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ORIGINAL ARTICLE

Medicine Science International Medical Journal

Medicine Science 2026;15(3):1097-105

The emotional burden of climate awareness: Climate anxiety as a pathway to health anxiety

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Received 31 December 2025; Accepted 01 April 2026
Available online 21 July 2026 with doi: 10.5455/medscience.2025.12.362

Abstract

This study examined the relationships among climate change awareness, climate change anxiety, health anxiety, and sustainable behaviors, and investigated the mediating role of climate change anxiety in these relationships. Using a quantitative correlational design, data were collected through an online survey from 352 participants aged 18–35 living in Turkey (56.3% female, 42.9% male). Participants completed validated scales measuring climate change awareness, climate change anxiety, health anxiety, and sustainable consumption behaviors. Spearman's rho correlations revealed weak but significant positive associations between climate change awareness and climate change anxiety ($\rho = .298$, $p < .001$) and between climate change anxiety and health anxiety ($\rho = .271$, $p < .001$). However, climate change awareness was not significantly associated with health anxiety ($\rho = .063$, $p = .235$), nor were climate change anxiety ($\rho = .035$, $p = .513$) or health anxiety ($\rho = .003$, $p = .955$) related to sustainable behaviors. Mediation analysis indicated that climate change awareness did not directly predict health anxiety ($\beta = .003$, $p = .936$), but it significantly predicted climate change anxiety ($\beta = .32$, $p < .001$), which in turn predicted health anxiety ($\beta = .16$, $p < .001$). The indirect effect was significant ($\beta = .052$, 95% CI [.029, .079]), indicating a full mediating role of climate change anxiety. In contrast, climate change anxiety did not mediate the relationship between climate change awareness and sustainable behaviors ($\beta = –.05$, $p = .17$; indirect effect $\beta = .019$, 95% CI [−.044, .005]). These findings suggest that climate change awareness has both informative and emotionally burdensome qualities. While increased awareness may elevate psychological distress through climate anxiety, the transition to sustainable behaviors does not appear to occur solely through anxiety.

Keywords: Climate change, eco-anxiety, mental health, sustainability, health anxiety

Introduction

Human-induced climate change represents one of the most pressing global threats of the 21st century, with profound ecological, social, and psychological consequences [1]. Beyond biodiversity loss, sea-level rise, and extreme weather events, climate change is increasingly recognized as a driver of adverse mental health outcomes, including depression, post-traumatic stress, and complicated grief [2]. Vulnerability to the psychological impacts of climate change is not uniform and may vary across different population groups, although young people are frequently identified as particularly at risk. Within this context, climate change anxiety has gained increasing attention in psychological research as a response to the uncertainty and perceived risks associated with climate change [3].

Climate change anxiety encompasses cognitive, emotional, and behavioral manifestations, ranging from worry and sleep disturbances to impaired concentration and functional disruption [4]. Climate change has increasingly been recognized not only as an environmental crisis but also as a potential psychological stressor. A growing body of research has examined the relationship between climate change–related distress, often conceptualized as eco-anxiety, and broader mental health outcomes. In particular, most correlational studies found significant positive relationships between eco-anxiety and clinical anxiety symptoms, although the strength of these associations varied depending on the measurement tools used and study characteristics. Overall, these

CITATION
Cokluk E, Ildirim E. The emotional burden of climate awareness: Climate anxiety as a pathway to health anxiety. Med Science. 2026;15(3):1097-105.

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DOI: 10.5455/medscience.2025.12.362

findings suggest that climate-related anxiety is frequently linked to general anxiety symptoms and broader psychological burden. However, while the relationship between eco-anxiety and general anxiety symptoms has been examined in a relatively large number of studies, research exploring its association with more specific anxiety constructs—such as health anxiety—remains limited. Consequently, there is still insufficient empirical evidence clarifying whether concerns about climate change extend beyond general psychological distress to influence individuals' perceptions and worries about their own health [5].

