

## ORIGINAL ARTICLE

# CLIMATE ANXIETY AS A PUBLIC HEALTH ISSUE: AN EXPLORATORY STUDY OF CLIMATE ANXIETY IN MALAYSIAN YOUTH AND THEIR BELIEFS ABOUT GOVERNMENT RESPONSES TO CLIMATE CHANGE

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## ABSTRACT

Young people bear the heaviest burden of the climate crisis, but not all aspects of their rights have been considered in the environment and public health governance framework. With evidence primarily collected from Western countries, this poses a challenge to understanding climate anxiety and its effects on the Asian region. Addressing this gap, this study investigated climate anxiety among young people in Malaysia and its relationship with perceived government responses. We surveyed 150 youth aged 19 to 25, collecting data on climate change worry, climate-related emotions, negative thoughts about climate change, negative beliefs about government responses, feelings of betrayal and reassurance by the government, and negative functioning impact. Descriptive statistics, Pearson correlations, and regression analyses were conducted for data analysis. Participants reported high climate anxiety, with more than 60% being afraid, powerless, guilty, helpless, and sad. Many reported negative thoughts about climate change and rated government responses to climate change negatively. Those with high levels of worry had higher negative thoughts, greater deterioration of daily functioning capability, stronger feelings of betrayal, and are less likely to feel reassured by the government. Those who have negative thoughts about climate change reported more beliefs about the inadequacy of governmental responses. Both negative thoughts about climate change and negative functional impact significantly predict feelings of betrayal by the government. This study highlights the need to acknowledge the distressing impact of climate change on young people and for the government to validate their concerns by taking serious action on the climate crisis.

**Keywords:** Climate anxiety, Climate change, Government responses, Young people, Public health

## INTRODUCTION

Recent editorial by Mahmood and Guinto<sup>1</sup> provides a thoughtful analysis of the repercussions of climate change and the corresponding required actions by the Malaysian public health and medical communities, and by extension, the government and community-at-large. This call to action is timely given that Malaysia's responses to climate and environmental issues have often been incongruous, i.e., aspiring to pursue climate-friendly policies but acting in contradictory ways. The former is reflected in the ratifications of international conventions such as the Montreal Protocol 1987, United Nations Framework Convention on Climate Change 1992, Kyoto Protocol 2005, and Paris Agreement 2016, which emphasise renewable energy, water resource management, green technology, and the reduction of carbon emissions, among others. The latter, however, concerns the inconsistent actions towards enforcing environmental policies<sup>2</sup>, the repressions of climate or environmental activism<sup>3, 4</sup>, the reluctance to declare a climate emergency<sup>5</sup>, and the overall lack of mobilisation of the whole-of-government and whole-of-society to address climate threats<sup>6</sup>.

No population is impacted more significantly by the climate crisis than children and young people<sup>7</sup>. Malaysia is ranked 61<sup>st</sup> out of 163 nations in the Children's Climate Risk Index (CCRI) with a medium-to-high risk of being adversely impacted by climate change and environmental shocks<sup>8</sup>. The devastating floods, landslides, rising sea levels, and changes in temperature and rainfall over the past three years have affected more than 400,000 people, which includes children and young people, resulting in an overall estimate of RM6.1 billion in financial losses<sup>9</sup>. Therefore, it is not surprising when nine out of 10 youths in Malaysia reported that they had experienced environmental and climate-related effects, with 92% having high levels of concerns with climate change and believing it is a crisis<sup>10</sup>.

These young people have in various ways, what researchers call, *climate anxiety* or *eco anxiety* - a state of heightened emotional, mental or somatic distress in response to changes in the environment or climate system and its effects<sup>11</sup>. A growing number of studies has investigated this phenomenon in children and young people worldwide<sup>12, 13, 14, 15</sup>, and found that climate change and environmental issues pose serious risks for this population segment, with

consequences observed in terms of health and well-being, education, and future income. In particular, feelings of worry, numbness, loss of control, powerlessness, and uncertainties about the future have been consistently reported across the countries surveyed. These feelings are further exacerbated by the apparent government inaction in addressing the climate crisis and environmental injustice<sup>12, 16</sup>.

