



How the public understands and reacts to the term “climate anxiety”

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ABSTRACT

The term *climate anxiety* has increasingly appeared in the academic literature and popular discourse since 2019, typically when discussing young people's negative emotional responses to climate change. This paper reports results from a nationally representative survey of the Norwegian public ($N = 2040$) that investigated whether people respond differently to descriptions of young people “having climate anxiety”, compared with being “concerned” or “worried” about climate change. Results from the survey experiment showed stronger support for politicians taking young people's climate concern or climate worry into consideration when designing new climate policy as compared with young people's climate anxiety. Analyses of an open-ended question asking what people think of when they hear or read the term “climate anxiety” showed that most respondents (52%) provided neutral descriptions (e.g., worry about climate change impacts), 27% viewed climate anxiety as unfounded, irrational, or excessive, and equal proportions of respondents critiqued the term specifically for contributing to such negative associations (6%) or referred to climate anxiety as a reasonable and rational reaction (6%). These findings indicate that among some audiences, using the term climate anxiety may provoke reactance and be perceived as distracting from political actions to mitigate climate change. Our results give important insights into the potential consequences of the terms we use when reporting on climate distress.

1. Introduction

During the last few years, terms such as *climate anxiety* and *eco-anxiety* have increasingly appeared in the academic literature (see Fig. A1),¹ typically when discussing young people's negative emotional responses to climate risk (e.g., Hickman et al., 2021; Whitlock, 2023). Across different research disciplines, climate anxiety and eco-anxiety² now refer to various negative threat-related cognitive and emotional reactions (Kurth & Pihkala, 2022; Ojala, Cunsolo, Ogunbode, & Middleton, 2021; Sangervo, Jylhä, & Pihkala, 2022). Due to a wide range of conceptualizations and indicators, these reactions have been found to be adaptive or maladaptive, and to relate differently to mental health and pro-environmental engagement (Clayton, 2020; Coffey, Bhullar, Durkin,

Islam, & Usher, 2021; Gago, Sargisson, & Milfont, 2024; Lutz et al., 2023; Ogunbode et al., 2022). In the current paper, we do not focus on the causes, consequences, indicators, or prevalence of eco-anxiety or climate anxiety. Instead, we look at how the Norwegian public perceives and reacts to such terms.

In addition to being widely discussed in the academic literature, we see a clear increase in references to climate anxiety in Norwegian media from 2019 and onwards,³ with the top years being 2019 and 2021 (see Fig. A2). The media coverage includes a range of different perspectives, as illustrated by headlines such as “More than one of four young Norwegians have climate anxiety” (Kaste, 2022), “We must stop using the word climate anxiety” (Refsdal, 2022), “Climate anxiety is healthy” (Karlsmoen, 2023), “The media causes climate anxiety in children”

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¹ The search for “climate anxiety” OR “climate change anxiety” OR “eco-anxiety” yielded 347 results in Scopus (November 2nd, 2023) and showed a clear increase in the use of the terms in the academic literature from 2019 to 2023, with few mentions before that period.

² Eco-anxiety can be seen as a broader term than climate anxiety, including anxiety related to a fuller range of environmental issues (Voški et al., 2023).

³ The search for “klimaangst*” OR “økoangst*” yielded 1566 results in the media analysis platform Retriever (November 2nd, 2023) and showed a clear increase in the use of these terms in Norwegian media from 2019, with few mentions before this.

(Schevig, 2022), “I have climate anxiety. ‘We didn’t know better’ is no longer good enough” (Eide, 2021), and “Why are people so provoked when young people say they have climate anxiety?” (Madsen, 2021). Given that the term eco-anxiety (økoangst) is seldom used in the Norwegian public discourse, the paper will henceforth only refer to the term climate anxiety (klimaangst).

1.1. Anxiety and climate anxiety

Anxiety is one of several anticipatory threat-related emotions (Böhm, 2003). Other emotional reactions, such as worry or concern, also reflect seeing the future as uncertain and potentially dangerous but are generally considered more cognitive and less intense (Borkovec, Robinson, Pruzinsky, & DePree, 1983; van der Linden, 2017). Moreover, anxiety can range from an appropriate and adaptive reaction to an existing threat to more pathological forms that impede mental health (e.g., generalized anxiety, panic disorder, phobias; see The Diagnostic and Statistical Manual of Mental Disorders, DSM-5; American Psychiatric Association, 2013).

The negative effects of both acute and long-term climate change related events on well-being are well established. For example, disaster events, heat waves, drought, and air pollution are all physiological and psychological stressors that can have direct and indirect effects on anxiety disorders (Clayton, Manning, Speiser, & Hill, 2021). However, when talking about climate anxiety, it is typically not as a disorder initiated or reinforced by directly experiencing such events, but as a reaction to the anticipation of an uncertain and threatening future (Clayton, 2021). Currently, the American Psychology Association (APA) does not categorize climate anxiety as a mental illness (APA Task Force on Climate Change, 2022), but climate anxiety can become clinically relevant if it is intense enough to start interfering with the ability to sleep, work, or socialize (Clayton, 2020). Some authors suggest that climate anxiety should be conceptualized in line with the definition and indicators of generalized anxiety disorder (van Valkengoed, Steg, & de Jonge, 2023) and that it should be treated as a mental health problem so that people experiencing severe forms of it can access appropriate mental health support (van Valkengoed, 2023).

