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Short communication

Climate anxiety in the Philippines: Current situation, potential pathways, and ways forward

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Introduction

The concept of climate anxiety, or the psychological distress attributed to the climate crisis, has emerged in recent years. However, there is a lack of consensus on its definition. Some scholars characterize climate anxiety similarly with the affective, physical, and behavioral symptoms of anxiety disorders [1], while others conceptualize climate anxiety as extreme worrying which includes a wide range of emotions about climate change (e.g., anger, depression, hopelessness, frustration, etc.) [2]. Although often perceived as a negative psychological response to climate change [3–5], climate anxiety can also be viewed as an adaptive psychological response to the actual threat posed by the climate crisis. Meanwhile, eco-anxiety, a related term, tends to pertain to a wider range of environmental problems such as deforestation and pollution [6]. Some argue that climate anxiety and eco-anxiety can be used interchangeably since most environmental problems are driven by and are contributing to climate change. From this point onward, we will use the term climate anxiety when referring to eco-anxiety and climate anxiety.

Climate anxiety in the Philippine context

Climate anxiety has been mostly described in Western studies. For example, increasing climate anxiety was found among Canadians after the 2021 Western North American heat dome [7]. Given that emotions are culture-bound [8] and climate-induced calamities do vary in different places, there is a reason to believe that people can have a unique experience of climate anxiety, especially those in the Global South or non-Western settings. Being known as one of the countries that is most at-risk of climate change [9], the Philippines faces at least 20 typhoons every year (with some being categorized as super typhoons), which destroy houses, ruin livelihoods, displace thousands and kill hundreds of people [10]. At least 25% of the country experienced extreme droughts in the past decade, which increased to more than 40% in recent years [11]. Early evidence is showing that Filipino youth experience climate anxiety (i.e., intrusive worrying, fear, and behavioral impairment) [4,5]. A recent global survey revealed that the Philippines has the greatest number of young people experiencing high levels of climate anxiety and other negative emotions (e.g., anger, hopelessness, frustration, etc.) associated with the climate crisis [2]. However, the common measurement tools used in assessing climate anxiety among Filipino youth are Western-based. For example, the Climate Change Anxiety Scale [3], which was used to measure climate anxiety in Filipino youth [4,5] was developed by and for individuals residing in the United States [3]. While Western-based anxiety measures can be useful tools in assessing climate anxiety beyond Western countries, they can only partially capture the experience of climate anxiety of people in the Global South, posing validity and utility concerns. Interrogating climate anxiety through the lens of non-Western contexts is also aligned with the global movement towards 'decolonizing' psychiatry and mental health [12].

Moreover, the aforementioned studies on climate anxiety in the Philippines mainly studied young people – little is known about anxiety and climate concerns of adult populations. Filipino adults have generally low climate change awareness [13], which may influence the extent to which they may be experiencing climate anxiety. Lower perception of climate change in Filipino adults (but not in young Filipinos) may be explained by their traditional ways of thinking. Filipinos often externalize their attribution of extreme weather events (e.g., *"Natural disasters are challenges given by God to strengthen me"*), a reflection of deeply ingrained religious and cultural beliefs. There may be an intergenerational difference between adults (who are from the generation that created the climate crisis and have fewer number of years to be affected by it) and young people (who contributed the least to the crisis and will inherit and suffer from it in the decades to come). Geographic differences in climate anxiety may also exist as the climate change events faced by Filipinos across regions

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differ due to the varying types, intensity, and perceived consequences of the climate hazards that they experience. Filipinos in disaster-prone regions reported greater levels of climate change awareness and engagement in adaptation [13] – this could provide information on potential geographical variations in climate anxiety. Filipinos residing in small low-lying islands, which may already be experiencing inundation due to sea-level rise, might be experiencing climate anxiety differently compared with those who live in farming communities hit by drought, typhoon-prone areas, or cities often affected by intense flooding.

Indeed, understanding climate anxiety requires a more nuanced appreciation of the unique context in which climate change consequences are experienced. Doing so is necessary for creating and implementing context-specific psychological, educational, and societal policies and interventions.

