Journal of Communication and Management, 2024;3(1):26-35

Journal of Communication and Management

ISSN: 2583-617X (Online)

Journal home page: https://jcoma.com

Research Article

DOI: 10.58966/JCM2024314

Role of Environmental Communication in Climate Change Anxiety and Mental Health of a Select Community in the Philippines

Leanne Marie D. Galleto[1] Geff B. Sagala[2]*

[1]Colegio de Sta. Ana de Victorias, Inc., Victorias City, Philippines
[2]University of San Agustin, Iloilo City, Philippines

ARTICLE INFO

Article history:

Received: 15 January, 2024

Revised: 20 February, 2024

Accepted: 03 March, 2024

Published: 22 March, 2024

Keywords:

Environmental Communication, Climate Change Anxiety, Mental Health, Depression, Anxiety, Mental Stress, Philippines

ABSTRACT

Climate change is a real threat to humanity that can cause anxiety and mental stress. Advocates and scientists are reminding us about the importance of communicating global issues, especially concerning environmental degradation. This quantitative-correlational study discussed the role of environmental communication in climate change anxiety and the mental health (in the aspect of depression, anxiety, and stress) of the community when taken as a whole and grouped according to age, sex, civil status, and occupation. Correlational research investigates the relationship between two or more variables without manipulating or controlling the other. Thus, this study sought if climate change anxiety and mental health correlate using Pearson product-moment correlation. Three hundred thirty-one respondents answered the adopted modified research instrument. Results showed that the level of climate change anxiety of the respondents was generally at a moderate level while the level of mental health in the aspect of depression was normal, with moderate anxiety, and normal stress level. Therefore, it was concluded that although the community is aware of how climate change is affecting them, their anxiety over environmental issues is not severe enough to cause depression or mental stress. Finally, it was proven that climate change anxiety and mental health were significantly correlated with each other. It is recommended that the government and community groups intensify climate change awareness programs and utilize various communication platforms because of their significant role in reducing climate change anxiety and mental stress.

Introduction

Climate change is happening, a real threat and an overwhelming crisis, where advocates and scientists are reminding us about the impacts and effects of environmental degradation on humanity. Human activities have affected the composition of the atmosphere, resulting in a greenhouse effect and global warming. According to Cianconi et al. (2020), the use of fossil fuels, deforestation, and pollution are all contributing factors to global warming. Hathaway and Maibach (2018) emphasized how climate change affects the earth and its repercussions for people's physical health.

The challenges of climate change in mental health are associated with extreme events that trigger fear, stress, trauma, anxiety, worry, and depression. Looking at the impact of climate change on psychological functioning, the vulnerability-stress model describes five pathways (biological, behavioral, cognitive, emotional, and social), the interaction of which can make an individual more or less susceptible to environmental stress factors (Thoma et al., 2021).

According to Hayes et al. (2018), climate change will have an extensive impact on human health including mental health. Some research has investigated the consequences of mental health as one of the indicators of climate change exhibiting the prevalence of common

***Corresponding Author:** Geff B. Sagala

Address: University of San Agustin, Iloilo City, Philippines

Email ✉**:** gsagala@usa.edu.ph

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

psychiatric conditions like Generalized Anxiety Disorder (GAD) and Major Depressive Disorder (MDD) (Hrabok et al., 2020). Additionally, rising temperatures can have an impact on mental health and increase the risk for suicidal behavior (Cianconi et al., 2020).

Climate Change Anxiety (CCA) is defined as negative responses related to climate change (Clayton, 2020; Wullenkord et al., 2021) comprising cognitive, emotional, and behavioral responses (e.g. incessant worry, psychological distress, or difficulty in sleeping). Some of the repercussion of climate change anxiety leads to functional impairment of the individual to be fully engaged in work, school, and relationships (Clayton & Karazsia, 2020).

Related studies prove that climate change can cause anxiety and mental stress, which is why it is vital to assess the current conditions of the local communities dealing with climate change and their mental health. This study focused on determining the climate change anxiety and mental health (in terms of depression, anxiety, and stress) of selected residents in the selected community when taken as a whole and when grouped according to age, sex, civil status, and occupation. It also explored the role of environmental communication in climate change anxiety and its impact on the mental health of the respondents. Moreover, this study found a significant relationship between climate change anxiety and mental health.

This study aims to highlight the importance of environmental communication in reducing climate change anxiety and maintaining the mental health of the respondents to minimize the impact of environmental degradation, particularly climate change on the community. The government needs to inform the local communities about the implications of climate change and its possible repercussions on their mental health. This study discussed how information dissemination about climate change can have a direct influence on people's mental health, both individually and in communities. Hudson et al. (2019) said that awareness of environmental issues has huge implications for a person's well-being.

This study is anchored on Terror Management Theory (TMT), which states that existential crises serve as the primary source of human psychological demands (Pyszczynski et al., 1997). Humans are susceptible to persevere and be resilient to increase their chances of surviving (Greenberg et al., 1997). Another concept is Solastalgia, an inability to obtain solace from the present state of one's environment (McNamara & Westoby, 2011). It explains how detrimental environmental changes jeopardize people's sense of identity, belonging, and control on a personal and communal level (Higginbotham et al., 2006).

Theoretically, the goal of this research is to demonstrate the connection between climate change anxiety and mental health in a community, which may be impacted by the role of environmental communication.

Conceptual Framework

Figure 1 depicts the relationship between the variables of climate change anxiety and mental health in a community. It displays the selected community in the Philippines along with information about the residents' age, sex, civil status, and occupation. This study determined the association between climate change anxiety and mental health through data collection using two sets of standardized questionnaires. Furthermore, the findings of this study discussed the role of environmental communication and its impact on climate change anxiety and mental health.