While also older people can experience and identify with climate anxiety (Dennis & Stock, 2023), the younger generations generally report higher levels of negative emotions related to climate change (Poortinga, Demski, & Steentjes, 2023). Still, the estimated prevalence of climate anxiety varies widely and according to whether the phenomenon is conceptualized as high levels of worry and anxiety or conceptualized as encompassing clinically significant symptoms associated with generalized anxiety. In a study of 10,000 young people aged 16 to 25 in 10 countries, 45% indicated that they have experienced negative impacts on their psychological functioning due to concerns about climate change (Hickman et al., 2021). 56% of young adults (above the age of 18, born in 1990 or later) in Norway reported being *worried* or *extremely worried* about climate change in 2023 (Gregersen, 2023). In contrast, responses from a group of Norwegian university students reporting that they are very or extremely *anxious* about climate change suggest a prevalence rate of 28% among that demographic (Ogunbode et al., 2022). The estimated prevalence of climate anxiety is generally low when measured by symptoms of functional impairment, such as disrupted sleep and concentration. In a UK national study, Whitmarsh et al. (2022) found that 9.1% of respondents below the age of 30 reported moderate symptoms of climate anxiety, while approximately no respondents in this age group reported severe climate anxiety.

1.2. How might the public understand and react to the use of the term?

In addition to *experiencing* more or less climate anxiety in response to climate change stimuli, people might hold certain beliefs about what climate anxiety entails (cf. the metacognitive model; Wells, 1999). The literature on *emotion beliefs* or *lay theories of emotions* highlights that

people can have different appraisals of emotions; for example, whether they help or hinder, and to what extent they are rational, important, or controllable (Ford & Gross, 2019; Kisley, Shulkin, Meza-Whitlatch, & Pedler, 2024). These theories are relevant in the context of climate change, where negative climate emotions may be interpreted as adaptive or dysfunctional. Neckel and Hasenfratz (2021) argue that some people see strong emotionality as an expression of the fundamental significance of the climate crisis, while others see it as an indication of the collective irrationality of the environmental movement.

Emotion beliefs can apply to emotions in general, or to specific emotional states. Positive beliefs about worry include thinking of worry as a path to problem-solving, and as helpful in anticipating bad things and preventing them from happening. Negative beliefs include thinking of worry as dangerous, uncontrollable, and antagonistic to effective coping (see e.g., Britton, Neale, & Davey, 2019; Wells, 1999). With regard to anxiety, research shows that people tend to recognize both detrimental and motivating aspects of the emotional state (Ben-Artzi & Mikulincer, 1996).

There is reason to expect people to appraise and react to different fear-related terms, such as climate anxiety, climate worry and climate concern, differently (see e.g., Gawda, 2022). While all the terms imply perceived risk, they express different degrees of intensity (Borkovec et al., 1983; van der Linden, 2017), and only anxiety has a clear connotation to clinical categories. Previous research supports that people differentiate between worry and anxiety in this context (Gawda, 2022); in a word association task, anxiety yielded more associations related to diseases (illness and impairments), somatic symptoms, fictional situations, existential aspects, and extreme events as compared to worry. Drawing upon these observations, Gawda (2022) emphasizes that “[t]he subjects point out that anxiety may lead to a mental disorder or is a manifestation of a mental disease” (p. 2962).

Psychological connotations are not necessarily negative. Rather, the use of psychological terms (e.g., anxiety) to describe climate distress could contribute to recognizing and validating young people’s negative feelings towards climate change, as well as underlining the severity and bringing attention to the situation (see e.g., Wardell, 2020). Similarly, Hickman (2020) suggests that eco-anxiety could be understood as “a recognisable term allowing us to speak with others of our fears of environmental and ecological vulnerability, collapse and extinction, and so feel less alone” (p. 414).

Still, it could be unclear to the public whether the term “climate anxiety” refers to a normal and adaptive risk reaction or whether it represents a clinical category. Further, although the term “anxiety” is frequently used among the public when referring to everyday emotional reactions, it tends to describe some sort of maladjustment (Wardell, 2020).

People’s perception of the term “climate anxiety” could also be influenced by the public debate regarding the widespread use of words and terms that can be considered pathological, including anxiety. One platform for this criticism has been opinion pieces in various Norwegian newspapers. For example, in the newspaper *Aftenposten*, an *anonymous teenager* (2022) states that today’s youth have made it a trend to struggle mentally and emphasizes that there is an important difference between being afraid (a normal part of life) and having anxiety (a diagnosis). In a feature article published by NRK, a psychologist argues that replacing adjectives such as nervous, stressed, and sad with diagnoses that have clear and often serious consequences for people’s lives (e.g., anxiety, panic, and depression) is a mockery of those who are really struggling (Appelkvist, 2020).

In sum, it is necessary to assess the beliefs people have about climate worry and climate anxiety because such beliefs can influence people’s willingness to self-report these states, their perception of the people with which these emotional labels are associated, and how they believe society should respond to people experiencing climate worry or climate anxiety.

In the current paper, we look at people’s associations with the term

“climate anxiety” and whether they think young people’s climate anxiety should guide climate policy development. Hickman et al. (2021) relate climate anxiety to perceived inadequate government response and see it as a symptom of a risk that is not sufficiently being handled. If climate anxiety is considered a rational response to a severe global threat, independent of how problematic the state is perceived to be at the individual level, increased political action aimed at reducing climate change would be an appropriate response. However, if people instead associate “climate anxiety” with something excessive or irrational, they likely consider it inappropriate for guiding political decisions.

