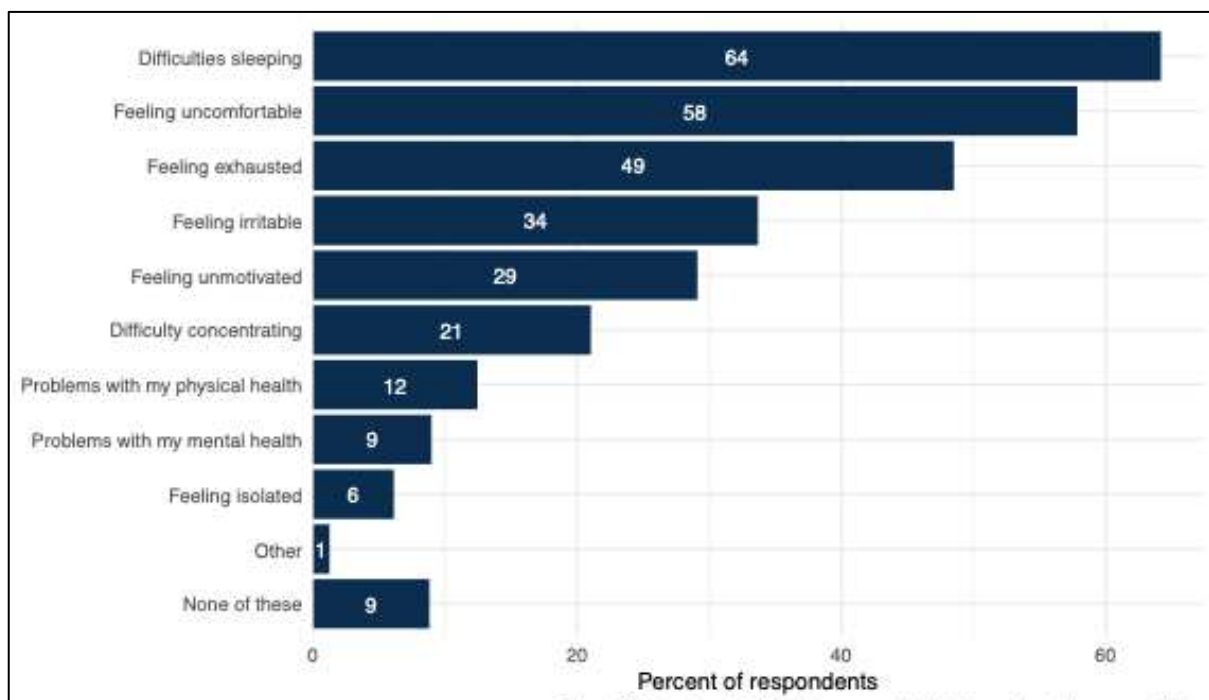


Figure 1. Self-reported symptoms experienced during very hot weather. Base: GB adults, $n = 2,937$, data are weighted to be nationally representative.

Differences in perceptions and experiences by pre-existing health conditions

We observed a number of significant differences in the experience of very hot weather across health status groups. People with pre-existing health conditions consistently reported greater vulnerability to the impacts of very hot weather compared to those with no long-term health conditions (Figure 2 and Supplementary Materials Table S2).