Pathways that may explain climate anxiety among Filipinos

Given our knowledge of and experience in the Philippines as well as emerging early literature, we propose several pathways, which include: (1) direct and indirect experience of extreme weather events; (2) slow onset events; (3) education and awareness about climate change; and (4) awareness of insufficient global and local climate action, that may explain the production of climate anxiety in the Philippine context. First, direct and indirect experiences of extreme weather events can explain potential climate anxiety in Filipinos. Evidence from the field of psychology points out that people's perception of climate change is influenced, partly, by psychological distance (i.e., a cognitive bias leading to perceive threats and events as abstract, less likely to happen to self, today, and in one's community) [14]. Substantial evidence shows that direct experience of extreme weather events can make the psychological distance of climate change more concrete and less abstract, hence influencing people to perceive climate change as psychologically proximal [15]. The numerous typhoons hitting the Philippines every year may trigger a proximal perception of climate change. Based on the Philippines' average life expectancy, a Filipino citizen may experience more than 1000 typhoons within one's lifetime. Since climate change is anticipated to drive an increase in the frequency and severity of these typhoons in the coming years, awareness of this reality could cause climate anxiety. Indirect exposure to extreme weather events through social media and other outlets could also trigger emotional responses to climate change [16]. The knowledge that extreme weather events also affect their families, relatives, and friends may trigger prolonged and repetitive anxiety. Available evidence on the mental health outcomes of survivors of extreme weather events in the Philippines revealed increased depression, anxiety, and post-traumatic symptoms [17,18]. However, there are no available studies that examined climate anxiety as a psychological response of Filipinos from extreme weather events. This area of research needs further investigation.

Second, because huge attention is given to extreme weather events (as they are visual and dramatic), slow-onset events such as sea-level rise, increasing temperature, ocean acidification, land and forest degradation, and loss of biodiversity, among others, and their direct and indirect effects on mental health are often unnoticed. Witnessing slow-onset events such as sea-level rise and droughts could directly cause climate anxiety. Indirect effects of these climate change- have had negative impacts on Filipinos' livelihoods and food insecurity [19–21], which may result to uncertainty leading to emotional distress including climate anxiety. As a tropical archipelagic country with more than 7100 islands, sea-level rise has already become noticeable, especially in small island communities, leading to continuous community displacement and relocation [22], which is associated with mental health problems [17]. As slow-onset events now begin to manifest, there is a need for scientific investigation on their psychological outcomes, specifically on whether or how such events are associated with climate anxiety in Filipinos.

Third, we reason that education and awareness about climate change potentially could induce climate change anxiety. Mandated by the Climate Change Act of 2009 (Republic Act 9729), Philippine education curricula have integrated climate change education within several primary and secondary subjects through the Department of Education Order 82 Series of 2010. The Enhanced Basic Education Act of 2013 requires subjects that cover the scientific aspect of climate change taken by students in STEM strands [21]. The content has been described to focus on climate adaptation strategies as the Philippines constantly faces typhoons, drought, and other climate-related events [23]. The implementation of climate change education in the previous years could explain why Filipino youth experience the most severe and heightened levels of climate anxiety compared with youths in other countries [24]. High exposure to climate change information through global and local media news reports, social media and other media platforms could also explain young Filipinos' climate anxiety; this needs further investigation. An important area that requires scientific inquiry is whether climate change education in the country is fear-based or action-oriented. This warrants the question: does climate change education in the Philippines harness sufficient levels of climate anxiety that effectively empowers young Filipinos to take action against climate change? On the other hand, does the approach to climate change education in the Philippines potentially trigger extreme levels of climate anxiety that paralyzes students from engaging in climate action? To date, no studies have attempted to cover this area of research.

Fourth, awareness or recognition of insufficient global and local climate action can cause climate anxiety. The Climate Change Commission (CCC) of the Philippines has been taking relevant actions [25]. For instance, CCC has implemented national frameworks, standards, assessments, and policy reviews for climate change mitigation and adaptation including climate-smart infrastructures, climate science youth programs, national and local climate change action plans, and community resilience programs, among others [25]. However, these efforts have not been fully and successfully implemented on the ground, hence the positive benefits are not yet felt by most communities. Moreover, these efforts emphasize more on adaptation strategies and less on mitigation actions, which does not help stabilize the climate and therefore amplifies the impact of climate disasters [26]. In addition, related concerns such as active mining, widespread deforestation, and biodiversity loss have been major problems in the country partly due to a lack of effective government action [27]. Available data show that a large percentage of Filipino youth feel betrayed by the global and national government's lack of action against climate change and perceive that governments cannot be trusted in issues related to the climate crisis [2]. Despite these realities, climate change and environmental problems have not been made a priority by the national and local leaders in the country, including during elections, which could be a source of uncertainty and worry among Filipinos who have a high concern for climate and environmental issues.

