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Climate Change and Its Impact: A Narrative Review of Risk Factors for Eco-Anxiety

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ABSTRACT: Climate is associated with severe distress to public health and is a growing concern for the current generation. This growing awareness of climate change causes "eco-anxiety", a phenomenon defined by severe distress caused by problems related to the environment. This narrative review aims to identify the risk factors for eco-anxiety. For this narrative review, electronic databases such as Google Scholar, National Digital Library, Elsevier OA, PsycINFO, Frontiers in Psychology, BMC Psychology, Taylor & Francis, Springer, and PubMed were searched including forward and backward citations for studies found on these databases. A comprehensive synthesis of findings from articles revealed a multitude of risk factors contributing to the onset and amplification of eco-anxiety. Common themes include socio-economic status, geographical location, psychological factors, gender, age, exposure to climate-related events, social and cultural factors, and environmental concern and engagement

1. INTRODUCTION

Thirty-five thousand deaths annually from heat stress, malaria, diarrhea, and malnourishment will result from climate change (CC) between 2030 and 2050 (WHO, 2021). Yet, the effects of eco-anxiety (which is a psychological response to CC) on mental health, the particular negative outcomes it may be linked to, and the processes by which it affects public health are unknown, even in light of the World Health Organization's declaration of climate change as a health emergency. Being a relatively new condition, eco-anxiety has drawn growing attention from psychologists and is associated with a range of emotional and social reactions as climate change becomes an urgent global issue (Clayton, 2020 & Leonard et al., 2023).

Eco-anxiety, a term first used by Albrecht in 2011, is categorized as a "Psychoterratic syndrome," which reflects the psychological effects of environmental change. Other words used interchangeably to describe different kinds of emotional suffering associated with environmental challenges are solastalgia, eco-angst, environmental distress, and ecological sadness. These phrases, though they use different nomenclatures, together show the intricate connection between climate change and human welfare.

Despite its widespread impact on mental health and overall well-being, eco-anxiety is frequently disregarded in the popular conversation about climate change. The emotional aspects of eco-anxiety, such as stress, guilt, and terror, play a crucial role in how people react to environmental dangers. The increasing threat posed by climate change can have unintended consequences, such as worsening mental health and raising anxiety levels in people (Katherine, 2022). Furthermore, eco-anxiety can show up as symptoms similar to depression or anxiety, making mental health issues worse for people when little action is taken to address the climate catastrophe (Pikhala et al., 2018).

Because eco-anxiety can cause environmentally sustainable activities in certain people (Pihkala, 2020), it is not always a sign of a pathology or clinical diagnosis. Concern over the hazards posed by climate change (CC) may be normal for some authors but it is argued that suppressing emotions such as anger hinders the effective mobilization of society to combat climate change (Isidro et al., 2022). In certain people, excessive levels of eco-anxiety may lead to a decline in their mental state, which might include symptoms of anxiety disorders such as hopelessness, rumination, subjective distress, sleep disturbance, and somatic disturbance (O'Brien & Elders, 2021). Therefore, eco-anxiety is considered clinically serious when it is hard to manage and gets in the way of a person's everyday activities. (Clayton, 2020).

The question of whether anxiety related to climate change is a subtype of anxiety in general or something else is not fully understood. Psychologists can treat this issue more effectively or reframe it as potentially adaptive by determining whether a correlation exists (Pihkala, 2020a, 2020b; Verplanken et al., 2020). In their 2021 study, Hogg and colleagues examined the affective symptoms, rumination associated with it, behavioral symptoms, and anxiety related to one's detrimental influence on the environment in samples from Australia and New Zealand. However, it was important to note that it was not the same as other mental health issues, such as generalized anxiety disorder. To determine whether eco-anxiety can be differentiated from generalized anxiety or anxiety disorders, more research is required (Helm, Pollitt, Barnett, Curran, & Craig, 2018; Swim et al., 2009; Wullenkord et al., 2021).

Eco-anxiety can manifest in various forms, including fear for the future, ecological grief, and a sense of guilt or helplessness in the face of environmental degradation (Ágoston et al., 2022). As anxiety about the ecological crisis grows worldwide, so too does research on eco-anxiety. However, according to years of multidisciplinary research, there are three main obstacles to overcome before eco-anxiety research may proceed (Pihkala, 2022). The intricate and multidimensional character of anxiety itself needs to be addressed first. Second, when measuring eco-anxiety, it is important to comprehend the coping strategies and mechanisms used by people and social groups, particularly if the relationship between eco-anxiety and pro-environmental action is being examined. Third, emotional intelligence and competencies need to be included in this field of study. In the years to come, overcoming these obstacles via ongoing multidisciplinary research and collaboration will be essential for expanding our knowledge of eco-anxiety and its effects.

1.1 Purpose of the present review

To fill in important research gaps in the literature on eco-anxiety, this literature review concentrates on cross-cultural studies, longitudinal research, and a thorough evaluation of risk factors over six years (2018–2024). Additionally, it offers a consolidated view of the phenomenon on a longer-term analysis, which is currently required (Whitmarsh et al.,). While eco-anxiety is becoming widely recognized, there isn't enough long-term research that looks at how it develops over time, this makes it difficult to grasp its temporal patterns and possible escalation. Comparably, current research mostly uses samples from a small number of Western nations, ignoring the diversity of cultural contexts around the world and narrowing our comprehension of cross-cultural differences in eco-anxiety levels.

Our objective is to provide a general topic summary of the risk variables, considering the likelihood that there are many of them. We intend to comprehensively summarize the various risk factors identified in the literature, even though using themes to summarize our findings adds a degree of abstraction. We also included the risk factors in a bigger sample that took data from worldwide. Since we expect the literature to offer a variety of risk variables, we combined these risk factors under a broad heading in this instance.

This review advances our understanding of climate anxiety and its implications for individuals, communities, and societies by synthesizing empirical evidence and filling research gaps, emphasizing the importance of future research in addressing the mental health challenges posed by climate change.

2. METHODOLOGY

2.1 RESEARCH APPROACH

Narrative reviews broadly summarize current research findings and identify gaps within a given research topic. Such reviews are beneficial when researchers aim to describe a problem of interest. Systematic reviews on the other hand are narrowly focused on finding answers by identifying, evaluating, and synthesizing all relevant studies on a particular topic (Agarwal et al., 2019; Arksey & O'Malley, 2005). The present paper merges the two procedures to find answers to specific questions from a broad body of peer-reviewed literature.

This paper follows the five components of the six-step approach outlined by Arksey and O'Malley (2005) to scope, identify, and elaborate on the key concepts found in the extant literature regarding the association between loneliness and well-being. The steps include (a) identifying the research topic, (b) finding relevant studies, (c) selecting a study, (d) synthesizing and interpreting qualitative data, and (e) synthesizing and reporting the results. The sixth step 'consultation exercise' being an optional component of the scoping study framework (Arksey & O'Malley, 2005), will not be included in the present review. This approach will provide a context to address the current review's queries. Subsequently, the search strategies will be detailed before presenting the results.

