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Towards Evidence-Based Guidelines for Working with Climate-Anxious Youth: Insights from a Delphi Study of Mental Health Practitioners and Researchers

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Abstract

Background.

Climate anxiety, defined as persistent worry and distress about climate change, is increasingly prevalent among young people, yet evidence-based guidelines for practitioners working with this population remain limited. This study aimed to develop and establish expert consensus on the helpfulness and feasibility of strategies for supporting young people experiencing climate anxiety.

Method.

A two-round modified internet-based Delphi study was conducted with researchers and practitioners with expertise in youth mental health. A total of 38 experts participated in Round 1 (R1) and 29 in Round 2 (R2). An initial set of 61 strategies, developed from focus groups, previous research conducted by the research team, and the broader literature, was rated for helpfulness and feasibility. Consensus was defined as at least 75% agreement on both helpfulness and feasibility.

Results.

Of the 61 candidate strategies, 53 (86.9%) reached consensus, with 37 reaching consensus in R1 and a further 16 in R2. Strongest support was found for strategies involving emotional processing and regulation, adaptive coping, cognitive-behavioral approaches, balanced climate-information consumption, manageable and collective action, social support, and psychoeducation. Consensus was lower or not reached for avoidance-based strategies, highly prescriptive pro-environmental behaviors, spirituality, pharmacological treatment, and some strategies requiring greater practical or organizational resources.

Discussion.

Experts showed substantial agreement regarding how young people experiencing climate anxiety should be supported. The findings suggest that support should primarily help young people understand and regulate climate-related emotions, strengthen coping and agency, engage with climate information in a balanced way, and draw on interpersonal support, while avoiding approaches that may reinforce avoidance, excessive individual responsibility, or unnecessary pathologization. The endorsed strategies provide an initial basis for informing practice, but their effectiveness should be evaluated in future intervention research.

Introduction

Climate change represents one of the defining challenges of the 21st century, and its psychological impacts are increasingly recognized as a significant public health concern (Clayton, 2021; Hayes et al., 2018). Among numerous concepts, often used interchangeably, eco-anxiety and climate anxiety have gained considerable interest in the scientific and professional public. Eco-anxiety broadly refers to anxiety related to environmental degradation, including concerns about biodiversity loss, pollution, deforestation, resource depletion, and climate change (Clayton et al., 2017; Pihkala, 2020). Climate anxiety can be understood as a more specific form of eco-anxiety, referring to

anxiety about climate change and its current or anticipated consequences (Clayton, 2020). In the present paper, we use the term climate anxiety in this narrower sense.

For many individuals such emotions usually don't reach clinically significant levels (Pihkala, 2020), however they can be a source of distress which affects everyday life. In some cases, the mentioned distress can also be associated with symptoms of generalized anxiety, depression, and sleep disturbance (Clayton, 2021; Hayes et al., 2018)

Young people are disproportionately affected by this. Survey data from 10 countries indicate that over 50% of youth aged 16–25 feel moderately or extremely worried about climate change, with a substantial minority reporting functional impairment (Hickman et al., 2021). Practitioners working with youth, school counselors, clinical psychologists, social workers, and psychiatrists, increasingly encounter climate anxiety in their work yet report a lack of guidance (Pitt et al., 2024).

Despite a growing body of theoretical and empirical work on climate anxiety interventions, no endorsed set of practice guidelines currently exists for working with young people experiencing climate anxiety. These varied accounts of addressing it often remain at the level of suggestions rather than endorsed guidance that mental health professionals could rely on. While many individual strategies have been tested empirically, they have not been appraised systematically by the professionals expected to deliver them, and few address whether they are workable within the constraints of everyday practice. The recommendations thus serve as a robust and evidence-based framework that can be used as a foundation to devise locally appropriate, concrete implementation strategies

To address this gap, we adopt the modified Delphi method in the present study, a structured, iterative procedure for eliciting and refining judgments from individuals with relevant expertise (Trevelyan & Robinson, 2015). Organizing professional experience and expert knowledge is particularly useful for identifying areas of consensus on complex or insufficiently established topics where empirical evidence remains limited, incomplete, or mixed, yet practitioners require guidance on which strategies to prioritize. It has proven especially valuable in health and mental health research and practice for questions that are not easily addressed through experimental or epidemiological methods. For example, the Delphi method has previously been used to select healthcare quality indicators (Boulkedid et al., 2011), to develop consensus-based guidance in mental health research (Jorm, 2015), and to identify self-help strategies for sub-threshold anxiety that are considered both helpful and feasible (Morgan et al., 2016).

More directly related to the topic of this study, guidance on addressing mental health concerns related to climate change among youth does exist. Major reports and policy documents have set out recommendations for responding to the mental health consequences of climate change, such as the WHO policy brief (2022), the American Psychological Association's guidelines (Clayton et al., 2023), and the synthesis by Lawrance and colleagues (2022). The WHO brief, for instance, sets out five approaches, such as integrating climate considerations into mental health policy and programming and adopting multi-sectoral, community-based measures that reduce vulnerability while addressing psychosocial impacts. What these documents offer, however, is direction mostly at the policy level.

Formal consensus studies have gone some way further. For example, Alford et al. (2023) used a Delphi-style study to develop and prioritize recommendations for action on climate change and mental health in the research, policy, healthcare, and third-sector contexts. Charlson et al. (2022) convened 22 experts from several sectors to establish ten priorities for research on climate change and mental health, and Augustinavicius et al. (2022) reached consensus on twenty research priorities for mental health and psychosocial support in the climate context with a panel of 91 experts. Tiatia et al. (2022) used a panel of 70 experts to determine key principles on mental health during climate change for Pacific peoples. Most of them, however, addressed only the research agenda rather than

practice, and neither considered what practitioners should do when a young person presents with climate-related distress.

The present study aimed to develop expert-endorsed guidelines for supporting young people with climate anxiety through a two-round Delphi study with a panel of Slovenian mental health practitioners and researchers. Specifically, we sought to establish which strategies experts from both groups consider helpful and feasible. Our approach differs from the existing Delphi studies in several ways. First, the strategies submitted for appraisal were not drawn solely from the literature. They also came from focus groups with practitioners who work directly with young people, and from a cross-sectional study of climate anxiety among Slovenian youth, which meant the pool reflected clinical experience, local empirical patterns, and published proposals. Strategies that practitioners already use but that have not been systematically empirically tested and hence have not been documented in the literature could therefore enter the process, and constructs that proved relevant in this population could be further assessed in future studies. Second, the panel deliberately combined researchers and practitioners, allowing evidence-based and practice-based perspectives to be compared and any divergence discussed. Third, we asked experts to rate each strategy on feasibility and helpfulness. Guidelines that are perceived as helpful but are not feasible due to financial, time-related, or other implementation constraints may have limited practical value. It is therefore important to assess not only the perceived helpfulness of each strategy, but also its feasibility in real-world settings.