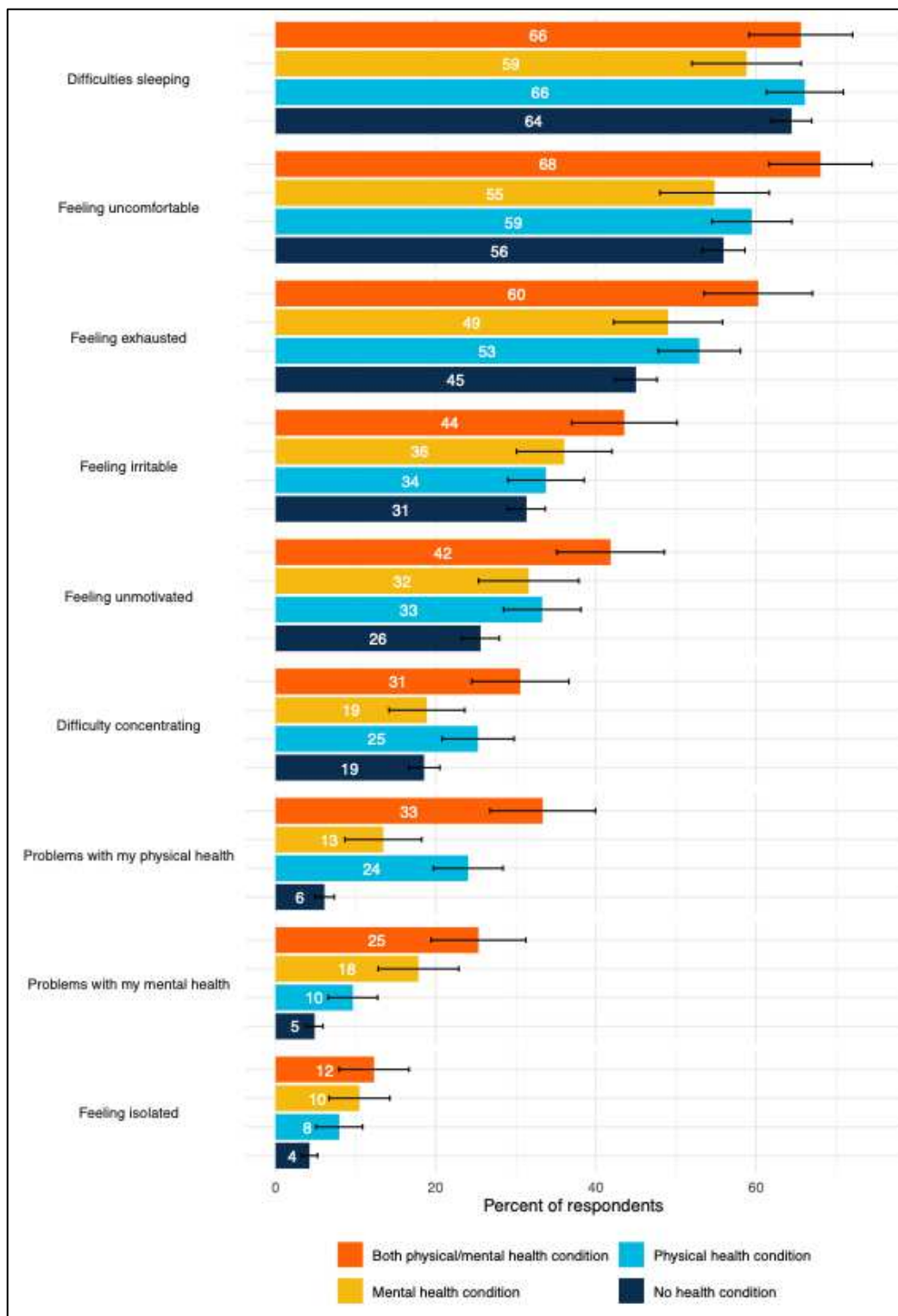


Figure 2. Symptoms experienced during very hot weather by health status with 95% confidence intervals. Marginal effects for health conditions were estimated in a logistic regression model controlling for age, gender, education, housing tenure, and region. Base: GB adults, $n=2,937$, data are weighted to be nationally representative.

Respondents with both mental and physical health conditions had a statistically significantly higher probability (all at the 1% level) of reporting eight out of nine symptoms associated with reduced wellbeing during very hot weather we included in the survey. These include problems with physical health (+27 percentage points (pp), compared with respondents with no existing health conditions), mental health (+20pp), lacking motivation (+16pp), feeling exhausted (+15pp), uncomfortable (+12pp), having difficulty concentrating (+12pp), and feeling isolated (+8pp).

Individuals with mental health conditions alone also reported increased vulnerability for some outcomes, with significantly higher proportion for three out of nine symptoms we measured: problems with mental health (+12pp, 1% sig.), physical health (+7pp, 1% sig.), and feeling isolated (+6pp, 1% sig.).