A systematic literature review was employed to explore the current literature on eco-anxiety and its predictors or risk factors. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines were used to enhance the transparency, clarity, and credibility of the systematic review by providing a clear protocol or 'checklist' of the components to be reported (Page et al., 2021). Based on these lines, we developed and used clear selection and data extraction criteria that defined the purpose of the search, the eligibility criteria, the data analytical framework, and how overlaps between researchers would be managed in our attempt to identify the risk factors for eco-anxiety.

2.2 Eligibility criteria

To determine the eligibility of manuscripts to be included in the study, clearly defined inclusion and exclusion criteria were set at the start of the project. To be included, manuscripts needed to be (a) specifically focused on reviewing or studying the impact of climate change on people, (b) theoretical work, (c) published between 2018 and 2024, (d) in English, (e) published in academic journals or scientific books, and (f) non-peer-reviewed articles were also included as this field of interest is relatively recent.

In contrast, manuscripts were excluded from further consideration for the following reasons: (a) if the purpose of the paper was not specifically focused on the impact of climate change on people, (b) if it was published in a non-English format. We also excluded manuscripts (c) that were unpublished master's or doctoral thesis.

These choices were made because coverage of identified risk factors was generally quite brief in these papers (presumably to provide sufficient space for the proposed solution or response), and also because manuscripts in these categories did not introduce unique characteristics of the people who are vulnerable to eco-anxiety. Finally, we excluded

manuscripts (j) if the papers were related to a specific field (e.g., sustainable development, organizations, or psychotherapy), or (k) if it was focused on particular concepts (e.g., resilience, strengths, or grit) or intervention. These choices were made because other papers on climate change and eco-anxiety, while relevant, extend the scope of the paper beyond our desired focus on the discipline as a whole.

2.3 Search strategy

A literature search was conducted using Google Scholar, National Digital Library, Elsevier OA, PsycINFO, Frontiers in Psychology, BMC Psychology, Taylor & Francis, Springer, and PubMed were searched including forward and backward citations for studies found on these databases. Appropriate literature was found using a set of primary search terms (e.g., 'risk factors for eco-anxiety, 'factors causing eco-anxiety') and their variants were applied (e.g., 'impact of climate change', 'eco-anxiety and mental health'). A subsequent search was conducted after that, where secondary search terms were first entered into the search query – 'climate-change', and 'Psychological impacts' – followed by a series of tertiary terms. A search in Google Scholar was also conducted in addition to a manual search of the reference lists of the included articles to identify additional relevant articles not captured in the electronic database searches.

2.4 Selection process

Following Shaffril et al.'s (2021) guidelines, the study selection process was divided into five phases. First, based on the search terms, an initial search was conducted independently by the authors, and basic manuscript details were captured in Zotero (database, item type, publication year, author, title, publication title, doi, abstract, pages, issue, volume, and ISBN/ISSN). The two datasets were merged and subsequently screened and cleaned, and duplicates were removed. A total of 432 out of 678 identified records were retained for further screening. Second, the titles and abstracts of the manuscripts were screened and tested against the predefined inclusion and exclusion criteria by four authors. A total of 381 records were subsequently excluded, making 51 full records eligible for inclusion. Third, the full texts of those papers identified via title and abstract screening (n = 51) were then read and assessed against the eligibility criteria. Records were excluded for the following reasons: publication date outside of the time frame (n = 94), non-English language (n = 85), excluded psychological impact (n = 128), and other (n = 74). Fourth, backward (i.e., references of included papers) and forward (i.e., identifying studies that cited the included papers) searches were conducted to locate any additional papers that needed to be included. Twenty-two additional records were identified for inclusion. The authors met and discussed each manuscript to collate a final list of manuscripts. The final list consisted of 54 manuscripts. Fifth, the final list of included manuscripts (n = 54) was then collated. Following the entire selection protocol, a final list of 54 full texts was retained for analysis (cf., Figure 1 for the PRISMA flow chart).

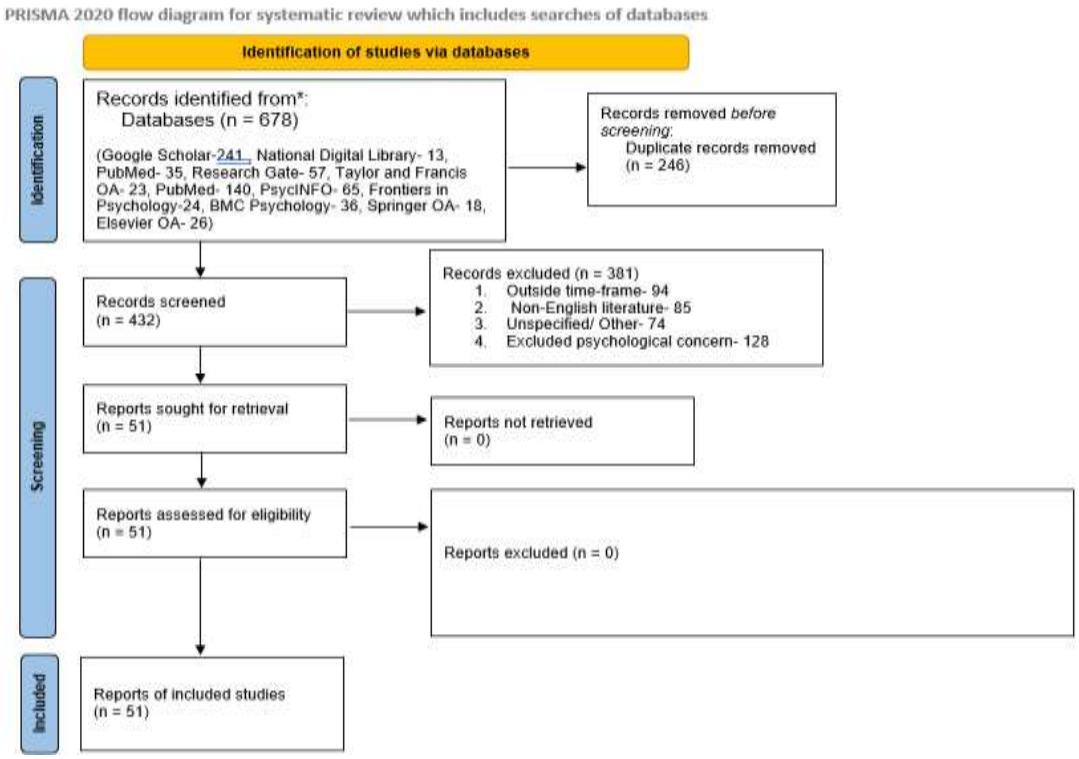
2.5 Selection and reporting bias

Several strategies were employed to reduce selection bias in the review process. First, a clearly defined selection criteria was determined before conducting the research. This criterion was followed strictly throughout the process. Second, the initial search was done and replicated to ensure that no records had been missed (Mohamed Shaffril et al., 2021; Moher et al., 2009). Third, all records (titles, abstracts, and full texts) were screened

