

Summarizing Existing Intervention Methods Against Climate Anxiety

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Abstract. Climate anxiety, or eco-anxiety, is an increasingly salient concern as severe weather has intensified in recent years. The persistent worry and distress can impair functioning and psychological well-being among young people and are shown to be very prevalent in this population. Although recognition of climate anxiety has grown in recent years, interventions remain fragmented across disciplines. This review synthesizes empirical studies of education and mental health-based interventions aimed at reducing climate-related distress. Findings of the studies reveal a pattern of trading off between engagement and anxiety. Educational programs can heighten pro-environmental engagement but is at times ineffective at addressing the distress. Mental health programs can effectively decrease distress but is at risk of decreasing pro-environmental engagement. These findings highlight the importance of future interventions to balance the dual role of climate anxiety, where it is no longer causing distress but is still acting as a catalyst for meaningful climate action.

Keywords: Climate anxiety, eco-anxiety, young adults, interventions, mental health

1. Introduction

Climate anxiety is characterized by a persistent worry and distress about climate change and its impacts [1]. Although climate anxiety is not recognized as an illness in the DSM-5 or the World Health Organization, it has a strong impact on one's well-being. A global survey of 10,000 youths estimated the prevalence of climate anxiety among adolescents and young adults, with 59% of participants expressing strong apprehensive feelings about climate change, and 85% reporting at least moderate concerns [2]. A longitudinal study from Canada in 2023 also provided evidence that climate worry is strongly tied to mental health, with anxiety, depression, and suicidal thoughts [3]. These statistics and findings demonstrate that the phenomenon is very prevalent and has a strong impact. Yet the distress associated with climate anxiety was found to be not just maladaptive. Anneser et al. found that higher levels of climate anxiety were correlated with higher levels of pro-environmental agency and behavior [4]. These findings illustrate the dual role of climate anxiety and underscore the importance of developing interventions for climate anxiety that reduce the harmful effects while preserving its potential.

Although recognition of climate anxiety has increased, few studies have reviewed interventions that might alleviate the distress. The available studies are also fragmented across disciplines, with different perspectives reviewed in isolation. Therefore, this review synthesizes the effectiveness of

the interventions designed to address climate anxiety, with a focus on education and mental health approaches. It aims to clarify their benefits, limitations, and implications for supporting youth mental health while sustaining pro-environment engagement.

2. Existing interventions

2.1. Education-focused interventions

A growing number of programs adopted education-based interventions to address climate anxiety by combining information and exposure to climate action to empower young people while reducing their distress.

Glynn et al. conducted a randomized controlled trial to test their educational program [5]. The study recruited 86 female students aged 15-16 years from Ireland and randomized them into two groups: intervention and control. The intervention group completed a four-week education session using Gen AI, followed by a half-day field trip in nature; the control group continued with their regular school curriculum. After the sessions, students from both groups completed a self-report questionnaire that consisted of the Climate Capability Scale and the Hogg Eco-Anxiety Scale. Eight students also participated in follow-up interviews, which provided qualitative insight into their experiences. Compared to the control group, the intervention group demonstrated a greater improvement in climate capability. However, results also showed that eco-anxiety rose significantly in the intervention group, specifically with their affective symptoms and rumination. This suggests that the students gained knowledge along with their levels of worry. Qualitative data demonstrated that students in the intervention group felt powerless to solve climate change and had a strong sense of burden to fix the problems created by older generations. Still, they also demonstrated a feeling of capability to contribute to the change. The authors interpreted this increase as not a failure of the program, but rather as potentially adaptive, as it fostered the motivation and agency of those who participated in the intervention. A limitation for the study would be its small sample size drawn from an all-girls school, which makes the findings hard to generalize. The short duration of the intervention also made it unclear whether these perceived gains in capability would persist over time. Methodologically, the self-report nature of the questionnaire may lead to exaggeration of responses.

Benoit et al. conducted another randomized controlled trial to examine whether short selfie videos featuring a peer of the same age could influence the adolescents' hope, agency, behavioral intentions, and anxiety [6]. The study had a large sample of 1039 adolescents aged 14-18 years from the United States, and these participants were randomized into three groups: watching a positive video that emphasized action, a negative video with a defeatist stance, or a neutral video unrelated to climate change. After viewing the videos, participants also completed a self-report survey that consisted of the Climate Change Anxiety Scale, the Climate Change Hope Scale, followed by 8 items measuring behavioral intentions, and two sliders to assess hope and sense of agency. Results from the survey demonstrated that the intervention did not significantly decrease climate anxiety or increase pro-environmental behavioral intentions, but those assigned to the positive videos reported significant increases in hope and agency. The authors concluded that the single exposure may be insufficient to reduce anxiety and translate into meaningful engagement. Limitations included the reliance on self-reported outcomes, which may be influenced by exaggerations and bias. The U.S. exclusive sample may limit cultural generalizability. The study also lacked follow-up, meaning that it is unknown if the benefits of the programs were sustainable. Finally, the study was only a one-time exposure; the effects of repeated exposures were not explored.