1.3. Research aims

In the current study, we aimed to investigate how the public perceives and reacts to the term “climate anxiety.” Specifically, we were interested in exploring whether and how referring to climate anxiety influences the level of support for young people’s influence on climate change policy development. We anticipated that climate anxiety could yield negative associations among some audiences due to its reference to strong emotionality or possibly irrational or excessive fear reactions. Thus, we expected people to react more negatively to the use of the term “climate anxiety” as compared to “climate worry” or “climate concern.”

We further expected different audiences to have different associations with and reactions to the term, depending on whether they relate to or identify with the term themselves and whether it is used about a group to which they belong. We therefore took an explorative approach to investigating the effect of age, gender, political orientation, and self-reported level of climate worry. Because the term “climate anxiety” is typically used when referring to young people’s climate distress, age is of particular relevance. Climate anxiety might also be associated with climate activism, which has often been visualized with images of young women (Hayes & O’Neill, 2021; Neas, Ward, & Bowman, 2022). Given that climate anxiety implies high risk perception and emotional engagement, people’s own climate worry could influence their perception of and reaction to climate anxiety. We also know from previous research that people on the right wing of the political spectrum tend to be more skeptical of and less worried about climate change (Gregersen, Doran, Böhm, Tvinnereim, & Poortinga, 2020). Among those who lack emotional engagement with the issue of climate change themselves, expressing (strong) negative climate emotions is more likely to be seen as an irrational or exaggerated response (Neckel & Hasenfratz, 2021).

2. Method

2.1. Data collection and participants

A survey experiment and an open-ended question were embedded in Round 27 of the Norwegian Citizen Panel (Ivarsflaten, Dahlberg, Storelv, Løvseth, Bjånesøy, Bye, Böhm, Gregersen, et al., 2023), fielded in June 2023. The total sample ($N = 9997$) is randomly drawn from the National Population Registry and is nearly representative of the adult Norwegian population. Our questions were fielded to a random sub-sample of $n = 2040$, consisting of 49% women, with 2% born in 1939 or earlier, 15% between 1940 and 1949, 26% between 1950 and 1959, 23% between 1960 and 1969, 16% between 1970 and 1979, 11% between 1980 and 1989, and 8% in 1990 or later. All respondents were above 18 years old. The variables for gender and age group⁴ were extracted from the Norwegian national population register. Demographic information by experimental condition is presented in the Supplementary material (see Table A1).

⁴ A continuous exact age variable is not available in the dataset due to potential privacy issues. We use the categories (10-year intervals) included in the dataset. Respondents born in the early 2000s are included among the youngest age group (1990 or later).

To estimate the smallest effect size that could reliably be detected by the survey experiment, we performed a sensitivity analysis using G*Power 3.1.9.2 (Faul, Erdfelder, Lang, & Buchner, 2007). For a sample size of $N = 2037$, $\alpha = 0.05$, power = 0.95, and three between-subjects conditions, the minimum detectable effect was equal to $f = 0.09$ for one-way analysis of variance (ANOVA).

The Norwegian Citizen Panel has three rounds of data collection each year, and data from the different rounds can be combined. For our analyses, data from Round 27 were combined with data from Round 26 (Ivarsflaten, Dahlberg, Storelv, Løvseth, Bjånesøy, Bye, Böhm, Fimreite, et al., 2023),⁵ to create a measure of climate worry covering all respondents (“How worried are you about climate change?”). Only newly recruited respondents received this question in Round 27, while all other respondents had answered it in the previous round. The observations were combined into one variable so that responses from Round 27 replaced missing values in the variable from Round 26. The question had five response categories: 1 (*not at all worried*), 2 (*not very worried*), 3 (*somewhat worried*), 4 (*worried*) and 5 (*very worried*). Political orientation was only measured in Round 26, by asking respondents to place themselves on the political left–right axis: “In politics people often talk about the ‘left wing’ and the ‘right wing.’ Below is a scale where 0 represents those who are on the far left politically, while 10 represents those who are on the far right. Where would you place yourself on such a scale?”.

2.2. Survey experiment

We tested our hypotheses in a between-subjects survey experiment. Respondents were randomly assigned to one of three possible versions of the following vignette: “Sometimes we can read in the media that many young people [are worried about climate change/have climate anxiety/are concerned about the climate issue]. To what extent do you agree or disagree that politicians should take this into consideration when designing new climate policy?”. Please see the Supplementary material for the original (Norwegian) wording of each vignette (see Table A2).

After reading the vignette as part of their assigned experimental condition, the respondents rated the degree to which they agreed or disagreed with the statement on a scale ranging from 1 (*strongly agree*), 2 (*agree*), 3 (*somewhat agree*), 4 (*neither agree nor disagree*), 5 (*somewhat disagree*), 6 (*disagree*), to 7 (*strongly disagree*). The responses were reverse-coded so that higher numbers corresponded to higher levels of agreement; $n = 3$ respondents did not answer the question.

2.3. Open-ended question

To investigate what people associate with the term “climate anxiety,” we asked the following open-ended question: “What do you think of when you hear or read the term ‘climate anxiety’? Please write down the first thing that comes to mind. We want all types of answers, a couple of sentences, or just a few words if that suits you better.”⁶ The open-ended question was asked after the survey experiment.