Method

We employed a two-round, modified, internet-based Delphi consensus method, following the procedures outlined by Morgan et al. (2016) and adapted for the climate anxiety domain. A modified Delphi approach was chosen because the initial strategy pool had already been developed before the Delphi rounds, based on focus groups with mental health professionals, preliminary findings from a cross-sectional study, and a targeted review of the relevant literature. Therefore, instead of using an open-ended first round to generate items, the Delphi process began with participants rating a pre-defined set of candidate strategies. This approach was considered appropriate because strategies relevant to different aspects of anxiety, coping, emotional regulation, and climate-related distress had already been identified and could be systematically evaluated by experts. In addition, two rounds were considered sufficient to provide participants with structured feedback, allow them to reconsider their ratings, and assess whether consensus increased after feedback. Limiting the process to two rounds also helped reduce participant burden and attrition, which was particularly important given the relatively small pool of eligible experts in the Slovenian youth mental health context.

The study was part of a larger national project, focused on climate anxiety among youth. All participants provided informed consent prior to participation. The Delphi study was reported in accordance with the DELPHISTAR guidelines (Niederberger et al., 2024).

Survey and Guidelines Development

Focus groups with mental health professionals were conducted in 2025, prior to the Delphi study, as part of a larger national project. We conducted three focus groups with a total of 32 professionals from diverse professional backgrounds (psychologists, clinical psychologists, psychiatrists, social workers, counselors, and researchers). Participants were invited to discuss the definition of climate anxiety, share their experiences of working with climate-anxious young people, and identify strategies they considered helpful for reducing distress and supporting adaptive responses. Transcripts were analyzed inductively to identify candidate strategies. Similar strategies were grouped together, duplicates were removed, and the remaining strategies were organized into a preliminary thematic

categorization scheme. These focus-group-derived strategies formed the primary backbone of the initial item pool and provided the basis for the category structure used in the subsequent Delphi survey.

The item pool was then further developed using preliminary findings from a cross-sectional study on climate anxiety among Slovenian youth, conducted as part of the same project. The study was conducted among 654 young people in Slovenia aged 16 to 24 years (*M* = 19.97, *SD* = 2.60). Of the participants, 58.3% identified as female (*n* = 381), 40.2% as male (*n* = 263), and 1.5% as another gender or preferred not to respond (*n* = 10). Regarding educational status, 48.0% were enrolled in upper secondary education (*n* = 314), 43.4% in higher education (*n* = 284), and 8.6% were not enrolled in education (*n* = 56). It examined potential risk and protective factors, as well as outcomes associated with climate anxiety in this population.

The study included measures of climate-related experiences, mental health, psychological characteristics, and environmental attitudes and behavior. Climate-related constructs were assessed using the Climate Change Worry Scale (CCWS; Stewart, 2021), Climate Change Anxiety Scale (CCAS; Clayton & Karazsia, 2020), Single-item Measure of Perceived Threat (Drummond et al., 2018), a single-item measure of direct personal experience with climate change, four items adapted from the Distress Disclosure Index (DDI; Kahn & Hessling, 2001), a two-item measure of climate change-related media exposure developed based on previous measures of climate change news exposure (Acquadro Maran & Begotti, 2021; Shao & Yu, 2023), and a four-item version of the Doomscrolling Scale (Sharma et al., 2022; Satici et al., 2023).

Mental health and psychological characteristics were assessed using the Mental Health Continuum–Short Form (MHC-SF; Keyes et al., 2008), Depression Anxiety Stress Scales–21 (DASS-21; Lovibond & Lovibond, 1995), the six-item Negative Emotionality scale from the BFI-2-S (Soto & John, 2017), Intolerance of Uncertainty Scale–Short Form (IUS-12; Carleton et al., 2007), Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), Brief Resilience Scale (BRS; Smith et al., 2008), and the short form of the Cognitive Emotion Regulation Questionnaire (CERQ-short; Garnefski & Kraaij, 2006).

Environmental constructs were assessed using the Environmental Self-Efficacy Scale–Short Form (ESE-10; Moeller & Stahlmann, 2019), New Ecological Paradigm Scale (NEP; Dunlap et al., 2000), an eight-item measure of pro-environmental behavior (Whitmarsh et al., 2022), and a resource allocation task adapted from Rutjens et al. (2018).

The purpose of using the cross-sectional findings was not to derive intervention strategies directly from statistical associations, but to identify constructs that were empirically relevant to climate anxiety among Slovenian youth. These constructs were then used to assess whether the strategy pool derived from the focus groups adequately reflected the factors associated with climate anxiety. Where relevant constructs were not sufficiently represented, additional strategies were identified or formulated to ensure their inclusion in the intervention content.

A targeted review of relevant literature was conducted for two purposes: first, to identify strategies and intervention principles corresponding to the domains identified through the focus groups and the cross-sectional study findings, and second, to determine whether additional relevant strategies or intervention domains had not yet been captured by the empirical sources within the project. The literature thus served both to translate the empirically identified themes into more concrete, actionable items and to broaden the initial strategy pool where appropriate. One key source, Bingley et al. (2022), was identified and included because it proposed a multiple-needs framework specifically for climate change anxiety interventions. Additional sources were identified iteratively while searching for intervention approaches and coping strategies relevant to the constructs that emerged from the empirical findings and the review of related literature. The search focused on publications addressing climate anxiety, eco-

anxiety, climate-related distress, coping with climate change, and strategies or interventions to reduce distress while supporting adaptive responses. Particular attention was given to sources that provided conceptually or practically useful guidance for translating the identified constructs into clear and actionable survey items.

One of the most common strategies mentioned were those encouraging and enabling emotional expression and validation (Cunsolo et al., 2020; Hickman, 2020; Verlie et al., 2021). More problem-focused approaches emphasized agency and collective action, on the grounds that engaging in meaningful action restores a sense of efficacy (Sanson et al., 2019). An increasing number of studies also discussed the importance of social connection. Sometimes referred to as a type of emotional coping, and other times discussed as a separate category, many studies have shown the importance of meaning-focused coping and hope (Ojala, 2012; Nimo et al., 2025). Others point to the need for educational approaches, contact with nature, and to psychotherapeutic approaches (Budziszewska & Jonsson, 2021). On this basis, we included Nimo et al. (2025), who reviewed coping strategies from a positive psychology perspective, and van Valkengoed and Steg (2024), who provided a comprehensive compass framework mapping problem-focused and emotion-focused strategies.

Together, these sources were used to link the empirically identified constructs with relevant intervention principles and to guide the selection, adaptation, and formulation of additional items. For domains for which climate-specific intervention literature was limited, additional literature from adjacent fields was consulted. In particular, for doomscrolling and climate news overload, strategies were adapted from broader literature on media use, digital well-being, and information overload. The strategies derived from all three sources were subsequently combined to form the initial draft of the strategy list. All additional resources used for this domain are listed in the Supplementary materials (Appendix A, Table A1).