Finally, individuals with physical health conditions also reported six of the nine symptoms we measured with significantly higher probabilities (all at the 1% level): problems with physical health (+18pp), feeling exhausted (+8pp), unmotivated (+8pp), having difficulties concentrating (+7pp), problems with mental health (+5pp), and feeling isolated (+4pp).

Health status differences were also observed in perceived risk of heat (Supplementary Materials Table S3). People with a physical or mental health condition, or both were significantly more likely to worry about the impact of extreme heat on their own mental and physical health as well as that of their family and friends and the health of trees, plants and wildlife. Worry was highest among those with both physical and mental health conditions, particularly for concern about impacts on their own physical ($\beta = 0.712$, 1% sig.) and mental health ($\beta = 0.657$, 1% sig.).

These differences extended to behavioural adaptation during very hot weather (Figure 3).

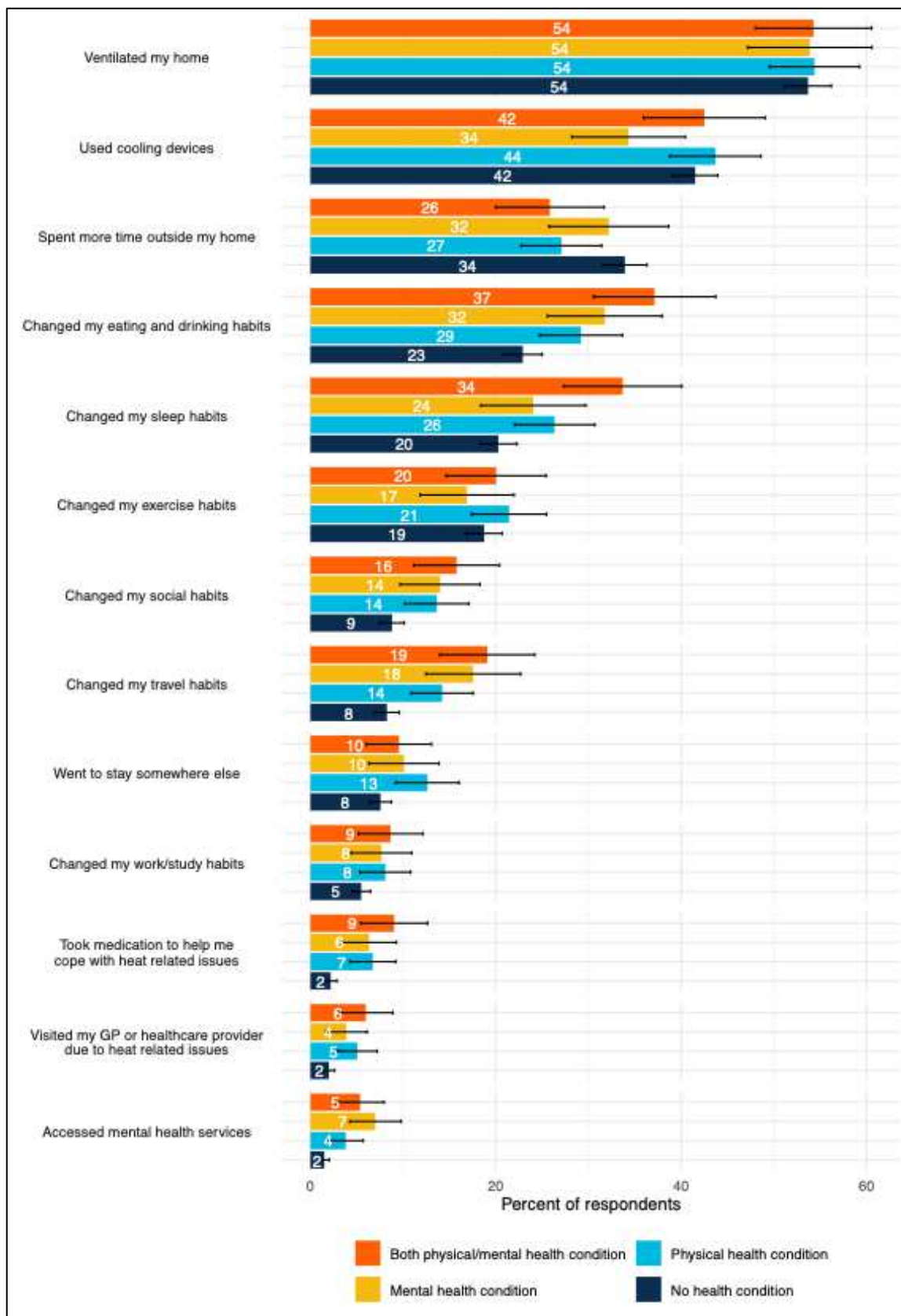


Figure 3. Behavioural adaptations during very hot weather by health status with 95% confidence intervals. Marginal effects for health conditions were estimated in a logistic regression model controlling for age, gender, education, housing tenure, and region. Base: GB adults, $n=2,937$, data are weighted to be nationally representative.

Respondents with both physical and mental health condition were significantly more likely to report seven out of thirteen behavioural changes compared to those with no long-term conditions (Supplementary Materials Table S4): changing eating and drinking habits (+14pp, 1% sig.), sleep habits (+13pp, 1% sig.), and travel habits (+11pp, 1% sig.), social habits (+7pp, 1% sig.), taking medication (+7pp, 1% sig.), visiting GPs (+4pp, 1% sig.), and accessing mental health services (+4pp, 1% sig.). Notably, respondents with both mental and physical health conditions also reported lower likelihoods of leaving their homes (-8pp, 5% sig.).