Recommendations for understanding and addressing climate anxiety in the Philippines

We offer several insights and recommendations that may help in advancing our understanding of climate anxiety as well as in creating policies that motivate climate action and address the psychological impacts of climate anxiety among the Filipino public. As part of an emerging research agenda addressing climate change and mental health in the Philippines [28], there is a need for more targeted research that aims to understand when, how, and to what extent Filipinos experience climate anxiety symptoms. Research that seeks to understand when climate anxiety becomes adaptive (i.e., inspires

climate action) or maladaptive (i.e., excessive anxiety that paralyzes people from taking climate actions) is imperative. Doing so would allow the development of contextualized educational and climate communication programs that can translate climate anxiety into climate action in Filipinos. Additionally, determining when climate anxiety can be maladaptive would help mental health professionals to identify individuals who might need psychological support as they try to understand their emotional reactions to the changing climate. As evidence shows that proximity to the coast increases people's belief in climate change [29] and Filipinos in disaster-prone areas suffer from negative mental health outcomes [17,18], it is critical as well to determine which populations are most vulnerable to climate anxiety and other psychological consequences of climate-related events.

The study of climate anxiety in the Philippines requires shifting from a purely clinical (psychiatry) approach to mental health towards a broader transdisciplinary approach that can provide a holistic view of how climate anxiety is linked to physical and psychological health and Filipinos' engagement in sustainable behaviors. Furthermore, there is a necessity to shift from pure disaster psychology framing of the climate-mental health nexus towards a broader environmental and climate psychology perspective. Such a shift would allow for a more integrated view of the etiology of climate change-induced mental health problems and more contextualized interventions that recognize the role of the changing climate in people's mental health.

The above-mentioned agenda can be a basis for the development and validation of contextualized local psychological tests that can objectively assess climate anxiety symptoms in Filipinos. Psychometrically sound and contextualized assessment measures for climate anxiety are necessary, as an accurate assessment of psychological symptoms and their causes is key in selecting and creating effective treatments. Moreover, this action agenda strongly calls for more preventive rather than reactive policies and interventions on climate change and its psychological outcomes. More holistic, systems-oriented, and cross-sectoral policies and programs must be established in the Philippines to help create more climate- and mental health-resilient citizens. The country must also create policies and interventions that offer opportunities for Filipinos to engage in climate action as a way to reduce climate anxiety (e.g., activism, community climate programs, etc.).

We advocate for a climate change education that sets a good balance between mitigation-oriented and adaptation-focused approaches and emphasizes action-focused rather than fear-based approaches to teaching climate change education [30]. In addition, meaning-oriented and hope-based climate education can be useful in reducing climate anxiety or rechanneling anxiety into climate action and in fostering hope, responsibility, and well-being [31]. The education system should promote and facilitate open dialogues about climate change to allow students to feel less isolated in their emotional experience of climate change. This could make students realize that climate anxiety is a shared experience and therefore would encourage social support that can mitigate the detrimental impact of climate anxiety on their mental health and promote collective action.

As we begin to understand how people across the world experience climate anxiety and its psychological consequences [2,32], a localized and nuanced appreciation of climate anxiety in climate-vulnerable and Global South nations such as the Philippines is also important as it could assist in creating effective societal and educational policies, interventions, and communication strategies about climate change and mental health. Moreover, contextualized and decolonized approaches to climate anxiety will enrich and diversify the growing body of evidence and solutions that different countries and communities can share and learn from and apply to our common pursuit of safeguarding our planetary mental health.

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John Jamir Benzon R. Aruta: Conceptualization, Writing – original draft, Writing – review & editing. **Renzo R. Guinto:** Conceptualization, Writing – review & editing.

