

Unravelling The Knots: A Narrative Review on Eco-Anxiety, Pro-Environmental Behaviour and Mental Health

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ABSTRACT

Aim and Objective: To comprehensively examine the intricate relationship between eco-anxiety, mental health conditions, and engagement in pro-environmental behaviours. **Background:** In the 21st century, climate change emerges as a paramount threat to global health, intertwining with concerns about mental well-being. Referred to as eco-anxiety, individuals experience persistent apprehension regarding environmental catastrophe, reflecting the perceived collapse of ecological foundations. Despite the importance of pro-environmental behaviours in mitigating this crisis, there remains a gap in understanding the potential relationship between eco-anxiety, mental health conditions, and participation in such behaviours. **Design:** Narrative Literature Review. **Method:** A comprehensive search of eight electronic databases was undertaken. Articles were assessed based on titles, abstracts, and full-text content to identify relevant studies focusing on the psychological impacts of climate change, the association between eco-anxiety and mental illness, and the relationship between eco-anxiety and pro-environmental behaviours. **Results:** Major themes that emerged from the literature are 1) Definitional Issues, 2) Impact of climate change on mental health, 3) Eco-anxiety as a mental health condition, 4) Assessment of eco-anxiety, 5) Eco-anxiety and pro-environmental behaviour (Eco-anxiety as a motivator), 6) Climate hope. **Conclusion:** There is a scarcity of studies on the interplay between eco-anxiety, mental health conditions, and pro-environmental behaviours. This review underscores the necessity for additional research to elucidate the placement of eco-anxiety along its continuum and the diverse psychosocial determinants that contribute to it.

Keywords: *Eco-Anxiety, Pro-Environmental Behaviour, Mental Health Conditions*

The 21st century has brought to light an alarming reality: climate change stands as one of the most significant threats to global health (Watts et al., 2018). In the present era, climate change emerges as a paramount challenge to both human and planetary well-being. According to Maibach and associates (Maibach, E., Miller, J., Armstrong, F., El Omrani, O., Zhang, Y., Philpott, N., ... & Jensen, 2021), maintaining a stable climate stands as the utmost foundational factor influencing human health. Its far-reaching impacts extend beyond physical health concerns, delving into the realm of mental well-being. Various forms of extreme weather events exhibit distinct impacts on mental health, particularly upon onset.

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The correlation between acute weather disasters, such as floods (the most prevalent global disasters), forest fires, heatwaves, cyclones, and extreme anxiety reactions like post-traumatic stress disorder (PTSD), has been well documented (Salcioglu et al., 2007). Emergency response procedures for such events are established, yet there remains a dearth of research into their long-term effects. However, floods have been linked to enduring anxiety, depression, PTSD, increased aggression (particularly in children), and potentially even suicide (Ahern et al., 2005). Additionally, Fritze et al. (Fritze et al., 2008) assert that climate change carries significant mental health implications, highlighting the psychological distress and anxiety stemming from acknowledging climate change as a global environmental threat. According to Fritze et al. (Fritze et al., 2008), the mental health consequences of climate change can be categorized into three main groups: firstly, the immediate trauma resulting from extreme weather events; secondly, vulnerable communities experiencing adverse effects due to disruptions in social, economic, and environmental factors; and thirdly, the emotional distress and anxiety arising from perceiving climate change as a global environmental threat. Similarly, Doherty and Clayton (Doherty & Clayton, 2011) propose a similar tripartite classification, distinguishing between direct impacts (such as acute traumatic events), psychosocial impacts (including social repercussions from phenomena like drought, migration, and conflicts linked to climate change), and indirect effects (stemming from the uncertainty of the future or observations of its impacts).