Review of Related Literature and Studies

On Climate Change Anxiety

According to Friedlingstein et al. (2020), one of the most critical considerations confronting our country and the entire world today is climate change, which is already having a significant negative impact on people's mental well-being. Climate Change Anxiety has received increasing attention in the popular press and how it relates to Psychiatric symptoms that include Major Depressive Disorder and General Anxiety Disorder (Benoit et al., 2022). Experiencing climate change may result in a variety of emotions, particularly unpleasant ones like feeling exasperated, angry, upset, infuriated, distressed, and anxious (Duggan et al., 2021). In addition, more people are taking action to address the climate change crisis. Beyond that matter, the people lacked awareness about the impact and effects of climate change and its relation to the mental health of the people (Wullenkord, 2020). Climate Change Anxiety determines the responses that are related to a potential traumatic climate-related experience, like extreme weather events including lack of awareness in the popular media (Clayton, 2020).

There are a few consensus on how it conceptualizes Climate Change Anxiety from the point of mental health, which some describe as the "Pop-Culture Trend" (Grist et al., 2019). The conflict in the area may be partly caused by criticism of valid medical environmental concerns, which may also be a reflection of the fact that there haven't been much recent data on climate change anxiety. The available data, however, are primarily focused on the overall negative emotions associated with climate change rather than specifically on climate change anxiety. The complexity and uniqueness of the problem may be the cause of the paucity of literature. The phenomenology of climate change varies widely; some mental illnesses are more common than others, and some are more specific to abnormal weather patterns (Cianconi et al., 2020).

On Mental Health

Mental health is described as a state of mind characterized by having the ability to create positive relationships and manage daily demands, tensions, and overall well-being (Canady, 2021). The detrimental consequences of climate

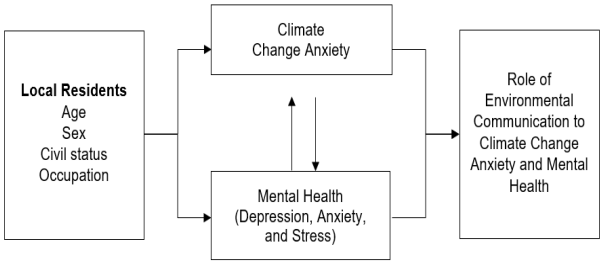

Figure 1: Schematic Diagram

change on mental health are not distributed equally; certain groups are disproportionately impacted based on factors like age, gender, and socioeconomic status. However, it is clear that climate change has an impact on a large number of the socioeconomic determinants of mental health. According to a 2021 WHO survey of 95 countries, only 9 have included mental health and psychosocial support in their national health and climate change plans thus far (World Health Organization, 2022).

Climate change threatens the ability to process information and make decisions without even being impeded by excessive emotional responses. An emotional reaction to adversity is emotions that are positive or negative. However, in the most extreme cases, emotional actions might obstruct the capacity for logical thought, and behavior management, and consider alternative course of action. Amid more frequent catastrophic events caused by climate change, such as cyclones, wildfires, and flooding, some of the most direct consequences on mental health can be observed such as trauma and shock, post-traumatic stress disorder (PTSD), sentiments of abandonment, anxiety and depression that can trigger suicidal thoughts and hazardous conduct. Those catastrophes hurt social cohesiveness, interpersonal aggression, and child abuse within communities (Hayes et al., 2018).

Moreover, natural disasters can also trigger technology catastrophes (such as power outages), failures in the water and sewage systems, and other infrastructure or city fires. The hazard of carbon increases the risk of carbon monoxide poisoning the community brought about by climate change (Bell et al., 2018). Errors can become serious and even fatal if there is an interruption in the supply of healthcare supplies or other aspects of healthcare technology. Additionally, hazardous substances can be introduced by floodwater, where there are inadequate hygiene supplies, water-borne epidemics including respiratory illnesses, skin infections, and neurologic and gastrointestinal ailments (Nichols et al., 2018). Even though almost all individuals are typically conscious of climate change people are still uncertain about the future (McDonald et al., 2015).

The increasing temperatures can exacerbate problems with mental health including depression and anxiety, schizophrenia, and vascular dementia, in addition to increasing readmission rates and rates of suicide. Changes in the local environment can impair interpersonal connections and self-esteem, as well as result in sadness, confusion, and subpar work performance.

Methods

This is a quantitative correlational research design that investigates the relationship between climate change anxiety and mental health in a select community in the Philippines. Correlational research investigates the relationship between two or more variables without manipulating or controlling the other. There were 331 (three hundred thirty-one) respondents selected using stratified random sampling who answered the adopted modified research instrument.

The research instrument was validated by a pool of experts and subjected to pilot testing. It is composed of three (3) parts. First is the respondent's profile which requires age, sex, civil status, and occupation. Second, the Climate Change Anxiety Scale (CCAS) by Clayton and Karaszia (2020) was used which is composed of thirteen (13) questions. The items were answered with a corresponding numerical code with interpretation: 5 (almost always), 4 (often), 3 (sometimes), 2 (rarely), and 1 (never). Third, the Depression, Anxiety, and Stress Scale (DASS 21) by Lovibond and Lovibond (1995) was used which consists of 21 items that are answered with a 3-point self-report Likert scale.

To investigate the data, the following statistical tools were used. The frequency and percentage were used to tally the demographic profile of the respondents. Mean and standard deviation were used for descriptive statistics, while t-test, ANOVA, and Pearson product moment of correlation were used for inferential statistics.

The following scales were used to interpret the data.