independently and in parallel by the two researchers (Buscemi et al., 2006). On completion of each step of the study selection process, the researchers met to discuss and debate the inclusion/exclusion of records. The reasons for the inclusion/exclusion of a given record were recorded. Third, backward and forward searches were conducted to ensure that all relevant search records were included and that none had been missed (Xiao & Watson, 2019). Fourth, the final list of papers was circulated to experts to ensure that no records had been missed (Mohamed Shaffril et al., 2021). Fifth, quality assessments were carried out on each final paper (e.g. the number of paper citations, and the impact factor of the journal). Sixth, to increase the credibility, trustworthiness, and transferability of the content analysis, the data were analyzed by two researchers (both independently and in parallel). Disagreements in the analysis were discussed until they had been resolved. Once the final analysis had taken place, a meeting was held with four researchers to discuss each code and to reflect on each agreement/disagreement. Miles and Huberman (1994) indicate that the average level of agreement between raters should exceed 70%. Finally, all raw process data were retained for future scrutiny.

2.6 Data recording and analysis

Using the data extraction form developed for the present study, we extracted data from the included studies for definitions of eco-anxiety, predictors of eco-anxiety, risk factors associated with eco-anxiety, sample characteristics, and gaps and recommendations for the future.



2.7 Tools used to measure

A variety of measurement tools have been utilized across the studies included in this review to assess eco-anxiety and its associated psychological impacts. One of the most commonly used instruments is the Climate Change Anxiety Scale (Clayton & Karazsia, 2020), which measures cognitive, emotional, and behavioral dimensions of eco-anxiety. This scale has been widely applied in multiple populations to evaluate the severity and nature of eco-anxiety responses. Another frequently employed tool is the Eco-Anxiety Scale (Hickman et al., 2021), which specifically targets younger demographics and assesses their emotional responses to climate change threats.

Additionally, self-report questionnaires, such as those used by Burke et al. (2018), rely on Likert-scale items to gauge levels of worry, distress, and coping mechanisms associated with climate change. Qualitative studies, such as those conducted by Ágoston et al. (2022) and Schneider-Mayerson & Leong (2020), often use semi-structured interviews and thematic analysis to capture the depth and complexity of eco-anxiety experiences in diverse cultural settings. Furthermore, longitudinal studies, such as those conducted by Boluda-Verdú et al. (2022), employ repeated measures and psychometric assessments to track changes in eco-anxiety over time. These measurement tools provide a comprehensive understanding of eco-anxiety by capturing both quantitative and qualitative dimensions, enabling researchers to develop targeted interventions and policy recommendations to mitigate its impact on mental health

3. FINDINGS

Data were extracted from 51 records and analyzed through conventional content analysis. The results showed that eco-anxiety is linked to future uncertainty, fear, and inaction, potentially leading to mental health conditions like phobias, generalized anxiety disorder, and post-traumatic stress disorders, with the risk factors being socio-economic status, geographical location, psychological factors, gender, age, exposure to climate-related events, social and cultural factors, and environmental concern and engagement. (See Table 1for summary of findings)

3.1 THEME 1: Socio-Economic Status (SES)

Individuals from lower socio-economic backgrounds are disproportionately affected by eco-anxiety due to economic disparities and limited access to resources (Pihkala, 2020; O'Brien & Elders, 2021). Marginalized communities face heightened vulnerability to climate-related stressors and environmental hazards, exacerbating psychological distress and anxiety (Ogunbode et al., 2021). These communities lack resources for adequate adaptation and mitigation strategies, exacerbating eco-anxiety, they are disproportionately affected by environmental degradation, experiencing adverse health outcomes and economic hardships (Pihkala, 2020). SES also influences access to green spaces and nature, which can impact mental health and exacerbate eco-anxiety symptoms (Nisbet et al., 2020).

Moreover, socio-economic disparities amplify exposure to climate-related events and limit access to mental health resources, leading to heightened eco-anxiety among marginalized populations and fostering a sense of hopelessness and anxiety (Australian Medical Association, 2019 & O'Brien & Elders, 2021). Hence, research suggests that individuals from lower SES backgrounds may experience heightened psychological distress due to environmental concerns (Clayton et al., 2020). This may stem from a feeling of powerlessness and inequity in addressing environmental issues, contributing to eco-anxiety. In India, it has been found that climatic changes are the conditions that harm the mental health of the people, especially those who depend upon agriculture as a profession (Pandey, 2022).

The association between SES and eco-anxiety extends beyond direct environmental exposure to encompass factors such as gender, geographical location, and psychosocial elements, influencing eco-anxiety manifestation (Reiss et al., 2021). However, the relationship between SES and eco-anxiety is not solely deterministic. While individuals from lower SES backgrounds may face increased vulnerability, socioeconomic privilege does not necessarily immunize individuals from eco-anxiety (Ito et al., 2020 & Kleinschroth & Kowarik 2020).

Addressing eco-anxiety necessitates acknowledging and mitigating socio-economic disparities, ensuring equitable access to resources, and fostering resilience among marginalized communities (Kleinschroth & Kowarik, 2020). Collaborative efforts encompassing policy interventions, community empowerment, and mental health support are imperative in addressing the socio-economic dimensions of eco-anxiety (Venter et al., 2020).

3.2 THEME 2: Geographical Location

Research shows that geographical location plays a pivotal role in shaping individuals' experiences and predicts eco-anxiety (Clayton & Karazsia, 2020; Wullenkord et al., 2021). Geographical location interacts with various socio-environmental factors to shape individuals' vulnerability to eco-anxiety and climate change impacts with those residing in climate-vulnerable regions facing heightened distress and uncertainty (Leonard & Steverson, 2023). People living in areas prone to climate-related disasters such as hurricanes, floods, wildfires, or sea-level rise may experience heightened eco-anxiety due to the direct threat these events pose to their safety, property, and way of life (Clayton & Karazsia, 2020; O'Brien & Elders, 2021).

Coastal communities are particularly vulnerable to sea-level rise and coastal erosion, which can lead to displacement, loss of property, and disruptions to livelihoods. Young people, especially children feel a sense of existential anxiety about their future, this shows the significant psychological toll of these threats (Hickman et al., 2021). Residents of areas prone to wildfires, such as those in drought-stricken regions or areas with extensive forest cover, experience eco-anxiety due to the constant threat of destructive fires. The increasing frequency and intensity of wildfires also contribute to psychological distress among affected populations (Clayton, 2020, & Leonard & Steverson, 2023).