Termed eco-anxiety, the psychological toll of witnessing gradual environmental shifts adds a new dimension to the climate crisis (Usher et al., 2019). The Australian Medical Association, in a notable 2019 declaration, underscored the gravity of climate change and its anticipated severe health ramifications, particularly for vulnerable populations worldwide. As individuals grapple with the unfolding consequences, feelings of fear, despair, and frustration permeate discussions, echoing concerns for present and future generations. With the world's collective consciousness increasingly tuned to the urgency of the climate crisis, there arises a pressing need to comprehend and address the anxiety it provokes. While the term "eco-anxiety" has garnered attention both in media and expert circles, its precise definition remains elusive. The operationalization of "eco-anxiety" remains unclear, as evidenced by the multitude of definitions and related terms found in existing literature. For instance, Albrecht (Albrecht, 2011) introduced "eco-anxiety" to characterize a persistent apprehension regarding environmental catastrophe. However, "eco-anxiety" is also described as mental distress or anxiety stemming from deteriorating environmental circumstances or as anxiety triggered by the ecological crisis (Usher et al., 2019). In a recent review by Pihkala (Pihkala, 2020a), the most meticulous and comprehensive elucidation of eco-anxiety was delineated. According to Pihkala's synthesis, eco-anxiety manifests as a persistent apprehension or non-specific concern regarding environmental catastrophe, encapsulating the overarching sense that the ecological underpinnings of existence are undergoing collapse (Albrecht, G.A. (2012) "Psychoterratic Conditions in a Scientific and Technological World." In Kahn, P., and Hasbach, P. (Eds), *Ecopsychology: Science, Totems, and the Technological Species*, MIT Press, Pp. 241-264 | Request PDF, n.d.). The definitions of eco-anxiety underscore its close association with fear and worry, yet it is further characterized by elements of uncertainty, unpredictability, and lack of control, exhibiting a wide spectrum of intensity. Moreover, eco-anxiety encompasses not only emotional dimensions such as worry or anxiety but also functional impairment and repetitive contemplation (Ojala et al., 2021). Various terms are utilized to delineate distress stemming from environmental factors. Ecological grief denotes the mourning experienced in reaction

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to actual or anticipated losses in the natural world, while solastalgia characterizes the distress arising from environmental changes affecting individuals directly within their home environment. Eco-angst encompasses a sense of despair emanating from the precarious state of the planet, and environmental distress reflects the emotional toll of witnessing the degradation of one's home and surroundings. These terms, while sharing similarities with eco-anxiety, still exhibit overlaps with anxiety and present inconsistencies in their conceptualization, highlighting the complex relationship between environmental distress and anxiety (Coffey et al., 2021).

Current research presents inconsistent perspectives on whether eco-anxiety should be regarded as a natural or pathological occurrence. Both forms may exist, though pathological levels are deemed rare (Verplanken et al., 2020). While Verplanken et al. (Verplanken & Roy, 2013) contend that treating climate change anxiety as a mental disorder would be erroneous, linking it positively to pro-environmental behaviour rather than pathological concern, other studies suggest associations with general anxiety and depression (Clayton & Karazsia, 2020). Eco-anxiety may contribute to broader syndromes of worry and intrusive thoughts in some instances (Taylor, 2020), necessitating further investigation into its potential maladaptive nature and its place along the anxiety continuum. Additionally, a research study suggests that eco-anxiety is an existential phenomenon, intricately tied to human responses to environmental degradation, encompassing themes of death anxiety, meaning-seeking, relatedness, authenticity, and questions of freedom, challenging the notion of treating it solely as a disorder (Budziszewska & Jonsson, 2021).

Anxiety, fundamentally, is an adaptive emotion that alerts individuals to potential threats, facilitating preparedness and adaptive responses. However, it can become maladaptive when these responses are disproportionate or dysfunctional relative to the actual danger. Given the genuine threat posed by climate change, determining what constitutes a normal or adaptive level of eco-anxiety remains uncertain. Thus, it is crucial to distinguish between adaptive and maladaptive manifestations of eco-anxiety (Doherty & Clayton, 2011). Maladaptive eco-anxiety refers to experiencing psychological distress alongside an inability to respond effectively to climate change, while adaptive eco-anxiety serves as a motivator for climate activism, encouraging collective action and individual mitigation efforts (Taylor, 2020). Among the various mitigation strategies, pro-environmental behaviours play a crucial role, encompassing actions that either minimize the negative environmental impact or actively contribute to its betterment (Steg & Vlek, 2009). Examples of such behaviours include energy and water conservation, reduction of plastic usage, composting food waste, recycling, and the adoption of sustainable products. However, recent research exploring the connection between eco-anxiety and pro-environmental behaviours has generated inconsistent findings. While some studies indicate a positive correlation between anxiety related to climate change and both environmental identity and engagement in pro-environmental behaviours, others have not consistently supported this relationship (Gao et al., 2021).