While such anxiety may be distressing, scholars argue that moderate levels can serve adaptive functions by heightening environmental awareness and motivating sustainable action [6]. Conversely, excessive anxiety may foster ecological paralysis, a state of hopelessness, apathy, or avoidance that inhibits constructive responses [7]. This dual role positions climate change anxiety as both a psychological burden and a potential catalyst for pro-environmental engagement. Findings from recent research suggest that the relationship between climate anxiety and pro-environmental behavior is not linear. Moderate levels of climate anxiety may function as a motivational force that encourages individuals to engage in environmentally responsible behaviors, whereas very high levels of climate anxiety may become psychologically overwhelming, leading to avoidance, disengagement, or reduced behavioral intentions. In other words, while a certain degree of concern about climate change can stimulate constructive action, excessive anxiety may increase feelings of helplessness and uncertainty, thereby undermining individuals' willingness or capacity to respond proactively. This pattern highlights the dual role of climate anxiety as both a potential motivator for climate action and, when experienced at extreme levels, a psychological barrier that may inhibit adaptive responses to the climate crisis [8-10].

Studies highlight that emotions and risk perceptions are as influential as rational evaluations in driving sustainable choices, underscoring the need for integrated approaches [11]. Despite these findings, important gaps remain. Few studies simultaneously examine the interplay between climate change awareness, climate change anxiety, health anxiety, and sustainable behavior, or test the mediating role of climate anxiety within these relationships. Addressing this gap is essential to clarify when climate anxiety acts as a constructive motivator and when it undermines adaptive responses.

The present study therefore investigates (i) the effects of climate change awareness on climate change anxiety, health anxiety, and sustainable behavior, and (ii) the mediating role of climate change anxiety in these pathways.

Literature Review

Climate change awareness

Increasing global concern regarding to climate change has elevated public awareness, not only of environmental and economic impacts but also of the psychological consequences [5]. Climate change awareness reflects individuals' and societies' ability to understand climate impacts, adapt effectively, and support global and local policy responses [12]. While increased awareness may foster resilience and proactive adaptation, it can also heighten anxiety, stress, and pessimism about the future [13]. Research suggests that individuals with high climate change awareness often report higher levels of climate-related anxiety [14], illustrating a paradoxical dynamic: knowledge empowers adaptation but also amplifies emotional burden [15].

The relationship between climate change knowledge and climate change anxiety (CCA) remains ambiguous. Some studies indicate that increased knowledge, such as among climate scientists or students exposed to climate-focused coursework, is linked to higher anxiety [16], Conversely, despite relatively low levels of climate literacy, young people often report high levels of concern and distress [17], While some evidence suggests that greater awareness intensifies worry or even leads to paralyzing eco-anxiety [18], other findings report an inverse relationship, with higher climate-specific knowledge associated with reduced anxiety [19]. Given these mixed outcomes, the role of knowledge in shaping CCA remains unclear, warranting further examination

Climate change anxiety

Climate change poses not only ecological and physical health risks but also significant challenges to psychological well-being. Research indicates that both acute events (e.g., floods, hurricanes, wildfires) and gradual stressors (e.g., rising temperatures, migration pressures, loss of biodiversity) can trigger heightened anxiety, depression, and trauma-related symptoms [20]. Increasingly, scholars have recognized climate anxiety—persistent worry and distress about climate change—even among individuals who have not directly experienced climate-related disasters [3]. This form of anxiety reflects existential concerns, uncertainty about the future, and grief for environmental loss [7].

Recent studies have increasingly focused on the psychological mechanisms and behavioral consequences associated with climate change anxiety. Although anxiety is often conceptualized as a maladaptive emotional response, some scholars suggest that climate-related worry may also function as an adaptive emotional signal that motivates individuals to engage in pro-environmental and sustainable behaviors [21]. From this perspective, anxiety about environmental threats may increase individuals' awareness of climate risks and encourage behavioral engagement aimed at mitigating these threats. Empirical research supports this view, indicating that climate change anxiety is positively associated with climate action and pro-environmental behavior in several contexts [22]. However, the strength and direction of these relationships are not entirely consistent across studies, with some findings suggesting that excessive anxiety may also lead to feelings of helplessness or inaction. This dual nature highlights the complex role of climate-related anxiety, which may simultaneously contribute to psychological strain while also

DOI: 10.5455/medscience.2025.12.362

motivating behavioral engagement with environmental issues. Thus, climate anxiety represents both a mental health challenge and a potential catalyst for pro-environmental action. Its impacts are moderated by social context, resilience, and coping strategies, underscoring the importance of distinguishing between adaptive engagement and maladaptive eco-paralysis [23].