After receiving the responses ($N = 1864$), we used content analysis (Bos & Tarnai, 1999) to gain descriptive insight into people’s associations with the term climate anxiety. Two of the authors read through a subset of the responses to develop a coding scheme that allowed to differentiate between positive, neutral, and negative associations. A total of six mutually exclusive categories were developed and included in the coding scheme: (1) mere descriptions, (2) climate anxiety is unfounded, (3) climate anxiety is justified, (4) climate anxiety as a problematic term, (5) don’t know, and (6) cannot be coded. Descriptions of

⁵ Round 26 was fielded in February and March 2023.

⁶ The original Norwegian wording for the open-ended question was: “Hva tenker du når du hører eller leser ordet « klimaangst»? Vennligst skriv ned det første du kommer på. Vi ønsker alle typer svar, gjerne et par setninger, eller bare noen få ord om det passer bedre for deg.”

each category and example responses can be seen in Section 3.2. The eventual coding of the responses was done by two research assistants who were not otherwise involved in the project. After the independent coding, the research assistants were asked to discuss all discrepancies among them (they initially disagreed on about 12% of the responses) until they could reach an agreement.

3. Results

3.1. Survey experiment

Means, standard deviations, and 95% confidence intervals (CI) for agreement with the proposition that young people’s climate distress be considered in climate policy, broken down by experimental conditions, can be seen in Table 1. All analyses were conducted in Stata 18 (Stata-Corp., 2023). Results from a one-way ANOVA supported that there was a significant difference between the three experimental conditions, $F(2, 2034) = 58.21, p < .0001$; partial $\eta^2 = 0.054$. Because Bartlett’s test showed unequal variances between the groups, we used Games-Howell for post-hoc tests (Games & Howell, 1976), which was run through the `-pwmc-` package in STATA (Klein, 2013).

The post-hoc tests revealed that there was more support for taking young people’s climate worry ($M = 5.46, SD = 1.59$) or climate concern ($M = 5.38, SD = 1.51$) into consideration when designing new climate policy as compared to climate anxiety ($M = 4.62, SD = 1.68$), $p < .0001$, 95% CI of mean difference [0.64, 1.06] for worry and $p < .0001$, 95% CI of mean difference [0.56, 0.96] for concern. There was no difference between young people being concerned or worried, $p = 0.546$, 95% CI of mean difference [-0.29, 0.11]. See Fig. 1 for an illustration of the results.

To investigate whether the negative effect of referring to climate anxiety was moderated by gender, age group, political orientation, or the respondent’s level of climate worry, we fitted a multiple linear regression. Climate anxiety was included as a dummy variable (0 = climate concern or climate worry, 1 = climate anxiety). Gender was a dummy variable (0 = male, 1 = female). The categorical variable for age group, political orientation (0 = left, 10 = right), and the respondents’ level of climate worry were treated as continuous variables. Age group was reverse-recoded so that lower values correspond to a more recent year of birth of the respondents (0 = 1990 or later, 1 = 1980–1989, 2 = 1970–1979, 3 = 1960–1969, 4 = 1950–1959, 5 = 1940–1949, 6 = 1939 or earlier).

With all the variables included in the model, we found no main effect of gender or age group, but a significant main effect of political orientation and self-reported level of climate worry (for a summary of these results, see Table A3). Specifically, those further left on the political spectrum and those reporting to be more worried about climate change themselves were more supportive of taking young people’s climate distress into account when designing new climate policies. The main effect of referring to climate anxiety, as compared to the other two experimental conditions referring to either climate worry or to climate concern, was also significant and negative.

With regards to the interactions with the experimental condition, we found no significant effects for gender and political orientation.

Table 1

Means, standard deviations and 95% confidence intervals for considering young People’s climate distress in climate policy development.

	<i>M</i>	<i>SD</i>	95% CI
Climate anxiety	4.62 ^a	1.68	[4.49, 4.74]
Climate worry	5.46 ^b	1.59	[5.34, 5.58]
Climate concern	5.38 ^b	1.51	[5.26, 5.49]
Total	5.15	1.64	[5.08, 5.22]

Note. $N = 2037$. Means with different subscripts within a column differ significantly at $p < 0.05$.

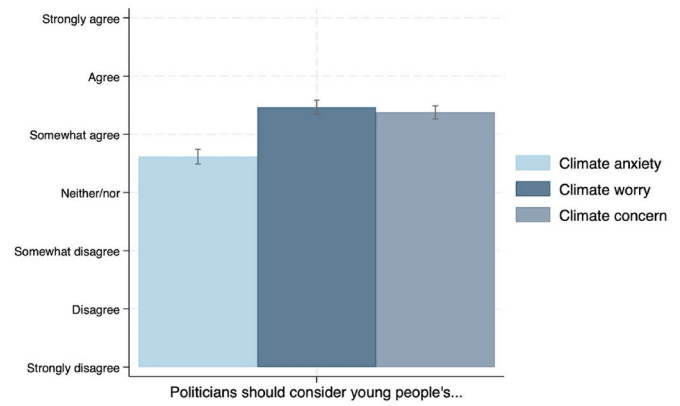


Fig. 1. Mean Support for Considering Young People’s Climate Anxiety vs. Climate Worry or Climate Concern.

However, the effect of referring to climate anxiety (vs. climate worry or climate concern) varied both with age group and with the self-reported level of climate worry. The interactions are illustrated using the categorical version of the variables (see Figs. 2 and 3). For the analysis, we used the `margins` option `dydx` to estimate the effect of referring to climate anxiety at the lowest, medium, and highest values of age group and self-reported worry. Compared to climate worry or climate concern, the effect of referring to climate anxiety was particularly negative among the youngest age group (see Fig. 2) and among those highly worried about climate change (see Fig. 3). While the youngest age group was the most negative towards taking young people’s climate anxiety into account, their support was still around the scale midpoint in this condition. Regarding self-reported worry, the difference between the experimental conditions was largest among respondents highly worried about climate change, but this group was still the most likely to think climate anxiety should be considered in climate policy.