While all children and young people are impacted by climate change, those living in marginalised ethnic groups and communities are more exposed to climate and environmental risks as they have fewer financial and political resources to buffer the impact<sup>17, 18</sup>. For example, indigenous people such as the Inuit in northern Canada and indigenous Sámi have reported increased substance abuse, suicidality, and mental health issues due to fear of losing traditional culture or practices associated with climate change<sup>19, 20</sup>. There has also been a corresponding increase in psychological distress in Tuvalu, a Pacific Island nation, due to climate change<sup>21</sup>. A similar disastrous situation happened in Isle de Jean Charles, Louisiana, another coastal area, where climate change has made its residents the first recognised climate refugees<sup>22</sup>. Injustice has long been a fundamental basis of strong emotional reactions<sup>23</sup>. Such an intense and overwhelming sense of fear, worry, anger, or guilt naturally induces multiple concerns and uncertainties about the future.

Although the number of young people affected by climate anxiety globally has been investigated, this phenomenon is relatively unexplored in Malaysia. Because young people and children bear the heaviest burden of the climate crisis, this lack of research could lead to a flaw in understanding the depth and impact of the issue. Hence, addressing this gap requires empirical evidence for its prevalence and patterns among the Malaysian youth population, which is the objective of the present study. In particular, this study accentuates the current scenario of climate anxiety among young people in Malaysia and provides an overview of how this population perceives the government’s responses to climate change. Data on these aspects is crucial for additional insight into formulating and implementing strategic policies to address climate change and its impacts.

**METHODS**

**Study Design and Participants**

We conducted a cross-sectional, correlational survey with a sample of 150 youth aged 19 to 25. The majority of participants are Malay (94.7%), female (74.7%), students (82.7%), completing or have completed an undergraduate degree (53.3%), and listed suburban residences (57.3%) (see Table 1). Participants were recruited through social media platforms and personal contacts.

**Table 1a: Demographic characteristics of participants (n = 150)**

Demographic characteristics	Category	Frequency	Percentage	
Gender	Male	38	25.3	
	Female	112	74.7	
Age	19	9	6.0	<i>Mean</i> = 22.29, <i>Standard deviation</i> = 1.43
	20	6	4.0	
	21	32	21.3	
	22	15	10.0	
	23	69	46.0	
	24	12	8.0	
	25	7	4.7	
Ethnicity	Malay	142	94.7	
	Chinese	3	2.0	
	Bajau	1	0.7	
	Bumiputera Sabah	1	0.7	
	Others	3	2.0	
Highest education	Secondary / high school	10	6.7	
	Diploma or equivalent	59	39.3	
	Bachelor’s degree	80	53.3	
	PhD or Master’s degree	1	.7	
Occupational status	Full-time	8	5.3	
	Part-time	14	9.3	
	Student	124	82.7	
	Home keeper/Not working or seeking	4	2.7	
Area currently live	Urban	51	34.0	
	Suburban	86	57.3	
	Rural	13	8.7	

Table 1b: Demographic characteristics of participants (n = 150)

State currently live			
	Selangor	64	42.6
	Kuala Lumpur	22	14.7
	Kedah	11	7.3
	Johor	10	6.7
	Pahang	10	6.7
	Perak	9	6.0
	Melaka	5	3.3
	Terengganu	5	3.3
	Kelantan	3	2.0
	Perlis	3	2.0
	Pulau Pinang	3	2.0
	Negeri Sembilan	2	1.3
	Sabah	2	1.3
	Sarawak	1	.7

#### Measures

Data were collected online between April and May 2022. Participants completed a questionnaire containing items from Hickman et al.'s study<sup>12</sup> to measure seven variables. First, *worry about climate change* was assessed by one item that asked participants how worried they are that climate change threatens people and the planet via a five-point scale, 0 (*Not worried*) to 5 (*Prefer not to say*). Percentages were obtained. For *climate-related emotions*, participants were asked whether (*Yes/ No/ Prefer not to say*) climate change makes them feel positive and negative emotions (i.e., helpless, sad, anxious, afraid, optimistic, angry, guilty, ashamed, hurt, depressed, despair, grief, powerless and indifferent). Higher frequencies of 'Yes' answers indicate more intense emotions about climate change. In this study, Cronbach's alpha is .74.