Health anxiety in the context of climate change

Health anxiety involves excessive worry about having or developing a serious illness, often triggered by misinterpreting minor physical symptoms [24]. Climate change, increasingly framed as a global health threat, may exacerbate such anxieties by intensifying concerns about physical vulnerability to hazards like heatwaves, air pollution, or infectious disease spread [20] Individuals exposed to climate-related hazards frequently report heightened health-related worries, underscoring the overlap between environmental threats and personal well-being [25].

Individuals' anxiety regarding their health may also extend toward environmental threats and manifest as environmental or climate-related anxiety. Clayton and colleagues [26] reported that individuals who experience problems resulting from climate change tend to exhibit higher levels of health-related concerns. Similarly, Fritze and colleagues [27] suggested that perceiving climate change as a global threat may intensify concerns about the future, including physical, social, economic, and health-related anxieties.

Within this context, climate change worry has been proposed as a key mechanism linking knowledge, prior experiences, and broader anxiety symptoms to CCA. Research consistently shows a positive relation between climate knowledge and environmental concern, with studies in Switzerland demonstrating that knowledge about climate causes and consequences significantly predicted climate concern [28].

Sustainable behaviors

Unsustainable consumption patterns and the pace of rapid development have significantly intensified ecological crises across the globe. In response to these challenges, the concept of sustainability emerged as a guiding principle, most notably defined in the Brundtland Report as the capacity to meet present needs without compromising the ability of future generations to meet their own [29]. Over time, this principle has been translated into concrete practices that operate on multiple levels of society. At the individual level, sustainable behaviors include everyday actions such as recycling, reducing unnecessary energy consumption, and purchasing environmentally friendly products [30].

Importantly, recent research suggests that emotional responses to climate change, particularly climate change anxiety, may play a role in encouraging sustainable action. Although often conceptualized as a negative psychological outcome, climate change anxiety has been positively associated with sustainable consumption and sustainable food-related behaviors [30,10]. For instance, a recent systematic review synthesizing 35 empirical studies found that eco-anxiety is consistently associated with psychological responses to climate change and represents a growing area of research in environmental mental health [5]. Complementing this evidence, a narrative review focusing specifically on sustainable consumption identified 12 empirical studies examining the relationship between eco-anxiety and sustainable consumer behavior, many of which reported that climate-related worry can encourage environmentally responsible choices such as reduced consumption or dietary changes . Together, these findings suggest that climate anxiety may act as a psychological driver of sustainable behavior, although its effects may depend on moderating factors such as self-efficacy and the intensity of emotional responses [31].

Present study

Climate change, driven largely by human activities, continues to intensify [20]. As the impacts of climate change become increasingly visible, climate change anxiety—often referred to as eco-anxiety—has also risen [3]. Climate change–related phenomena, including rising temperatures and extreme weather events, have been shown to affect individuals' psychological well-being, particularly among younger populations, contributing to environmental anxiety and, in some cases, increasing vulnerability to mental health problems such as suicidal ideation [32].

From a psychological perspective, increased awareness of climate change may heighten individuals' perception of a global and existential threat. Perceiving climate change as an ongoing and uncontrollable threat can activate chronic anticipatory anxiety about future environmental conditions. Over time, this persistent sensitivity to environmental threats may extend beyond environmental concerns and contribute to heightened health-related worries, thereby increasing vulnerability to health anxiety [33]. In this sense, climate change anxiety may function as a psychological pathway through which broader environmental awareness translates into individual health-related concerns.

At the same time, climate change anxiety may influence behavioral responses. Some studies suggest that individuals who experience higher levels of climate change anxiety are more likely to engage in pro-environmental or sustainable behaviors [34]. However, psychological theories of risk perception and behavior change indicate that anxiety alone may not necessarily lead to behavioral action unless individuals also perceive sufficient efficacy, agency, or control over the problem. Consequently, the relationship between climate change anxiety and sustainable behaviors remains complex and empirically understudied.