Table 1: Climate Change Anxiety Scale

Number Code	*Scale*	*Descriptor*	*Interpretation*
5	4.20-5.00	Almost Always	Extremely Severe
4	3.40-4.20	Often	Severe
3	2.60-3.40	Sometimes	Moderate
2	1.80-2.60	Rarely	Mild
1	1.00-1.80	Never	Normal

Table 2: DASS-21

Descriptor	*Depression*	*Anxiety*	*Stress*
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

Results and Discussion

Climate Change Anxiety

Table 1 shows the level of climate change anxiety of the community when taken as a whole and grouped according to the variables. The results showed that overall the respondents have moderate anxiety concerning climate change with a mean score of 2.88. This implies that the community is experiencing an average level of climate change anxiety because of the government's environmental communication awareness programs. This is probable because people are learning about the impacts of climate change from the various communication materials and are also coping with their personal experiences of climate change. According to Marks et al. (2021), the Philippines (84%), India (68%), and Brazil (67%) were severely affected by climate change, and the people seem to feel 'very concerned' about it.

In regards to age, all age brackets showed that the level of climate change anxiety was moderate. However, it can be noted that respondents who are 46 years old and above got a higher mean of 2.92 than those who are below 46 years old with a mean of only 2.85. This implies that the level of climate change anxiety is higher for older adults than younger respondents. Older people are more aware of environmental issues affecting their lives and the world. According to Teo et. al (2020), youth and adolescents are at least marginally concerned about climate change. Bollettino et al. (2020), highlight that the level of climate change anxiety of Filipino adults is influenced by their overall lack of understanding about climate change due to ineffective environmental communication programs.

Meanwhile, when grouped according to sex, results showed that both female and male groups have moderate levels of climate change anxiety. This indicates that the level of climate change anxiety experienced by the respondents are the same regardless of their sexes and are both exposed to the same level of environmental communication. However, women bear the threat of climate change more evidently because it creates risks to their employment, healthcare, and security (Dunne, 2020). With this, women should be more exposed to environmental awareness campaigns to appease their anxiety about the impacts of climate change on their lives.

Moving on to civil status, results showed that all respondents have moderate levels of climate change anxiety. This implies that all the respondents regardless of civil status have the same level of awareness about the impacts of climate change. Reyes et al. (2021), show that the degree of climate change anxiety did not differ significantly according to civil status. They are all experiencing similar levels of climate change anxiety, thus environmental communication has effectively reached different groups of people making them moderately anxious about the effects of climate change on the world.

For occupation, the white-collar job got the lowest level of climate change anxiety with a mean score of 2.44, while the blue-collar job got the highest level of climate change anxiety with a mean score of 2.92. Blue-collar job employees are usually working in industries, while white-collar job employees are usually in the office. Naturally, people who are working in the industry are more aware of environmental issues and concerns which makes them more anxious about climate change compared to the people who are working inside their offices. According to the International Labor Organization (ILO, 2018), the increased incidence of severe weather events and climate change may cause reductions in employment and decreased productivity in the workplace causing anxiety. Catastrophic events ruin buildings and cost lives, which affects unemployment and the economy.

Table 2 shows that there is no significant difference in climate change anxiety between the variables of age, sex, and civil status, while there is a significant difference in occupation. This concludes that the respondents have a different experience and environmental awareness when it comes to their level of climate change anxiety. Reyes et al. (2021) emphasized climate change awareness and effective environmental communication enable people to adjust and prepare for unforeseen disasters and calamities. The emotional reactions shouldn't be dismissed as disorder, but rather as an incentive to discover climate change solutions. Moreover, Chukwuorji et al. (2017) said that there will be impacts if people are made aware of viable efforts in mitigating the issues of climate change through effective environmental communication programs.

Mental Health in the Aspect of Depression

Table 3 shows that the level of mental health of the respondents in the aspect of depression is normal with an overall mean score of 9.48. This reveals that the respondents do not suffer from depression as evident in their daily routine. Even though the respondents are exposed to environmental communication, the knowledge they have about climate change does not implicate their mental health. According to Rice et al. (2021), throughout a depressive state, the individual may feel a depressed mood (feeling upset, agitated, lonely) or a lack of satisfaction or enthusiasm for activities, throughout most of the day, usually daily basis, within at minimum two weeks. In a depressed period, the individual has severe difficulties performing within interpersonal, family, economic, intellectual, professional, and/or other vital domains.

When grouped according to age, sex, and occupation the respondent's level of mental health in the aspect of depression are all normal. However, in the variable of age, it can be noted that 60 years old or more got the highest mean score of 9.77 while those who belong to 18-30 years old got the lowest mean score of 9.00. This implies that older people have a higher tendency to be depressed than younger people especially concerning environmental

Table 3: *Climate Change Anxiety*

Variables	*Mean*	*SD*	*Verbal Interpretation*
Age			
18-30 years old (n=85)	2.85	0.642	Moderate
31-45 years old (n=125)	2.85	0.615	Moderate
46-60 years old (n=78)	2.92	0.636	Moderate
60+ years old (n=43)	2.92	0.689	Moderate
Sex			
Female (n=192)	2.88	0.630	Moderate
Male (n=139)	2.87	0.643	Moderate
Civil Status			
Married (n=188)	2.83	0.635	Moderate
Separated (n=14)	3.16	0.600	Moderate
Single (n=100)	2.90	0.627	Moderate
Widow (n=29)	2.95	0.663	Moderate
Occupation			
Blue-collar job (n=207)	2.92	0.640	Moderate
Government employee (n=18)	2.87	0.603	Moderate
Unemployed (n=89)	2.88	0.604	Moderate
White collar job (n=17)	2.44	0.652	Moderate
Take as a whole (n=331)	2.88	0.635	Moderate

issues like climate change. While adolescents suffer from depression because of the inability to cope with their transition period, trauma, employment issues, and other circumstances. Middle-aged people might encounter depression because of financial stability, marital conflicts, health concerns, and job stability (Rapee et al., 2019). Older people have experienced more catastrophic events brought about by climate change that may lead to depression.