Next, the participants answered seven items that measured *negative thoughts about climate change* (e.g., "I'm hesitant to have children" and "Humanity is doomed") via *Yes (2)/ No (1)/ Prefer not to say (0)* options (Cronbach's alpha = .58). Responses were summed to create an overall score, with higher scores indicating more negative thoughts. Participants were then asked whether they had experienced *being ignored or dismissed* when talking about climate change. The scoring was based on how many participants selected *Yes/ No/ I don't talk to other people about climate change* options. Meanwhile, *negative beliefs about government responses* were measured by nine items, which obtained a Cronbach's alpha of .84. Higher scores equate to a more negative evaluation of the government's

responses. Each item was rated on a three-point scale from 0 (*Prefer not to say*) to 2 (*Yes*) (or in the reverse way for five positively-worded items); thus, the total score ranged from 0 to 18.

The participants also completed the *emotional impacts of the government responses* scale that consisted of two sub-scales of Likert-type responses, ranging from 0 (*Not at all*) to 5 (*Prefer not to say*). The four-item Reassurance scale measured positive emotional responses to the government's actions and obtained a Cronbach's alpha of .82. The scores for the Betrayal scale were obtained from the mean of the six negative feelings items, with Cronbach's alpha of .91. Finally, feelings about *how climate change negatively affects functioning in daily life* were measured by nine items via *Yes (2)/ No (1)/ Prefer not to say (0)* options (Cronbach's alpha = .75). Responses were summed to create an overall score, with higher scores indicating more negative functioning impacts.

#### Data Analysis

The collected data were analysed using descriptive statistics to generate frequencies, percentages, means, and standard deviations of the study variables. Then, Pearson's correlation was performed to determine the magnitude of the relationships among the respective variables. This correlation coefficient was used instead of Spearman correlation because of three reasons: (i) it works with the raw data values of the variables; (ii) the variables tested were continuous; and (iii) the data distributions fulfilled the requirement for normality. Finally, regressions were conducted to model the linear relationship between the study variables.

## RESULTS

Screening revealed that all variable values are within normal ranges with no outliers. In discussing the results, *M* denotes the mean score, whereas *SD* refers to the standard deviation. Table 2 displays descriptive statistics for all variables. Participants reported a large amount of worry, with almost 70% stating that they felt “Very” or “Extremely” worried about climate change ( $M = 2.85$ ,  $SD = 1.08$ ). They believed their feelings about climate change negatively affects their daily lives, especially about spending time with nature (64%) and concentrating (44.7%). Many participants reported negative emotions, particularly feeling afraid, powerless, guilty, helpless, and sad - each was reported by more than 60% of the participants. The emotions least often reported are optimism, depression, and despair.

A significant number of participants also had a range of negative beliefs, with 90.7% saying the future is frightening, 81.3% believing that people have failed to take care of the planet, and 73.3% stating the things they most value will be destroyed. About 71.3% perceive that their family’s security would be threatened due to climate change (see Table 2). Ironically, while these negative beliefs are high, 48% of the participants reported not talking with others about climate change. Among those who did talk about climate change issues ( $n = 78$ ), 21.8% reported that other people had ignored or dismissed them.

Regarding how young people perceive governmental responses to climate change, participants rated government responses negatively ( $M = 12.01$ ,  $SD = 4.52$  on the 0-18 scale). The percentage of agreement on the negative statements is higher (34, 58.7%) than on the positive statements (14.7, 44.7%). Interestingly, while 45.3% of the participants answered “No” to whether the government is doing enough to avoid a climate catastrophe, 44.7% said “Yes”.

Following a similar procedure to that in (12), participants’ mean scores on feeling betrayed and feeling reassured regarding government responses to climate change were calculated by omitting those who had responded with ‘Prefer not to say’. Participants reported slightly greater feelings of betrayal ( $M = 1.45$ ,  $SD = 1.00$ ) than of reassurance ( $M = 1.44$ ,  $SD = .97$ ). However, pairwise t-tests showed that betrayal ratings do not significantly differ from reassurance ratings,  $t(136) = .074$ ,  $p = .941$ .