Therefore, understanding the psychological consequences of climate change awareness requires examining its associations with both different forms of anxiety and behavioral responses such as sustainability-oriented actions. Accordingly, the present study aims to examine the effects of climate change awareness on climate change anxiety, health anxiety, and sustainable behaviors. Although previous research has documented associations between climate change awareness and psychological distress,

DOI: 10.5455/medscience.2025.12.362

the mechanisms through which awareness influences different forms of anxiety and behavioral outcomes remain insufficiently understood. Building on existing theoretical perspectives and empirical findings, the present study investigates the mediating role of climate change anxiety in these relationships. Specifically, it is hypothesized that climate change anxiety mediates the relationship between climate change awareness and health anxiety, as well as the relationship between climate change awareness and sustainable behaviors.

Material and Methods

Research Design

The study employed a correlational, quantitative design to examine the relationships among climate change awareness, climate change anxiety, health anxiety, and sustainable behaviors. Data collection was conducted through Google Forms. The survey required approximately 5–10 minutes to complete and included demographic questions, the study scales, and an electronic informed consent form. Statistical analyses (correlation, regression, and mediation) were conducted to test the hypothesized associations.

Participants and Sampling

The target population comprised adults aged 18–35 living in Turkey. The age group was specifically selected because emerging adulthood is a period characterized by identity formation, career development, and heightened social and environmental awareness. Due to time and accessibility constraints, convenience sampling was used. Recruitment was conducted through social media platforms (Facebook, Instagram, X), online research groups, and announcement channels. Participation was voluntary, and informed consent was obtained electronically.

The required sample size was determined through an a priori power analysis conducted using G*Power 3.1. The analysis specified a statistical power of 95% (1-ß = .95), a significance level of 5% (α = .05), and a small effect size (f^2 = .05). Results indicated that a minimum of 385 participants was needed to obtain valid and reliable results.

Data were collected from 405 individuals. Five participants who did not provide informed consent were excluded from the dataset. Additionally, 20 participants outside the targeted age range of 18–35 years were removed. Normality tests and boxplot analyses identified 28 further cases as outliers due to violations of normal distribution. The final analytic sample therefore consisted of 352 participants.

A post hoc power analysis was also conducted to evaluate whether the final sample size was sufficient. With N = 352, α = .05, and f^2 = .05, the achieved statistical power was calculated at approximately 93%, indicating that the study retained adequate power to detect small effects.

The final sample consisted of 352 participants aged between 18 and 35 years. The majority were female (56.3%), followed by males (42.9%), with a small proportion preferring not to disclose their gender (0.9%). In terms of age distribution, 55.7% were between 18–25 years, while 44.3% were between 26–35 years. Descriptive statistics related to the sample are presented in Table 1.

Table 1. Frequency and percentage distributions of participants' sociodemographic characteristics

Variable	Group	n	%
Gender	Female	198	56.3
	Male	151	42.9
	Prefer not to say	3	0.9
Age	18–25	196	55.7
	26–35	156	44.3
Marital status	Single	197	56.0
	In a relationship	61	17.3
	Married	90	25.6
	Divorced	3	0.9
	Widowed	1	0.3
Place of residence	Rural area	19	5.4
	Town/District	58	16.5
	City center	275	78.1
Education level	Primary school	2	0.6
	Middle school	4	1.1
	High school	49	13.9
	Bachelor's degree	241	68.5
	Master's degree	46	13.1
	Doctorate	10	2.8
Occupation	Blue-collar worker	11	3.1
	White-collar worker	49	13.9
	Self-employed	49	13.9
	Public employee	24	6.8
	Manager	14	4.0
	Entrepreneur	13	3.7
	Homemaker	21	6.0
	Student	163	46.3
	Unemployed	8	2.3
Monthly income	0–20,000 TL	81	23.0
	20,001–40,000 TL	63	17.9
	40,001–60,000 TL	85	24.1
	60,001–80,000 TL	50	14.2
	80,001–100,000 TL	41	11.6
	100,000 TL and above	32	9.1
Perceived income level	Very low	19	5.4
	Low	63	17.9
	Moderate	209	59.4
	High	56	15.9
	Very high	5	1.4