Figure 1

Flow Chart of the Delphi Study Procedure

Item Categorisation

Items were organized into thematic categories. The categorization was primarily guided by the focus group data and cross-sectional findings, with partial reference to the framework of Bingley et al. (2022), who distinguished Emotion Management, Problem-Focused Action, and Enhancing Social Connections as core intervention domains. Additional categories were developed inductively to accommodate items not covered by existing frameworks (e.g., supporting balanced climate information consumption, nature connection, role-modeling, education). The final item pool comprised strategies across 12 categories. The categories were: Emotion Expression (9 items), Supporting Balanced Climate Information Consumption (7 items), Problem-Focused Action (17 items), Positive Psychology (7 items), Emotion Regulation (4 items), Fostering Social Connection (4 items), Nature (2 items), Pharmacological Treatment (1 item), Psychological Therapy (3 items), Role-Modeling (2 items), Grief, Loss and Crisis Counselling (2 items), and Education (3 items), comprising 61 items in total (see Appendix A, Table A1).

Participants and Recruitment

The expert panel comprised two distinct groups. We recruited researchers and practitioners from the youth mental health sector to capture both evidence-based and practice-based perspectives on how to support climate-anxious youth. The first group consisted of mental health practitioners with direct experience working with young people.

Inclusion criteria were: (a) at least one year of experience in youth mental health practice, and (b) employment at a youth mental health institution. Educational background was intentionally not specified as an inclusion criterion, given that Slovenian institutions employ diverse mental health professionals who perform comparable counseling work. The second group comprised researchers in youth mental health, with a) at least 1 year of experience researching youth mental health and b) employment at a research institution. The same pool of participants was invited to take part in both rounds, and no additional participants were recruited after Round 1.

Purposive sampling was used to recruit participants from relevant mental health and youth education institutions, as well as university research departments. Potential participants were identified through institutional contacts and professional networks. In doing so, we took into account the Slovenian context, where the population of researchers and practitioners specializing in youth mental health is relatively small, and the relevant scientific and professional communities are closely interconnected. Recruitment, therefore, focused on identifying individuals with relevant expertise across the available national network of institutions and research groups. Recruitment emails were sent with a two-week response window.

Study Design and Procedure

The Delphi study was conducted between February 10th and April 2nd, 2026. Round 1 (R1) was open for participation from February 10th to February 24th, 2026, while Round 2 (R2) was conducted from March 16th to April 2nd, 2026, providing participants with a two-week response window. To ensure better participation, reminder emails were sent near the end of each round. The internet-based format was selected to facilitate participation among professionals from different locations and to allow asynchronous completion of the survey within a defined time window. This format enabled participants to review and rate strategies at their own pace, and facilitated structured, anonymous feedback across rounds. Participants needed, on average, approximately 17 minutes to complete the strategy ratings in Round 1 and approximately 13 minutes in Round 2.

Participants received a structured online questionnaire containing all candidate strategies, preceded by a brief demographic questionnaire. For each strategy, participants rated: (a) helpfulness –"How likely is this strategy to be helpful for an adolescent with climate anxiety?" on a five-point scale (1 = Very likely not helpful, 2 = Likely not helpful, 3 = Neither helpful nor not helpful, 4 = Likely helpful, 5 = Very likely helpful); and (b) feasibility –"How feasible is this strategy in everyday professional practice, considering time, staffing, and material constraints?" on a parallel five-point scale (1 = Very difficult, 2 = Difficult, 3 = Neither easy nor difficult, 4 = Easy, 5 = Very easy). Scales were adapted from Morgan et al. (2016). Participants were also invited to suggest modifications to existing strategies and to propose new strategies at the end of each category.

After R1, responses were analyzed by calculating the proportion of participants selecting the top two ratings (i.e., likely helpful/feasible and very likely helpful/feasible) for each strategy on each criterion.

A strategy was considered to have reached consensus and to qualify as an endorsed guideline if ≥ 75% of participants selected one of the top two responses (i.e., “likely helpful/feasible” and “very likely helpful/feasible”) on both the helpfulness and feasibility scales (as adapted from Morgan et al., 2016). This threshold was selected as appropriate, where a stricter threshold might prematurely exclude potentially valuable strategies (Hasson et al., 2000).

For each strategy, item-level feedback was prepared indicating whether the predefined consensus threshold had been reached, what the most frequent response was (i.e., response modus), and the proportion of participants who

selected that response. The thematic categories remained unchanged across rounds, and no strategies were removed based on R1 results. Open-ended comments were reviewed by the research team and used to refine the wording of selected strategies where clarification was needed. In R2, participants were presented with the revised set of strategies, along with item-level feedback from R1. For strategies for which consensus had been reached in R1, the most frequent response was pre-selected as the default answer, although participants could modify it. In R2, participants rated the updated set of strategies using the same criteria and response format as in R1.

Data Analysis

In Microsoft Excel, descriptive statistics were computed for each item, such as the number of valid responses, the number of top-two responses, and the percentage agreement. Analyses were conducted at the level of the full expert panel, with responses from researchers and practitioners aggregated. Consensus status was determined separately for R1 and R2. Experts' open-ended comments were reviewed and used descriptively to provide additional context for interpreting the quantitative findings.

To examine whether evaluations differed between researchers and practitioners and whether R1 ratings differed between participants who completed R1 only and those who completed both rounds, independent-samples *t*-tests were conducted for each strategy in IBM SPSS Statistics 31. To account for multiple comparisons, *p*-values were adjusted using the Benjamini-Hochberg correction (Benjamini & Hochberg, 1995). As a sensitivity analysis, R2 consensus was recalculated after excluding participants who had participated only in R2 to assess the robustness of the findings to panel composition.

Results

Expert Panel Characteristics

Table 1 presents characteristics of the expert panel. A total of 38 participants completed R1, and 29 completed R2. In R1, the panel comprised 18 mental health practitioners (47.4%) and 20 researchers (52.6%). In R2, 12 practitioners (41.4%) and 17 researchers (58.6%) participated.

Participants were categorized as either researchers or practitioners based on their reported primary work activity and their work institution. They were classified as researchers if they indicated that research was their primary work activity and that they were employed at an institution exclusively dedicated to research. Participants were classified as practitioners if they reported their primary work activity outside research, specifically in applied professional settings such as the health sector or different educational settings. Based on the participant codes, 14 participants (28.9%) who took part in R1 did not participate in R2. In addition, 5 of 28 R2 participants were absent from R1, representing 21.4%. This pattern was more pronounced among practitioners, where 46.7% of R1 participants did not participate in R2, and 33.3% of R2 participants were new, compared with 30.0% and 12.5% among researchers.

