The Relationship between Climate Change Anxiety and Mental Health among Students at Nangarhar University, Afghanistan

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ABSTRACT

Climate change is progressively having stronger and longer-lasting impacts on societies, which can directly and indirectly affect people's mental health. The aim of this study was to examine the relationship between climate anxiety and mental health (in terms of depression, general anxiety, and post-traumatic stress disorder) among students of Nangarhar University, Afghanistan. A cross-sectional online survey was conducted on 350 participants who are currently studying at Nangarhar University from December 1 to December 21, 2023. A non-probability-convenient sampling technique was used to select study participants. Data were collected using an online Google form that was shared with 13 faculties' student groups for three weeks with the help of Nangarhar University lecturers. The data were analyzed using the statistical package for social sciences (SPSS) version 24. The findings of this study show that there is a positive and significant relationship between climate change anxiety and depression (Beta = 52; P<0.001), a positive and significant relationship between climate change anxiety and general anxiety (Beta = 48; P <0.001), and a positive and significant relationship between climate change anxiety and post-traumatic stress disorder (Beta = 47; p <0.001). Climate change anxiety was the main source of mental health problems for Nangarhar University male students, as it has a positive and significant relationship with mental health in terms of depression, general anxiety, and post-traumatic stress disorder. So it is suggested to incorporate climate change anxiety into governmental policies and plans for the mental health of students, including mental health psychological supports, to better prepare and respond to climate change anxiety.

Keywords: Climate change anxiety, Relationship, Mental health, Depression, General anxiety

INTRODUCTION

Climate change and mental health are the two concepts that face societies with the greatest challenges throughout the world. An increasing body of research indicates that climate change has extensive impacts on general human health, specifically mental health (Clayton, 2020; Hayes et al., 2018). A large body of literature has shown that major depressive disorder (MDD) and generalized anxiety disorder (GAD) are the most common elevated rates of mental health consequences of climate change anxiety (CCA) (Goldmann & Galea, 2014; Hrabok et al., 2020). (Clayton, 2020) defined CCA as "anxiety associated with perceptions about climate change, even among people who have not personally experienced any direct impacts (p. 2)". CCA includes cognitive-emotional impairment and functional impairment. Cognitive-emotional impairment, reflecting difficulties in sleep, nightmares, concentrating, and rumination, and functional impairment, reflecting difficulties in engaging work or academic responsibilities and relationships (Clayton & Karazsia, 2020) CCA is a source of stress that may have a negative impact on mental health (Clayton, 2020). People with anxiety have lower mental health scores. Serious climate events can directly affect mental health in the form of higher rates of anxiety, depression, and post-traumatic stress disorder (PTSD) (Vaingankar et al., 2013). It can also have indirect effects on mental health, such as economic losses in the form of reduced productivity in agricultural societies, population displacement and forced migration, loss of income and employment opportunities, and increased conflict and violence; all of these can significantly impact mental health (Mouguiama-Daouda et al., 2022). There is an association between higher climate anxiety and lower levels of mental health (Eric Reyes et al., 2021). Similarly, various studies showed a strong and positive connection between higher climate anxiety and general anxiety symptoms (Innocenti et al., 2022; Schwartz et al., 2023). Clayton acknowledged that awareness of the negative impact of extreme temperatures, increased seasonal haze, air pollution, earthquakes,

and floods can contribute to an increase in mental health problems (Clayton, 2020). Living through a disaster can lead to higher rates of anxiety, depression, post-traumatic stress disorder, sleep disruption, and suicidal ideation (Chiw et al., 2019).

Several studies have already examined factors related to climate anxiety (Clayton, 2020; Eric Reyes et al., 2021; Hajek & König, 2023; Mouguiama-Daouda et al., 2022). Most of these studies have been conducted in developed countries that cannot be generalized to developing countries, and it is therefore necessary to study in developing countries like Afghanistan. The aim of this study was to examine the relationship between climate anxiety and mental health (in terms of depression, general anxiety, and post-traumatic stress disorder) among students of Nangarhar University, Afghanistan, with the following hypotheses:

There is a significant relationship between climate change anxiety and depression.

There is a significant relationship between climate change anxiety and general anxiety.

There is a significant relationship between climate change anxiety and PTSD.