DOI: 10.5455/medscience.2025.12.362

Measures

Climate Change Awareness Scale (CCAS)

Climate change awareness was assessed with the 21-item CCAS, originally developed by Halady and Rao and adapted into Turkish by Deniz, and colleagues in 2021 [35]. The scale employs a 5-point Likert response format (1 = strongly disagree to 5 = strongly agree) and consists of four subdimensions: Impacts on Natural and Human Environment, Global Organizations and Agreements, Causes of Climate Change, and Energy Consumption. Scores range from 21 to 105, with higher values reflecting greater awareness. In the Turkish validation study, the scale demonstrated good reliability (α = .83 for the total scale), with subscale reliabilities between .73 and .88, and confirmatory factor analyses supported adequate model fit indices. For this study Cronbach's α was found to be .847.

Climate Change Anxiety Scale (CCASx)

Participants' anxiety regarding climate change was measured using the 13-item CCASx developed by Clayton and Karazsia (2020). While the original instrument comprised two subdimensions (cognitive impairment and functional impairment), the Turkish adaptation by Cebeci et al. (2022) [36] revealed a unidimensional structure. Items are rated on a 5-point Likert scale (1 = never to 5 = almost always), yielding total scores between 13 and 65. Higher scores indicate greater climate change–related anxiety. The Turkish version demonstrated excellent internal consistency (α = .95) and satisfactory construct validity with acceptable model fit indices. For this study Cronbach's α was found to be .955.

Health Anxiety Inventory (HAI)

Health-related anxiety was assessed using the 18-item HAI, developed by Salkovskis and collagues and adapted into Turkish by Aydemir and colleagues in 2012 [37]. The scale consists of two factors: Body-related Concerns and Negative Consequences of Illness. Items are rated on a 4-point Likert scale (0–3), with higher scores indicating greater health anxiety. Possible scores range from 0 to 54. In the Turkish adaptation, the two-factor structure was retained and the overall internal consistency was high (α = .92), with confirmatory factor analysis supporting the factor structure. For this study Cronbach's α was found to be .863.

Sustainable Consumption Behavior Scale (SCBS)

Sustainable behaviors were measured with the 17-item SCBS, developed by Doğan and colleagues [38]. The scale uses a 5-point Likert response format (1 = never to 5 = always) and encompasses four subdimensions: Environmental Sensitivity, Non-essential Purchasing, Saving, and Reusability. Scores range from 17 to 85, with higher scores indicating stronger sustainable consumption behaviors. Internal consistency was good (α = .83 overall; subscales ranged from .72 to .77), and model fit indices indicated acceptable construct validity. For this study Cronbach's α was found to be .815.

Ethical Considerations

This study was conducted in accordance with internationally recognized ethical principles for research involving human-related data and received ethical approval from the İstinye University Human Research Ethics Committee (İstinye Üniversitesi İnsan Araştırmaları Etik Kurulu) at its meeting dated 22.11.2024 (Meeting No: 2024/10, Protocol No: 24-258). Electronic informed consent was obtained from all participants prior to their inclusion in the study. Participation was voluntary, and participants were informed about the purpose of the research, the nature of the procedures, their right to withdraw at any time without penalty, and the confidentiality of their data. All data were collected and stored in anonymized form, and no identifying information was retained.

Results

Skewness and kurtosis values for each scale, and descriptive statistics for the Climate Change Awareness Scale, Climate Change Anxiety Scale, Health Anxiety Inventory, and Sustainable Consumption Behavior Scale scores are presented in Table 2.

Table 2. Descriptive statistics and normality values for the study variables

Scale	N	Mean	SD	Skewness	Kurtosis
Climate change awareness	352	3.11	0.64	-0.001	0.26
Climate change anxiety	352	1.65	0.77	0.09	-0.12
Health anxiety	352	0.94	0.44	0.20	-0.14
Sustainable behaviors	352	3.26	0.62	0.06	0.10

N: number of participants; SD: standard deviation

Spearman's rho correlation analyses were conducted due to non-normal distributions in the variables. The results showed a weak but statistically significant positive correlation between climate change awareness and climate change anxiety ($\rho = .298$, $p < .001$), as well as between climate change anxiety and health anxiety ($\rho = .271$, $p < .001$). In contrast, no significant relationships were found between climate change awareness and health anxiety ($\rho = .063$, $p = .235$), climate change anxiety and sustainable behaviors ($\rho = .035$, $p = .513$), or health anxiety and sustainable behaviors ($\rho = .003$, $p = .955$) (Table 3).