Urban areas, especially densely populated cities, experience the urban heat island effect, where temperatures are higher than surrounding rural areas due to human activities and infrastructure; heatwaves in urban environments can exacerbate eco-anxiety, particularly among vulnerable populations such as the elderly or those with pre-existing health conditions (Washington Post, 2019; Helm et al., 2018). Indigenous communities, often located in remote or environmentally sensitive areas, face unique challenges related to climate change, including loss of traditional lands, cultural disruptions, and threats to food security, research sheds light on the intersection of climate change impacts and indigenous mental health, emphasizing the importance of culturally sensitive approaches to addressing eco-anxiety in these communities. (Bank, 2019; Schneider-Mayerson & Leong, 2020)

Furthermore, geographic location can influence individuals' access to mental health services, social support networks, and community resilience initiatives. Remote or marginalized areas may have limited access to such resources, leaving residents feeling isolated and overwhelmed by eco-anxiety (Leonard & Stevenson, 2023; Agoston, 2022). This lack of access can also exacerbate feelings of anxiety and helplessness in the face of environmental threats (Coffey et al., 2021). Important considerations include age and people's direct dependence on nature for at least one of their basic needs. In agrarian countries like India, climate change mainly affects the farming profession (Pandey, 2022).

3.3 THEME 3 Psychological Factors

Climate change, including the crisis it has caused, produces difficult feelings of uncertainty, unpredictability, and uncontrollability, all of which are classic ingredients in anxiety. The effect of eco-anxiety on behavior related to climate change mitigation is unclear, although it is pointed out that strong forms of eco-anxiety can require mental health care, however, eco-anxiety is not defined by scholars as an official disorder (Pikhala, 2020). Self-destructive behavior which includes other cognitive failures like panic attacks, difficulty in sleeping, hopelessness, learned helplessness, obsessive behavior, feelings of anxiousness for the future, and unemployment are some of the examples of cognitive failures that are symptoms of the adverse effects of climate change (Pandey, 2022).

Cognitive biases, maladaptive coping strategies, and pre-existing mental health conditions contribute to the development and perpetuation of eco-anxiety (Clayton, 2020; O'Brien & Elders, 2021). Eco-anxiety is also associated with functional impairment, symptoms of depression, anxiety, PTSD, stress and insomnia, lower self-rated mental health, and reluctance to have children (Boluda Verdu et al., 2022). Cognitive appraisal of climate-related risks influences individuals' degree of eco-anxiety, with perceived severity and personal susceptibility shaping emotional responses to environmental degradation.

Some studies suggest that eco-anxiety motivates adaptive behavioral responses and engagement (APA, 2020). The relationship between climate anxiety and actual behavior appears to be complex, with both motivating and paralyzing effects possibly coexisting in a state of tension (Clayton & Karazsia, 2020). Mental health might be another important factor: as noted, there is some evidence of an association between generalized anxiety and climate anxiety (Clayton & Karazsia, 2020), and it could be that those with existing mental health disorders could be vulnerable to experiencing more severe levels of climate anxiety as the stress of climate anxiety could exacerbate pre-existing psychological distress.

Climate change contributes to increased anxiety levels in young people, impacting mental health. While emotional support and meaningful actions from adults and institutions are crucial for managing climate-related anxiety (Whitlock, 2023), coping styles also play a crucial role in dealing with eco-anxiety, with problem-focused coping being better than emotion-focused coping by focusing on one's ability to make individual behavioral responses toward climate change (Clayton, 2020).

3.4 THEME 4: Gender

Gender differences play a significant role in eco-anxiety, with women often reporting higher levels of distress compared to men (Julia B. Rothschild et al., 2022; Susie E. L. Burke et al., 2018; Katherine et al., 2022). Women have significantly higher scores in pathological worry, and in a pro-ecological worldview, than men (Verplanken et al., 2020). Women also suffer increased

climate psychological risks from higher rates of stillbirth, preterm birth, and developmental problems in their children (Rothschild et al., 2023)

Women face higher risks and greater burdens from climate change impacts due to factors like food scarcity, poor air quality, rising temperatures, extreme weather events, increased vector-borne diseases, economic dependence, less access to education, and cultural norms, highlighting the need for international funding organizations to mitigate these effects. Women are more prone to poor air quality-induced respiratory and cardiovascular diseases (Abid et al., 2018 & Mukhopadhyay & Das, 2020). A correlation between air quality and

maternal and child health is also apparent in cases of stillbirth, intrauterine growth restriction, and congenital defects (Health Effects Institute 2018). Societal gender norms, women's higher levels of empathy, emotional connection to environmental issues, and a limited capacity to adapt contribute to this disparity.

Since women differ from men in their physiologic compensation to elevated temperatures, this increases their biological vulnerability (Sorensen et al., 2018). Another missed fact is that even today, coping and basic survival strategies like climbing up a tree, and swimming which prove to be crucial in the face of floods and disasters are taught primarily to males. Hence, lack of survival techniques makes women increasingly vulnerable to climate-induced disasters (Mukhopadhyay & Das, 2020).

To prepare for the climate crisis, women's healthcare providers must assist their patients through political advocacy, provide family planning services, and focus on nutrition and lifestyle counseling (Pandipati & Abel, 2023). In response to these issues, there is a growing movement known as eco-feminism, which is a framework that highlights the relationship between women and nature, including the inextricable link between the oppression of women and the climate crisis (Madhanagopal et al., 2022).

3.5 THEME 5: Age

Eco-anxiety in young people, related to climate change, is a growing concern, age-related differences in eco-anxiety are observed, with younger individuals, reporting higher levels of distress compared to older generations. (APA, 2018; Clayton & Karazsia, 2020; Reyes et al., 2023; Burke et al., 2018; Hickman et al., 2021; Brophy et al., 2023). Young people perceive climate change as a direct threat to their future well-being, contributing to heightened anxiety about environmental issues.

Young people have high levels of climate anxiety across ten countries (although this was not compared with older age groups; Hickman et al., 2021). Data further suggests that young people are indeed more likely to report higher levels of climate-related distress, in both the UK (Triodos Bank, 2019) and North America (Washington Post., 2019). A study involving South Korean adults found that age-specific factors, such as being under 30 or between 60-65 years, influenced environmental sustainability interest, with eco-anxiety as a potent predictor (Sophia et al., 2023). Climate change can have adverse effects on children's mental health and well-being (Burke et al., 2018)

3.6 THEME 6: Exposure to Climate-Related Events

Individuals residing in areas experiencing visible environmental degradation, such as deforestation, loss of biodiversity, or pollution, may develop eco-anxiety as they witness firsthand the degradation of their surroundings, direct personal experience of climate change impacts, such as extreme weather events, can also lead to heightened perceptions of risk and increased levels of eco-anxiety (Pikhala, 2020; Reser & Bradley, 2020). Exposure to extreme or prolonged weather-related events can lead to disorders such as posttraumatic stress and eco-anxiety as they develop a sense of uncertainty, unpredictability, and uncontrollability. (Cianconi et al., 2020 & Pikhala, 2020).