Similarly, individuals with physical health conditions were significantly more likely to enact eight of the thirteen behaviours, but also significantly less likely to leave their homes. Finally, individuals with mental health conditions were significantly more likely to enact six of the thirteen behaviours, but also significantly less likely to leave their homes (-7pp, 5% sig.).

Accessing healthcare services during very hot weather was low overall but followed a similar pattern across health condition groups. Overall, 2% of those without an existing health conditions took medication to cope with heat-related issues or accessed their doctor or mental-health health services. The proportions rise for those with a physical health condition (5% visited their doctor, 4% access mental health services, 7% took medication) and higher for those with a mental health condition (4% visited their doctor, 7% accessed mental health services, 6% took medication). Proportions were highest overall for those with both a mental and physical health condition (6%, 5%, 9% respectively). All differences were significant at the 5% level or higher compared to those with no conditions.

Information sources and trust

Respondents reported that their most trusted sources of information on health and wellbeing during hot weather is the NHS or their doctor (82%) and the Met Office (79%). Other sources trusted by most participants included others in their community/grassroots initiatives (60%) and their local authority/council (58%), while trust in the government (47%) and social media are much lower (40%). However, more people report getting this information from social media (28%) than from the NHS or their doctor (26%). The most used source was the Met Office (39%) (Figure 4).

Information sources choice was seldom significantly associated with health conditions, with two exceptions: first, respondents with both mental and physical health conditions were significantly more likely (+8pp, 1% sig.) to source information from the NHS and GPs, compared to those without health conditions (Supplementary Materials Table S5). Second, respondents with physical health conditions were significantly more likely to source information from others in their local community (4pp, 5% sig).