The model explained 38% of the variance in the outcome, $R^2 = 0.38$, $F(9, 1734) = 119.96, p < .0001$. Looking at the standardized beta values (see Table A3), we see that the self-reported level of climate worry has the largest effect on the outcome.

3.2. Open-ended question

The categories, example responses, and frequencies for the open-ended question can be seen in Table 2. The average length of the responses was 13.84 words. When asked what they think of when they hear or read the term “climate anxiety,” most respondents (52%) either neutrally defined the term as a fear for, worry about, or anxiety related

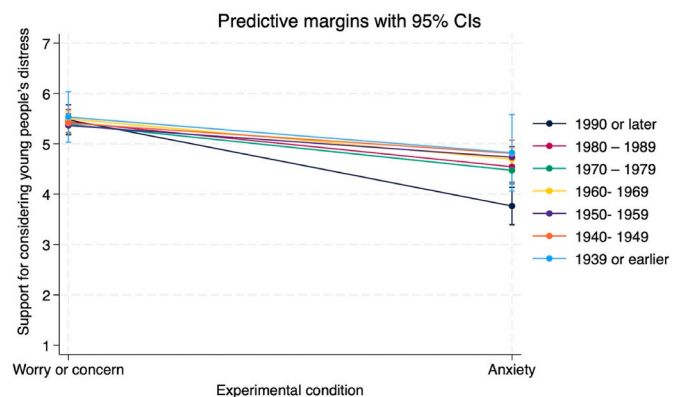


Fig. 2. Interaction Between Experimental Condition and Age Group. Note. The graph was created with the original (categorical) version of the age group variable.

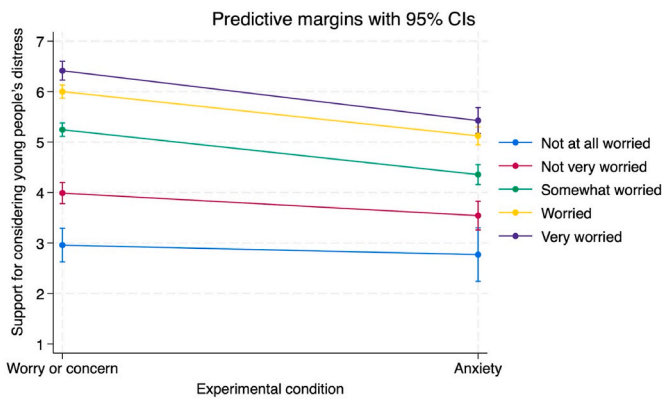


Fig. 3. Interaction Between Experimental Condition and Self-Reported Level of Climate Worry.

Note. The graph was created with the original (categorical) version of self-reported climate worry.

Table 2
Categories, example responses and frequencies for the free associations.

Category	Description	Example response	Frequency, n (%)
Mere descriptions	The answer <i>only</i> gives a neutral description of climate change (e.g., its causes or consequences) or of climate anxiety. The category includes mere definitions of anxiety or climate anxiety.	"Worry about global warming" "Fear of the future" "Natural disasters" "Extreme weather"	978 (52%)
Climate anxiety is unfounded	The answer indicates that climate anxiety is unnecessary, excessive, or irrational. The answers may point to climate anxiety as an individual problem (e.g., delusions) or a group problem (e.g., snowflake generation).	"Hysteria" "Hypersensitivity" "Excessive" "Unnecessary"	507 (27%)
Climate anxiety is justified	The answer emphasizes that it is understandable, rational, or reasonable to have climate anxiety.	"Rational" "Understandable" "Everyone should have it" "A logical response to the threats we face"	104 (6%)
Climate anxiety as a problematic term	The answer refers to problems with the use of the term. The category also contains answers that point to climate anxiety as a term constructed by specific groups (e.g., media, politicians, or climate skeptics).	"The word downplays justified concern" "Psychologizing a social problem" "Made up word to shift the focus away from the real problem" "A term created by the media"	103 (6%)
Don't know	The respondent is not familiar with the term.	"Don't know" "Nothing" "?" "Never heard of it"	40 (2%)
Cannot be coded	The answer does not fit into any of the other categories. The intention is unclear.	"Not me" "Greta Thunberg" "MDG" "That little Norway will solve the world's environmental problems"	132 (7%)

Note. The categories are mutually exclusive. N = 1864.

to climate change consequences (e.g., "Afraid of the future") or listed negative climate change consequences (e.g., "Major natural disasters such as droughts and floods"). Six percent of the respondents specifically answered that they think of climate anxiety as rational or understandable given the current situation (e.g., "Fear, but justified fear. Everything is going in the wrong direction").

About a third of the respondents reported negative associations. Some associated the term with something unnecessary, excessive, or irrational (27%) (e.g., "Crazy, and completely unnecessary", "Excessive fear of climate change"). Others (6%) directly criticized the use of the term for contributing to such negative associations (e.g., "a term used to talk down people who are genuinely afraid of climate change"). Only 2% of respondents answered that they were unfamiliar with the term, while 7% of the responses could not be coded in any of our categories (e.g., "MDG").