Exposure to climate-related events also leaves indirect impacts like depression, socio-ethical paralysis, and loss of well-being (Pikhala, 2018). The psychological symptoms experienced by those who are vulnerable to the impact of climate change and usually are the first responders, are depression, anxiety, hopelessness, panic attacks, distress, low self-esteem, suicidal ideations, loss of control, fear, insomnia, learned helplessness, aggression, loss of interest in work, and loss of appetite (Pandey, 2022).

3.7 THEME 7: Social and Cultural Factors

Sociology explains eco-anxiety as a feeling of anxiety related to uncomfortable changes in society and the social order of things (Pikhala, 2020). Social and cultural factors, including community cohesion, social support networks, and cultural beliefs, influence individuals' vulnerability to eco-anxiety (Terra Léger-Goodes et al., 2022; Talbot & Andrews, 2020). Strong social networks and adaptive coping mechanisms buffer against the negative effects of climate change anxiety.

While cultural beliefs and values shape perceptions of environmental risks and resilience strategies it also plays a significant role in shaping eco-anxiety, influencing individuals' perceptions and responses to environmental concerns. Different cultural beliefs can significantly influence eco-anxiety levels (Leo et al., 2020; Alexandre, 2023; Arnaud, 2023; Feder, 2022) For instance, historical perceptions of the environment, such as the myth of clean mountain air in the Arve Valley, can shape how individuals perceive their surroundings and their health. Cultural beliefs also impact eco-anxiety levels by shaping perceptions of environmental threats and responses to climate change, influencing individuals' feelings of powerlessness or empowerment. (Christine, 2020).

Different cultural beliefs can also impact eco-anxiety levels by shaping individuals' perceptions of ecological breakdown, climate change, and biodiversity loss within their societal and cultural contexts (Jennifer et al., 2022). Different media types, such as video, radio, and newspapers, can impact eco-anxiety levels, with videos specifically shown to affect individuals' anxiety levels

3.8 THEME 8: Environmental Concern and Engagement

Individuals' environmental concern and engagement with climate change mitigation and adaptation efforts influence their experience of eco-anxiety (Helm et al., 2018; Schwartz et al., 2022). Those who care more about environmental issues face a higher risk of eco-anxiety (Clayton & Karazsia, 2020). Eco-anxiety is associated with greater self-reported frequency of hearing about climate change in the media and discussing climate change with friends and family (Katherine et al., 2022).

Reporting climate anxiety in the first instance requires acknowledging the seriousness of climate change and even though environmental activism and engagement in pro-environmental behaviors may serve as protective factors, many psychological effects come with being an environmentally active and aware individual, one of which is 'eco-anxiety' (Pihkala, 2018). Environmental values and connectedness to nature are associated with eco-anxiety and higher worry about the climate (Galway et al., 2021). Therefore, the implications of the climate crisis may be more keenly felt by those who see themselves as part of nature, which may predict higher climate anxiety

These risk factors underscore the complex interplay of individual, social, and environmental determinants of eco-anxiety, highlighting the need for holistic approaches to understanding and addressing psychological responses to climate change. Identifying and mitigating these risk factors can promote mental well-being and resilience in the face of ecological uncertainty.

Themes	Impacts
Socio-economic Status (SES)	1. Feeling of powerlessness, lower mental well-being. 2. Heightened psychological distress, and anxiety due to environmental concerns. 3. Limited access to resources for adaptation and mitigation; disproportionate exposure to hazards and health outcomes 4. Socio-economic disparities amplify exposure to climate events; inequalities in access to mental health resources
Geographical Location	1. Distress, uncertainty, psychological toll of displacement, loss, disruptions 2. Increased psychological toll in climate-vulnerable regions 3. Vulnerability to climate-related disasters, urban heat island effect 4. Limited access to mental health services, social support networks, and community resilience in remote areas
Psychological Factors	1. Eco-anxiety, functional impairment, depression, anxiety, PTSD, stress 2. Cognitive biases, maladaptive coping strategies, reluctance to have children 3. Self-destructive behavior, panic attacks, difficulty sleeping, learned helplessness, hopelessness 4. Pre-existing mental health conditions exacerbate eco-anxiety; coping styles are crucial

Gender	1. Higher levels of distress and pathological worry among women 2. Women's higher empathy and emotional connection to environmental issues 3. Higher risks from climate impacts like food scarcity, poor air quality, extreme weather 4. Societal gender norms and limited adaptive capacity increase vulnerability to eco-anxiety
Age	1. Higher levels of distress among younger individuals 2. Perception of climate change as a direct threat to future well-being 3. Adverse effects on children's mental health and well-being 4. Age-specific interest in environmental sustainability; eco-anxiety predicts environmental concern among youth
Exposure to Climate-Related Events	1. Heightened risk perceptions, increased eco-anxiety, PTSD 2. Psychological impact of extreme weather events Physical symptoms: panic attacks, insomnia, loss of appetite 3. First responders experience depression, anxiety, hopelessness, and loss of control
Social and Cultural Factors	1. Cultural beliefs and values shape perceptions and resilience strategies 2. Different cultural beliefs influence eco-anxiety levels 3. Community cohesion and social support buffer against climate change anxiety; media impact varies
Environmental Concern and Engagement	1. Higher risk of eco-anxiety among environmentally concerned individuals 2. Connectedness to nature leads to higher levels of climate worry 3. Environmental activism and pro-environmental behaviors may protect against anxiety; acknowledging climate anxiety

(Table 1: Summary of the findings)

4. DISCUSSION AND FUTURE DIRECTIONS

4.1 Socio-economic status

The findings highlight that the impacts of CC on public health will be more severe in population groups for whom socioeconomic inequalities are deeper and/or the health levels of the population and health structures are more precarious, this is because they (a) lack resources for adequate adaptation and mitigation strategies, exacerbating eco-anxiety (b) have limited access to green spaces and nature (c) limited access to mental health resources (d) lack economic stability and security (Australian Medical Association, 2019 & Nisbet et al., 2020; Ogunbode et al., 2021; Pihkala, 2020; O'Brien & Elders, 2021).

Additionally, economic instability and insecurity associated with lower SES may intensify feelings of uncertainty and anxiety about the future, including environmental concerns and people experience heightened psychological distress due to a sense of powerlessness and inequity in addressing environmental issues (Clayton et al., 2020 & Pihkala, 2020). However, it is important to note that while lower SES individuals are disproportionately affected, socio-economic privilege does not immunize individuals from eco-anxiety (Kleinschroth & Kowarik, 2020).