Table 1

Characteristics of the Expert Panel for R1 and R2

Characteristic	Round 1			Round 2		
	Practitioners (n = 18)	**Researchers (n = 20)**	**Total (N = 38)**	**Practitioners (n = 12)**	**Researchers (n = 17)**	**Total (N = 29)**
Gender						
Women, n (%)	15 (83%)	16 (80%)	30 (79%)	10 (83%)	13 (76%)	23 (79%)
Men, n (%)	3 (17%)	4 (20%)	8 (21%)	2 (17%)	4 (24%)	6 (21%)
Age, *M* (*SD*)	41.7 (10.5)	38.3 (10.9)	39.9 (11.0)	44.1 (10.4)	39.5 (12.6)	41.4 (11.8)
Professional sector						
Healthcare (primary/secondary/tertiary)	11 (61%)	–	11 (29%)	6 (50%)	–	6 (21%)
Education (school counseling)	7 (39%)	–	8 (21%)	6 (50%)	–	6 (21%)
Research	–	20 (100%)	19 (50%)	–	17 (100%)	17 (59%)
Climate anxiety research						
Yes, > 1 year, n (%)	1 (6%)	10 (50%)	11 (29%)	3 (25%)	10 (59%)	13 (45%)
Yes, < 1 year, n (%)	1 (6%)	5 (25%)	6 (16%)	0 (0%)	4 (24%)	4 (14%)
No, n (%)	16 (89%)	5 (25%)	21 (55%)	9 (75%)	3 (18%)	12 (41%)
Previously worked with climate-anxious youth						
Yes, n (%)	2 (11%)	1 (5%)	3 (8%)	5 (42%)	1 (6%)	6 (21%)
No, n (%)	16 (89%)	19 (95%)	35 (92%)	7 (58%)	16 (94%)	23 (79%)

Note. M = mean; *SD* = standard deviation.

Overview of Consensus Results

Across both Delphi rounds, a large majority of strategies reached consensus. Consensus was reached on 53 of 61 strategies (86.9%) to support climate-anxious youth. Strategies that achieved consensus are presented in Table 2. In R1, 37 strategies (60.6% of all strategies) reached consensus, with most falling in the categories Emotion Expression, Positive Psychology and Mindfulness, Emotion Regulation, Fostering Social Connection, and Education.

In R2, 16 additional strategies reached consensus, mainly in the categories Supporting Balanced Climate Information Consumption, Nature Connection, Psychological Therapy, and Grief, Loss, and Crisis Counseling. No consensus was reached for eight strategies. Most non-consensus strategies belonged to the Problem-Focused Action category, while one strategy each in the Emotion Expression, Positive Psychology and Mindfulness, Fostering Social Connection, and Pharmacological Treatment categories did not reach consensus (see Appendix A, Table A1).

Of the 53 endorsed strategies, 9 (17%) received substantial support in R1, while 43 (81.1%) received substantial support in R2, with ≥ 90% agreement on both helpfulness and feasibility. Substantial support was most consistent for Emotion Expression, Emotion Regulation, Fostering Social Connection, Role-Modelling, Grief, Loss and Crisis Counseling, and Education, as all endorsed strategies within these categories received strong support. A large majority of strategies also received substantial support within Problem-Focused Action and Positive Psychology and Mindfulness sections. In contrast, substantial support was less common for Supporting Balanced Climate Information Consumption, Nature Connection, and Psychological Therapy strategies.

Table 2

Endorsed Strategies for Supporting Adolescents With Climate Anxiety Across Delphi Rounds

No.	Strategy	Round 1		Round 2		Consensus round
		Helpfulness %	Feasibility %	Helpfulness %	Feasibility %	
1. Emotion Expression						
1.1	**Teaching young people to recognize and name emotions related to environmental issues.**	91.90	94.60	100.00	100.00	R1
1.2	Promoting an understanding of climate anxiety as a natural and understandable emotional response to the real threats of climate change, rather than as a pathological disorder.	97.30	86.50	100.00	100.00	R1
1.3	**Teaching strategies for regulating intense emotions and stress.**	100.00	97.30	100.00	100.00	R1
1.4	**Teaching young people to accept thoughts and emotions instead of avoiding, suppressing, or excessively controlling them.**	97.30	94.60	100.00	100.00	R1
1.5	Encouraging emotional expressiveness and safe sharing of emotions with like-minded others.	86.50	86.10	100.00	100.00	R1
1.6	**Support in channeling emotions into constructive activities (e.g., participating in environmental projects, volunteering, or community initiatives).**	94.30	91.40	100.00	100.00	R1
1.8	Encouraging individuals to redirect their attention by engaging in sports, hobbies, or work.	75.70	86.50	100.00	100.00	R1
1.9	Encouraging expression of emotions about environmental issues through creativity, art, and writing.	75.70	86.10	100.00	100.00	R1
2. Supporting Balanced Climate Information Consumption						
2.1	Teaching young people to recognize and reduce compulsive consumption of negative news and its triggers.	100.00	88.60	100.00	100.00	R1

Note. Helpfulness/Feasibility % agreement = percentage of participants selecting a rating of 4 or 5 (top two options) on the five-point scale. R1 = Round 1; R2 = Round 2. Strategies in bold received high support with ≥ 90% agreement on both helpfulness and feasibility in R1.

No.	Strategy	Round 1		Round 2		Consensus round
		Helpfulness %	Feasibility %	Helpfulness %	Feasibility %	
2.2	Setting digital boundaries, e.g., establishing one day per week without checking the news or social media, encouraging the use of apps that limit time spent on news portals, and turning off push notifications for news about environmental issues.	91.70	74.30	96.55	86.20	R2
2.3	Creating a list of verified, balanced, and neutral news outlets.	75.00	73.50	93.10	86.21	R2
2.4	Developing critical thinking skills to recognize sensationalist reporting.	97.20	74.30	100.00	82.80	R2
2.5	**The "STOP" protocol (Stop–Take a breath–Observe–Proceed) as a way to interrupt compulsive consumption of negative news.**	96.90	91.40	100.00	96.55	R1
2.6	Teaching selective avoidance of specific climate-related topics that currently increase distress, while maintaining the possibility of following other, less emotionally burdensome content.	70.60	66.70	79.31	82.80	R2
2.7	Learning a "triage" approach to climate news: before clicking, assessing whether the content provides useful information or will primarily increase distress, e.g., "Will I learn something from this, or will it only upset me?"	83.30	77.10	100.00	100.00	R1
3. Problem-Focused Action						
3.1	Encouraging participation in group-based pro-environmental activities with tangible outcomes (e.g. collective actions or local projects).	82.90	82.30	100.00	100.00	R1
3.2	Encouraging small pro-environmental behaviours or habit formation, such as separating waste, that are	79.40	91.20	96.55	100.00	R1

Note. Helpfulness/Feasibility % agreement = percentage of participants selecting a rating of 4 or 5 (top two options) on the five-point scale. R1 = Round 1; R2 = Round 2. Strategies in bold received high support with ≥ 90% agreement on both helpfulness and feasibility in R1.