Pearson’s correlation analysis was conducted to examine whether worry about climate change, negative thoughts about climate change, and negative functional impact are linked to feelings of betrayal and reassurance and negative beliefs about government responses. Worry about climate change ( $M = 2.85$ ,  $SD = 1.08$ ), negative thoughts ( $M = 11.24$ ,  $SD = 2.14$ ), and negative functional impact ( $M = 10.55$ ,  $SD = 3.11$ ) are significantly and positively correlated with feelings of betrayal. The strength of these correlations is small to moderate, with coefficient (*r*) values between .27 and .42. See Table 3 for a summary of these results.

Only negative thoughts about climate change ( $r = .42$ ,  $p < .01$ ) and feelings of betrayal ( $r = .46$ ,  $p < .01$ ) are significantly correlated with negative beliefs about government responses. These correlations are moderate in size. Finally, significant negative correlations with small to moderate magnitude of correlation are found between feelings of reassurance and worry ( $r = -.21$ ,  $p = .012$ ), negative thoughts ( $r = -.23$ ,  $p = .007$ ), negative beliefs about government responses ( $r = -.48$ ,  $p < .01$ ), and feelings of betrayal ( $r = -.38$ ,  $p < .01$ ).

To assess the unique effects of negative thoughts about climate change and the negative functional impact on negative beliefs about government responses, hierarchical multiple regression was conducted by holding the “worry about climate change” constant (see Table 4). While no significant results were obtained for negative functional impact ( $B = -.002$ ,  $p = .99$ ,  $CI = -.23, .23$ ), the negative thoughts variable is found to significantly predict negative beliefs about government responses ( $B = .92$ ,  $p < .001$ ,  $CI = .59, 1.26$ ), even when worry was held constant. These results suggest that people experiencing negative thoughts about climate change reported an increased number of beliefs about inadequate governmental responses - an effect observed even among those who felt the same level of worry about climate change.

Two separate hierarchical multiple regressions were then performed with feelings of betrayal and reassurance as the dependent variables. We find that both negative thoughts about climate change ( $B = .18$ ,  $p < .001$ ,  $CI = .08, .28$ ) and negative functional impact ( $B = .08$ ,  $p < .001$ ,  $CI = .02, .13$ ) remain significant as predictors of feelings of betrayal while holding worry constant. However, neither negative thoughts ( $B = -.09$ ,  $p = .07$ ,  $CI = -.19, .01$ ) nor negative functional impact ( $B = -.01$ ,  $p = .61$ ,  $CI = -.07, .04$ ) is a significant predictor of feelings of reassurance in the final regression analysis.

Table 2a: Descriptive statistics of the study variables

Emotions about climate change		Negative beliefs about climate change and dismissal		Government-related beliefs		Negative functional impact	
Participants were asked “Does climate change make you feel any of the following?”		Participants were asked “Does climate change make you think any of the following?”		Participants were asked “In relation to climate change I believe that my government is/other governments are...”		Participants were asked “My feelings about climate change negatively affect my daily life in terms of the following..”	
<b>Sad</b>		I’m hesitant to have children		Taking my concerns seriously enough		Eating	
Yes	94 (62.7%)	Yes	52 (34.7%)	Yes	45 (30.0%)	Yes	19 (12.7%)
No	53 (35.3%)	No	84 (56.0%)	No	86 (57.3%)	No	111 (74.0%)
Prefer not to say	3 (2.0%)	Prefer not to say	14 (9.3%)	Prefer not to say	19 (12.7%)	Prefer not to say	20 (13.3%)
<b>Helpless</b>		Humanity is doomed		Doing enough to avoid a climate catastrophe		Concentrating	
Yes	106 (70.7%)	Yes	102 (68.0%)	Yes	67 (44.7%)	Yes	67 (44.7%)
No	36 (24.0%)	No	36 (24.0%)	No	68 (45.3%)	No	71 (47.3%)
Prefer not to say	8 (5.3%)	Prefer not to say	12 (8.0%)	Prefer not to say	15 (10.0%)	Prefer not to say	12 (8.0%)
<b>Anxious</b>		The future is frightening		Dismissing people’s distress		Work	
Yes	89 (59.3%)	Yes	136 (90.7%)	Yes	51 (34.0%)	Yes	33 (22.0%)
No	40 (26.7%)	No	12 (8.0%)	No	80 (53.3%)	No	99 (66.0%)
Prefer not to say	21 (14.0%)	Prefer not to say	2 (1.3%)	Prefer not to say	19 (12.7%)	Prefer not to say	18 (12.0%)
<b>Afraid</b>		I won’t have access to the same opportunities that my parents had		Acting in line with climate science		School	
Yes	137 (91.3%)	Yes	72 (48.0%)	Yes	26 (17.3%)	Yes	37 (24.7%)
No	10 (6.7%)	No	71 (47.3%)	No	98 (65.3%)	No	95 (63.3%)
Prefer not to say	3 (2.0%)	Prefer not to say	7 (4.7%)	Prefer not to say	26 (17.3%)	Prefer not to say	18 (12.0%)
<b>Optimistic</b>		My family’s security will be threatened (e.g., economic, social, physical security)		Protecting me, the planet, and/or future generations		Sleeping	
Yes	29 (19.3%)	Yes	107 (71.3%)	Yes	35 (23.3%)	Yes	49 (32.7%)
No	104 (69.3%)	No	31 (20.7%)	No	79 (52.7%)	No	84 (56.0%)
Prefer not to say	17 (11.3%)	Prefer not to say	12 (8.0%)	Prefer not to say	36 (24.0%)	Prefer not to say	17 (11.3%)
<b>Angry</b>		The things I most value will be destroyed		Can be trusted		Spending time in nature	
Yes	62 (41.3%)	Yes	110 (73.3%)	Yes	22 (14.7%)	Yes	96 (64.0%)
No	75 (50.0%)	No	28 (18.7%)	No	87 (58.0%)	No	42 (28.0%)
Prefer not to say	13 (8.7%)	Prefer not to say	12 (8.0%)	Prefer not to say	41 (27.3%)	Prefer not to say	12 (8.0%)