Meanwhile, results showed that both female and male participants have normal levels of depression. However, this study shows that the male group has a higher level of depression with a mean score of 9.76 than the female group with a mean score of 9.29. The results imply that both sexes are experiencing the same normal depressive state with the male group being more prone to depression than females when they are made aware of environmental dilemmas. This finding however disagrees with Rosenfield and Mouzon (2013) who said females can internalize depression and anxiety better than males especially if they are focused on societal problems and global concerns.

In terms of civil status, results showed that respondents who are separated have mild levels of depression with a mean score of 10.43 compared to other groups who are normal. This may be attributed to the marital conflicts that led to their separation. When individuals have lots of concerns affecting their lives including personal relationships, environment, and workplace, they tend to feel down and depressed. According to Bulloch et al. (2017), civil status is deeply associated with major depression prevalence. Married people are less prone to experience depression because of their happy marriage, satisfaction with the environment, and contentment with their lives.

Moreover, results showed that all respondents regardless of their occupation has a normal level of depression with the unemployed respondents having the highest mean of 9.67. This implies that due to unstable financial income unemployed individuals have a higher tendency to be depressed compared to other groups. Environmental risks and climate change concerns add up to the possibility of losing jobs and unemployment. Knowing these implications about environmental issues can lead to unemployed people being more depressed. This concurs with McGee and Thompson (2015) who emphasized that the risk of depression is higher among the unemployed than the people who are employed especially if they are made aware of the impacts of climate change and environmental degradation.

Mental Health in the Aspect of Anxiety

Overall the respondents are experiencing moderate level of anxiety with a mean score of 10.43 (Table 3). This implies that the respondents have a lot on their minds that can trigger their anxiety and worries, especially concerning climate change. The respondents have access to environmental issues and concerns faced by their community leading to some anxiety attacks. According to Clark and Beck (2023), anxiety continues to be one of the world's greatest mental health problems that have a huge implication for the lives of billions of people around the world.

The group of 46-60-year-olds shows that they have the highest level of anxiety with a mean score of 10.73 compared to other age group. While the 18-30-year-old group has the lowest mean of 10.07. This is evident because of the responsibilities of the people who are between 46-60 years old who are expected to be more stable and accomplished with their lives compared to people less than 30 years old that are just starting to build their lives and career. Older people are more engaged in environmental issues such as climate change which makes them more anxious about their future and global sustainability. Canuto et al. (2018) emphasize that anxiety disorders are more prevalent among many elderly because they are more knowledgeable about pressing societal issues such as climate change. The younger generations have various ways to deal with their anxiety and adversities and are less concerned about the sustainability of the environment.

Meanwhile, both sex groups have moderate levels of anxiety with the male group having a higher mean score of 10.45 than the female group. This implies that male tends to be more anxious about climate change and its impact on their lives than females which contradicts the study of Rapee et al. (2019) that argues that females are more

likely to suffer from anxiety disorders than males with regards to environmental concerns. The vulnerability of female to anxiety disorder may be associated with their reproductive hormones and brain structures responsible for anxiety and panic-related circuitry (Jalnapurkar et al., 2018). The more females are informed about climate change, the more they get anxious about its impact on society and the world.

Moreover, married, separated, and single have moderate levels of anxiety compared to widows who only have mild levels of anxiety. Additionally, separated respondents show the highest level of mean score of 12.14 which implies that their failed marriage may have added to their anxiety together with their problems in helping the environment. Ta et al. (2017) said that marital status can lead to different levels of exposure to stressors and risks for mental health problems. Environmental communication has increased the knowledge of the communities about the pressing concerns of the world.

Meanwhile, the blue and white-collar job employees and the unemployed have moderate levels of anxiety compared to the government employees who only have mild levels of anxiety. This implies that people who are working in the government are less anxious about climate change and are more stable because they have a reliable source of income. Government employees also have access to climate change programs and information materials leading them to be more aware of the plans to solve this global phenomenon. The findings also show that unemployed employees have the highest mean of 10.79. They are more anxious about their life and the impacts of climate change because they do not have stable incomes to support their family and fear the implication of environmental degradation to their lives. Loss or no income at all causes mental illness which adds to worries and being more anxious about their life. These conditions related to job security are mostly associated with anxiety and mental health concerns (Doty et al., 2021).

Mental Health in the Aspect of Stress

As shown in Table 3, the overall stress level of the respondents is normal with an overall mean score of 10.29. This indicates that the stress level of the respondents is still manageable regardless of age, sex, civil status, and occupation.

The respondents belonging 30 years old up to 60 years old show that they are more stressed than those who are 18 – 30 years old with a mean score of 10.46 and 9.91 respectively. This implies that the older the people are, the more they become stressed concerning environmental issues. Adolescents to young adults are more focused on starting their careers and establishing their lives with minimal efforts to read and be involved in environmental communication. As per Osmanovic-Thunström et al. (2015), psychological and health-related stressors often occur in the latter years of the individuals. Young adults are preoccupied with enjoying their prime years and are opting to set aside environmental issues.