Attentional bias, a cognitive factor, may influence how eco-anxiety impacts engagement in pro-environmental behaviours (Bar-Haim et al., 2007). It involves the preferential allocation of attention to certain information, extensively studied about anxiety. When individuals are overly sensitive to threats, they may develop a negative attentional bias, contributing to various psychopathologies like depression and anxiety disorders. However, research suggests that an attentional bias to threat can be adaptive in situations of genuine danger,

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facilitating protective behaviours. For instance, Notebaert et al. (Notebaert et al., 2016) found that high trait anxiety coupled with an attentional bias to bushfire-related threats impaired engagement in preparatory behaviors, while low trait anxiety with such a bias enhanced preparedness. Based on several research, it appears conceivable that the association between eco-anxiety and pro-environmental behaviors may be contingent upon the level of attention directed toward climate-related information. Moreover, this relationship might vary based on whether the information pertains to climate change mitigation strategies or the underlying causes and repercussions of climate change. However, as of now, no studies have examined the potential interplay between, eco-anxiety, Mental Health Conditions, and subsequent participation in pro-environmental behaviours (Mathers-Jones & Todd, 2023).

Rationale

The contemporary research landscape is marked by a growing interest in the complex interplay between environmental concerns, individual behaviour, and mental well-being. With heightened global awareness of climate change, eco-anxiety has emerged as a significant phenomenon, characterized by heightened apprehension and distress related to environmental issues. Concurrently, there is increasing recognition of the importance of pro-environmental behaviour in addressing ecological threats. Despite the acknowledgement of individual psychological responses to environmental issues, a comprehensive understanding of the relationships among eco-anxiety, pro-environmental behaviour, and mental health conditions remains understudied. This narrative review aims to bridge this gap by synthesizing existing literature and exploring the multifaceted connections among these variables.

Grasping the emotional and psychological impacts of eco-anxiety is crucial for understanding its implications for mental health and its influence on pro-environmental behavior. The reciprocal relationship between mental health conditions and engagement in pro-environmental behaviors adds complexity, necessitating a comprehensive review to understand these concepts fully. This study seeks to contribute to existing knowledge by offering insights into the psychological dimensions of eco-anxiety and its effects on pro-environmental actions, elucidating the impact of environmentally friendly behaviors on mental health outcomes, and identifying potential interventions to mitigate negative mental health effects associated with eco-anxiety.

In a world facing urgent environmental challenges, this narrative review aims to illuminate the connections among eco-anxiety, pro-environmental behavior, and mental health conditions. By doing so, it hopes to lay the groundwork for future research, inform public discourse, and guide the development of interventions promoting environmental sustainability and mental well-being.

METHODOLOGY

A thorough literature review was conducted using multiple databases, including Scopus, Web of Science, PsycINFO, and PubMed. Specific keywords such as eco-anxiety, climate change emotions, psychological effects, and pro-environmental behaviour were utilized to identify relevant studies. Both scoping reviews and original research articles were considered to encompass a broad spectrum of insights regarding the psychological impacts of climate change, the relationship between eco-anxiety and mental health conditions, and the correlation between eco-anxiety and pro-environmental behaviours.

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To assess methodological quality, a checklist adapted from Hawker et al. (Hawker, S., Payne, S., Kerr, C., Hardey, M., & Powell, 2002) was employed. This checklist facilitated the extraction and appraisal of data pertaining to various aspects of each study, including abstract & title, introduction and aims, methods and data, sampling, data analysis, bias, results, transferability or generalizability, implications, and usefulness. Each study was rated using this appraisal tool, with scores ranging from 9 (indicating very poor methodological rigour) to 36 (indicating good methodological rigour), providing insights into the quality of each paper.

An iterative consensus-building approach was adopted to synthesize the literature and elucidate the social context of the findings. This process involved the thorough reading and re-reading of papers by the research team to initially identify subthemes and subsequently agree upon major themes emerging from the literature. Through this method, a comprehensive understanding of the relationships among eco-anxiety, psychological effects, and pro-environmental behaviours was achieved.