References

[1] Crandon TJ, Scott JG, Charlson FJ, Thomas HJ. A social–ecological perspective on climate anxiety in children and adolescents. Nat Clim Change 2022;13:1–9 Jan. doi: 10.1038/s41558-021-01251-y.
[2] Hickman C, Marks E, Pihkala P, Clayton S, Lewandowski RE, Mayall EE, Wray B, Mellor C, van Susteren L. Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. Lancet Planet Health 2021;5(12) Dec 1e863-73. doi: 10.1016/S2542-5196(21)00278-3.
[3] Clayton S, Karazsia BT. Development and validation of a measure of climate change anxiety. J Environ Psychol 2020;69:101434 Jun 1. doi: 10.1016/j.jenvp.2020.101434.
[4] Reyes ME, Carmen BP, Luminarias ME, Mangulabnan SA, Ogunbode CA. An investigation into the relationship between climate change anxiety and mental health among Gen Z Filipinos. Curr Psychol 2021:1–9 Jul 15. doi: 10.1007/s12144-021-02099-3.
[5] Simon PD, Pakingan KA, Aruta JJ. Measurement of climate change anxiety and its mediating effect between experience of climate change and mitigation actions of Filipino youth. Educ Dev Psychol 2022:1. Feb 16. doi: 10.1080/20590776.2022.2037390.
[6] Verplanken B, Marks E, Dobromir AI. On the nature of eco-anxiety: how constructive or unconstructive is habitual worry about global warming? J Environ Psychol 2020;72:101528 Dec 1. doi: 10.1016/j.jenvp.2020.101528.
[7] Bratu A, Card KG, Closson K, Aran N, Marshall C, Clayton S, Gislason M, Samji H, Martin G, Lem M, Logie C. The 2021 Western North America heat dome increased climate change anxiety among British Columbians: results from a natural experiment. J Clim Change Health 2022:100116 Jan 19. doi: 10.1016/j.joclim.2022.100116.
[8] Aruta JJ, Antazo BG, Paceño JL. Self-stigma is associated with depression and anxiety in a collectivistic context: the adaptive cultural function of self-criticism. J Psychol 2021;155(2):238–56 Jan 16. doi: 10.1080/00223980.2021.1876620.
[9] Asian Disaster Reduction Center. Information on disaster risk reduction of the member countries. 2021 Jan 21; Retrieved from: https://www.adrc.asia/nationinformation.php?NationCode=608&Lang=en&NationNum=14
[10] Aruta JJBR, Crisostomo KA, Canlas NF, Almazan JU, Peñaranda G. Measurement and community antecedents of positive mental health among the survivors of typhoons Vamco and Goni during the COVID-19 crisis in the Philippines. Int J Disaster Risk Reduct 2022;72:102853. doi: 10.1016/j.ijdrr.2022.102853.
[11] United Nations OCHA. Philippines: droughts and dry spells – Information Bulletin No. 1. 2016 Apr 29. Retrived from: https://reliefweb.int/report/philippines/philippines-drought-and-dry-spells-information-bulletin-n-1#:~:text=PAGASA%20states%20that%2029%20per,affected%20areas%20are%20in%20Mindanao.
[12] Hickling FW. Owning our madness: contributions of Jamaican psychiatry to decolonizing global mental health. Transcult Psychiatry 2020;57(1):19–31 Feb. doi: 10.1177/1363461519893142.
[13] Bollettino V, Alcayna-Stevens T, Sharma M, Dy P, Pham P, Vinck P. Public perception of climate change and disaster preparedness: evidence from the Philippines. Clim Risk Manag 2020;30:100250 Jan 1. doi: 10.1016/j.crm.2020.100250.
[14] Spence A, Poortinga W, Pidgeon N. The psychological distance of climate change. Risk Anal Int J 2012;32(6):957–72 Jun. doi: 10.1111/j.1539-6924.2011.01695.x.
[15] McDonald RI, Chai HY, Newell BR. Personal experience and the 'psychological distance' of climate change: an integrative review. J Environ Psychol 2015;44:109–18 Dec 1. doi: 10.1016/j.jenvp.2015.10.003.
[16] Maran DA, Begotti T. Media exposure to climate change, anxiety, and efficacy beliefs in a sample of Italian university students. Int J Environ Res Public Health 2021;18(17):9358. Jan. doi: 10.3390/ijerph18179358.
[17] Labarda CE, Jopson QD, Hui VK, Chan CS. Long-term displacement associated with health and stress among survivors of Typhoon Haiyan. Psychol Trauma Theory Res Pract Policy 2020;12(7):765. Oct. doi: 10.1037/tra0000573.