Interestingly, males have a higher level of stress than females with a mean score of 10.32. This implies that in this particular study, the male has a higher tendency to be stressed than the female concerning environmental concerns. This contradicts the study of Mocny-Pachońska et al. (2020) that said, females characterized higher stress levels than their male counterparts. According to Graves et al. (2021), males and females have significant gender differences in their ability to cope with stress. Female employs the emotion-focused coping component which includes venting, psychological support, instrumental support, and self-distraction more frequently than males. Respondents who are separated show the highest stress level with a mean score of 11.64 while the widow have the lowest stress level with a mean score of 9.72. This implies that marital status has a significant impact on the stress level of the individual. Khaled and Akhter (2020) discovered a substantial variation in mental health factors depending on individuals' marital status. This revelation may be connected to the fact that, in contrast to singles, married people had their partners on whom to converse or convey emotions, especially about environmental degradation and dilemmas. They could also aggregate financial means to reduce the stress of financial commitments that might result in mental breakdowns.

Finally, the unemployed participants got the highest mean score of 10.75 while the employees with white-collar jobs got the lowest mean score of 9.00. This is evident since socioeconomic status and financial stability contribute to the stress level of the individual. The unemployed are mostly stressed by what's happening in our environment since they will be affected if these global issues will not be solved. Schieman and Koltai (2017) said that stress is more prevalent among the people under lowest socio-economic status than those who belong to higher socio-economic status. Being jobless can become one of the contributors to stress and may also implicate the mental health of an individual.

As shown in Table 4, there are no significant differences in the level of mental health across different aspects of depression, anxiety, and stress on all variables of age, sex, civil status, and occupation. Jo et al. (2011), determined the role of socioeconomic status in depression, with different degrees of classification according to income, degree, profession, social status, or civil status. Moreover, according to Stein and Sareen (2015), Generalized Anxiety Disorder (GAD) is characterized by chronic and persistent worry about finances, family, health, and future sustainability. Prevalence of anxiety is estimated in the general population regardless of age and other variables. Monteiro et al. (2014), describe stress as the mechanism by which a human and the environment connect, resulting in a person's particular reaction to external pressures

and demands. A vast collection of literature on stress and stressful life experiences demonstrates that stress may be an important element of a person's life.

As shown in Table 5, climate change anxiety and mental health are correlated with each other which implies that climate change may be one of the contributing factors to the mental health status of the respondents especially if they are made aware of various environmental concerns. These findings are aligned with the study of Reyes et al. (2021) which highlights the significant relationship between climate change anxiety and mental health in the Philippines. Moreover, Bollettino et al. (2020) highlight that there was generally insufficient awareness of climate change among Filipinos which may have a significant role in reducing anxiety and mental stress.

Summary of Findings

The overall level of climate change anxiety of the respondents was generally at a moderate level. This is also true when the respondents were grouped according to age, sex, civil status, and occupation. The findings imply that the respondents were experiencing an average level of climate change anxiety, thus, people seemed to be worried and concerned about climate change because of environmental communication. Additionally, older people are seen to be more anxious about climate change than the younger generation. This is due to the lack of awareness and participation of the younger people about environmental issues. Moreover, this study proves that females are more concerned about climate change compared to males. Females feel more threatened about the consequences of climate change that may implicate risks to their work, health, and security. The results also show that regardless of marital status, they are all concerned about climate change and are experiencing similar levels of anxiety about this environmental issue. Lastly, blue-collar job employees were the most anxious about climate change since hazards of catastrophic events may lead to reductions in employment and economic crisis. On another note, the level of mental health of the respondents in the aspect of depression was normal, with moderate anxiety, and normal stress levels. Older people tend to experience depression, anxiety, and

Table 4: Significant difference in the climate change anxiety

Variables	*p-value*	*Status*
Age	0.804	No significant difference
Sex	0.869	No significant difference
Civil Status	0.250	No significant difference
Occupation	0.031	Significant difference

Table 5: *Level of Mental Health*

Variables	*Depression*		*Anxiety*		*Stress*	
	Mean	*VI*	*Mean*	*VI*	*Mean*	*VI*
Age						
18-30 years old (n=85)	9.00	Normal	10.07	Moderate	9.91	Normal
31-45 years old (n=125)	9.70	Normal	10.46	Moderate	10.46	Normal
46-60 years old (n=78)	9.49	Normal	10.73	Moderate	10.46	Normal
60+ years old (n=43)	9.77	Normal	10.51	Moderate	10.23	Normal
Sex						
Female (n=192)	9.29	Normal	10.42	Moderate	10.27	Normal
Male (n=139)	9.76	Normal	10.45	Moderate	10.32	Normal
Civil Status						
Married (n=188)	9.25	Normal	10.36	Moderate	10.02	Normal
Separated (n=14)	10.43	Mild	12.14	Moderate	11.64	Normal
Single (n=100)	9.88	Normal	10.47	Moderate	10.77	Normal
Widow (n=29)	9.14	Normal	9.93	Mild	9.72	Normal
Occupation						
Blue-collar job (n=207)	9.65	Normal	10.40	Moderate	10.30	Normal
Government employee (n=18)	8.11	Normal	9.06	Mild	9.17	Normal
Unemployed (n=89)	9.67	Normal	10.79	Moderate	10.75	Normal
White collar job (n=17)	7.88	Normal	10.47	Moderate	9.00	Normal
Take as a whole (n=331)	9.48	Normal	10.43	Moderate	10.29	Normal

Table 6:*Significant difference in the mental health between variables*

Variables	*Depression*		*Anxiety*		*Stress*	
	p-value	*Status*	*p-value*	*Status*	*p-value*	*Status*
Age	0.590	No significant difference	0.715	No significant difference	0.707	No significant difference
Sex	0.276	No significant difference	0.953	No significant difference	0.911	No significant difference
Civil Status	0.434	No significant difference	0.302	No significant difference	0.149	No significant difference
Occupation	0.129	No significant difference	0.339	No significant difference	0.159	No significant difference

Table 7: *Significant relationship between climate change anxiety and mental health*

Variables	r	Sig (2-tailed)	Sig@0.05
Climate change and mental health	0.472**	< .001	Significant relationship

stress more than younger people. Younger people have more emotional support and other alternative options to deal with depression and anxiety compared to older people who experience loneliness, self-worth, and self-validation. Additionally, older people have experienced natural calamities and are more knowledgeable about environmental issues and hazards.