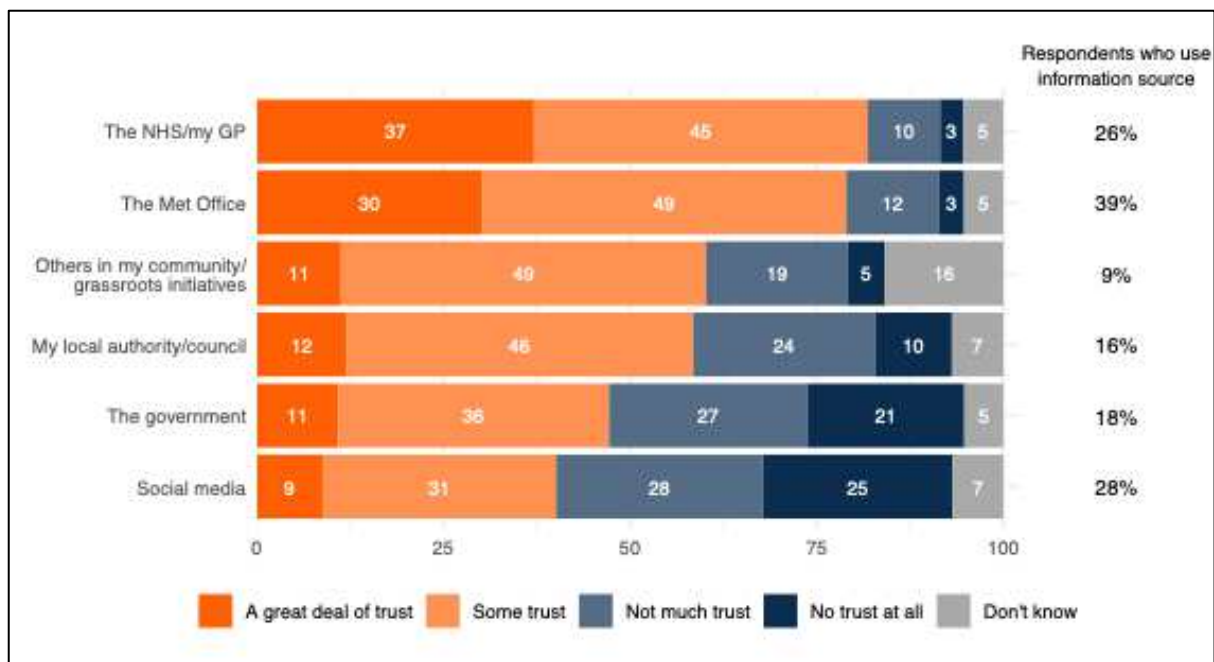


Figure 3. Trust in and use of information sources during very hot weather. Base: GB adults, n=2,937, data are weighted to be nationally representative. Note: NHS = National Health Service, GP: general practitioner.

Perceptions of government action reflected these patterns. Half of respondents (51%) believe that the government is out of touch when it comes to how hot weather is impacting people's lives. This is significantly higher among people with a mental health condition (66%, 1% sig.) or with both a mental and physical health condition (60%, 1% sig.) (Supplementary Materials Table S6). A majority of respondents (56%) believed that current government action is insufficient and that it should be doing more to address the issue, and 70% agree that it has a responsibility to do so.

Among potential solutions the government could implement, respondents favoured more trees and canopy cover in streets and public spaces (49%), and green spaces to cool urban

areas (48%), over other options, such as installing air conditioning in buildings that overheat (39%).

Respondents also expressed support for a range of resources to help people cope during periods of very hot weather. The most commonly selected options were more trees and canopies to increase shade and cool outdoor spaces (46%), advice about health and wellbeing during very hot weather (39%), information services and alerts (38%), and support for making homes cooler during hot weather (36%). Around one-third also supported flexibility to work or study from home (34%), relaxed dress codes in businesses or schools (33%), and additional healthcare support during very hot weather (31%), while fewer respondents prioritised information about air-conditioned public buildings (27%).

Discussion

This nationally representative survey on how adults in Great Britain perceive, experience, and respond to extreme heat has revealed three key findings. First, although many respondents reported symptoms consistent with reduced mental wellbeing during hot weather, relatively few recognised these as mental health impacts or expressed concern about them. Second, vulnerability to heat-related mental health impacts was distributed unequally, with individuals with pre-existing health conditions reporting greater impacts and use of behavioural adaptation. Third, while trust in health and weather institutions was relatively high, many respondents relied on different sources of information, and substantial proportions felt that government responses to extreme heat are insufficient or out of touch. Together, these findings suggest that while population mental wellbeing was worse during a period of extreme heat, these impacts remained under-recognised, unevenly distributed, and insufficiently addressed in current communication strategies.