Table 2b: Descriptive statistics of the study variables

<b>Guilty</b>		<b>People have failed to take care of the planet</b>		<b>Lying about the effectiveness of the actions they are taking</b>		<b>Playing</b>	
Yes	107 (71.3%)	Yes	122 (81.3%)	Yes	63 (42.0%)	Yes	31 (20.7%)
No	36 (24.0%)	No	22 (14.7%)	No	46 (30.7%)	No	98 (65.3%)
Prefer not to say	7 (4.7%)	Prefer not to say	6 (4.0%)	Prefer not to say	41 (27.3%)	Prefer not to say	21 (14.0%)
<b>Ashamed</b>		<b>When I try to talk about climate change other people have ignored or dismissed me</b>		<b>Failing young people across the world.</b>		<b>Having fun</b>	
Yes	86 (57.3%)	Yes	17 (11.3%)	Yes	88 (58.7%)	Yes	49 (32.7%)
No	49 (32.7%)	No	61 (40.7%)	No	39 (26.0%)	No	79 (52.7%)
Prefer not to say	15 (10.0%)	I don't talk to other people about climate change	72 (48.0%)	Prefer not to say	23 (15.3%)	Prefer not to say	22 (14.7%)
<b>Hurt</b>				<b>Betraying me and/or future generations</b>		<b>Relationships</b>	
Yes	57 (38.0%)			Yes	80 (53.3%)	Yes	15 (10.0%)
No	74 (49.3%)			No	41 (27.3%)	No	112 (74.7%)
Prefer not to say	19 (12.7%)			Prefer not to say	29 (19.3%)	Prefer not to say	23 (15.3%)
<b>Depressed</b>							
Yes	33 (22.0%)						
No	86 (57.3%)						
Prefer not to say	31 (20.7%)						
<b>Despair</b>							
Yes	36 (24.0%)						
No	83 (55.3%)						
Prefer not to say	31 (20.7%)						
<b>Grief</b>							
Yes	43 (28.7%)						
No	86 (57.3%)						
Prefer not to say	21 (14.0%)						
<b>Powerless</b>							
Yes	121 (80.7%)						
No	24 (16.0%)						
Prefer not to say	5 (3.3%)						

Table 2c: Descriptive statistics of the study variables

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Indifferent	
Yes	55 (36.7%)
No	78 (52.0%)
Prefer not to say	17 (11.3%)

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**Table 3: Correlation matrix for the study variables**

		<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1	Worry about climate change	2.85	1.08	1	.29**	.27**	.08	.27**	-.21*
2	Negative thoughts about climate change	11.24	2.14		1	.25**	.42**	.42**	-.23**
3	Negative functional impact	10.55	3.11			1	.09	.37**	-.14
4	Negative beliefs about government response	12.01	4.52				1	.46**	-.48**
5	Feeling betrayed by government	1.45	1.00					1	-.38**
6	Feeling reassured by government	1.44	.97						1

\*\*Correlation is significant at  $p < .01$  level.