No.	Strategy	Round 1		Round 2		Consensus round
		Helpfulness %	Feasibility %	Helpfulness %	Feasibility %	
	under the individual's direct control.					
3.3	Presenting concrete examples of communities that, through their own engagement, achieved significant progress in addressing environmental issues.	72.70	87.90	96.55	100.00	R2
3.4	Emphasising the collective power to bring about change rather than individual blame.	76.50	85.70	100.00	100.00	R1
3.5	Encouraging young people to distinguish between actions they can directly influence and broader systemic processes that extend beyond individual control.	80.60	88.60	100.00	100.00	R1
3.6	Teaching young people to break goals down into small, manageable steps.	85.70	94.30	100.00	100.00	R1
3.8	Encouraging civic engagement in relation to environmental issues, such as supporting environmental organisations, voting for environmentally oriented policies, donating, volunteering, and signing petitions.	67.70	72.70	82.76	93.10	R2
3.9	Encouraging participation in volunteering and prosocial activities (e.g., clean-up campaigns, community gardens, helping with local environmental initiatives).	80.00	86.10	100.00	100.00	R1
3.10	Encouraging the use of renewable energy sources and efficient energy use, including reducing consumption and using energy-efficient appliances.	77.80	75.00	100.00	96.55	R1
3.12	Encouraging less air and car travel, and more walking, cycling, and use of public transport.	80.00	60.00	96.55	75.90	R2
3.13	Encouraging buying fewer new products, using existing items	77.80	77.80	100.00	100.00	R1

Note. Helpfulness/Feasibility % agreement = percentage of participants selecting a rating of 4 or 5 (top two options) on the five-point scale. R1 = Round 1; R2 = Round 2. Strategies in bold received high support with ≥ 90% agreement on both helpfulness and feasibility in R1.

No.	Strategy	Round 1		Round 2		Consensus round
		Helpfulness %	Feasibility %	Helpfulness %	Feasibility %	
	for longer, and borrowing, sharing, or reusing items.					
3.16	Using ways of communicating about climate change that strengthen young people's sense that they can contribute to change through their actions, without creating excessive pressure or guilt.	91.20	82.30	100.00	100.00	R1
3.17	Encouraging young people to channel climate anxiety into concrete action rather than helplessness or despair.	94.40	75.00	100.00	100.00	R1
4. Positive Psychology and Mindfulness						
4.1	Exploring physical and emotional responses to environmental issues and regulating them through mindfulness.	91.40	80.00	100.00	96.70	R1
4.2	Encouraging sensory awareness of nature, such as sounds, light, and movement, as a way of calming oneself.	78.80	84.90	100.00	100.00	R1
4.3	Teaching exercises for maintaining attention in the presence of unpleasant feelings, rather than avoiding them.	91.40	82.90	100.00	100.00	R1
4.4	Guiding young people toward recognizing core personal values (e.g., care for nature, justice, and solidarity).	61.10	86.10	79.31	100.00	R2
4.5	Incorporating optimism and hope training into psychological first aid and support programmes following climate-related disasters and traumatic experiences.	78.10	71.90	100.00	93.10	R2
4.6	Using programmes that strengthen resilience and adaptive skills as part of preparation for climate-related stressors and uncertainty.	88.20	81.80	100.00	100.00	R1
5. Emotion Regulation						

Note. Helpfulness/Feasibility % agreement = percentage of participants selecting a rating of 4 or 5 (top two options) on the five-point scale. R1 = Round 1; R2 = Round 2. Strategies in bold received high support with ≥ 90% agreement on both helpfulness and feasibility in R1.

No.	Strategy	Round 1		Round 2		Consensus round
		Helpfulness %	Feasibility %	Helpfulness %	Feasibility %	
5.1	**Teaching young people to distinguish between adaptive and maladaptive coping strategies.**	97.10	94.10	100.00	100.00	R1
5.2	Teaching young people to recognize cognitive distortions or maladaptive thinking patterns and their triggers.	97.10	88.60	100.00	100.00	R1
5.3	Introducing a time-limited framework for engaging with worry.	93.50	81.30	100.00	96.70	R1
5.4	**Encouraging the reframing of catastrophic thoughts about climate change into more manageable, realistic, and solution-focused interpretations.**	100.00	91.40	100.00	100.00	R1
6. Fostering Social Connection						
6.1	Encouraging young people to seek peer support and build connections with people who share similar values.	88.90	80.60	100.00	100.00	R1
6.2	Strengthening a sense of belonging to the community through small, visible contributions to environmental conservation (e.g., planting trees together, clean-up campaigns).	88.90	91.70	100.00	100.00	R1
6.4	Learning to distinguish between conversations that constructively reduce stress and conversations that reinforce maladaptive responses (e.g., excessive sharing of negative news).	94.40	82.90	100.00	100.00	R1
7. Nature Connection						
7.1	Introducing principles of ecological health (i.e., emphasising the importance of biodiversity, ecosystem balance, their capacity for regeneration, and responsible management of natural resources) that link human	73.10	61.50	82.76	96.40	R2

Note. Helpfulness/Feasibility % agreement = percentage of participants selecting a rating of 4 or 5 (top two options) on the five-point scale. R1 = Round 1; R2 = Round 2. Strategies in bold received high support with ≥ 90% agreement on both helpfulness and feasibility in R1.

No.	Strategy	Round 1		Round 2		Consensus round
		Helpfulness %	Feasibility %	Helpfulness %	Feasibility %	
	well-being with environmental health.					
7.2	Integrating ecopsychological approaches (i.e., approaches that emphasise the connection between people's mental health and their relationship with nature, and encourage contact with the natural environment as a source of psychological support) into existing educational and therapeutic practices.	80.70	55.20	100.00	90.00	R2
9. Psychological Therapy						
9.1	Providing group psychotherapy to normalize emotional responses.	80.60	65.70	100.00	89.70	R2
9.2	Using interpersonal psychotherapy to improve relationships and social functioning.	66.70	54.80	92.60	81.50	R2
9.3	**Using cognitive-behavioural approaches to reduce anxiety, catastrophic thinking, and exaggerated threat perception.**	97.20	91.70	100.00	96.70	R1
10. Role-Modelling						
10.1	Presenting positive examples of people who cope with climate anxiety in constructive ways.	77.80	79.40	96.70	100.00	R1
10.2	Encouraging adults to regulate their own anxiety about climate change so that they can provide young people with a sense of safety and support.	85.30	72.70	100.00	96.70	R2
11. Grief, Loss and Crisis Counseling						
11.1	Offering counselling for experiences of loss and grief related to environmental changes.	91.40	70.60	100.00	96.60	R2
11.2	Providing crisis counselling following acute stressful or traumatic events related to climate change.	97.20	74.30	100.00	96.50	R2

Note. Helpfulness/Feasibility % agreement = percentage of participants selecting a rating of 4 or 5 (top two options) on the five-point scale. R1 = Round 1; R2 = Round 2. Strategies in bold received high support with ≥ 90% agreement on both helpfulness and feasibility in R1.