A key finding of the survey is the mismatch between lived experience of very hot weather and individuals' recognition of the mental health impacts. Whilst only 9% of respondents reported experiencing problems with their mental health during very hot weather, a much larger proportion reported symptoms consistent with reduced wellbeing, including difficulties sleeping and concentrating, and feeling unmotivated, irritable, exhausted, and uncomfortable. This marked discrepancy suggests that the mental health impacts of extreme

heat may be underestimated, consistent with previous evidence that individuals do not view themselves as vulnerable to heatwaves (Howarth et al., 2025).

Previous surveys of people's experiences of the 2022 and 2023 heatwaves in the UK also identified sleep disruption or difficulty sleeping as one of the most frequently reported health impacts of heat (Ogunbode et al., 2024; Godwin et al., 2025; Kirkcaldy et al., 2025). Sleep disruption is a well-established determinant of mental wellbeing, associated with poorer mood and reduced cognitive functioning (Medic et al., 2017; Kong et al., 2023). Temperature-related sleep disruption has been proposed as a key behavioural mechanism linking extreme heat and mental health (Baecker et al., 2025).

In addition, our findings extend previous survey evidence by identifying additional symptoms, including feeling irritable, exhausted, and uncomfortable. Exhaustion is linked to impaired emotional functioning (Tuithof et al., 2017), while high irritability has been associated with anxiety and depression (Vidal-Ribas et al., 2016). Participants also reported difficulty concentrating and feeling unmotivated, which may have implications for daily functioning, cognitive performance and productivity. Together, these symptoms may compound one another, contributing to significant reductions in wellbeing during periods of extreme heat.

One possible explanation for the mismatch between symptoms experienced and interpreting these as mental health impacts is the cultural framing of heat as something positive and desirable. In traditionally temperate climates such as GB, hot weather is still perceived as a rare event (Howarth et al., 2024) and is often associated with leisure, holidays, and outdoor social activities (O'Neill et al., 2022). This framing may reduce recognition of extreme heat as a potential health risk and limit the adoption of adaptation behaviours. Given the broad mental wellbeing impacts identified in the present study, improving public knowledge and recognition of the potential mental health impacts of extreme heat should therefore be an important component of future heat communication strategies.

The survey revealed clear inequalities in vulnerability to extreme heat, with individuals with pre-existing health conditions reporting substantially greater impacts on wellbeing during very hot weather, with the highest impacts reported by those with both a physical and mental

health condition. These inequalities may arise through multiple mechanisms. Certain psychotropic medications (e.g., antipsychotics) and physical health conditions (e.g., diabetes) can impair thermoregulation, alter hydration, or affect subjective experiences of heat (Bongers et al., 2019; Kenny et al., 2016). Other mechanisms may include disruption to usual coping strategies for maintaining mental wellbeing. For example, extreme heat may reduce opportunities for outdoor activity, social interaction, or physical exercise, which are commonly used to support mental health. We found that individuals with pre-existing health conditions were more likely to make changes to their travel, work/study, and socialising habits. Such disruptions to routine may increase social isolation and potentially exacerbate pre-existing mental health conditions (Baecker et al., 2025).

Our findings support the view of climate change as a “threat multiplier”, exacerbating existing health and social inequalities (Torales et al., 2026). Vulnerability to heat is shaped not only by individual health status, but also by structural and environmental factors, including housing quality and access to green space (Baecker et al., 2026a). Poorly insulated or overcrowded housing, for example, can increase indoor temperatures and make it difficult to sleep, work, or rest during heatwaves, further amplifying mental health impacts (Howarth et al., 2024). These structural risk factors are not evenly distributed across the population and often co-occur with socioeconomic disadvantage and poorer baseline health (Marmot, 2020). This underscores the need to consider equity and social justice within heat-health policy, as extreme heat appears to disproportionately affect individuals already experiencing poorer health. Failure to target vulnerable populations in adaptation strategies risks widening existing mental health inequalities.