Contradicting other studies, the findings of this study reveal that males have a higher tendency to be depressed, more anxious, and stressed than females. This implies that males are more concerned about the environment than females. However, other studies prove that females are more prone to depression and emotional breakdowns. Female are more vulnerable to depressive states and anxiety disorders because of their psychological and biological nature affected by their environment.

Separated individuals show more inclination to depression, anxiety disorder, and stress compared to other groups primarily because of their failed relationships. Marital conflicts with no definite closure contribute to an emotional rollercoaster that may lead to depression and anxiety.

Naturally, unemployed respondents can experience a higher probability of depression, anxiety, and stress compared to employed respondents because of their financial problems and unstable future. Interestingly, the findings showed that government employees only have mild anxiety that may be attributed to job security especially if they are working in the government. Mental health issues are more prevalent to those people who belong to low socio-economic status because of financial concerns and dilemmas brought about by climate change and other environmental concerns.

Conclusion

The findings of this study conclude that there were no significant differences in the level of climate change anxiety with regard to age, sex, and civil status. However, findings reveal that in terms of occupation, there was a significant difference in the level of their climate change anxiety. Despite of the age, sex, civil status, and occupation, the respondents can still manage to work and cope with their levels of climate change anxiety.

Additionally, this finding concludes that there were no significant differences in the mental health of the respondents in the aspects of depression, anxiety, and stress when they were grouped according to age, sex, civil status, and occupation.

Finally, this study proves that climate change anxiety and mental health are significantly correlated with each other. The more respondents are aware and knowledgeable about the problems of the environment, the more they are anxious about how it can affect their lives, their families, and the community they live in.

Recommendations

It is recommended that the government and community groups intensify climate change awareness programs and utilize various communication platforms because of their significant role in reducing climate change anxiety and mental stress. The government may also implement new policies to mitigate climate change or commit fully to supporting sustainable programs such as the United Nations' Sustainable Development Goals (SDG) thirteen (13) for Climate Action. Moreover, to combat the mental illnesses that are related to climate change, the government could propose a project adopting policies from SDG three (3): Good Health for all ages. Non-Government Organizations (NGOs) may also coordinate and support the programs of the government to combat the impacts of climate change and help in informing the public about its impact on the world. Finally, mental health professionals may implement intensive programs to ensure the psychological well-being of the community.

References

1. Bell, J. E., Brown, C. L., Conlon, K., Herring, S., Kunkel, K. E., Lawrimore, J., Luber, G., Schreck, C., Smith, A., & Uejio, C. (2018). Changes in extreme events and the potential impacts on human health. *Journal of the Air & Waste Management Association*, *68*(4), 265-287. https://doi.org/10.1080/10962247.2017.1401017
2. Benoit, L., Thomas, I., & Martin, A. (2022). Ecological awareness, anxiety, and actions among youth and their parents–a qualitative study of newspaper narratives. *Child and adolescent mental health*, *27*(1), 47-58. https://doi.org/10.1111/camh.12514