RESULTS

Definitional issues

Ecological anxiety, commonly referred to as eco-anxiety, describes heightened distress experienced in response to ecological crises, notably anthropogenic climate change (Pihkala, 2020b). Research indicates that individuals experiencing climate-related distress often exhibit symptoms such as depression, pathological anxiety, insomnia, panic attacks, and obsessive thinking (Verplanken et al., 2020). Notably, eco-anxiety is not formally recognized as a clinical disorder. However, the American Psychiatric Association has acknowledged the psychological impact of climate change on mental health, defining eco-anxiety as a "chronic fear of environmental doom" (Clayton, 2020). Despite this recognition, some argue that such a narrow definition of eco-anxiety may wrongly pathologize what is fundamentally a rational response (Pihkala, 2020b). In light of the genuine threat posed by climate change and ecological degradation, experiencing fear and worry can be viewed as a rational and understandable reaction (Clayton, 2020), (Heeren & Asmundson, 2023), (Verplanken & Roy, 2013)

Impact of climate change on mental health

Climate change is universally acknowledged as one of the foremost global health challenges in the 21st century, posing a significant threat to public health on a global scale (Watts et al., 2018). This encompasses not only the gradual impacts of climate change but also its implications for mental health, commonly referred to as eco-anxiety (Usher et al., 2019). Numerous individuals express concerns about their well-being, that of their children, and the prospects for future generations, experiencing profound emotions of grief, despair, and frustration as they observe the consequences of climate change. Recognizing the anxiety triggered by the climate crisis is essential, particularly in light of its heightened global recognition (Coffey et al., 2021). While climate change typically prompts considerations of its environmental repercussions and physical health implications, it also exerts an impact on individuals' mental well-being. The effects of climate change-induced weather events and natural disasters on mental health have been acknowledged for some time, manifesting in issues such as sleep disturbances, stress, anxiety, depression, post-traumatic stress disorder, and suicidal thoughts (Warsini et al., 2014). However, there is comparatively less research addressing the mental and emotional consequences stemming from the awareness of the gradual environmental changes directly linked to climate change (Pihkala, 2018).

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Encounters with apparent impacts attributed to climate change, as well as individuals' subjective perceptions of such experiences, play a crucial role in shaping risk perceptions and emotional responses toward the issue (Reser et al., 2014). People frequently rely on their personal encounters with extreme weather events to gauge the reality of climate change (McDonald et al., 2015). Exposure to events like flooding and hurricanes can intensify negative sentiments surrounding climate change, as they render the phenomenon more tangible and immediate (Bergquist et al., 2019). This process of experiential learning often leads to the intuitive association of negative emotions evoked by extreme weather events with climate change, influencing individuals' perceptions of climate-related risks (Marx et al., 2007). Berry et al. (Berry et al., 2010a) have categorized the mental health impacts of climate change into three main groups: direct, indirect, and vicarious. The majority of research has primarily focused on the direct impacts, which arise following exposure to extreme weather events such as floods, earthquakes, or hurricanes. These significant disruptions in life can precipitate conditions like post-traumatic stress disorder (PTSD), depression disorders, anxiety disorders, substance use disorders, and suicidal ideation (Hayes et al., 2018),(Cianconi et al., 2020a). Additionally, indirect effects of climate change can also exert an influence on mental health through their repercussions on the economy, migration patterns, damage to physical and social infrastructure, shortages of food and water, and the escalation of conflict. These factors have all been associated with heightened levels of stress, grief, anxiety, and depression (Hayes et al., 2018). Moreover, even individuals who have not directly experienced the consequences of climate change, whether direct or indirect, may still experience distress simply due to their awareness of the global environmental crisis(Pihkala, 2018).These findings underscore the intricate connections between environmental concerns, individual behaviours, and mental well-being. They highlight the imperative to explore how eco-anxiety, driven by both direct and indirect impacts of climate change, influences pro-environmental behaviour and mental health outcomes.

Eco-anxiety as a mental health condition

Changes in climatic conditions are already recognized to have an impact on public health (Berry et al., 2010b) (Berry et al., 2010a) and can have direct or indirect and short term or long term impact on mental health (Cianconi et al., 2020b; Fritze et al., 2008). At its core, anxiety serves as a functional emotion, alerting individuals to potential threats. The cognitive, emotional, and physiological processes involved in anxiety play a crucial role in preparing individuals for potentially hazardous situations and facilitating adaptive behavioural responses (Grupe & Nitschke, 2013). However, anxiety can become maladaptive when these processes malfunction or when the level of anxiety exceeds the actual threat present (Barlow, 2004). Given the substantial threat posed by climate change, defining what constitutes normal, appropriate, or adaptive eco-anxiety remains a topic of debate (Doherty & Clayton, 2011). Thus, it is imperative to distinguish between adaptive and maladaptive forms of eco-anxiety. Maladaptive eco-anxiety is characterized by psychological distress accompanied by an inability to respond effectively to climate change, whereas adaptive eco-anxiety spurs climate activism, including collective action and individual efforts toward mitigation (Taylor, 2020).