The findings also highlight a gap between trusted sources of information and where individuals actually obtain advice during very hot weather. Although respondents reported high levels of trust in institutions such as the NHS, their doctors, and local authorities, one in four or less of all respondents say they use them as sources of information. Respondents also reported high levels of trust and use of the Met Office, highlighting opportunities for health communications through this channel. On the other hand, while nearly one in three source their information from social media, trust levels with this channel are lower, which could pose a challenge for organisations seeking to reach the public through their socials.

Given that half of UK households have little to no knowledge about how to cope with extreme heat (Khosravi et al., 2025), improving communication around the broader health impacts of extreme heat is critical to encourage effective protective behaviours. However, the most effective heat risk imagery and text that will lead to adaptation/behaviour change remain unclear (McLoughlin et al., 2023).

Our findings suggest that communication strategies should focus on helping individuals recognise connections between their experiences during hot weather and the implications for mental wellbeing, framing that may be particularly important for populations already experiencing poorer health. Creative and accessible communication approaches may play an important role. For example, the 'COOL MINDS' billboard campaign trialled at Bethnal Green Nature Reserve in Summer 2025 aimed to raise awareness of how to cope with the mental health impacts of extreme heat using clear and accessible messaging co-developed with members of the public (Baecker et al., 2026b). Expanding such approaches, alongside increased representation of heat-related impacts in the media, may help convey the seriousness of extreme heat in ways that resonate with lived experience.

Given the limited recognition of the mental health impacts of heat and the inequalities we have identified, our findings suggest several priorities for policy and practice. Public heat-health communications should explicitly address symptoms relating to reduced mental health. Improving recognition is important because adaptation depends not only on the awareness of rising temperatures, which is already widespread, but also on understanding how heat affects everyday wellbeing. Individuals who interpret their experiences as heat-related health impacts may be better positioned to engage with protective behaviours, seek support when needed, and involve themselves in broader climate change adaptation measures.

Increasing awareness amongst policy and industry stakeholders is also essential. Given the potential impacts on productivity and cognitive functioning, the mental health impacts of extreme heat may also have broader economic implications. An average of £1.2 billion annual productivity losses are estimated from extreme heat in the UK (Office for National Statistics,

2024). Framing these impacts in terms of productivity, workforce performance, and economic resilience may therefore be important for engaging policymakers and driving investment in adaptation measures.

Our findings also suggest that adaptation strategies should place greater emphasis on populations already experiencing poorer health. While those with pre-existing health conditions are increasingly recognised as a vulnerable group in heat planning, these are grouped collectively with other at-risk populations (e.g., older adults, infants, pregnant women) and rarely receive distinct, tailored consideration (Stewart-Ruano et al., 2025). Targeted support for individuals with prior health conditions, particularly those with both physical and mental health diagnoses, should be considered within future heat-health planning.

Finally, respondents were more concerned about the impact of heat on nature than on their own mental health and similarly favoured cooling solutions such as increasing tree canopy cover over increasing air conditioning. These findings are consistent with growing support for nature-based solutions that align with net-zero objectives and have co-benefits for both environmental and human health. Such approaches are increasingly gaining inclusion in policy, such as the recent 'A Well Adapted UK' report (Climate Change Committee, 2026), and our findings underscore the need for this to be prioritised through to delivery.

This study has several strengths. It uses a large, nationally representative GB sample, providing broad insight into perceptions and experiences that may be generalisable to residents of other traditionally moderate climates. In addition, the timing of the survey during a nation-wide heatwave likely reduced recall bias. However, some limitations should be considered. The cross-sectional design limits causal inference, and responses relied on self-reported perceptions and experiences rather than validated clinical measures. Nevertheless, this approach was appropriate to explore lived experiences in the general population, which are unlikely to be reflected in clinical indicators alone. It should also be acknowledged that results from this particular heatwave may not generalise to others. Future research should collect additional data across multiple heatwaves to mitigate potential single case bias. Finally, although responses were weighted to be nationally representative, the use of an

online survey may have limited participation among some groups, including individuals with limited digital access or lower digital literacy, who might engage in different information-seeking behaviours.