Since the impacts of climate change on public health are more severe in population groups with deeper socio-economic inequalities and more precarious health structures, addressing eco-anxiety necessitates acknowledging and mitigating socio-economic disparities, ensuring equitable access to resources, and fostering resilience among marginalized communities (Kleinschroth & Kowarik, 2020). The intersectionality of socio-economic factors with gender, geographical location, and psychosocial elements plays a crucial role in the manifestation of eco-anxiety, intersectional research is crucial to understand how factors such as race, gender, geographical location, and SES interact to influence eco-anxiety. By examining these intersections, researchers can design more targeted and effective interventions. (Reiss et al., 2021).

Collaborative efforts encompassing policy interventions, community empowerment, and mental health support are imperative in addressing the socio-economic dimensions of eco-anxiety (Venter et al., 2020). Future research should prioritize longitudinal and comparative studies to track changes in eco-anxiety over time among different socio-economic groups and try to gain insights into the specific factors contributing to varying levels of eco-anxiety between lower and higher SES populations. Additionally, Future studies should also focus on the significant lack of understanding regarding the barriers to accessing mental health resources for individuals from lower SES backgrounds and aim at developing strategies to overcome them, potentially involving policy changes to increase funding and support for mental health services in underserved areas. Addressing these gaps will help develop comprehensive strategies to support the mental health of all communities in the face of climate change.

4.2 Geographical location

Geographical location significantly influences individuals' experiences of eco-anxiety and the psychological impacts of climate change. Research indicates that geographical location can predict climate anxiety and those residing in climate-vulnerable regions, such as areas prone to hurricanes, floods, wildfires, or sea-level rise, face heightened distress and uncertainty due to the direct threats these events pose to their safety, property, and way of life (Leonard & Steverson, 2023; Clayton, 2020; Clayton & Karazsia, 2020; Wullenkword et al., 2021). Coastal communities, in particular, are susceptible to sea-level rise and coastal erosion, leading to displacement and disruptions to livelihoods, which exacerbates eco-anxiety (O'Brien & Elders, 2021). Additionally, residents of wildfire-prone areas, often in drought-stricken regions, experience significant psychological distress due to the constant threat of destructive fires (Leonard & Steverson, 2023). Urban areas also face unique challenges, such as the urban heat island effect, which exacerbates eco-anxiety, especially during heat waves, affecting vulnerable populations like the elderly and those with pre-existing health conditions (Washington Post, 2019; Helm et al., 2018).

Indigenous communities, often situated in remote or environmentally sensitive areas, encounter specific challenges related to climate change, including the loss of traditional lands and threats to food security, necessitating culturally sensitive approaches to address their eco-anxiety (Bank, 2019; Schneider-Mayerson & Leong, 2020). Furthermore, geographic location impacts access to mental health services, social support networks, and community resilience initiatives which increases feelings of isolation and helplessness among residents (Leonard & Steverson, 2023; Agoston, 2022).

There is a lack of research explaining the dynamic interplay between geographical location and socio-environmental factors in shaping eco-anxiety and the psychological impacts of climate change. Exploring how individuals in climate-vulnerable regions experience eco-anxiety over time while focusing on specific stressors related to geographical factors such as hurricanes, floods, wildfires, and sea-level rise should be considered as a need in future studies. Moreover, comparative studies across diverse geographic regions could provide a more comprehensive understanding of how different environmental threats contribute to psychological distress. Additionally, developing and evaluating interventions tailored to the unique needs of populations in climate-vulnerable areas, including coastal, wildfire-prone, and urban heat island-affected communities, should be prioritized.

Special attention should be given to indigenous communities, incorporating culturally sensitive approaches to address their specific vulnerabilities and mental health needs. Significant research gaps remain regarding the availability and effectiveness of mental health services and social support networks in remote or marginalized areas facing climate change impacts. Future studies should also investigate the barriers to accessing these resources and propose strategies to improve mental health support in these regions. Moreover, the intersection of geographical location with socio-economic factors and direct dependence on nature for livelihoods, particularly in agrarian communities, warrants further exploration. Addressing these research gaps will enable the development of targeted interventions and policies to mitigate eco-anxiety and enhance resilience among geographically and socio-economically vulnerable populations.

4.3 Psychological factors

From mild distress to severe impairment and inducing feelings of uncertainty, unpredictability, and uncontrollability, reminiscent of classic anxiety symptoms, eco-anxiety encompasses a range of emotional responses (Pikhala, 2020). Although eco-anxiety is not officially recognized as a disorder, it is associated with a myriad of adverse psychological and behavioral outcomes. Self-destructive behaviors, cognitive failures, and symptoms of depression, anxiety, PTSD, and insomnia are commonly reported among individuals experiencing eco-anxiety (Pandey, 2022; Boluda Verdu et al., 2022). Maladaptive coping strategies and cognitive biases further exacerbate eco-anxiety, highlighting the complex interplay between cognitive appraisal and emotional responses to climate-related risks (Clayton, 2020; O'Brien & Elders, 2021).

While some studies suggest that eco-anxiety may motivate adaptive behavioral responses and engagement with climate change mitigation efforts, the relationship between eco-anxiety and actual behavior remains complex, with both motivating and paralyzing effects potentially coexisting (Clayton & Karazsia, 2020). Moreover, the impact of eco-anxiety on individuals' mental health, particularly among vulnerable populations such as young people, underscores the importance of emotional support and meaningful actions from adults and institutions in managing climate-related anxiety (Whitlock, 2023). Coping styles also play a crucial role in dealing with eco-anxiety, with problem-focused coping strategies proving more effective than emotion-focused coping in empowering individuals to take proactive steps toward climate change mitigation (Clayton, 2020).

Despite growing recognition of eco-anxiety as a significant mental health concern, there are notable research gaps that require attention. There is a need for standardized measures and diagnostic criteria for eco-anxiety to facilitate accurate assessment and intervention. Moreover, the complex relationship between eco-anxiety and behavioral responses to climate change is poorly understood. Investigating the role of mental health disorders, such as generalized anxiety, in exacerbating eco-anxiety could help identify vulnerable populations in need of targeted support and intervention (Clayton & Karazsia, 2020).

Research should also explore the underlying mechanisms driving eco-anxiety, including cognitive biases, personality traits, maladaptive coping strategies, and the impact of cognitive appraisal of climate-related risks. Another critical gap is the lack of research on the psychological impacts of climate change on specific populations, such as children, the elderly, and those with pre-existing health conditions, who may be particularly vulnerable to environmental stressors. Understanding these mechanisms could inform the development of tailored interventions aimed at alleviating eco-anxiety and promoting resilience among affected individuals (Pikhala, 2020; Clayton, 2020). Additionally, more research is needed to explore the long-term consequences of eco-anxiety on individuals' mental health and well-being, particularly among vulnerable populations.

4.4 Gender

The findings underscore a profound gender difference in eco-anxiety and associated health risks, emphasizing the multifaceted nature of these disparities, women score significantly higher in pathological worry and maintain a more pro-ecological worldview than males (Burke et al., 2018; Verplanken et al., 2020; Rothschild et al., 2022; Katherine et al., 2022). This could be because societal gender norms and women's inherent empathy and emotional connection to environmental issues amplify their eco-anxiety also, women's limited capacity to adapt to climate change, compared to men, is a significant factor contributing to this disparity (Sorensen et al., 2018).