Sarrasin et al. implemented an intervention in Switzerland that examined the extent to which climate anxiety, agency, and group dynamics influenced their willingness to take part in environmentally friendly action [7]. The intervention consisted of a day and a half of intensive educational events, where 169 adolescents (aged 11-19) were recruited to form small groups and design climate-related projects. Researchers administered several self-report measures. Climate anxiety was measured with a single-item question capturing worry associated with climate change, rated on a Likert scale. Efficacy beliefs were divided into self-efficacy and collective efficacy. Pro-environmental behavioral intentions were assessed using items on willingness to act for the climate. The teachers of the participants were also interviewed for their qualitative insight into the program's effects. The results of the study indicated that both self-efficacy and collective efficacy predicted pro-environmental intentions. Climate anxiety was also found to be associated with pro-environmental intentions and self-efficacy. The researchers argued that climate anxiety, when supported in a group setting and feelings of efficacy, can promote pro-environmental intentions. Limitations of the study include reliance on a single-item measure of climate anxiety and having a relatively small sample. The teachers also observed that only a subset of students were openly concerned about climate change, with only a few distressed to the point they had to leave class when the subject was raised.

The educational programs were able to enhance agentic feelings of the participants while they learn. However, these studies also show that simply increasing awareness does not automatically reduce anxiety levels, and in some cases, such as the study conducted by Glynn et al., education has led to heightened distress [5]. This dichotomy suggests that knowledge may intensify feelings of burden and powerlessness, and is insufficient to address climate anxiety, but when combined with social support elements, it has the potential to be channeled into engagement.

2.2. Mental health-focused interventions

Researchers have also widely explored interventions that involve licensed professionals directly addressing the root of the distress.

Eklöf & Klöckner created the Climate Emotion School intervention, which was a large three-year program consisting of five after-school workshop sessions facilitated by licensed psychologists and educators [8]. Each session focused on building emotional coping skills, both individual and collective problem-focused coping, and strengthening peer support. Activities included sharing emotions concerning the climate, learning about the role of difficult emotions, exploring strategies for collective action, and reflecting on self-care practices. The participants were 60 young people (aged 15-29), and 10 participants and 4 practitioners were chosen for semi-structured interviews. Some common themes were identified from the interviews. First, understanding, accepting, and verbalizing difficult emotions was a valuable new coping skill. Participants indicated that naming emotions helped them feel validated rather than ashamed of how they felt. Instead of treating climate emotions as negative, the participants also came to see them as motivating forces rather than weaknesses. Second, the group discussions helped diminish feelings of isolation when hearing that other people had the same fears. The group space also successfully reduced feelings of stigma of climate anxiety. Even then, some participants reported challenges in applying their coping strategies in their daily lives after the sessions. This points to an important limitation of the intervention. While the short-term workshops created a safe space, they did not provide the tools or the support needed for participants to sustain coping strategies beyond the group context. Methodologically, only a few participants were interviewed, which means that their experiences may not be reflective of the wider

experiences of other participants, and the wider age range of participants may further affect this generalizability, as adults may have different concerns and stress than teenagers.

Lindhe et al. designed a pilot randomized controlled trial evaluating the impact of their individually tailored cognitive behavioral therapy (ICBT) program [9]. 60 Swedish participants were recruited and randomized into either the intervention group with eight weeks of the program or the control group. The program consisted of coping skills learning modules such as stress management, emotional regulation, and cognitive restructuring. Participants completed self-report surveys before and after treatment, which included scales on depression, perceived stress, generalized anxiety, climate change-related distress, quality of life, and pro-environment behavior. Results showed that the treatment group demonstrated improvements in depression, climate change-related distress, and quality of life. The study also found that the reduced climate distress did not relate to a reduced engagement in climate-friendly behavior. However, the study had several limitations, including a high dropout rate and a small sample size, which may have led to inaccurate outcomes.

Karl & Stanley conducted a study in Australia examining the impact of various elements of mindfulness on climate anxiety [10]. The researchers included 287 participants and had them complete several validated measures: the Comprehensive Inventory of Mindfulness Experiences, the Hogg Climate Anxiety Scale, the Anticipatory Solastalgia Scale to capture distress about future environmental losses, and questions on pro-environmental behavior. Results demonstrated that the different aspects of mindfulness correlated differently with climate anxiety. Nonjudgmental attitude and nonreactive decentering correlated with reduced affective and behavioral symptoms, but not cognitive symptoms; acting with awareness was the strongest predictor of lower climate anxiety across all dimensions; the awareness of internal and external experiences was linked with higher personal impact anxiety and higher anticipatory solastalgia, respectively. The climate anxiety dimensions of rumination and personal impact anxiety predicted more pro-environmental behavior, and anticipatory solastalgia was also associated with both. These findings led the authors to conclude that mindfulness is a “double-edged sword”, as it can lead to a reduced affective symptom of climate anxiety but can also demotivate action. The authors suggest that interventions should aim for a balance, where personal distress can be managed in a way that does not obstruct pro-environmental behavior. However, there are several limitations to the study. The study used a cross-sectional self-report design, which prevents causal inference. The overall levels of climate anxiety in the samples were also relatively low, which hinders generalizability to those with heightened climate anxiety.

Taken together, these studies illustrate the complexity of the effects of targeting the distress of climate anxiety. Group-based approaches emphasize social support but face challenges with sustaining coping strategies outside the program. Individualized therapy sessions show strong potential for reducing climate anxiety without undermining pro-environmental engagement, but the scalability remains a problem due to the small sample size. Finally, the mindfulness-based approach highlights that reducing distress alone may not always be beneficial, as it may take away from the motivating role of anxiety on climate action. Overall, the findings suggest that interventions must have a careful balance of helping individuals manage distress while maintaining their engagement in climate action.

3. Conclusion

The intervention examined in this review reflects the dual role of climate anxiety, where approaches that address psychological distress may also lead to a decrease in motivation for climate action. Educational programs can empower young people but may also intensify the anxiety experienced by

young people. The results of the interventions emphasize the importance of an integrative approach, specifically one that helps participants maintain psychological well-being while remaining engaged.

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