No.	Strategy	Round 1		Round 2		Consensus round
		Helpfulness %	Feasibility %	Helpfulness %	Feasibility %	
12. Education						
12.1	Using evidence-based, age-appropriate, and responsible approaches when communicating about the impacts of climate change on mental health.	88.60	85.30	100.00	100.00	R1
12.2	**Providing information on effective coping strategies and psychological self-help.**	97.20	97.20	100.00	93.30	R1
12.3	Strengthening climate literacy in formal and non-formal education.	88.60	82.90	100.00	100.00	R1

Note. Helpfulness/Feasibility % agreement = percentage of participants selecting a rating of 4 or 5 (top two options) on the five-point scale. R1 = Round 1; R2 = Round 2. Strategies in bold received high support with ≥ 90% agreement on both helpfulness and feasibility in R1.

Independent-samples *t*-tests were used to compare researchers' and practitioners' ratings of all strategies as well as ratings between participants who completed only round 1 and those who completed both rounds, with no significant differences (see Appendix B and C, respectively). The sensitivity analysis, where we compared the full R2 sample with the sample of experts who completed both rounds, showed that excluding participants who completed only R2 resulted in four changes in consensus classification. Strategies 2.6 and 3.12 no longer met the consensus threshold for feasibility, whereas strategy 3.14 newly met the threshold for feasibility, and strategy 8.1 newly met the threshold for helpfulness. Consensus classifications for all other strategy ratings remained unchanged (Appendix D).

Discussion

The present Delphi study aimed to develop and assess expert consensus on strategies to support young people experiencing climate anxiety. Of the 61 strategies, 53 reached the predefined consensus threshold, with 37 reaching consensus in R1 and a further 16 after reconsideration in R2. Moreover, consensus frequently exceeded the minimum criterion, with 9 strategies receiving at least 90% agreement for both helpfulness and feasibility in R1, and a further 34 in R2. Thus, the findings indicate considerable agreement regarding how to support climate-anxious youth.

First, strong support emerged for strategies targeting the emotional processing and regulation of climate anxiety, with six strategies within the Emotion Expression and Emotion Regulation domains receiving substantial support on both helpfulness and feasibility in R1. These strategies included recognizing and naming climate-related emotions; teaching strategies to regulate intense emotions and stress; accepting rather than suppressing difficult thoughts and feelings; channeling emotions into constructive activities; distinguishing adaptive from maladaptive coping; and reframing catastrophic thoughts. Another six of the strategies were also strongly endorsed, focusing on normalization of climate anxiety, encouraging emotional expression and redirection of attention, recognition, and reframing of cognitive distortions. This suggests that experts viewed climate anxiety as something that should be addressed primarily by helping young people understand, tolerate, and regulate their emotional responses. Their

strong endorsement may also reflect recognition that, although climate anxiety is conceptually distinct, it involves psychological processes that overlap with general anxiety, such as worry, avoidance, and catastrophic thinking (Clayton, 2021), and can therefore be approached using established clinical principles. This interpretation is reinforced by the ratings within the Psychological Therapy domain. All psychotherapy-based strategies reached consensus, with particularly strong support for cognitive behavioral therapy (CBT) approaches in R1. CBT directly targets maladaptive interpretations, avoidance, and ineffective coping, and its high endorsement suggests that experts considered these mechanisms especially relevant when climate-related distress becomes sufficiently intense to require more structured psychological intervention (Hofmann et al., 2012).

The one Emotion Expression strategy that did not reach consensus, reducing exposure to stressors that remind young people of environmental change, was nevertheless rated as highly helpful in R2, while feasibility remained below the threshold. This suggests that experts may have recognized the potential value of reducing overwhelming exposure but questioned how realistically such reminders can be controlled in young people's everyday lives. It also shows broader caution toward avoidance-based approaches that emerged in the Problem-Focused Action domain, which we describe in the following paragraphs.

Pharmacological treatment, in contrast, did not reach consensus because helpfulness remained below the predefined threshold, despite relatively high perceived feasibility. This suggests that experts were concerned about the appropriateness of medication for climate anxiety rather than the practical possibility of providing it. Given that climate anxiety can present an understandable response to a real environmental threat (Pikhala, 2020), experts may have been reluctant to endorse pharmacological treatment as a general response to climate-related distress. Medication may instead have been viewed as more appropriate when severe symptoms occur within a broader clinically significant anxiety or affective disorder, rather than as a treatment for climate anxiety itself.

Strategies within the Supporting Balanced Climate Information Consumption domain were also generally endorsed, although the ratings suggest that experts differentiated between regulating engagement with climate-related information and avoiding it. The strongest support was given to strategies that promoted more deliberate and controlled information consumption, such as recognizing compulsive consumption of negative news. The STOP protocol for interrupting compulsive negative news consumption was among the nine strategies receiving substantial support in R1, suggesting particularly strong confidence in techniques that provide young people with an immediate way to interrupt automatic or repetitive information seeking. Recognizing compulsive news consumption and using a “triage” approach were likewise strongly endorsed. These strategies may have been viewed as particularly useful because they allow young people to remain informed while reducing automatic or repetitive exposure that may intensify distress. Strategies involving digital boundaries, identifying reliable and balanced information sources, and recognizing sensationalist reporting also reached consensus, although feasibility was rated somewhat lower, particularly in R1. This may reflect the practical difficulty of regulating young people’s media environments and the fact that these strategies require sustained self-monitoring and media literacy rather than a single intervention. While reaching consensus, teaching selective avoidance of climate-related topics received the lowest support within this domain and reached consensus only in R2. The qualitative feedback helps explain this more cautious evaluation. One expert explicitly warned that avoiding anxiety-provoking information could, over time, maintain or increase anxiety. However, while selective disengagement may reduce short-term distress, avoidance-based coping is associated with maintenance or worsening of anxiety over time (Salkovskis, 1991). The ratings thus suggested that the panel favored approaches that help young people engage with climate information in a more intentional, critical, and manageable way, while remaining cautious about strategies that could reinforce avoidance as a coping mechanism.

Most Problem-Focused Action strategies were also mostly strongly endorsed. However, experts evaluated actions that strengthen agency differently from those that may place additional demands on young individuals. Strategies received particularly strong support when they helped young people identify what is within their control, break larger tasks into manageable steps, engage in collective or group-based activities, and channel climate-related distress into constructive action. This suggests that experts viewed action as potentially beneficial when it restored a sense of efficacy and reduced helplessness, particularly when responsibility was shared rather than placed solely on the individual. Such an interpretation is consistent with evidence that perceived personal and collective efficacy can support adaptive coping and engagement in the context of climate change (Bingley et al., 2022; Sanson et al., 2019).