Assessment of eco-anxiety

The latest UN report on climate change, as of press time, unequivocally confirms humanity's role in global warming and has sparked widespread concern about the present and potential future catastrophic outcomes (Intergovernmental Panel on Climate Change, 2021). The

heightened visibility of climate change in 2019, coupled with comprehensive scientific analysis, has led to increased media coverage of the phenomenon. News coverage now extends beyond environmental degradation to include its effects on individuals, notably eco-anxiety (Clayton & Karazsia, 2020). In a research study, Three novel questionnaires were developed: the 11-item Eco-Guilt Questionnaire (EGuiQ-11), the 6-item Ecological Grief Questionnaire (EGriQ-6), and the 22-item Eco-Anxiety Questionnaire (EAQ-22). Through a multi-stage factor analysis, robust scales were identified, offering a nuanced understanding of eco-guilt, ecological grief, and eco-anxiety in relation to climate change and the ecological crisis. The comprehensive range of items within the eco-anxiety domain, the most diverse among the three emotional constructs, focused primarily on concerns related to the ecological crisis. These items coalesced into two distinct factors: habitual ecological worry and negative consequences of eco-anxiety. The habitual ecological worry factor encapsulates externally focused concerns regarding climate change and the ecological crisis, reflecting emotional states such as fear, alarm, and worry about uncertain futures or disturbing changes (Verplanken & Roy, 2013). Additionally, this factor encompasses concerns for others and feelings of anger toward environmentally harmful behaviour exhibited by individuals, leaders, or countries. It represents a form of "practical anxiety" and indignation, which may be considered normative reactions to the ecological crisis (Sangervo et al., 2022). Conversely, the negative consequences of the eco-anxiety factor delineate tangible physical, emotional, or behavioural repercussions, including poor sleep, muscle tension, heightened vigilance, and eco-paralysis—the inability to meaningfully address ecological challenges in an unpredictable world (Albrecht, 2011). This factor also encompasses functional and social impairment, such as diminished performance in academic or professional settings and conflicts with others. While the habitual ecological worry factor may signify a more adaptive form of anxiety, the negative consequences factor likely represents a less adaptive manifestation. Future research should aim to determine whether the negative consequences of eco-anxiety factors indicate clinical levels of anxiety and explore the extent to which these factors predict psychological adaptivity in the context of climate change (Ágoston et al., 2022).

Eco-anxiety and pro-environmental behavior (Eco-anxiety as a motivator)

Additionally, there is evidence suggesting that eco-anxiety may coincide with pro-environmental behaviours, including climate activism, which could potentially mitigate the effects on symptoms of Major Depressive Disorder (Boluda-Verdú et al., 2022). One notable mitigation strategy involves engaging in pro-environmental behaviours, which encompass actions that either have a minimal negative impact on the environment or actively benefit it (Steg & Vlek, 2009). Examples of such behaviours include conserving energy and water, reducing plastic usage, composting food waste, recycling, and opting for sustainable products. Eco-anxiety has been linked to various adverse mental health outcomes such as depression, anxiety, stress, insomnia, reduced self-reported mental well-being, functional impairment, and reluctance to have children. These associations were particularly notable among populations with heightened concerns about climate change, women, individuals residing in economically disadvantaged countries, and younger age groups.

The ongoing debate among researchers regarding the relationship between eco-anxiety and pro-environmental behaviour underscores the complexity of this issue. While some researchers propose that eco-anxiety catalyzes pro-environmental actions, suggesting that individuals may engage in such behaviours as a coping mechanism to alleviate their anxiety about environmental concerns (Heeren et al., 2022). others argue that eco-anxiety may not

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necessarily translate into actual behavioural change or may even hinder such actions (Clayton & Karazsia, 2020). These contrasting perspectives on the relationship between eco-anxiety and pro-environmental behaviour are crucial considerations for the narrative review on eco-anxiety, pro-environmental behaviour, and mental health. By synthesizing existing literature and examining the nuances of this relationship, the review aims to shed light on the multifaceted connections among these variables. Moreover, the notion of "eco-paralysis," wherein excessive levels of eco-anxiety inhibit individuals from taking tangible steps toward environmental action, adds another layer of complexity to this dynamic (Albrecht, 2011). Understanding how eco-anxiety may both motivate and hinder pro-environmental behaviour is essential for crafting effective interventions and strategies to promote both environmental sustainability and mental well-being. Thus, by unravelling the knots surrounding the relationship between eco-anxiety, pro-environmental behaviour, and mental health, the narrative review seeks to contribute to a deeper understanding of these interconnected concepts and provide insights for future research and intervention efforts.