Looking at word frequency across all categories, we find that the word "anxiety" (angst) was mentioned 318 times. Other threat-related words were also frequently mentioned: "redd" [afraid] or "redsel" [horror] was mentioned 368 times, "frykt" [fear] 166 times, and "bekymr*" [worried] 118 times. Several respondents referred to the young ("ung*" is mentioned 124 times) or the future ("fremtid*" 208 times). Regarding climate change consequences, weather ("vær") was mentioned 171 times. Versions of the word hysteria (hysteri*) were mentioned 68 times and excessive (overdrev*) 70 times.

Next, we looked at potential differences in responses based on the respondents' gender and age group (see Table A4). Due to the differences in group size between these groups, with some being very small, one must be careful with drawing conclusions. The differences should be considered only as descriptive, but they might shed light on the results and help generate future hypotheses.

Those born in 1939 or earlier differed from all other age groups with regards to seeing climate anxiety as unfounded, with 42% of answers falling into this category, making it the largest category for the oldest age group (the category accounted for between 25% and 28% of the responses in all other age groups). For the other age groups, mere descriptions were the most frequent answer. Critiques towards climate anxiety as a term were somewhat more frequent in the younger age groups, at least compared to the three oldest age groups. The younger age groups were also somewhat more likely to refer to climate anxiety as justified.

With regards to gender differences, men more frequently than women referred to climate change as unfounded, but there was no notable difference with regards to seeing climate anxiety as justified nor with respect to criticizing the term. Women more often merely described the term. In contrast to the age groups, the group sizes for the gender categories considered in this study are highly similar, making them more comparable.

Next, we looked at the effect of political orientation, sorted into left-wing (0–3), center (4–6), and right-wing (7–10) (see Table A5). The category referring to climate anxiety as something unfounded was less frequent among those on the left wing (19%), compared to those in the center (25%) or right-wing (38%). They were also somewhat more likely to answer that climate anxiety is justified (9%) than those in the center (5%) or right-wing (3%). Mere descriptions were the most frequent response among all three groups, although somewhat less frequent among those identifying as right-wing.

Lastly, we looked at differences based on the self-reported level of worry about climate change (see Table A6). For this purpose, the level of climate worry was sorted into three groups: Low-worry (1 = not at all worried, 2 = not very worried), medium-worry (3 = somewhat worried), and high-worry (4 = worried, 5 = very worried). We found that the answers given by those with low levels of climate worry were more frequently sorted into the climate anxiety is unfounded-category (62%), especially when compared to the high-worry group (13%). While this category is the most frequent for the low-worry group, mere descriptions are most prevalent within the medium- and high-worry groups,

respectively.

4. Discussion

A survey experiment was used to investigate whether the degree to which people think politicians should consider young people's climate distress when designing climate policies depends on the term used to describe the distress. Our results showed a significant difference between referring to young people as having climate anxiety as compared to being worried or concerned about climate change. Specifically, people had a greater preference for taking young people's climate worry or concern, rather than their climate anxiety, into consideration in the policymaking process. One explanation could be that using the term "climate anxiety" shifts some people's attention from the political sphere (i.e., climate change as a risk that can be addressed through policy decisions) to the individual sphere (i.e., excessive threat reactions).

The term "climate anxiety" is typically used to describe young people's climate distress, and its rise in popularity coincides with the uprise of youth climate activism in 2018–2019 (see Figs. A1 and A2), demanding increased climate action. It should be noted that, overall, people are not opposed to accounting for young people's climate distress in the design of new climate policies – the means for all three conditions fall on the positive side of the response scale. Those highly worried about climate change themselves were the most supportive, independent of the experimental condition. At the same time, the reduction in support when referring to climate anxiety as compared to climate worry or climate concern was largest among those most worried. Thus, this group seems to differentiate between high levels of climate worry or climate concern on the one hand and climate anxiety on the other, which could reflect a separation between perceived reasonable risk perception and pathological or excessive reactions.

We also find young people to be particularly skeptical of the term. While the youngest age group was neither more nor less supportive of accounting for young people's worry or concern in climate policy development than older age groups, they reacted especially negatively when the text was referring to climate anxiety. Young adults generally report higher levels of negative emotions, including climate anxiety, related to climate change (e.g., Poortinga et al., 2023; Whitmarsh et al., 2022). At the same time, youth report feeling patronized, dismissed, discredited, and invalidated when sharing their emotional experiences with adults (Diffey et al., 2022; Hickman, 2020; Jones & Lucas, 2023). The negative reaction to the term among the youngest age group and among those highly worried could thus originate from a wish to distance themselves from the label. These groups may have experienced stigma associated with the term, like when being told that they are over-reacting, and therefore prefer to identify with other labels. Another explanation is that, even within these groups, most people do not relate to or identify with having "climate anxiety". The prevalence of strong climate emotions is relatively low among all age groups in Norway (Gregersen, 2022) and the "young people" the term climate anxiety is often used to describe are not a homogeneous group.

Based on our findings from the survey experiment, the term "climate anxiety" seems to be somewhat contested. This is supported by responses to the open-ended question, where 27% referred to climate anxiety as excessive, or irrational. Thus, parts of the public might think of climate anxiety, or people who experience climate anxiety, as problematic. Considering this, the lower mean score of our dependent variable in the climate anxiety condition makes sense – irrational or excessive states are likely not considered appropriate guides of climate policy development. As one person wrote: "Young people's exaggerated fear of the effects of climate change. Anxiety does not bring us forward but can cause panic and contribute to faulty decisions." A notable minority (6%) stress that the term is problematic, see it as a way of ridiculing young people's climate distress, and consider the use of the term a premeditated strategy. One of them wrote: "I think of 'gaslighting'

because when I hear 'climate anxiety' I get the impression that people use this to reduce the credibility of those who care a lot about climate and climate change, by reducing their concerns to only 'anxiety' as if it were a disease. Sounds a bit like trying to shift the focus away from climate change and instead direct it towards the people who are concerned about climate change, as if they are the problem".

