

Research Paper

Climate Change Perception and Anxiety Level among Young Adults

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ABSTRACT

Objective: This study aimed to analyse the relationship between climate change perception and anxiety levels among young adults. It specifically assessed correlations in the overall sample and within subgroups by gender, while also exploring differences in perception and anxiety levels between males and females. **Method:** A quantitative cross-sectional design was employed with a sample of 116 adults. Climate change perception was measured using the Climate Change Perception Questionnaire developed by Himalaya Tiwari and Balbinder Singh. Anxiety levels were assessed using the Hamilton Anxiety Rating Scale, as described in the British Journal of Medical Psychology. Data analysis methods included the use of correlation coefficients to evaluate the relationship between climate change perception and anxiety levels, and independent samples *t*-tests to explore gender differences. **Findings:** A weak positive correlation was observed between climate change perception and anxiety levels among young adults. Gender-specific analysis showed a weak negative correlation between these variables among males, while a weak positive correlation was observed among females. No significant differences were found in climate change perception scores between males and females, nor were there significant gender differences in anxiety levels. These findings suggest that young adults' perception of climate change is not associated with anxiety, and gender does not significantly influence these variables.

Keywords: Climate Change Perception, Anxiety Level, Gender Differences, Psychological Impact, Correlation, Adults, Environmental Anxiety, Mental Health

Climate change refers to long-term shifts in the general atmospheric conditions that not only affect the local, geopolitical, and universal weather conditions of Earth but also human health, including mental health and well-being. It has been observed since the mid-20th century and can be natural and human-activated. Natural causes include the marine cycle, volcanic activity, fluctuation in Earth's orbit, and the sun's energy. Human practices cause fossil fuel burning, deforestation, industrial emissions, and interference with the natural processes. There are many vital signs of climate change already present in the

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environment, like increasing temperature on land and ocean, rising sea level, ice melting at the earth poles and in mountains, leading to heatwaves, wildfires, lack of rain, and floods. (*What Is Climate Change?* - NASA Science, n.d.)

Perception is the process of sensory experience changed into systematic information in humans. That perception is the combined output of the arousal and the process itself. Climate change perception can be understood through how people notice and understand climate change as a threat or a natural process. (Carbon, 2014) Climate Change significantly impacts mental health and is one of the major causes of anxiety which decreases the level of human well-being. (Meo et al., 2025)

Anxiety is an anticipatory mood state correlated with the formulation of a potential upcoming negative occurrence. Sometimes, an optimum level of anxiety is good for an individual because it improves performance but most of the time it leads to unnecessary fear and worries for the future. (Craske et al., 2011)

Young adults are mentally, physically and emotionally affected by climate change and feel anxious about environmental changes. While several studies show positive relationship between climate change perception and anxiety but research does not consistently show a strong link between climate change perception and anxiety levels. Lawrence et al. (2022) found that while some climate-related concerns were tied to distress but other measures of climate perception did not relate to anxiety at all. In another study, when the Hogg Eco-Anxiety Scale was tested in non-Western settings some parts of eco-anxiety showed no connection with climate change perception (Ali et al., 2024). There are some Community surveys which indicate that people with more neutral views of climate change did not necessarily feel more or less anxious. Similarly, research in the British Journal of Health Psychology showed that climate-specific worry does not always relate with general anxiety or everyday behaviours.

In addition to research on gender differences has shown mixed results. A meta-analysis by Metin et al. (2022) on COVID-19 related fear and anxiety showed mixed results, with several included studies reporting no significant gender differences. Similarly, Tsukamoto et al. (2021) found that although women initially get higher anxiety during early hospitalization for COVID-19 but by follow-up there was no significant difference between the genders. Similarly, Seens et al. (2021) observed no significant difference between males and females in the change in anxiety scores over time. In a neurocognitive study Strand et al. (2021) found no gender-based differences in anxiety-related electrophysiological markers.

Same findings have comes in the context of climate change perception. McKinley et al. (2016) reported no gender imbalance in climate change awareness and understanding among rice farmers in Vietnam. Similarly, Jamal et al. (2021) found no significant difference between male and female farmers' perceptions of climate variability. In Ghana, Acheampong et al. (2023) observed that although 95% of respondents acknowledged temperature increases, there were no gender-based differences in perceptions of this change. Same results given by UNDP Global Report (Fruttero et al., 2023) that gender gaps in climate change perception are context dependent and not consistently observed across regions.

Taken together these studies suggest that neither climate change perception nor anxiety is universally linked to gender differences. The relationship between climate perception and

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anxiety is influenced by cultural context, individual background and measurement tools rather than gender alone. Thus, young adults' experiences of climate anxiety appear to be shaped more by personal and environmental contexts than by demographic factors.