DISCUSSION

Climate change stands unequivocally recognized as a paramount global health crisis of the 21st century, casting a formidable shadow over public health worldwide (Watts et al., 2018). Its effects extend beyond the evident environmental changes, infiltrating mental health realms, often labelled as eco-anxiety (Usher et al., 2019). Understanding the emotional and psychological impacts of eco-anxiety is pivotal in comprehending its implications for mental health. Moreover, investigating how eco-anxiety influences pro-environmental behaviour is crucial for devising effective strategies to encourage sustainable actions. The intricate interplay between mental health conditions and engagement in pro-environmental behaviours further complicates this dynamic, underscoring the need for a comprehensive review to unravel these complexities. This study aims to contribute to the existing body of knowledge in several key ways. Firstly, by delving into the psychological dimensions of eco-anxiety and its potential role in driving or impeding pro-environmental actions, to offer valuable insights into the intricate relationships between these concepts. Secondly, seek to elucidate the impact of engaging in environmentally friendly behaviours on mental health outcomes, thereby shedding light on the reciprocal nature of these interactions. This review endeavours to identify potential interventions and strategies to alleviate the negative mental health effects associated with eco-anxiety, fostering a holistic understanding of the connections between eco-anxiety, pro-environmental behaviour, and mental health. These contributions aim to enrich the understanding of these complex phenomena and inform future research and intervention efforts in this field. The mental health implications of climate change are multifaceted, encompassing sleep disturbances, stress, anxiety, depression, and post-traumatic stress disorder (Warsini et al., 2014). Encounters with extreme weather events, such as flooding and hurricanes, intensify negative emotions and shape risk perceptions regarding climate change (Reser et al., 2014). Berry et al. (Berry et al., 2010a) categorize the mental health impacts into direct, indirect, and vicarious effects, highlighting conditions like PTSD, depression, anxiety disorders, and substance use disorders following exposure to extreme weather events. Indirect effects, including economic repercussions and social disruptions, also contribute to heightened stress, grief, anxiety, and depression (Hayes et al., 2018). Moreover, awareness of the environmental crisis can induce distress even among those not directly affected by its consequences (Pihkala, 2018).

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Ecological anxiety, colloquially known as eco-anxiety, delineates an elevated state of distress triggered by ecological crises, particularly anthropogenic climate change (Pihkala, 2022). Studies suggest that individuals grappling with climate-related distress often manifest symptoms including depression, pathological anxiety, insomnia, panic attacks, and obsessive thinking (Verplanken et al., 2020). Although eco-anxiety lacks formal recognition as a clinical disorder, the American Psychiatric Association has acknowledged the psychological repercussions of climate change on mental health, characterizing eco-anxiety as a persistent apprehension concerning environmental catastrophe (Clayton, S., Manning, C., Krygsman, K., & Speiser, 2017). Anxiety, at its essence, functions as a mechanism to alert individuals to potential threats, with cognitive, emotional, and physiological processes facilitating adaptive responses (Grupe & Nitschke, 2013). However, when anxiety exceeds the actual threat or its processes malfunction, it can become maladaptive (Barlow, 2004). Eco-anxiety, a mental health condition arising from concerns about climate change, presents a complex scenario wherein distinguishing between adaptive and maladaptive forms is crucial (Doherty & Clayton, 2011). Maladaptive eco-anxiety is characterized by psychological distress and an ineffective response to climate change, while adaptive eco-anxiety motivates climate activism and mitigation efforts (Taylor, 2020).