\*Correlation is significant at  $p < .05$  level.

**Table 4: Prediction of negative beliefs about government response, feeling betrayed, and feeling reassured.**

Predictors	Criterion								
	Negative beliefs about government response			Feeling betrayed by government			Feeling reassured by government		
	<i>B</i>	95% CI (LL, UL)	<i>p</i>	<i>B</i>	95% CI (LL, UL)	<i>p</i>	<i>B</i>	95% CI (LL, UL)	<i>p</i>
Worry about climate change	-.20	-.87, .46	.54	.09	-.06, .24	.25	-.12	-.28, .03	.12
Negative thoughts about climate change	.92	.59, 1.26	.00	.18	.08, .28	.00	-.09	-.19, .01	.07
Negative functional impact	-.002	-.23, .23	.99	.08	.02, .13	.00	-.01	-.07, .04	.61

$R^2 = .18$ ;  $F(3, 146) = 10.72$ ,  $p < .001$ ,  $R^2 = .24$ ;  $F(3, 136) = 14.19$ ,  $p < .001$ ,  $R^2 = .07$ ;  $F(3, 139) = 3.60$ ,  $p = .02$

Note: The relevant statistics and corresponding coefficients of the final model are reported.

**DISCUSSION**

This study demonstrates the current scenario of climate anxiety among young people in Malaysia and its serious ramifications on their mental health. Our results confirm that they reported high climate anxiety, which is reflected in their expression of distressing emotions, thoughts, and worries about how climate change is impacting their daily lives. Many reported painful, complex emotions, such as fear, powerlessness, guilt, helplessness, and sadness, leading to pessimistic beliefs about the future. We find that those with high levels of worry about climate change have higher negative thoughts, more reports of deteriorating daily functioning capability,

stronger feelings of betrayal, and are less likely to feel reassured by the government. Even more unfortunate is that the perceptions of inadequate governmental responses and feelings of betrayal amplify these pessimistic beliefs.

Consistent with Hickman et al.'s study<sup>12</sup>, these results expand on prior work demonstrating the extent and impact of climate anxiety on young people in the country. The evidence for climate anxiety among Malaysian youth is similar to that of the neighbouring countries such as the Philippines and Indonesia, with studies by (15), (24), and (25) reporting an increasing number of young people with this anxiety in those countries. Due to such high levels of distress,



functional impact, and feelings of betrayal, young people are likely to suffer from mental health impacts now and in the future. Previous research has shown that subjecting children and young people to fear and hopelessness increases their immediate stress responses and risks for mental disorders such as depression, post-traumatic stress disorder, and suicide, and leads to maladaptive coping strategies such as violence and substance misuse<sup>13, 26, 27, 28</sup>. In this study, these effects are particularly pronounced among those who have experienced and are still experiencing the adverse impacts of floods, like in Selangor and Pahang<sup>29, 30, 31</sup>.

The distress associated with climate change is exacerbated by political inaction and the lack of immediate responses from the government, making young people struggle with climate fear. Young people in the country are watching the government failing to act on the climate crisis, the consequence of which researchers have argued is a form of moral injury - a psychological harm from witnessing or taking part in something that violates one's ethical beliefs or from betrayal of "what is right" by trusted authorities<sup>32</sup>. This conundrum can make them feel both responsible and powerless, leading to despair associated with inaction and anxiety. Overall, this study reinforces the argument by Hickman et al.<sup>12</sup> that psychological distress, moral injury, and injustice can be attributed to the failure of the government to respond to climate-related issues in a way that adequately protects its citizens.