MATERIALS AND METHODS

Study Area

A cross-sectional online survey was conducted on 350 participants who are currently studying at Nangarhar University from December 1 to December 21, 2023. A non-probability-convenient sampling technique was used to select study participants. Data were collected using an online Google form that was shared with 13 faculties' student groups for three weeks with the help of Nangarhar University lecturers

Samples Collection

The population of this study was all male students who were studying at Nangarhar University in 2023. Students who had access to the internet or an online Google Form from December 1 to December 21 were included in this study (350). Other students, such as females, graduated, and those who did not have access to the internet or an online Google form by the mentioned date were excluded from this study.

Statistical analysis

Data were analyzed using the statistical package for social sciences (SPSS) version 24. The quantitative data were reported as means and standard deviations. The categorical data were summarized as frequencies and percentages. To measure the internal consistency of the translated questionnaires, Cronbach's alpha was calculated. Liner Regression was used to evaluate the impact of climate change anxiety on students' mental health in terms of depression, general anxiety, and PTSD. The level of significance was set at $p < 0.01$.

Measurement tools

A standard Climate Change Anxiety Scale created by (Clayton & Karazsia, 2020) was used to measure climate change anxiety. This is a 13-item scale that evaluates the cognitive-emotional impairment (8 items) and functional impairment (5 items) associated with perceptions of climate change. This scale was destined for a Likert scale, with response options ranging from 0 = never to 4 = almost always. Higher scores on this scale indicate high levels of climate anxiety. Reliability in the current sample of this study was good (total score α =.90).

For measuring depression, the standard Patient Health Questionnaire Major Depression Disorder (MDD) that has nine items and developed from the criteria of Diagnostic and Statistical Manual for Mental Disorders (DSM-IV) Fourth Edition (Kroenke et al., 2001). This scale was designed on a Likert scale, with response options ranging from 0 = never to 4 = almost always. Higher scores on this scale indicate high levels of MDD. Reliability in the current sample was good (α =.90).

To measure general anxiety, the Patient Health Questionnaire Generalized Anxiety Disorder Scale was used (Spitzer et al., 2006). This 7-item scale evaluates anxiety symptoms based on the criteria for GAD used in the DSM-IV, fourth edition of the American Psychiatric Association. This scale was designed on a Likert scale, with response options ranging from 0 = never to 4 = almost always. Higher scores on this scale indicate high levels of MDD. Reliability in the current sample was good (α =.89).

To measure post-traumatic stress disorder (PTSD), use a short screening scale for DSM-IV post-traumatic stress disorder (Breslau et al., 1999). This scale was designed on a Likert scale, with response options ranging from 0 = never to 4 = almost always. Higher scores on this scale indicate high levels of PTSD. The reliability of the current sample was good (α =. 91).

RESULTS

Demographic characteristics of the participants

In this study were 294 participants under the age of 25; 38 were 25–30 years old, and 18 were over 30 years old. Regarding marital status, (270) of the participants were unmarried, and (80) were married. According to their economic status, 92 participants had a lower, 252 had a medium, and 6 had a high economic status. In addition, 74 participants provided their responses from education faculty, 72 from language and literature, 44 from journalism and engineering, 36 from agriculture, 22 from economics, 18 from computer science, 16 from science, 8 from public management, 4 from law, 4 from sharia, 4 from veterinary, and 4 from medical faculty. A total of 350 participants provided their free responses that have been included in a quantitative analysis.

Table 1. Shows mean, standard deviation and correlation matrix of the research variables.

Variables	Mean	SD	CCA	MDD	GA	PTSD
Climate change anxiety	21.42	9.59	1			
Depression	14.98	9.12	.521[**]	1		
General anxiety	11.58	7.24	.485[**]	.821[**]	1	
Post-traumatic stress disorder	14.79	9.38	.473[**]	.780[**]	.852[**]	1

[**]. Correlation is significant at the 0.01 level (2-tailed). SD (Standard deviation), CCA (Climate change anxiety), MDD (Major depression disorder), GA (General anxiety) PTSD (Post-traumatic disorder).

Table 2. Shows results of liner regressions according to research hypotheses.

Hypothesis	Beta	SD.E	Sig	Decision
There is significant relationship between CCA and depression.	.521	.044	.000	confirmed
There is significant relationship between CCA and general anxiety.	.485	.035	.000	confirmed
There is significant relationship between CCA and PTSD	.473	.046	.000	confirmed
SD.E (Standard error), CCA (Climate change anxiety), PTSD (Post-traumatic disorder).				