Additionally, traditional survival skills, such as swimming and climbing, which are crucial during climate-induced disasters, are often taught predominantly to males, leaving women at a disadvantage during such events (Mukhopadhyay & Das, 2020). Another critical dimension of this gender disparity is the increased climate psychological risks that women face, the intersection of air quality and maternal and child health is notably significant and women are more susceptible not only to respiratory and cardiovascular diseases induced by poor air quality but also preterm birth, stillbirth, and intrauterine growth restriction during pregnancy. (Rothschild et al., 2018; Abid et al., 2018; Mukhopadhyay & Das, 2020; Health Effects Institute, 2018).

This is further compounded by broader environmental stressors such as food scarcity, poor air quality, rising temperatures, and extreme weather events, which disproportionately affect women due to economic dependence, less access to education, and restrictive cultural norms. Addressing these issues requires a multifaceted approach. In response to these gender-specific challenges, the growing movement of eco-feminism offers a promising framework by exploring the intricate connections between the oppression of women and environmental degradation, advocating for a more inclusive and equitable approach to addressing the climate crisis (Madhanagopal et al., 2022).

In conclusion, findings highlight the critical need for targeted interventions and policies that address the unique vulnerabilities of women in the face of climate change. Future research should conduct longitudinal studies to examine how eco-anxiety evolves among different genders and should also explore the biological and psychological mechanisms that underlie gender differences in eco-anxiety, which should include studying hormonal, neurological, and cognitive factors that may predispose women to higher levels of eco-anxiety compared to men.

4.5 Age

There is a significant impact of age on eco-anxiety, with a particular emphasis on the heightened distress observed among younger individuals. The pervasive sense of threat to their future well-being contributes to the heightened eco-anxiety among younger individuals, distinguishing their experiences from those of older generations who may have different levels of exposure

to, and perspectives on, climate-related risks. The literature consistently demonstrates that youths, especially those aged 16 to 25, exhibit increased levels of eco-anxiety compared to older generations (APA, 2018; Clayton & Karazsia, 2020; Brophy et al., 2023; Hickman et al., 2021).

This growing concern is evidenced by various studies indicating that young people perceive climate change as an imminent threat to their future well-being, thereby intensifying their anxiety related to environmental issues. Data underscores the profound sense of dread and uncertainty that climate change instills in younger populations around the globe (Hickman et al., 2021; Bank, 2019; Washington Post, 2019; Sophia et al., 2023). The mental health implications of climate change for young people are profound, especially for children, emphasizing the need for targeted interventions (Burke et al., 2018).

There is an urgent need for age-specific strategies to address climate-related distress. Younger individuals' heightened perception of climate change as a direct threat necessitates comprehensive mental health support and educational initiatives that foster resilience and adaptive coping strategies. By understanding and addressing the unique concerns of different age groups, policymakers, and mental health professionals can better mitigate the psychological impacts of climate change and promote a more sustainable and emotionally resilient future for all generations.

4.6 Exposure to climate-related events

Individuals residing in areas experiencing visible environmental degradation, such as deforestation, loss of biodiversity, or pollution, may develop eco-anxiety as they witness firsthand the degradation of their surroundings (Pikhala, 2020; Reser & Bradley, 2020). Moreover, direct personal experience of climate change impacts, such as extreme weather events, can lead to heightened perceptions of risk and increased levels of eco-anxiety (Pikhala, 2020). Exposure to extreme or prolonged weather-related events can even result in disorders such as posttraumatic stress and eco-anxiety due to feelings of uncertainty, unpredictability, and uncontrollability (Cianconi et al., 2020).

Furthermore, exposure to climate-related events can have indirect impacts on mental health, leading to depression, socio-ethical paralysis, and loss of well-being (Pikhala, 2018). The psychological symptoms experienced by individuals vulnerable to the impact of climate change, often the first responders, are diverse and include depression, anxiety, hopelessness, panic attacks, distress, low self-esteem, suicidal ideations, loss of control, fear, insomnia, learned helplessness, aggression, loss of interest in work, and loss of appetite (Pandey, 2022).

Given that individuals experiencing eco-anxiety often have strong connections to the natural environment, leveraging the restorative potential of nature experiences may be an important therapeutic response (Martin et al., 2020). Encouraging a sense of connection to nature has been associated with greater subjective well-being among both adults and children (Barrera-Hernández et al., 2020). However, it's crucial to distinguish between adaptive and maladaptive levels of anxiety triggered by exposure to extreme weather events associated with climate change (Clayton, 2020).

Research should focus on finding the underlying mechanisms that cause eco-anxiety, including the role of witnessing climate change-related events such as floods, earthquakes, and hurricanes. Studies tracking the mental health outcomes of individuals exposed to climate-related events can provide valuable insights into the long-term consequences of eco-anxiety and inform targeted intervention strategies. Additionally, research exploring the effectiveness of nature-based interventions and other coping strategies in managing eco-anxiety is warranted. Understanding the adaptive and maladaptive responses to climate-related stressors can guide the development of tailored interventions to mitigate eco-anxiety and promote mental health resilience in the face of environmental challenges.

4.7 Social and cultural factors

Sociology offers insights into eco-anxiety as a phenomenon influenced by societal changes and disruptions to the social order (Pikhala, 2020). Social and cultural factors play significant roles in shaping individuals' vulnerability to eco-anxiety, with community cohesion, social support networks, and cultural beliefs influencing their perceptions and responses to environmental concerns (Terra Léger-Goodes et al., 2022; Talbot & Andrews, 2020).

Strong social networks and adaptive coping mechanisms serve as protective factors against the negative effects of climate change anxiety, while cultural beliefs and values shape perceptions of environmental risks and resilience strategies. Culture, in particular, plays a crucial role in shaping eco-anxiety by influencing individuals' perceptions and responses to environmental challenges (Leo et al., 2020; Alexandre, 2023; Arnaud, 2023; Feder, 2022).

Future research should delve deeper into the interplay between social and cultural factors and eco-anxiety, exploring how specific cultural beliefs and societal norms influence individuals' experiences of climate change anxiety. Exploring how cultural shifts and societal changes affect eco-anxiety levels over time can provide valuable insights into the dynamic nature of this phenomenon.