In contrast, support was more mixed for strategies that prescribed specific pro-environmental behaviors, such as changes in diet, transportation, or other forms of individual carbon-footprint reduction. The open-ended comments help clarify this difference. One expert questioned whether encouraging a smaller carbon footprint would actually reduce climate anxiety, explaining that such efforts could potentially intensify distress despite being environmentally desirable. Another emphasized that recommendations concerning diet or transportation cannot be applied uniformly because young people differ in the alternatives and resources realistically available to them. Experts were particularly cautious about encouraging information-seeking and preparedness for climate-related hazards. One participant suggested that greater attention to climate risks could increase rather than alleviate anxiety. Moreover, the strategy of avoiding moral pressure and excessive emphasis on young people's responsibility did not reach consensus because feasibility remained low despite very high perceived helpfulness. This discrepancy suggests that experts supported the principle of protecting young people from excessive responsibility but may have questioned how readily professionals can control the broader social, family, educational, and media messages through which such pressure is communicated. Strategies were thus rated less favorably when they were deemed highly prescriptive, dependent on circumstances outside the young person’s control, or likely to reinforce vigilance and personal responsibility.

Strategies within the Positive Psychology and Mindfulness domain were generally well supported, particularly those focused on mindfulness, attentional regulation, contact with nature, and resilience. Their high ratings likely suggest that experts considered these approaches broadly applicable, low-risk ways of helping young people tolerate distress, remain engaged with difficult emotions, and strengthen coping capacity without minimizing the reality of climate change. Values clarification and hope-focused interventions received lower ratings in R1 but reached consensus in R2, possibly because their usefulness depends more on how they are framed and integrated into support. In contrast, encouraging religious individuals to seek meaning through religion or spirituality was the only strategy in this domain that did not reach consensus. Its lower ratings may reflect its limited applicability across young people with different beliefs and the difficulty of recommending spirituality as a general strategy within professional practice. Experts thus appeared to favor approaches that could be applied across individuals regardless of worldview, while showing greater caution toward strategies whose relevance depends more strongly on personal values or beliefs.

Strategies within the Fostering Social Connection domain were strongly endorsed when they involved accessible forms of interpersonal support, such as seeking support from like-minded peers, strengthening community belonging, and learning to recognize whether conversations are helping or reinforcing distress. These ratings suggest that experts viewed social connection as an important resource for reducing isolation and supporting more adaptive ways of responding to climate concerns. In contrast, introducing structured safe spaces for discussing environmental concerns did not reach consensus, despite being considered relatively helpful. The main reservation concerned feasibility, which may reflect the practical demands of creating and sustaining such spaces, including the

need for trained facilitators, appropriate settings, and ongoing organizational support. Thus, experts appeared to favor forms of social support that can be integrated into young people's existing relationships and communities over more formalized interventions that require additional infrastructure.

Nature Connection strategies reached consensus only in R2, after receiving particularly low feasibility ratings in the first round. The qualitative feedback suggests that this may partly reflect unfamiliarity with the approaches themselves, as participants described concepts such as "ecological health" and "ecopsychology" as unclear or insufficiently familiar. At the same time, the increase in endorsement should be interpreted cautiously because attrition between rounds occurred predominantly among practitioners. The higher R2 ratings may therefore reflect not only reconsideration following clarification and feedback, but also a shift in panel composition toward researchers, who may have been more familiar with these concepts or more receptive to their theoretical relevance. Thus, while the final consensus indicates support for integrating nature-related perspectives into interventions, the initial ratings and differential attrition suggest that their practical meaning and applicability may be less immediately evident to practitioners.

Strategies related to Role-Modelling were endorsed, suggesting that experts viewed adults and other visible role models as an important source of emotional guidance for young people. Presenting examples of constructive coping may make adaptive responses more tangible, while adults' ability to manage their own climate-related anxiety may help prevent the transmission of fear and provide a greater sense of safety (Wolf & Salo, 2008). The somewhat lower initial feasibility rating for adults regulating their own anxiety may reflect the fact that this requires adults themselves to possess sufficient coping skills and awareness, rather than representing a strategy that can be implemented directly with the young person.

Grief, Loss, and Crisis Counselling strategies also received very high helpfulness ratings, but reached consensus only in R2 because feasibility was initially just below the threshold. This pattern suggests that experts clearly recognized the relevance of counselling when climate change involves direct experiences of loss, grief, or acute stressful events, while being somewhat more cautious about whether such specialized support is readily available in routine practice. The increase in feasibility ratings in R2 may therefore reflect greater agreement about the appropriateness of these approaches once participants reconsidered them, although changes in panel composition should also be kept in mind.

Finally, Education was among the most consistently endorsed domains. In particular, providing information about effective coping strategies and psychological self-help was one of only nine strategies to receive substantial support on both criteria already in R1. Evidence-based and developmentally appropriate communication and strengthening climate literacy were also endorsed. These ratings suggest that experts viewed knowledge and psychoeducation as a foundational component of support. The particularly strong endorsement of coping-focused psychoeducation may reflect its combination of broad applicability and practical feasibility, as it can be incorporated across mental health, school, and other youth-support settings without requiring specialist treatment.

Limitations

Several limitations should be considered. First, the initial item pool was developed from three sources, one of which was a non-systematic literature review. That leaves open the possibility that some relevant intervention strategies or broader strategy domains were not identified. A systematic review might not only have yielded additional strategies, but could also have led to a different conceptual organization or categorization of the identified strategies. This may

have influenced the structure of the final framework and the extent to which the proposed categories comprehensively represent the range of approaches relevant to climate anxiety.

Second, the expert sample was relatively small. In addition, all participating experts were based in Slovenia, which may limit the generalizability of the findings to other cultural and professional contexts. Another limitation concerns attrition between the two rounds. A considerable proportion of participants did not take part in the second round, with the decline being particularly pronounced among practitioners. This may have affected the composition of the expert panel in R2 and, consequently, the consensus estimates obtained in the final round. Finally, expert rating should not be interpreted as evidence of intervention effectiveness. Although the participating experts judged the strategies as likely to be helpful in alleviating climate anxiety, these ratings reflect expert opinion regarding their perceived usefulness and feasibility rather than empirical evidence that the strategies actually reduce climate anxiety.