It is hard to untangle people's motivations for negative responses to the open-ended question, as these might be based on their views on climate change or climate policies, not just the term "climate anxiety." Thus, associations such as "irrational" or "excessive" could reflect climate skepticism rather than skepticism toward the term climate anxiety itself. Although negative associations were found across groups, they were more frequent among men, older age groups, right-wing individuals, and those less worried about climate change themselves. It is possible that some individuals within these groups would report similar associations if asked what they think of when hearing or reading the terms "climate concern" or "climate worry". In some instances, the specific term used (climate worry, climate concern, or climate anxiety) might matter less because the level of support is low regardless. Previous research has illustrated that not everyone is susceptible to labeling and framing effects, particularly if they have strong prior opinions (see e.g., Benjamin, Por, & Budescu, 2016).

It is important to highlight that most respondents (52%) answered the open-ended question by merely describing climate anxiety (e.g., as concern for the negative impacts of climate change). Defining climate anxiety as distress about realistic outcomes, such as climate change leading to "increases in temperatures", "more extreme weather", "an uncertain future" or "poorer living conditions" indicates that these respondents consider climate anxiety to be somewhat rational or justified. Answers in the "mere descriptions" category have no clear negative connotations, no reference to irrational or exaggerated reactions and they do not indicate discontent with unnecessary pathologization of terms. Finally, 6% of respondents specifically emphasized that climate anxiety is justified and defended the state or the people who experience it with answers such as "Anxiety is normally an exaggerated fear, but climate change will lead to major changes that will affect young people throughout their lives". These answers imply an awareness of a polemic against the term but also show that some are pushing against this polemic.

Several researchers have highlighted that a focus on climate anxiety should not distract from political action. For example, Bhullar, Davis, Kumar, Nunn, and Rickwood (2022) argue that "care must be taken to not pathologise climate anxiety as a mental health disorder, because this conveys the wrong message that it is an individual's problem ..." (p. 1). Clayton (2020) further argues that focusing "on individual mental health should not distract attention from the societal response that is necessary to address climate change" (p. 1). Given that most of our respondents either defended the state of climate anxiety or neutrally defined it as concern about the negative impacts of climate change, there are likely few negative implications of using the term in media or research communication among most people in Norway. Still, our finding that referring to climate anxiety can reduce support for considering young people's climate distress in climate policy development, should initiate discussions and further research. If parts of the public see the term or state as stigmatizing, we should also be concerned about various forms of bias in surveys referring to the term, and whether some people who experience clinically relevant symptoms might avoid seeking help. In sum, we may need to reconsider not only the conceptualization of climate anxiety but the potential positive and negative repercussions of using the term itself.

4.1. Limitations and future research

There are some potential limitations of this study. Young people and their opinions are typically underrepresented in climate policy issues, also in Norway (Helliesen, 2023), and there are different views on the

degree to which certain groups *should* have an impact on political decisions (political representation and responsiveness; [Dovi, 2018](#)). Our survey experiment has no control condition that tells us whether the respondents think young people (and their concerns for the future) should influence policy development in general. Previous research has found that parts of the public view children and youth as “immature, ill-informed and irresponsible citizens-in-the-making, lacking the sufficient capabilities and competencies to engage in argumentation and make sound decisions” ([Andersen, 2023b](#), p. 6; see also [Andersen, 2023a](#)).

Further, in line with theories of emotion beliefs (cf. Section 1.2.; e.g., [Ford & Gross, 2019](#); [Kisley et al., 2024](#)), respondents likely hold different views on whether it is appropriate to let emotions influence climate policy. A reason for the difference between experimental conditions could be that “worry about climate change” and “being concerned about climate change” is understood as more cognitive and less emotional than “having climate anxiety”. In line with this, future research could investigate whether people think different groups (e.g., children, youth, seniors), and emotions (e.g., anxiety, worry, sadness, or anger) should influence various policy areas (e.g., climate, health, economy).

Although open-ended survey questions can be highly useful for getting insights into unprompted associations, they also have their limitations. The results and conclusions could have been different if the coding categories had not been mutually exclusive, or if sub-categories were added to further differentiate the responses. Further, merely describing climate anxiety in response to our open-ended question does not equal being indifferent regarding the use of the term. A next step could be to ask respondents more explicitly whether they consider climate anxiety justified or unjustified, and to what degree they support or oppose using the term in various contexts. It must be noted that this would not negate another caveat of self-reporting, namely that the obtained answers can only be assumed to reflect accurate thoughts and feelings to the extent that a person has a desire to disclose this information. Importantly, in some cases, personal gravitation towards climate skepticism could serve as a psychological strategy to cope with information that elicits emotions like fear and anxiety; people might then turn to conspiratorial narratives about climate change to restore psychological comfort ([Haltinner & Sarathchandra, 2018](#)).