As in Table 2, It has been clearly seen that there is a positive and significant relationship between climate change anxiety and depression in Nangarhar University students, because the level of significance is $P<.001$. Therefore, the first hypothesis was confirmed with a confidence interval of 95%.

Table 2 shows that there is a positive and significant relationship between climate change anxiety and general anxiety among Nangarhar University students, because the level of significance is less than 0.001. Therefore, the first hypothesis was confirmed with a confidence interval of 95%.

Table 2 shows that there is a positive and significant relationship between climate change anxiety and post-traumatic stress disorder in Nangarhar University students, because the level of significance is less than 0.001. Therefore, the first hypothesis was confirmed with a confidence interval of 95%.

DISCUSSION

The results of this study indicate a positive and significant relationship between climate change anxiety and mental health (in terms of depression, general anxiety, and post-traumatic stress disorder) among the students studying at Nangarhar University, Afghanistan. This result is supported by (Clayton & Karazsia, 2020; Eric Reyes et al., 2021; Mouguiama-Daouda et al., 2022). And there could be several reasons why Nangarhar University students are concerned about climate change. For example, recently, several flooding and earthquake events took place in some provinces of Afghanistan, and many people, including women and children, died. Afghanistan is among the most susceptible nations to the confrontational impacts of climate change, mainly in relation to drought and flooding. Afghanistan is a developing country, and with a lower economy, it is difficult to prevent and fight climate change events effectively. Therefore, it might be the reason for the increase in students' climate change anxiety rates, which in turn affects their mental health. Regarding the findings of this study, there is a significant relationship between climate change anxiety and depression. This finding is supported by several previous findings (Clayton & Karazsia, 2020; Mouguiama-Daouda et al., 2022; Vaingankar et al., 2013). Thinking about climate change makes it difficult for students to concentrate. It may negatively affect their interest or pleasure in doing things, which may increase their depression rate. Thinking about climate change makes it difficult for students to sleep or to have fun with their family or friends, which

might increase their feelings of being down, depressed, or hopeless. For people who feel anxious, it is possible to have lower mental health scores. In dangerous cases like climate change, emotional reactions can interfere with the students' ability to think rationally, plan behavior, and consider alternative actions.

According to the findings of this research, there is a positive and significant relationship between climate change anxiety and general anxiety. This finding is supported by (Innocenti et al., 2022; Schwartz et al., 2023). Concerns about climate change interfere and undermine students' ability to get work or to do academic responsibilities. It might increase student's feelings of being frightened, as if something terrible were happening. Furthermore, thinking too much about climate change might pave the way for worrying too much about different things that may increase students' feelings of nervousness and anxiety. The main reason could be that several unpredictable and uncontrollable climate change events recently happened in Afghanistan that might raise students' general anxiety.

The findings of this research also explored a positive and significant relationship between climate change anxiety and post-traumatic stress disorder. This finding is supported by (Chiw et al., 2019). Afghanistan is one of the countries that has more climate-changing events. Specifically, students who are studying at Nangarhar University experienced high and increasing temperatures that can have direct and immediate impacts on their mental health, such as changes in mood, an increase in aggressive behavior, and crime. Climate change is a real personal and financial threat to individuals and societies. Students who have experienced any serious climate change events that are out of their control and feel unsafe. For example, many people died and suffered damage in recent climate change events such as flooding and earthquakes in Afghanistan. Such stressful situations can lead to temporary or even long-lasting health damage, particularly in the form of post-traumatic stress disorder.

There are several limitations to this study. First, this study was conducted only on Nangarhar University male students, so the reader must consider the female university students, school students, and even other university male students that might have different results. Second, participants were required to answer the online questionnaire, as students with no access to the online questionnaire were excluded. Third, the participants in this study might not have been representative of the whole Afghan population. Thus, it would be helpful if studies with more nationwide samples were replicated.

CONCLUSION

The aim of this study was to examine the relationship between climate anxiety and mental health (in terms of depression, general anxiety, and post-traumatic stress disorder) among students of Nangarhar University, Afghanistan. Nangarhar University students' mental health is negatively affected by climate change anxiety. Climate change anxiety has a positive and significant impact on students' mental health in terms of depression, general anxiety, and post-traumatic stress disorder. According to the result of this research, it is suggested to incorporate climate change anxiety into governmental policies and plans for the mental health of students, including mental health psychological supports, to better prepare and respond to climate change anxiety.

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