Eco-anxiety has been associated with various adverse mental health outcomes such as depression, anxiety, stress, insomnia, reduced self-reported mental well-being, functional impairment, and reluctance to have children (Boluda-Verdú et al., 2022). Despite these negative effects, there is evidence suggesting that eco-anxiety may coincide with pro-environmental behaviours, including climate activism, which could potentially mitigate symptoms of Major Depressive Disorder (Boluda-Verdú et al., 2022). Engaging in pro-environmental behaviours, such as conserving energy and water, reducing plastic usage, composting food waste, recycling, and opting for sustainable products, is considered a notable mitigation strategy for eco-anxiety (Steg & Vlek, 2009). These associations between eco-anxiety and mental health outcomes are particularly notable among populations with heightened concerns about climate change, women, individuals residing in economically disadvantaged countries, and younger age groups. While some researchers propose that eco-anxiety serves as a catalyst for pro-environmental actions, suggesting that individuals may engage in such behaviours as a coping mechanism to alleviate their anxiety about environmental concerns.

In a recent study, three novel questionnaires were developed: the 11-item Eco-Guilt Questionnaire (EGuiQ-11), the 6-item Ecological Grief Questionnaire (EGriQ-6), and the 22-item Eco-Anxiety Questionnaire (EAQ-22) offering a nuanced understanding of eco-guilt, ecological grief, and eco-anxiety in relation to climate change and the ecological crisis (Ágoston, 2022). The EAQ-22 focused primarily on concerns related to the ecological crisis, with items coalescing into two distinct factors: habitual ecological worry and negative consequences of eco-anxiety (Clayton & Karazsia, 2020). The habitual ecological worry factor reflects fear, alarm, and worry about uncertain futures or disturbing changes, while the negative consequences factor delineates tangible physical, emotional, or behavioural repercussions, including poor sleep, muscle tension, and heightened vigilance (Verplanken & Roy, 2013).

Hope, both passive and constructive, plays a pivotal role in addressing the challenges posed by climate change. Scholars like Ojala (Ojala, 2016) have delineated between these forms of hope, emphasizing their significance in motivating individuals to engage with climate

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action. In the realm of climate activism, hope emerges as a crucial factor, particularly when confronted with daunting odds of success (Bury et al., 2020). Despite the complexity of climate-related issues, hope serves as a driving force, providing resilience and determination to pursue a better future amidst adversity (Oettingen & Chromik, 2017). This conceptualization of hope encompasses motivational factors and beliefs in personal efficacy, rooted in individuals' commitment to environmental values and moral convictions (Snyder, 2000). Moreover, hope acts as a catalyst for collective action, illuminating pathways for community engagement in addressing climate change (Bury et al., 2020). Research indicates that hope mediates the relationship between the perceived likelihood of success and support for climate action, particularly within highly committed participant groups. Individuals deeply invested in climate-related outcomes are spurred by hope, especially in situations where success is conceivable but uncertain (Bury et al., 2020). This underscores hope's unique motivational function in inspiring action amid challenging circumstances.

In a world where environmental challenges are becoming increasingly urgent, this narrative review endeavors to shed light on the intricate connections among eco-anxiety, pro-environmental behavior, and mental health conditions. By unraveling these knots, this review provides a foundation for future research, informs public discourse, and guides the development of interventions that promote both environmental sustainability and mental well-being.

CONCLUSION

Understanding the emotional and psychological impacts of eco-anxiety is pivotal in comprehending its implications for mental health. Moreover, investigating how eco-anxiety influences pro-environmental behaviour is crucial for devising effective strategies to encourage sustainable actions. Numerous psychosocial determinants are pivotal in determining the positioning of eco-anxiety along its continuum. Several literatures highlight the importance of climate activists, who demonstrate the ability to effectively respond to climate change, serving as drivers for promoting collective action and individual mitigation efforts. Additionally, attentional processes play a significant role in shaping the placement of eco-anxiety on this spectrum. However, aside from these factors, numerous other psychosocial determinants have not been thoroughly investigated in research. This study has significantly advanced understanding in several key aspects. It has provided valuable insights into the psychological dimensions of eco-anxiety and its potential impact on driving or hindering pro-environmental actions, thereby enhancing comprehension of the intricate relationships among these constructs. Additionally, it has shed light on the reciprocal nature of the relationship between engagement in environmentally friendly behaviours and mental health outcomes, contributing to a deeper understanding of the dynamics at play.

Based on an extensive review of the literature and the collective insights of various authors, this narrative review offers a definition of eco-anxiety, *“the transient experience of difficult emotional and mental states arising from knowledge about climate change and its disastrous consequences, resulting in either appraisal-focused, problem-focused, emotion-focused and/or occupation-focused coping as a response to alleviate the distress experienced by the individual.”* These findings hold significance in enriching comprehension of these complex phenomena and offer valuable insights to guide future research endeavours.

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