3. Bollettino, V., Alcayna-Stevens, T., Sharma, M., Dy, P., Pham, P., & Vinck, P. (2020). Public perception of climate change and disaster preparedness: Evidence from the Philippines. *Climate Risk Management*, *30*, 100250. https://doi.org/10.1016/j.crm.2020.100250
4. Bulloch, A. G., Williams, J. V., Lavorato, D. H., & Patten, S. B. (2017). The depression and marital status relationship is modified by both age and gender. *Journal of affective disorders*, *223*, 65-68. https://doi.org/10.1016/j.jad.2017.06.007
5. Canady, V. A. (2021). APA survey: Majority of Americans reporting prolonged stress. *Mental Health Weekly*, *31*(6), 6-6. https://doi.org/10.1002/mhw.32674
6. Canuto, A., Weber, K., Baertschi, M., Andreas, S., Volkert, J., Dehoust, M. C., Sehner, S., Suling, A., Wegscheider, K., Ausin, B., Crawford, M. J., Da Ronch, C., Grassi, L., Hershkovitz, Y., Munoz, M., Quirk, A., Rotenstein, O., Santos-Olmo, A. B., Shalev, A., Strehle, J., & Härter, M. (2018). Anxiety disorders in old age: psychiatric comorbidities, quality of life, and prevalence according to age, gender, and country. *The American Journal of Geriatric Psychiatry*, *26*(2), 174-185. https://doi.org/10.1016/j.jagp.2017.08.015
7. Chukwuorji, J. C., Iorfa, S. K., Nzeadibe, T. C., & Ifeagwazi, C. M. (2017). Role of climate change awareness and pro-environmental behaviour in subjective wellbeing. *Nigerian Journal of Social Sciences*, *13*(1).
8. Cianconi, P., Betrò, S., & Janiri, L. (2020). The impact of climate change on mental health: a systematic descriptive review. *Frontiers in psychiatry*, *11*, 74. https://doi.org/10.3389/fpsyt.2020.00074
9. Clark, D. A., & Beck, A. T. (2023). *Anxiety and Worry Workbook*. Guilford Publications.
10. Clayton, S. (2020). Climate anxiety: Psychological responses to climate change. *Journal of anxiety disorders*, *74*, 102263. https://doi.org/10.1016/j.janxdis.2020.102263
11. Clayton, S., & Karazsia, B. T. (2020). Development and validation of a measure of climate change anxiety. *Journal of Environmental Psychology*, *69*, 101434. https://doi.org/10.1016/j.jenvp.2020.101434
12. Doty, B., Grzenda, A., Hwang, S., Godar, S., Gruttadaro, D., Hauge, K. A., Sherman, B., & Clarke, D. E. (2021). An Ecological Study of a Universal Employee Depression Awareness and Stigma Reduction Intervention:"Right Direction". *Frontiers in Psychiatry*, *12*, 581876. https://doi.org/10.3389/fpsyt.2021.581876
13. Duggan, J., Haddaway, N. R., & Badullovich, N. (2021). Climate emotions: it is ok to feel the way you do. *The Lancet Planetary Health*, *5*(12), e854-e855. https://doi.org/10.1016/S2542-5196(21)00318-1
14. Dunne, D. (2020). Mapped: How climate change disproportionately affects women's health. *Carbon Brief*, *29*.
15. Friedlingstein, P., O'sullivan, M., Jones, M. W., Andrew, R. M., Hauck, J., Olsen, A., ... & Zaehle, S. (2020). Global carbon budget 2020. *Earth System Science Data Discussions*, *2020*, 1-3. https://doi.org/10.5194/essd-12-3269-2020
16. Graves, B. S., Hall, M. E., Dias-Karch, C., Haischer, M. H., & Apter, C. (2021). Gender differences in perceived stress and coping among college students. *PloS one*, *16*(8), e0255634. https://doi.org/10.1371/journal.pone.0255634
17. Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). Terror management theory of self-esteem and cultural worldviews: Empirical assessments and conceptual refinements. In *Advances in experimental social psychology* (Vol. 29, pp. 61-139). Academic Press. https://doi.org/10.1016/S0065-2601(08)60016-7
18. Grist, R., Croker, A., Denne, M., & Stallard, P. (2019). Technology delivered interventions for depression and anxiety in children and adolescents: a systematic review and meta-analysis. *Clinical Child and Family Psychology Review*, *22*, 147-171. https://doi.org/10.1007/s10567-018-0271-8
19. Hathaway, J., & Maibach, E. W. (2018). Health implications of climate change: a review of the literature about the perception of the public and health professionals. *Current environmental health reports*, *5*, 197-204. https://doi.org/10.1007/s40572-018-0190-3
20. Hayes, K., Blashki, G., Wiseman, J., Burke, S., & Reifels, L. (2018). Climate change and mental health: risks, impacts and priority actions. *International journal of mental health systems*, *12*(1), 1-12. https://doi.org/10.1186/s13033-018-0210-6
21. Higginbotham, N., Connor, L., Albrecht, G., Freeman, S., & Agho, K. (2006). Validation of an environmental distress scale. *EcoHealth*, *3*, 245-254. https://doi.org/10.1007/s10393-006-0069-x
22. Hrabok, M., Delorme, A., & Agyapong, V. I. (2020). Threats to mental health and well-being associated with climate change. *Journal of Anxiety Disorders*, *76*, 102295. https://doi.org/10.1016/j.janxdis.2020.102295
23. Hudson, P., Botzen, W. W., Poussin, J., & Aerts, J. C. (2019). Impacts of flooding and flood preparedness on subjective well-being: A monetisation of the tangible and intangible impacts. *Journal of Happiness Studies*, *20*, 665-682. https://doi.org/10.1007/s10902-017-9916-4
24. International Labour Office. (2018). *World employment and social outlook 2018: Greening with jobs*. Geneva: International Labour Organisation (ILO).
25. Jalnapurkar, I., Allen, M., & Pigott, T. (2018). Sex differences in anxiety disorders: A review. *J Psychiatry Depress Anxiety*, *4*(12), 3-16. http://doi.org/10.24966/PDA-0150/100012
26. Jo, S. J., Yim, H. W., Bang, M. H., Lee, M. O., Jun, T. Y., Choi, J. S., Lee, M. S., Lee, W. C., & Park, Y. M. (2011). The association between economic status and depressive symptoms: an individual and community level approach. *Psychiatry Investigation*, *8*(3), 194. https://doi.org/10.4306%2Fpi.2011.8.3.194
27. Khaled, H., & Akhter, M. (2020). The outbreak of novel coronavirus disease (COVID-19) pandemic: consequences on public mental Health. *Journal of Brain Sciences*, *3*(1), 1-15. http://doi.org/10.18488/journal.83.2020.31.1.15
28. Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour research and therapy*, *33*(3), 335-343. https://doi.org/10.1016/0005-7967(94)00075-U
29. Marks, E., Hickman, C., Pihkala, P., Clayton, S., Lewandowski, E. R., Mayall, E. E., Wray, B., Mellor, C., & Van Susteren, L. (2021). Young people's voices on climate anxiety, government betrayal and moral injury: A global phenomenon. *Government betrayal and moral injury: A global phenomenon*. https://doi.org/10.1016/S2542-5196(21)00278-3
30. McDonald, R. I., Chai, H. Y., & Newell, B. R. (2015). Personal experience and the 'psychological distance'of climate change: An integrative review. *Journal of environmental psychology*, *44*, 109-118. https://doi.org/10.1016/j.jenvp.2015.10.003
31. McGee, R. E., & Thompson, N. J. (2015). Peer reviewed: unemployment and depression among emerging adults in 12 states, behavioral risk factor surveillance system, 2010. *Preventing chronic disease*, *12*. https://doi.org/10.5888%2Fpcd12.140451
32. McNamara, K. E., & Westoby, R. (2011). Solastalgia and the gendered nature of climate change: An example from Erub Island, Torres Strait. *EcoHealth*, *8*, 233-236. https://doi.org/10.1007/s10393-011-0698-6
33. Mocny-Pachońska, K., Trzcionka, A., Doniec, R. J., Sieciński, S., & Tanasiewicz, M. (2020). The Influence of gender and year of study on stress levels and coping strategies among Polish dental. *Medicina*, *56*(10), 531. https://doi.org/10.3390/medicina56100531
34. Monteiro, N. M., Balogun, S. K., & Oratile, K. N. (2014). Managing stress: the influence of gender, age and emotion regulation on coping among university students in Botswana. *International journal of adolescence and youth*, *19*(2), 153-173. https://doi.org/10.1080/02673843.2014.908784
35. Nichols, G., Lake, I., & Heaviside, C. (2018). Climate change and water-related infectious diseases. *Atmosphere*, *9*(10), 385. https://doi.org/10.3390/atmos9100385
36. Osmanovic-Thunström, A., Mossello, E., Åkerstedt, T., Fratiglioni, L., & Wang, H. X. (2015). Do levels of perceived stress increase with increasing age after age 65? A population-based study. *Age and ageing*, *44*(5), 828-834. https://doi.org/10.1093/ageing/afv078
37. Pyszczynski, T., Greenberg, J., & Solomon, S. (1997). Why do we need