Our results demonstrate that the impact of perceived government failure is greatest for those who believe themselves to be compromised by climate-related issues. Negative thoughts about climate change, together with impaired daily functioning, are also integral to predicting feelings of betrayal by the government. Much of the distrust and resentment toward the government reflects a sentiment of having lost trust in the authorities, the very people who are expected to be responsible for environmental protection and community safeguarding. This scenario follows the same trend observed in the national data that indicate government and media have the lowest trust levels among Malaysian citizens<sup>33, 34</sup>. Growing weary of issues involving corruption, freedom of expression, the lack of transparency, and widespread allegations of mismanagement at various governmental levels, Malaysians see this as an abject failure of leadership, further contributing to their distrust.

The results of this study also reinforce the view that action on climate change and environmental issues needs to go beyond self-regulation and the limits of communities' and non-governmental organisations' efforts. Hickman et al.<sup>12</sup> passionately argued that those in power must

give climate change action high priority, and a crucial part of addressing climate anxiety starts by acknowledging and understanding why young people feel such grief, anger, and frustration. Also paramount for this generation is that the government must validate their concerns and mobilise those emotions into action by acknowledging their rights and including them in public policy-making and social change. What young people look for in this aspect is not only validation but also thoughtful, practical, and timely solutions that can tackle the climate crisis in the immediate, short, and long run. This includes addressing the intersection between climate change and mental health by ensuring that the country's healthcare policies, facilities, and services are prepared to deal with climate anxiety. Accordingly, sufficient support must be given to professionals in the respective fields, such as medical, psychological, and healthcare, especially regarding their capacity, climate-awareness trainings, and wages.

We offer two ways in which our results may have further public health relevance. First, mental health concerns are usually treated as categorical abnormalities within the existing diagnostic systems, and disorder labels are assigned to individuals accordingly. McLean (35) argues that such an approach has a high risk of assigning climate anxiety to a categorical abnormality; hence, implying that it is an abnormal behaviour. In reality, climate anxiety is a natural response to stress and danger that threatens the real world, which is, by definition, not abnormal. In other words, it is not a clinical condition but an inevitable response to the ecological or environmental threats we face. As such, a critical view of the current structure of the mental and public health diagnostic systems, specifically on their diagnostic taxonomies, is very much required<sup>35</sup>.

Second, climate change is always a highly politically charged issue that has legal implications. It is thus not surprising to find countries worldwide looking into numerous mitigation efforts. In our own backyard, Malaysia has the Environmental Quality Act (EQA) 1974 to protect the environment and the Renewable Energy Act 2011 that relates to the reduction of carbon emissions. However, these acts do not contain specific provisions for climate change<sup>36</sup>. Meanwhile, implementation and enforcement are major criticisms of the National Policy on Climate Change<sup>37</sup>. Fortunately, there is a silver lining for now as the National Climate Change Legal Framework, which will set the foundation for a Climate Change Act, is currently being drafted and is expected to come into force in 2024<sup>38</sup>. It is hoped that there are some provisions for addressing the effects of climate change on mental health in this framework and act. It is clear that climate anxiety disproportionately affects young people in Malaysia, with the

direction of the impacts consistent with earlier findings. Although our sample size admittedly does not allow any definitive conclusion about this issue, the findings of this study provide a reasonable basis to focus serious efforts on acknowledging climate anxiety and investigating its impact on young people in the country. More broadly, the results of this study reaffirm the urgency and need for the government to make a structural change to address climate-related issues, alongside enhanced evidence and approaches to support young people's mental health appropriately. People's ability to live fulfilling lives often depends on their mental health; hence, protecting and restoring mental health is an immediate concern to public health professionals. As such, climate anxiety should be treated as a public health issue, and failing to do so will be damaging to many in the long term. To this end, improving mental health policies, facilities, and services will ultimately enhance public health.

## CONCLUSIONS

In conclusion, we echo previous recommendations, such as those by <sup>1</sup>, <sup>13</sup>, and <sup>24</sup> that have called for the inclusion of climate anxiety in the national healthcare agenda. Increased resources and investments to provide the required capacity to care for the mental health consequences of climate change are vital if young people are to overcome the impact of distressing experiences. The lack of such investments will only yield mid-and long-term impacts, with a large percentage of the future country's workforce suffering from some form of emotional or mental disorder. This consequently can lead to losses in future productivity and long-term economic impact on the country. Finally, disclosure of truthful information and engaging young people in public debate and policy-making are must-have components to develop effective climate mitigation and adaptation programmes.

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## Conflict of interests

There are no competing interests to declare.

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