More studies should investigate how interventions tailored to cultural contexts can effectively mitigate eco-anxiety and promote mental health resilience within diverse communities. Additionally, studies investigating the impact of different media types on eco-anxiety levels are limited, highlighting the need for more nuanced analyses of media consumption patterns and their psychological effects. Addressing these research gaps will be crucial in developing culturally sensitive interventions to support individuals experiencing eco-anxiety and promote collective action in response to climate change

4.8 Environmental concern and engagement

Individuals' level of environmental concern and their engagement with climate change mitigation and adaptation efforts significantly influence their experience of eco-anxiety (Helm et al., 2018; Schwartz et al., 2022). Those who are more environmentally conscious face a higher risk of eco-anxiety, suggesting that heightened awareness and involvement in environmental issues may contribute to increased psychological distress (Clayton & Karazsia, 2020). Furthermore, individuals reporting greater frequency of exposure to climate change information in the media and discussions with peers also tend to experience higher levels of eco-anxiety (Katherine et al., 2022).

However, the relationship between environmental activism and eco-anxiety is complex. While engagement in pro-environmental behaviors may be a protective factor against the psychological impacts of climate change anxiety, connectedness to nature has been associated with higher worry about the climate (Galway et al., 2021). This suggests that individuals who perceive themselves as part of nature may be more attuned to the implications of the climate crisis, leading to heightened climate anxiety.

The nuanced relationship between environmental concern, engagement in environmental activism, and eco-anxiety should be explored. Research is needed to investigate how ecological concern and engagement influence individuals' experiences of climate change anxiety. Additionally, studies focusing on how connectedness to nature shapes eco-anxiety require more in-depth examination to elucidate the complex interplay between nature-relatedness and psychological responses to environmental challenges.

Another less understood phenomenon is how changes in environmental attitudes and behaviors over time impact individuals' psychological responses to climate change. Additionally, exploring the role of environmental values in predicting climate anxiety can provide valuable insights into the underlying mechanisms driving eco-anxiety. Addressing these research gaps will enhance our understanding of the multifaceted nature of eco-anxiety and inform the development of targeted interventions to support individuals' mental well-being in the context of climate change.

5. LIMITATIONS AND RECOMMENDATIONS

While the existing literature has explored the relationships between eco-anxiety, pro-environmental behavior, and mental health, several limitations and areas for further research have been identified. Firstly, the association between engaging in pro-environmental behavior and eco-anxiety remains ambiguous. On one hand, such actions could provide a sense of control over climate change, potentially alleviating anxiety. However, it is also possible that increased engagement with environmental issues could heighten awareness and exacerbate feelings of eco-anxiety (Wullenkord et al., 2021; Hogg et al., 2021; Verplanken et al., 2020; Pihkala, 2020a, 2020b). Future research should examine the nuances of this relationship, considering potential subgroups and individual differences, such as personality traits, that may influence the direction of the association.

Furthermore, while the link between eco-anxiety and mental health outcomes has been established, this is not always evident, because people have developed psychological and social defenses in response, including “socially constructed silence.” (Pikhala, 2018). There is also a need to understand the potential impact of eco-anxiety on behavioral engagement with climate change issues. It is plausible that eco-anxiety could serve as a motivating factor for pro-environmental actions, yet the existing data is insufficient to comprehend the role of individual differences in shaping perceptions and responses to climate change (Pihkala, 2018; Pihkala, 2020a, 2020b).

Additionally, the current literature lacks a comprehensive review of the broader socioeconomic, environmental, and psychological determinants of eco-anxiety. There is a paucity of research investigating the predictors of eco-anxiety and their relationship to pro-environmental behaviors, highlighting the need for studies that examine the complex interplay between psychological, social, and environmental variables in shaping eco-anxiety (Coffey et al., 2021).

Moreover, the conceptualization of eco-anxiety itself remains unclear, with overlapping and closely related terms such as climate change distress, climate change anxiety, and environmental anxiety being used interchangeably (Pihkala, 2018, 2020a, 2020b). Efforts should be made to define and distinguish these terms, raising discussions about the various aspects of eco-anxiety to diminish misunderstandings (Pihkala, 2020b). The definition provided by the American Psychological Association, which describes eco-anxiety as "a chronic fear of environmental doom," could serve as a consistent starting point.

Finally, while eco-anxiety has been associated with pro-environmental behavior and climate activism, which may buffer the impact on Major Depression Disorder symptoms (Boluda Verdú et al., 2022), further research is needed to explore the potential protective factors and coping mechanisms that could mitigate the negative effects of eco-anxiety on mental health.

6. CONCLUSION

The complexity of defining and conceptualizing eco-anxiety poses a significant challenge for research in this area. Prior systematic reviews have used different terminologies and definitions to describe eco-anxiety, with eco-anxiety emerging as the most discussed form, particularly about children, adolescents, or young adults engaged in climate activism (Kurth & Pihkala, 2022; Coffey et al., 2021; Ágoston et al., 2022; Clayton, 2020; Hickman et al., 2021).

While it appears plausible that individuals globally experience eco-anxiety given the massive effects of climate change, there is limited knowledge regarding its prevalence and correlates, particularly among the general adult population (Burke et al., 2018; Thunberg, 2020). Furthermore, eco-anxiety may disproportionately impact certain groups, such as Indigenous communities, which are often more vulnerable to the effects of climate change due to their geographic locations and reliance on natural resources (Abid et al., 2018; Mukhopadhyay & Das, 2020). Future research should prioritize comparative studies across diverse populations to understand the potential disparities in eco-anxiety experiences and develop tailored interventions and support systems

Additionally, eco-anxiety can manifest in adaptive or maladaptive forms, with adaptive eco-anxiety promoting resilience and proactive climate action, while eco-anxiety disorder may impair daily functioning (Jeremy et al., 2023). Lastly, the impacts of eco-anxiety extend beyond its influence on climate activism and sustainable behavior. Anecdotal evidence suggests that climate anxiety may influence personal decisions, such as the choice to have children, due to concerns about the future implications of climate change (Schneider-Mayerson et al., 2020).

Reducing personal climate risks through individual actions may help decrease personal climate anxiety levels caused by concerns about the negative impacts of climate change (Jeremy et al., 2023). Further investigation into these diverse impacts and the development of effective coping strategies is crucial to mitigate the potential negative consequences of eco-anxiety on individual well-being and societal functioning.

7. ACKNOWLEDGMENTS

7.1 Ethical approval

Because this narrative review used published works, ethics approval was not required.

7.2 Informed Consent Statement

Not applicable. This narrative review synthesizes data from previously published studies. No new data were collected from human participants, so informed consent was not required.

7.3 Conflict of Interest

We, the authors of the manuscript entitled "Impact of Climate Change: A Narrative Review of Risk Factors for Eco-Anxiety," declare that we have no financial or personal relationships that could inappropriately influence or bias the content of this paper. We have no conflicts of interest to disclose.

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All authors have contributed significantly to the research and the preparation of the manuscript and have approved the final version for submission. The research was conducted independently, without any influence from funding agencies or external parties.

We affirm that this manuscript has not been previously published and is not currently under consideration for publication elsewhere. We agree to the terms and conditions of the Journal of Open Psychology and are committed to adhering to the ethical standards set forth by the journal.

Sincerely,

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7.4 DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author(s).

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