[18] Mordeno IG, Carpio JG, Nalipay M, Jenina N, Saavedra RL. PTSD's underlying dimensions in typhoon Haiyan survivors: assessing DSM-5 symptomatology-based PTSD models and their relation to posttraumatic cognition. Psychiatric Q 2017;88(1):9–23 Mar. doi: 10.1007/s11126-016-9429-z.
[19] Combest-Friedman C, Christie P, Miles E. Household perceptions of coastal hazards and climate change in the central Philippines. J Environ Manag 2012;112:137–48 Dec 15. doi: 10.1016/j.jenvman.2012.06.018.
[20] Escarcha JF, Lassa JA, Palacpac EP, Zander KK. Livelihoods transformation and climate change adaptation: the case of smallholder water buffalo farmers in the Philippines. Environ Dev 2020;33:100468 Mar 1. doi: 10.1016/j.envdev.2019.100468.
[21] Estrella AB, Foronda VR, Lirag MT. Socio-ecological and livelihood assessment of selected coastal areas in Sorsogon, Philippines. Int J Adv Sci Eng Inf Technol 2015;5(4):339–43.
[22] Jamero L, Onuki M, Esteban M, Billones-Sensano XK, Tan N, Nellas A, Takagi H, Thao ND, Valenzuela VP. Small-island communities in the Philippines prefer local measures to relocation in response to sea-level rise. Nat Clim Change 2017;7(8):581–6 Aug. doi: 10.1038/nclimate3344.
[23] Reyes M., Diopenes V.E., Co R., Berse P., Eng K., Harianti D., Lieu, N.T.T. Disaster resilience starts with the young: mainstreaming disaster risk reduction in the school curriculum. ASEAN Knowledge Sharing Workshop; February 18-19, 2011; Malacca, Malaysia. http://www.preventionweb.net/english/professional/publications/v.php?id=18743. Accessed December 18, 2021.
[24] Aruta JJ, Simon PD. Addressing climate anxiety among young people in the Philippines. Lancet Planet Health 2022;6(2):e81–2 Feb 1. doi: 10.1016/S2542-5196(22)00010-9.
[25] Climate Change Commission, Office of the president of the philippines: programs. Available from: https://climate.gov.ph/our-programs. Accessed: February 25, 2022
[26] De Leon EG, Pittock J. Integrating climate change adaptation and climate-related disaster risk-reduction policy in developing countries: a case study in the Philippines. Clim. Dev. 2017;9(5):471–8 Jul 29. doi: 10.1080/17565529.2016.1174659.
[27] Perez GJ, Comiso JC, Aragones LV, Merida HC, Ong PS. Reforestation and deforestation in Northern Luzon, Philippines: critical issues as observed from space. Forests 2020;11(10) Oct 1071. doi: 10.3390/f11101071.
[28] Guinto RR, Alejandre JC, Bongcac MK, Guilaran J, Salcedo SS, Sunglao JA. An agenda for climate change and mental health in the Philippines. Lancet Planetary Health 2021;5(11):e755–7 Nov 1. doi: 10.1016/S2542-5196(21)00284-9.
[29] Milfont TL, Evans L, Sibley CG, Ries J, Cunningham A. Proximity to coast is linked to climate change belief. PLoS One 2014;9(7):e103180 Jul 21. doi: 10.1371/journal.pone.0103180.
[30] Ettinger J, Walton P, Painter J, DiBlasi T. Climate of hope or doom and gloom? Testing the climate change hope vs. fear communications debate through online videos. Clim Change 2021;164(1):1–9 Jan. doi: 10.1007/s10584-021-02975-8.
[31] Ojala M. Hope and anticipation in education for a sustainable future. Futures 2017;94:76–84 Nov 1. doi: 10.1016/j.futures.2016.10.004.
[32] Ogunbode CA, Pallesen S, Böhm G, Doran R, Bhullar N, Aquino S, Marot T, Schermer JA, Wlodarczyk A, Lu S, Jiang F. Negative emotions about climate change are related to insomnia symptoms and mental health: cross-sectional evidence from 25 countries. Curr Psychol 2021;16:1. Feb.