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Table 3. Between variable analysis: Spearman's rho correlation results

Variable	1	2	3	4
(1) Awareness of climate change	1			
(2) Climate change anxiety	.298**	1		
(3) Health anxiety	.063	.271**	1	
(4) Sustaniable behaviors	.320**	.035	.003	1

* N = 352. p** < .01.

The conducted multiple linear regression analysis model to analyze the predictive effect of climate change anxiety, health anxiety and sustainable behaviors on climate change awareness was found to be statistically meaningful F(3, 348) = 24.65, p < .001. Independent variables, indicate 17.5% of climate change awareness. According to output, the climate change anxiety (ß=.256, p<.001) and sustainable behaviors (ß=.327, p<.001) predicts the climate change awareness positively and significantly. But, health anxiety is not a significant predictor of climate change awareness (ß=-.003, p= .958) (Table 4).

Table 4. Multiple linear regression analysis results on the predictive effect of climate change anxiety, health anxiety and sustainable behaviors on climate change awareness

Variable	B	Std. Error	ß	t	P
Fixed	1.673	.184		9.109	.001**
Climate change anxiety	.211	.042	.256	5.034	.001**
Health anxiety	-.004	.074	-.003	-.053	.958
Sustainable behaviors	.336	.050	.327	6.707	.001**

** p < .001, R =.419; R^2 =.175; Adj. R^2 = .168; F (3.348) = 24.654, p < .001

PROCESS Modal 4 analysis was performed to analyze the mediation effect between independent variables. According to mediation results, climate change awarness has no direct effect on health anxiety (β = .003, p = .936). climate change awareness predict climate change anxiety (β = .32, p < .001); climate change anxiety predict health anxiety (β = .16, p < .001) in a statistically significant way. The climate change awareness has no direct effect on health anxiety (β = .003, p = .936). The indirect effect is statistically significant (β = .052, 95% GA [.029, .079]) (Table 5). As a results, climate change anxiety has a full mediating role in this model (Figure 1).

To analyze the mediation effect between the independent variables PROCESS Model 4 analysis was conducted. Climate change awareness predicts climate change anxiety (β = .32, p < .001) in a statistically significant way. However, climate change anxiety does not predict sustainable behavior (β= –.05, p=.17). Furthermore, climate change awareness directly affects health anxiety. (β = .34, p < .001) Confidence interval in bootstrap analysis includes a value of 0 (ß = .019, 95% GA [-.044, .005]) (Table 6). This model was not statistically meaningful. As a result, climate change anxiety does not have a mediating role in this model, the climate change awareness directly has effect on sustainable behaviors (Figure 2).

Table 5. Mediator analysis results to examine the mediating role of climate change anxiety (PROCESS Model 4)

Effect	B	SE	t	95% GA Bottom	95% GA Up	p
X → M (Awareness → Climate Change Anxiety)	.32	.06	5.08	.19	.44	<.001
M → Y (Climate Change Anxiety → Health Anxiety)	.16	.03	5.45	.10	.22	<.001
X → Y (Awareness → Health Anxiety)	.002	.03	.08	–.06	.07	.93
Indirect Effect (X → M → Y)	.052	.01	-	.029	.07	P<.05

Table 6. The mediator analysis results to determine the mediating role of climate change anxiety (PROCESS Model 4)

Effect	B	SE	t	95% GA Low	95% GA Up	p
X → M (Awareness→ Climate Change Anxiety)	.31	.06	5.08	.19	.44	<.001
M → Y (Climate Change Anxiety → Sustainible behaviors)	–.05	.04	–1.37	–.13	.02	.17
X → Y (Awareness → Sustainable behaviors)	.34	.05	6.71	.24	.44	<.001
Indirect effect (X → M → Y)	–.01	.01	-	–.04	.004	-