what we need? A terror management perspective on the roots of human social motivation. *Psychological inquiry*, *8*(1), 1-20. https://doi.org/10.1207/s15327965pli0801_1

38. Rapee, R. M., Oar, E. L., Johnco, C. J., Forbes, M. K., Fardouly, J., Magson, N. R., & Richardson, C. E. (2019). Adolescent development and risk for the onset of social-emotional disorders: A review and conceptual model. *Behaviour research and therapy*, *123*, 103501. https://doi.org/10.1016/j.brat.2019.103501
39. Reyes, M. E. S., Carmen, B. P. B., Luminarias, M. E. P., Mangulabnan, S. A. N. B., & Ogunbode, C. A. (2021). An investigation into the relationship between climate change anxiety and mental health among Gen Z Filipinos. *Current psychology*, 1-9. https://doi.org/10.1007/s12144-021-02099-3
40. Rice, F., Riglin, L., Lomax, T., Souter, E., Potter, R., Smith, D. J., Thapar, A. K., & Thapar, A. (2019). Adolescent and adult differences in major depression symptom profiles. *Journal of affective disorders*, *243*, 175-181. https://doi.org/10.1016/j.jad.2018.09.015
41. Rosenfield, S., & Mouzon, D. (2013). Gender and mental health. *Handbook of the sociology of mental health*, 277-296.
42. Schieman, S., & Koltai, J. (2017). Discovering pockets of complexity: Socioeconomic status, stress exposure, and the nuances of the health gradient. *Social Science Research*, *63*, 1-18. https://doi.org/10.1016/j.ssresearch.2016.09.023
43. Stein, M. B., & Sareen, J. (2015). Generalized anxiety disorder. *New England Journal of Medicine*, *373*(21), 2059-2068. https://doi.org/10.1056/NEJMcp1502514
44. Ta, V. P., Gesselman, A. N., Perry, B. L., Fisher, H. E., & Garcia, J. R. (2017). Stress of singlehood: Marital status, domain-specific stress, and anxiety in a national US sample. *Journal of Social and Clinical Psychology*, *36*(6), 461-485. https://doi.org/10.1521/jscp.2017.36.6.461
45. Teo, S. M., Gao, C. X., Brennan, N., Fava, N., Simmons, M. B., Baker, D., Zbukvic, I., Rickwood, D. J., Brown, E., Smith, C., Watson, A. E., Browne, V., Cotton, S., McGorry, P., Killackey, E., Freeburn, T., & Filia, K. M. (2024). Climate change concerns impact on young Australians' psychological distress and outlook for the future. *Journal of Environmental Psychology, 93*, 102209. https://doi.org/10.1016/j.jenvp.2023.102209
46. Thoma, M. V., Rohleder, N., & Rohner, S. L. (2021). Clinical ecopsychology: The mental health impacts and underlying pathways of the climate and environmental crisis. *Frontiers in psychiatry*, *12*, 675936. https://doi.org/10.3389/fpsyt.2021.675936
47. World Health Organization (2022). Why mental health is a priority for action on climate change: New WHO policy brief highlights actions for countries. Retrieved from https://www.who.int/news/item/03-06-2022-why-mental-health-is-a-priority-for-action-on-climate-change
48. Wullenkord, M. (2020). Climate change through the lens of Self-Determination Theory: How considering basic psychological needs may bring environmental psychology forward. *Zeitschrift Umweltpsychologie*, *24*(2), 110-129.
49. Wullenkord, M. C., Tröger, J., Hamann, K. R., Loy, L. S., & Reese, G. (2021). Anxiety and climate change: A validation of the Climate Anxiety Scale in a German-speaking quota sample and an investigation of psychological correlates. *Climatic Change*, *168*(3-4), 20. https://doi.org/10.1007/s10584-021-03234-6

HOW TO CITE THIS ARTICLE: Galleto, L.M. D., Sagala, G. B. (2024). Role of Environmental Communication in Climate Change Anxiety and Mental Health of a Select Community in the Philippines. *Journal of Communication and Management*, 3(1), 26-35. DOI: 10.58966/JCM2024314