Anxiety in the Face of Climate Change:

A Study on the Feelings, Thoughts, and Functional Impacts of Climate Change in University Students

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Introduction

- Climate anxiety impacts children and young people, leading to negative emotions, pessimistic thoughts, and disruptions in daily life (Hickman et al., 2021)
- Perceptions of inadequate government responses to climate change have been found to contribute to climate anxiety (Hickman et al., 2021).
- Receiving information on climate change relevant to one's local versus global area is more effective in improving climate change communication and pro-environmental behaviours (Scannell & Gifford, 2011)

Methodology

- Administered online using Qualtrics
- Participants were given a *demographics measure*
- Then in counterbalanced order, participants completed the *DASS-21* and the *Climate Experiences Survey* (survey on emotional, functional, and psychological experiences with climate change and local/global responses)

Research Questions

1. To what extent do university undergraduate students experience climate anxiety?
2. How does climate anxiety relate to direct exposure, other mood states (depression, anxiety, stress), and resilience?
3. What are undergraduate students' perceptions of the effectiveness of climate change responses at the local and national levels
   a. How does this relate to climate anxiety?

Conclusion

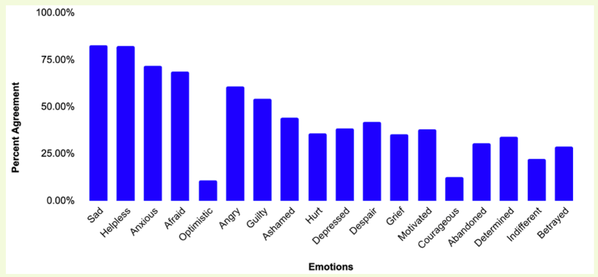
- Undergraduate UW students report worry, negative emotions, and thoughts about climate change
- Participants did not report significant functional impacts
- There is a small to moderate relationship between climate anxiety and all three mood states
- Direct/indirect exposure is positively related to climate anxiety
- Emotional and functional components of climate anxiety positively relate with resilience
- Climate anxiety is associated with students' perceptions of the effectiveness of climate change responses on the local and national level
- Local responses could play a larger role in fostering individuals' capacity to mitigate climate change

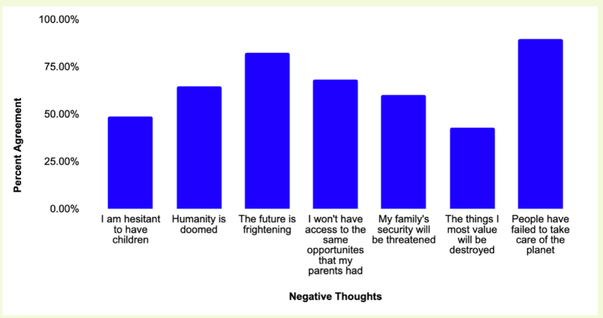
Results

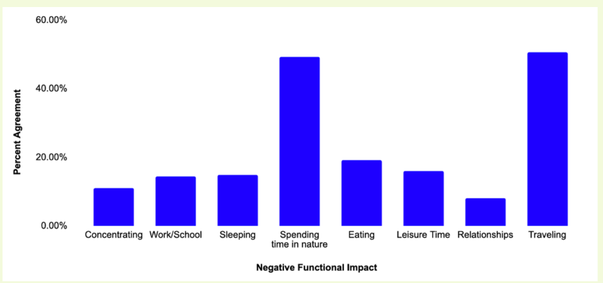
Means, Standard Deviations, and Cronbach's Alpha (α) for study variables:

Variable	*M*	*SD*	*Alpha (α)*
DASS Scores:			
DASS Depression	12.78	10.50	.87
DASS Anxiety	11.24	9.66	.91
DASS Stress	15.74	9.94	.87
Climate Change Anxiety Components:			
Betrayal emotions about climate change	3.91	1.33	.89
Sad emotions about climate change	4.85	1.04	.80
Negative thoughts about climate change	4.80	1.18	.85
Negative functional impact	2.77	1.24	.90
Worry about climate change	5.67	1.08	-
Related Factors:			
Direct/Indirect Exposure	1.60	.36	.76
Ignored/Dismissed (lack of social support)	3.43	1.55	.87
Resilience	3.33	1.01	.73
Local vs. National:			
Betrayal: Federal Government	4.81	1.07	.78
Reassurance: Federal Government	2.95	1.05	.87
Betrayal: University of Waterloo	3.49	1.07	.85
Reassurance: University of Waterloo	4.05	.99	.88

Note: There is no alpha value for the measure *Worry about climate change* as it was a one item scale.







Bivariate Correlations (*N = 347*):

Variables	1	2	3	4	5	6	7	8	9	10
1. Betrayal emotions	-									
2. Sad emotions	.65**	-								
3. Negative thoughts	.60**	.62**	-							
4. Negative functional impact	.41**	.39**	.38**	-						
5. Exposure	.22*	.24**	.21**	.28**	-					
6. Ignored/ Dismissed	.21**	.09	.18**	.16**	.04	-				
7. Resilience	.21**	.14**	-.02	.25**	.10	.17**	-			
8. Betrayal: Government	*.30***	*.27***	*.35***	*.14***	.09	.08	-.10	-		
9. Reassurance: Government	*-.17***	*-.13**	*-.21***	.05	-.01	-.00	.19**	-.54**	-	
10. Betrayal: University	*.22***	*.12**	*.22***	*.21***	.03	.18**	-.02	.32**	-.08	-
11. Reassurance: University	-.08	*-.11**	*-.14***	.02	.01	.04	.23**	-.21**	.32**	.48**

*Note: ** p< .01; *p<.05*

Climate Anxiety + Other Mood States:

	DASS Depression	DASS Anxiety	DASS Stress
Betrayal	.29**	.28**	.28**
Sad	.20**	.27**	.25**
Negative Thoughts	.35**	.28**	.31**
Functional Impact	.26**	.25**	.25**

Exploratory Analysis: One-way ANOVA to determine differences in climate anxiety across genders and relationship status

One-way ANOVA with Descriptive Statistics (Gender)

Measure	Man/Transman		Women/Transwomen		Genderqueer		F
	M	*SD*	*M*	*SD*	*M*	*SD*	
Betrayal	3.66[a]	1.42	3.94[a]	1.31	4.71[b]	1.08	3.94*
Sad	4.23[a]	.97	5.01[b]	.99	5.16[b]	1.02	17.4*
Negative Thoughts	4.39[a]	1.36	4.85[b]	1.12	5.33[b]	1.04	5.80*
Functional Impact	2.50[a]	1.26	2.81[a]	1.22	3.47[b]	1.28	4.10*

Note: p<.05*; *a*, *b* denote means significantly different from each other according to LSD post hoc tests

One-way ANOVA with Descriptive Statistics (Relationship Status)

Measure	Married/ Cohabitating		Committed relationship		Dating (not in a committed relationship)		Not dating/ married/ cohabiting		F
	M	*SD*	*M*	*SD*	*M*	*SD*	M	SD	
Betrayal	4.08	1.43	4.01	1.31	3.22	1.69	3.89	1.30	1.68
Sad	5.03	1.08	4.92	.95	4.61	1.37	4.80	1.05	.80
Negative Thoughts	4.53	1.04	4.82	1.18	4.64	.98	4.81	1.22	.43
Functional Impact	3.05	1.28	2.87	1.23	2.53	1.23	2.70	1.23	.99

Note: p<.05*