Hypothesis

- **H₁.** There would be a weak positive relationship between the climate change perception and anxiety level among young adults.
- **H₂.** There would be a weak negative relationship between the climate change perception and anxiety level among Males.
- **H₃.** There would be a weak positive relationship between the climate change perception and anxiety level among females.
- **H₄.** There would be no significant difference in climate change perception between males and females.
- **H₅.** There would be no significant difference in anxiety level between males and females.

Objectives

1. To study the relationship between climate change perception and anxiety level among young adults.
2. To study the relationship between climate change perception and anxiety level among Males.
3. To study the relationship between climate change perception and anxiety level among females.
4. To study the difference in climate change perception between males and females.
5. To study the difference in anxiety level between males and females

Sampling

A total of 120 participants aged 18-35 years completed the survey and 4 participants were excluded from the study due to incomplete responses. To ensure ethical conduct, participants were informed about the purpose of the survey, confidentiality and voluntary participation. Convenience sampling was used; incomplete and inconsistent responses were excluded. Reverse scoring was applied where necessary and composite scores were computed as per scale guidelines.

Research Design

A cross-sectional survey research design was used to conduct study.

Data Analysis

Descriptive analyses such as mean and standard deviation, were used.

Inferential statistics such as Pearson product-moment correlation were employed to examine the relationship between climate change perception and anxiety level and t test used for finding the difference between both genders on climate change perception and anxiety level with the use of MS excel.

Variables

Independent Variable

- Climate Change Perception

Dependent Variables

- Anxiety Level

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Tools

1. **Climate Change Perception Questionnaire Revised (CCPQ-R):** CCPQ-R is developed by Himalaya Tiwari and Balbinder Singh. The CCPQ-R consisted of 40 items and has 5 point scale. Out of these 14 items scored as 0- 4 from strongly agree to strongly disagree and rest of the 26 items has reverse scoring. Respondent were asked to answer each item by their extent of agreement on 5 point scale.
2. **Hamilton Anxiety Rating Scale (HAM-A):** HAM-A was developed by Br J Med Psychol and consists total 14 items at 5 point rating scale. Items scored as 0-4 from symptoms are not present to severe symptoms. Respondent were asked to answer according to magnitude of their symptoms.

Procedure

The study conducted a cross-sectional survey design to understand the correlation between climate change perception and anxiety levels among young adults of Hemvati Nandan Bahuguna Garhwal University, from undergraduate to Ph. D. students. Data were collected through a structured Google form that included demographic details, items on climate change perception, and anxiety.

Data collection

Table no. 1- Correlation between climate change perception and anxiety level

Subjects	N	r	p-value	Interpretation
Overall	116	0.024	> .05	H ₀ 1. Accepted, not significant, Weak positive relationship
Male	50	-0.055	> .05	H ₀ 2. Accepted, not significant, Weak negative relationship
Female	66	0.078	> .05	H ₀ 3. Accepted, not significant, Weak positive relationship

- The correlation between climate change perception and anxiety levels among all the participants (N=116) revealed a very weak positive correlation at 0.024.
- The correlation between climate change perception and anxiety levels among male participants (N = 50) revealed a very weak negative correlation, at -0.055.
- The correlation between climate change perception and anxiety levels among female participants (N = 66). The results showed a very weak positive correlation, at 0.078.
- These results indicate that there is no significant relationship between climate change perception and anxiety level.

Table no. 2 Mean, S.D & t value of Male and female on climate change perception

Subjects	N	Mean	Std. Deviation	t (df=114)	p value
Male	50	94.12	6.58	0.64	0.26
Female	66	93.8	8.68		

The independent samples t-test for climate change perception revealed no significant difference between males (M = 94.12, SD = 6.58, N = 50) and females (M = 93.8, SD = 8.68, N = 66), with $t(114) = 0.64$, $p = 0.26$. This indicates that males and females did not differ significantly on climate change perception.

Table no. 3- Mean, S.D & t value of Male and female on anxiety level

Subjects	N	Mean	Std. Deviation	t (df=114)	p value
Male	50	13.56	10.56	-0.44	0.33
Female	66	14.38	9.32		

The independent samples t-test for anxiety levels revealed no significant difference between males ($M = 13.56$, $SD = 10.76$, $N = 50$) and females ($M = 14.38$, $SD = 9.32$, $N = 66$), with $t(114) = -0.44$, $p = .33$. This indicates that males and females did not differ significantly in their reported levels of anxiety.

CONCLUSION

The study conclude that climate change perception does not predict the anxiety level among young adults. There is no meaningful gender differences found in climate change perception and anxiety level. Findings reveals that any emotional response towards climate change are determine by personal, psychological social and cultural factors rather than the perception alone. Anxiety is context-dependent and not consistent for all individuals. Overall, the study highlights the role of context, coping, and resilience in understanding climate-related anxiety.

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Conflict of Interest

The author(s) declared no conflict of interest.

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