DOI: 10.5455/medscience.2025.12.362

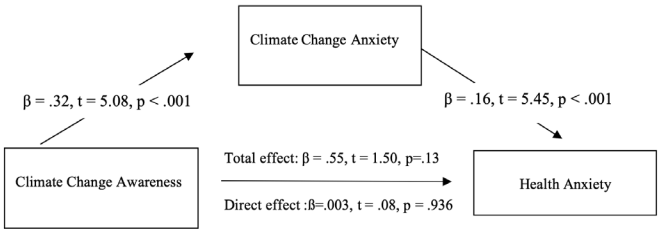

Figure 1. The mediating role of climate change anxiety in the relationship between climate change awareness and health anxiety

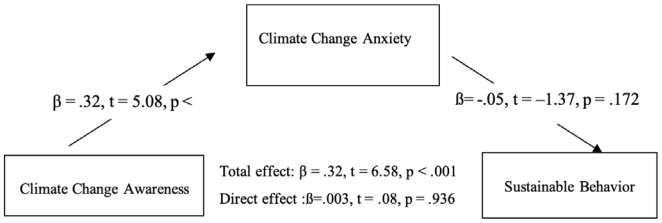

Figure 2. The mediator role of Climate Change Anxiety between Awareness of climate change and Sustainable behaviors

Discussion

The present study explored the interrelationships among climate change awareness, climate change anxiety, health anxiety, and sustainable behaviors. Findings indicated a weak but significant positive association between climate change awareness and climate change anxiety, suggesting that individuals with greater awareness also experienced higher levels of anxiety. This aligns with prior studies showing that knowledge of environmental threats can amplify psychological distress by fostering uncertainty, stress, and a sense of lost control [14] Awareness, therefore, appears to serve a dual function: while it equips individuals with critical information about climate risks, it may also burden them emotionally with fear and anxiety [15]

The findings on sustainability-related behaviors reveal an important distinction between everyday conservation practices and more proactive forms of environmental engagement. While a majority of participants reported engaging in recycling, energy saving, and water conservation, fewer adopted behaviors that require greater lifestyle adjustments, such as using environmentally friendly transportation, consuming local or organic products, or participating in nature protection activities. This pattern suggests that individuals are more likely to engage in sustainable actions that are convenient, habitual, and integrated into daily routines, whereas behaviors that demand structural changes, additional effort, or long-term commitment are less widely practiced. Consistent with earlier studies, this indicates the presence of psychological and contextual barriers—such as perceived inconvenience, cost, or lack of institutional support—that may limit broader engagement in sustainability. The very small proportion of participants who reported not engaging in any sustainable behavior underscores that sustainability awareness is present in the sample, but its translation into more impactful practices remains uneven [39]. This highlights the importance of designing interventions and policies that not only raise awareness but also reduce practical and psychological barriers to adopting more comprehensive pro-environmental behaviors

Another key finding was the positive relationship between climate change anxiety and health anxiety. Individuals who worried more about environmental threats also tended to report higher health-related concerns, consistent with earlier work linking climate change to heightened perceptions of physical, social, and health risks [20,27]. This suggests that environmental distress can spill over into concerns about personal health. Nevertheless, the relatively weak strength of this relationship indicates that while climate-related anxiety contributes to health-related worry, other psychological and contextual factors are also likely to play important roles. Some research even questions the consistency of this link, showing that environmental anxiety does not always translate into health-related concerns [6]. Such differences may depend on individual coping styles, levels of resilience, and how risks are perceived and internalized.

In contrast, no meaningful association was observed between climate change anxiety and sustainable behaviors. This supports the idea that anxiety does not necessarily lead to action; for some individuals, it may foster avoidance, denial, or paralysis rather than constructive engagement [21]. similarly identified psychological barriers—such as resistance, distrust, or ingrained habits—that can prevent people from adopting sustainable practices. At the same time, other studies have reported that higher climate anxiety can promote sustainable behaviors, suggesting that the relationship is context-dependent [22]. The present findings reinforce the notion that anxiety can manifest in divergent ways: for some, it motivates protective action, while for others it exacerbates helplessness. Whether climate-related distress is translated into behavior likely depends on personal resources, environmental attitudes, social norms, and perceived control.