Conclusions

This study provides evidence that the mental health impacts of extreme heat are under recognised and unequally distributed across Great Britain, with individuals with pre-existing health conditions reporting greater impacts on wellbeing and daily life. As climate change intensifies and extreme heat events become more frequent, these impacts are likely to increase. Improving recognition of heat-related physical and mental health through trusted communication and prioritising support for vulnerable populations will be essential to protect population wellbeing and build resilience within communities.

Methods

Study design and sample

We conducted a cross-sectional online survey of 2,937 adults in GB between 12-15 August 2025, during the final summer heatwave. This period marked the end of the warmest UK summer on record, which included amber heat health warnings alongside other extreme weather events such as wildfires, storms, and flooding. The survey was carried out by Focldata on behalf of King's College London. Ethical approval was obtained from the PNM Research Ethics Panel at King's College London (LRS/RGO-24/25-48871).

Participants were recruited from an online panel of survey respondents and were deemed eligible for this survey if they were aged 18 years and over and residing in GB. Focldata recruits participants through partner panel systems and does not retain information on number of participants invited. Quality controls were enacted both by the partner panels and by Focldata resulting in 315 responses being removed. To enable comparisons between London and the rest of GB, a larger sample of 748 respondents living in London was recruited. The sample also includes 1,629 responses from the rest of England, 181 from Scotland, and 114 from Wales. Responses were weighted by Focldata to be nationally representative of

the GB adult population using iterative proportional fitting with targets for age, gender, and GB region. Weights were trimmed within 0.2 and 5 thresholds.

Survey design

The survey included 45 questions using a variety of scales and categorical response options to cover key themes related to experiences of extreme heat, with a particular focus on mental health and access to green spaces. These captured perceptions of changing temperatures and concern about the health impacts of very hot weather (e.g., “How worried, if at all, are you about the impact of very hot weather on your mental health?”), as well as self-reported effects on wellbeing and daily functioning during periods of heat (e.g., sleep disruption, irritability, and difficulty concentrating). Additional items explored behavioural adaptations to hot weather (e.g., changes to travel, socialising, or home environments), perceived future ability to cope with increasing temperatures, and views on the role of government and priority actions for adaptation. The survey also examined information-seeking behaviours and levels of trust in different sources of advice during heatwaves, including the National Health Service (NHS), the Met Office, government, and social media. Although the survey included questions on access to and use of green space (e.g., frequency of visits, perceived benefits, and proximity), these variables were not the primary focus of the present analysis and will be reported elsewhere.

Demographic and socioeconomic characteristics data were collected, including age, gender, ethnicity, education, region, financial security, housing characteristics, and caring responsibilities. Participants were also asked ‘Do you currently have any physical or mental health conditions or illnesses lasting or expected to last 12 months or more?’ Response options included: ‘Yes – physical health condition; Yes – mental health condition; Yes – both physical and mental health conditions; No; or Prefer not to say’. Responses were used to define health status comparison groups. The relevant survey questions are provided in Supplementary Materials S1.

The survey design process included coproduction workshops between researchers at King’s College London, practitioners from third sector organisations, with input and feedback from policymakers, especially from local government in London. This collaboration ensured that the

final questionnaire could combine survey-methodological rigour with policy insight to increase the impact of the data collected. We also replicated survey questions from other studies. These included notably the Adults' People and Nature Survey for England, the Public Trust in Expertise in the Context of Climate Change and Covid-19 (PERITIA) study, the European Quality of Life Survey, and the English Housing Survey. More information on which questions are replicated is in Supplementary Materials S1.

Statistical analysis

We used a combination of descriptive statistics and regression models to analyse the data. Descriptive analysis included calculating modal categories in response distributions, and visualising data to identify descriptive differences across respondents with self-reported mental, physical, or mental and physical health conditions. We then used logistic (for categorical dependent variables) and linear (for scale variables) regression models, to investigate whether differences across health groups were statistically significant.

In these models we took respondents with no physical or mental health conditions as the baseline, and compared them to respondents with mental, physical, or both mental and physical health conditions. The models also controlled for respondents' age, gender, education, housing tenure, and for their region (living in London compared to living in the rest of Great Britain). Regression models used survey weights, and heteroskedasticity-robust standard errors.

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