The popular discourse and media reporting surrounding “climate anxiety” can play an important role in how the public perceives and reacts to the term. [Wells \(2010\)](#) refers to a clinical example of how a woman who had previously thought of her tendency to worry as an asset developed negative beliefs about worrying after having “read in a magazine that anxiety and stress could be harmful to the body and should be controlled” (p. 135). Related to this, future research could investigate potential (political) motivations for and implications of pushing the national discourse about climate distress into a certain connotation (see e.g., [Turner & Stets, 2006](#)). Currently, there is a lack of research studying how and when “climate anxiety” is discussed in different media, whom the term typically refers to, and how this may have changed over time.

Future research could also experimentally test how different media frames influence people’s beliefs about climate anxiety. Since different people can interpret and react very differently to the same type of information (e.g., [Bayes & Druckman, 2021](#)), it would be highly relevant to look at the differential effects of media frames across groups. This would inform how media reporting on climate distress could be tailored to different audiences, as it is unlikely that a single frame or term exists that communicates well to all.

The current study was conducted in Norway, using the Norwegian form of the term (klimaangst). This may have implications for the generalizability of our findings. First, some countries may not use terms such as “climate anxiety” or “eco-anxiety” at all, and people’s associations might differ even in countries where these terms are established. There are reports about a drastic increase in Google searches related to

“climate anxiety” (in several languages) from 2017 to 2023. These reports highlight that the Nordic countries have the highest search interest for the term (measured as relative popularity and adjusted to population sizes), especially compared to the Global South and Eastern Europe, where the search interest remains relatively low ([Gilder, 2023](#)). [Voşki, Wong-Parodi, and Ardoin \(2023\)](#) highlight that much of the research on eco-anxiety and climate anxiety has been conducted in WEIRD (Western, educated, industrialized, rich, and democratic) countries and flag several challenges with generalizing findings beyond these countries. These include linguistic variation and differences in emotion expression and regulation, amongst other things. In line with this, there have been calls to link research on climate emotions to the broader debate on the universality of emotions ([Schneider & van der Linden, 2023](#)).

Finally, how people understand and react to the term might also depend on how vulnerable they are to experiencing severe climate change impacts. The ND-GAIN Country Index ([Notre Dame Global Adaptation Initiative, 2021](#)), summarizing a combination of a country’s vulnerability and readiness for adaptation to climate change, puts Norway at the top of the 2021 ranking. Other WEIRD countries where climate anxiety has frequently been researched, such as the other Nordic countries (all ranked among the top 7), Germany (9th), the UK (10th), Australia (12th), Canada (14th), and the US (17th) all rank relatively highly. On the other hand, countries in South America, Africa, and Asia are the most vulnerable and least resilient. As emphasized by [Clayton \(2020\)](#): “The assessment of risk is somewhat subjective and the question of how much worry is appropriate or excessive in response to climate change will be affected by social interpretations” (p. 3). Thus, both our open-ended question and the survey experiment could yield other results in other contexts.

5. Conclusion

What the public associates with the term “climate anxiety” can have consequences for how they perceive and react to the people this term is used to describe. Although the support for considering young people’s climate distress when designing climate policy was relatively high across our experimental conditions, the term used to represent their distress did have a significant effect. Specifically, there was less support for young people having an impact on climate policy development if referred to as having climate anxiety as compared to being worried- or concerned about climate change. The negative effect of referring to climate anxiety, as compared to climate worry or concern, was particularly large among younger age groups and those experiencing higher levels of climate worry themselves.

Asking respondents what they think of when they hear or read the term “climate anxiety”, the majority merely described the state (e.g., as a fear for an uncertain future) or listed realistic impacts of climate change (e.g., more extreme weather). Six percent specifically referred to the state as rational or reasonable given the circumstances. Consequently, the risk of using the term in public communication is likely small among most people in Norway.

However, we also found that some audiences associated climate anxiety with something irrational, or excessive. Such negative associations were more frequent among men, the oldest age group, right-wing individuals, and those reporting a low level of climate worry. Due to the negative reaction from parts of the public, researchers and other relevant stakeholders should be conscious of the words they use to represent (young) people’s climate change distress. Uncritical use of ambiguous terms could in turn muddy the debate about climate change, and eventually, about how we should react to young people’s distress about their future.

Ethics statement

The Norwegian Citizen Panel deals with human subjects and follows the EU General Data Protection Regulation (GDPR). According to this,

the NCP has conducted a Data Protection Impact Assessment (DPIA), which is approved by the University of Bergen. The DPIA was conducted in cooperation with what is now named Sikt – Norwegian Agency for Shared Services in Education and Research. The DPIA number is 118868. Participants in the panel provided written informed consent. In addition, the Scientific Committee of the Norwegian Citizen Panel reviews all questions that are to be fielded in the NCP based on ethical issues, scientific issues, and on how the questions will impact the respondents. A separate IRB approval is not necessary in Norway, but the NCP data adhere to national and university-level ethical standards. Participants receive no payment for participating, but in each wave, there is a lottery where three people win a travel gift card valued at 8000 NOK.

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Data availability statement

Data from the Norwegian Citizen Panel (NCP) are available for use in research and education upon request from Sikt - Norwegian Agency for Shared Services in Education and Research. <https://surveybanken.sikt.no/en/series/ed271b1c-2595-47e4-8c97-3fcc00f02368>.

CRediT authorship contribution statement

Thea Gregersen: Writing – original draft, Visualization, Resources, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Rouven Doran:** Writing – review & editing, Methodology, Investigation, Formal analysis, Conceptualization. **Charles A. Ogunbode:** Writing – review & editing, Validation, Methodology. **Gisela Böhm:** Writing – review & editing, Validation, Resources, Methodology.

Declaration of competing interest

None.

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Appendix A. Supplementary data

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