Implications and Future Directions

The present study is the first to provide a comprehensive set of expert-endorsed strategies for supporting young people experiencing climate anxiety. Given that climate-related concerns are particularly pronounced among youth (Hickman et al., 2021) and may be associated with cognitive–emotional distress and difficulties in everyday functioning (Clayton, 2021), these strategies may offer a useful starting point for mental health practitioners, counsellors, and other professionals working with young people. Results suggest that focusing on validating climate-related emotions, identifying maladaptive patterns of thinking and coping, strengthening social support, and helping young people translate distress into manageable, meaningful actions is essential for managing climate. Support should also promote a sense of agency without placing excessive responsibility for climate change on the individual young person. Professionals may also help young people establish a balanced relationship with climate-related information and provide accurate, developmentally appropriate psychoeducation. More intensive psychological interventions should be considered when climate-related distress becomes persistent or functionally impairing, whereas highly prescriptive lifestyle recommendations or broad avoidance of climate-related information should be approached more cautiously and tailored to the individual and their circumstances.

While the present study establishes preliminary support for the usefulness and feasibility of such strategies, future research should evaluate the efficacy of the endorsed strategies through intervention studies and examine for whom, under which circumstances, and in what combinations particular approaches are most effective. Replication of the Delphi study in other countries and in cross-national expert panels would also be valuable for assessing the extent to which the present recommendations generalize across other cultural contexts. In addition, future guideline development should incorporate the perspectives of young people themselves, as they are the primary target group of these recommendations and may provide important insights into the acceptability, relevance, and feasibility of the proposed strategies. Finally, further development and validation of climate anxiety-specific assessment tools could help identify young people who require different levels of support and facilitate the evaluation and monitoring of intervention outcomes.

Declarations

Abbreviations

Not applicable.

Ethics approval statement and consent to participate

The cross-sectional study conducted as part of the broader project received ethical approval from the Ethics Committee of the Faculty of Arts, University of Maribor (Ethics Code: 038-08-210/2025/10/FF/UM) on April 23, 2025. All procedures involving human participants were conducted in accordance with the relevant Slovenian national guidelines and regulations and with the ethical principles of the Declaration of Helsinki. Written informed consent was obtained from all participants prior to their participation in the studies.

Consent for publication

Not applicable.

Availability data and materials

The data supporting the findings of the present study are available from the corresponding author, Ana Lampret, upon reasonable request. This study is not preregistered.

Competing interests

The author(s) declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Authors' contribution

Ana Lampret: Conceptualization, Writing – Original Draft, Resources, Formal Analysis, Investigation, Methodology, Writing-Review & Editing; **Nejc Plohl:** Conceptualization, Supervision; Writing-Review & Editing, Project Administration; **Minea Rutar:** Validation, Resources, Writing – Original Draft, Writing – Review & Editing; **Urška Smrke**: Supervision; Methodology; Validation; Writing-Review & Editing; **Bojan Musil:** Conceptualization, Writing – Review & Editing, Supervision, Funding Acquisition; **Tina Kos:** Conceptualization, Writing – Original Draft, Resources, Formal Analysis, Methodology, Investigation, Writing-Review & Editing.

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Figures

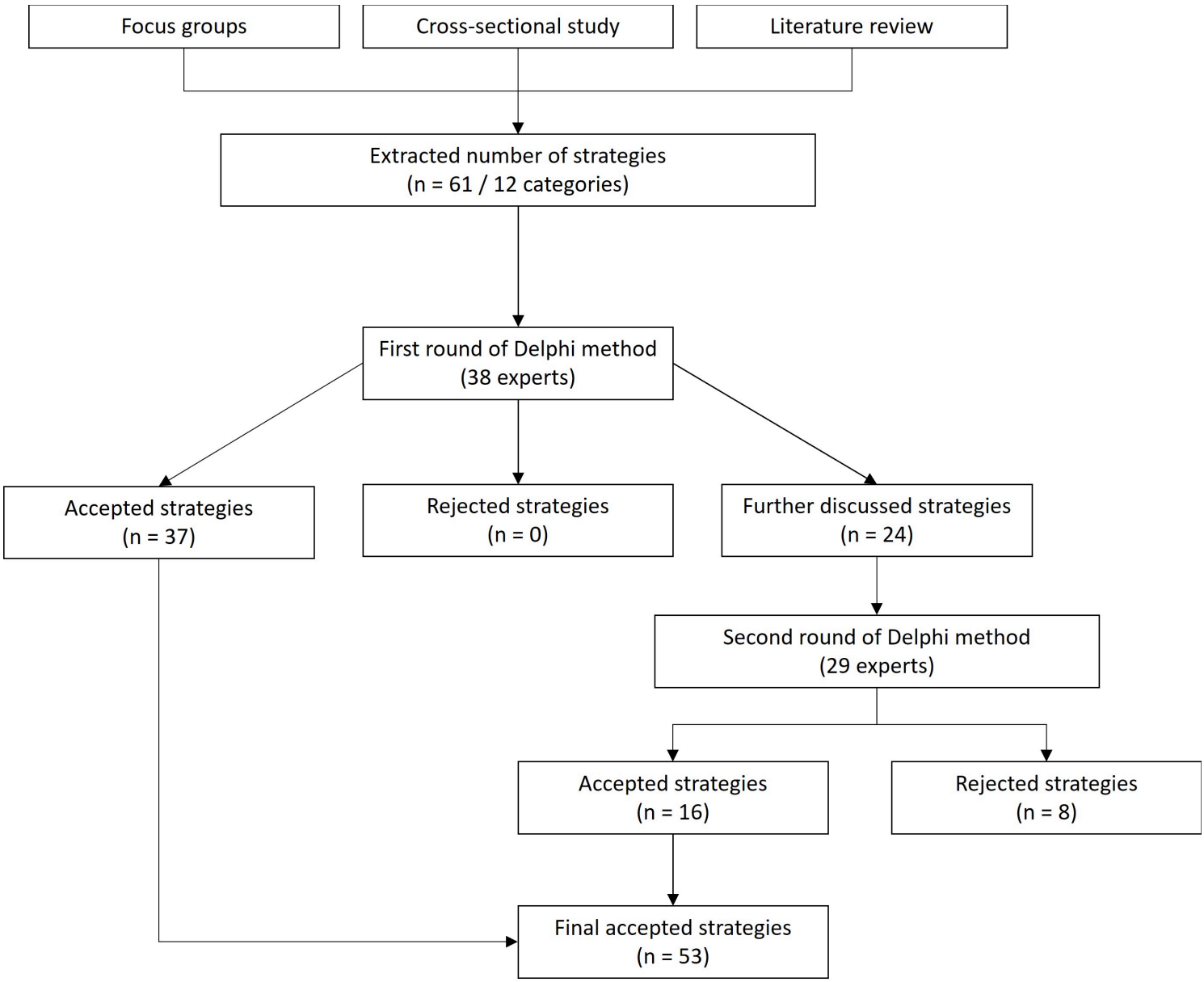

Figure 1

Flow Chart of the Delphi Study Procedure

Supplementary Files

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