The results also indicated that sustainable behaviors were not associated with health anxiety. This implies that engaging in pro-environmental practices does not necessarily alleviate health-related worries. Previous studies have suggested that individuals with elevated anxiety may engage in short-term anxiety-reduction strategies, such as excessive reassurance seeking [40]. While some work has reported negative associations between sustainable behaviors and anxiety [27], the current results suggest that sustainability practices are likely driven more by social, moral, or cognitive motivations than by health concerns.

Further findings showed that climate change awareness was strengthened both by emotional engagement and by practical behaviors. Individuals who reported higher levels of climate anxiety or greater involvement in sustainable actions tended also to demonstrate higher awareness. This points to the interconnectedness of emotional, cognitive, and behavioral processes in shaping how people perceive and understand climate change. Similar results have been reported in earlier studies,

DOI: 10.5455/medscience.2025.12.362

which suggest that both environmental concern and active engagement can heighten awareness of climate issues [14].

Finally, the relationship between awareness and health anxiety was found to operate indirectly, through the influence of climate change anxiety. Awareness alone did not appear to directly increase health concerns; rather, it elevated climate-related anxiety, which in turn contributed to worries about health. This suggests that the emotional burden of knowledge, rather than awareness itself, may be the mechanism driving personal health concerns [15]. In contrast, sustainable behaviors were more directly linked to awareness and were not dependent on anxiety. This pattern implies that knowledge and understanding of climate change can more effectively encourage sustainable actions when supported by cognitive and motivational processes, rather than by heightened emotional distress.

Conclusion

This study examined the relationships among climate change awareness, climate change anxiety, health anxiety, and sustainable behaviors in young adults. The findings demonstrated that higher levels of climate change awareness were associated with increased climate change anxiety, and in turn, elevated levels of health anxiety. However, neither climate change anxiety nor health anxiety showed a significant association with sustainable behaviors, suggesting that awareness and emotional distress alone are insufficient to motivate behavioral change. Instead, the translation of awareness into sustainable action may depend on broader social, cultural, and structural factors. Importantly, climate change anxiety fully mediated the relationship between climate change awareness and health anxiety, underscoring the role of emotional processes in linking environmental knowledge to individual well-being. By contrast, no mediating effect was found between awareness and sustainable behaviors, indicating that awareness more directly informs sustainable engagement.

These results highlight the dual role of awareness: while it increases knowledge and understanding of environmental challenges, it may simultaneously burden individuals with psychological distress. The study emphasizes the importance of integrating emotional processes into climate change research and policy, demonstrating that climate change is not only an environmental issue but also a psychosocial one. Practical implications include the need to strengthen environmental education and public awareness initiatives while simultaneously fostering psychological resilience. Interventions should balance cognitive and affective dimensions—equipping individuals with knowledge while providing strategies to manage distress and encouraging constructive behavioral engagement.

Despite its contributions, the study is not without limitations. The sample was restricted to individuals aged 18–35, limiting the generalizability of the findings across age groups. Data were based on self-report measures, which may be subject to biases such as social desirability and limited by the absence of objective behavioral indicators. In addition, data collection via online surveys may have been influenced by situational factors such as participants' environment, concentration, and motivation at the time of response. Future research should aim to include more diverse age groups, employ objective measures of sustainable behavior, and explore potential mediators and moderators—such as coping styles, social norms, and resilience—that may clarify the mechanisms linking awareness, anxiety, and behavior.

In conclusion, climate change awareness exerts both cognitive and emotional influences, shaping individuals' psychological experiences and, to a more limited extent, their behaviors. Understanding this interplay is essential for designing effective interventions and policies. Climate change, as a biopsychosocial phenomenon, requires holistic approaches that address not only ecological and economic aspects but also psychological and societal dimensions.

Ethical Approval
Ethical approval for the research protocol was obtained from the İstinye University Ethics Comittee (Approval No: 2024/10, Date: 22/11/2024, Protocol number:24-258).

Patient Consent
Written informed consent was obtained from all participants after they were fully informed about the purpose, procedures, and potential risks of the study.

Conflict of Interest
The authors confirm the absence of any conflicts associated with this work.

Funding
The authors declare that they have received no financial support for the study.

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