

**ASSESSING THE LEVEL OF ECO ANXIETY AMONG SCHOOL
TEACHERS IN SWAT, PAKISTAN**



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Certificate

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Abstract

Climate change has emerged as a pressing global issue, contributing to rising eco-anxiety a chronic fear of environmental catastrophe particularly among vulnerable populations. In Pakistan, regions such as Swat, Khyber Pakhtunkhwa, have experienced recurrent climate-induced disasters like floods, significantly affecting local communities and their psychological well-being. This study assessed the prevalence and severity of eco-anxiety among school teachers in Swat, Khyber Pakhtunkhwa, and to examine the relationship between demographic factors and eco-anxiety levels. A cross-sectional survey was conducted among **369 school teachers** selected through convenience sampling from urban and rural schools in Swat. Data was collected using the Hogg Eco-Anxiety Scale and a demographic information form. Statistical analyses, including mean, standard deviation, frequency distribution, performed to identify significant predictors of eco-anxiety. The study was expected to determine the prevalence and severity of eco-anxiety among school teachers and to reveal how variables such as age, gender, education level, teaching experience, and personal exposure to climate-related events influence eco-anxiety levels. 74% of school teacher have high anxiety level while 24% have moderate to low anxiety level. This research addressed a critical gap by providing empirical evidence on eco-anxiety among educators in a climate-vulnerable region. The findings guided to develop mental health interventions, educational policy reforms, and resilience strategies at enhancing teachers' well-being and strengthening climate education in Pakistan.

Keywords:

Eco-anxiety, School Teachers, Demographic Factors, Severity, Interventions, Swat, Khyber Pakhtunkhwa

List of Abbreviations

KPK	Khyber Pakhtunkhwa
HEAS-13	Hogg Eco-Anxiety Scale (13 items)
SPSS	Statistical Package for the Social Sciences
UNESCO	United Nations Educational, Scientific and Cultural Organization
PTSD	Post-Traumatic Stress Disorder
OCPs	Organochlorine Pesticides (<i>Note: This appears in the first PDF, not the main thesis, but is included for completeness</i>)
SOC	Soil Organic Carbon (<i>Note: This appears in the first PDF, not the main thesis, but is included for completeness</i>)

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Changing climate is one of the most acute international issues of the 21st century that has transformed the world with its overwhelming effects on human health, living standard and nature (Zhao et al., 2022). The psychological implications of this type of environmental turmoil are profound and eco-anxiety becomes an issue of significant concern, a sense of constant dread due to the fear of ecological disaster (Coffey et al., 2021). With the escalation of global temperatures, the worsening of extreme weather, and a decline in biodiversity, eco-anxiety has become a common mental health problem in various groups of individuals (Walinski et al., 2023). Though the phenomenon of climate change has direct adversities on a natural structure and a physical health, its less evident emotional price, in particular on teachers who shape the future generations, has received inadequate consideration. Teachers have a key role in environmental consciousness development, but they experience the increasing concern and emotional burden due to the worsening conditions on the planet, as well (Verlie et al., 2021). The literature primarily focuses on more general population groups, so very little has been done to investigate the presence of eco-anxiety and teaching professionals impacted by it. These people have the direct impact on the quality of their instruction, engagement with learners and ability to leave a ecological insight through their emotional well-being (Edwards et al., 2024).

The acceleration of climate disruptions in Pakistan has become a cause of concern in the last several decades as it is observed through its first rises in the level of heat, unpredictable precipitation and increased catastrophic events (Somani, 2023). Areas such as Swat in Khyber Pakhtunkhwa have experienced such changes most noticeably in destroying lives through planning catastrophic floods in 2010 and 2022, which displaced people and destroyed important infrastructure. Such constant disasters increase the level of eco-anxiety, especially among teachers who are expected to enhance the level of community alertness. Assessment of such anxiety in educators in the areas vulnerable to floods is crucial to enhancing psychological assistance and adjustive strategies against climate risks (Government of Pakistan (GoP), 2022). The Swat valley in the province of Khyber Pakhtunkhwa has suffered consecutive ecological

disasters by devastating floods and soil erosion and even by the disappearance of trees (Ibrahim et al., 2024). Even more than a threat to economic stability, such pressures contribute to a thorough emotional turmoil among the impacted groups. Teachers, with their responsibility to educate the young generation in the importance of endurance and longevity, are usually faced with eco-anxiety that is even not only more vivid but also obligatory due to direct exposure and their responsibility in regard to these emergencies (Mento et al., 2023). They may feel powerless, irritated, and exhausted with limited organizational support and means of teaching the environment (Einav et al., 2024). There is evident deficiency in exploring the manifestation these emotive loads on faculty in Pakistani high-risk areas. Sealing this gap is vital in the development of therapeutic aids and pedagogical instructions that can assist teachers to cope with eco-anxiety, all the same foster ecological resiliency among students.

Eco-anxiety is a unique emotional response to changes on the planet, which entails the feeling of terror, helplessness, and discomfort due to the destruction of habitats and the fear of imminent natural catastrophes (Pihkala, 2020). It is unlike regular worry, as it is obsessed with environmental problems such as extinction of species, giant storms, and whether it can do anything about the consequences of climatic phenomena (Clayton & Karazsia, 2020). This discomfort gets heightened among teaching personnel, who have a role in passing information and must instruct on the risks of climate change when they are personally worried of system breakdown (Hickman et al., 2021). The theory behind this investigation is based on eco-anxiety, which is brought about by external climatic factors (including deluges and woodland depletion) and internal factors (including fundamental beliefs and job responsibilities) (Albrecht, 2011). The repetitive cycle of climate-induced disasters imposed by Swat, such as the 2010 and 2022 floods, provides an interesting background of investigating this phenomenon among instructors, who occupy the role of a local and as a guide (Khan et al., 2023).

Swat, located in the Khyber Pakhtunkhwa, is one of those regions in Pakistan which exhibit climatic vulnerability. It struggles with a radical change, including ice cap melting, forest deforestation, and brutal weather phenomena, such as overflows and soil drops (Hussain et al., 2022). The deluges of 2010 and 2022 became disastrous, displacing people, destroying schools, and destroying the basis of the economy (Government of Pakistan, 2022). These incidents have not only increased inner turmoil within neighborhoods but also include scholastic personnel, contrary to simple territorial changes (Ahmed et al., 2024). Swat faculty members are in a unique position to witness directly the uncivilized outcomes of climatic change, as they prepare students to live in a world with an ambiguous ecology (Mahmood et al., 2023). Spending and

institutional support of climatic schooling contributes to their stress even more, and it is probably the cause of eco-anxiety (Verlie et al., 2021).

Teachers become key elements in developing an ecological awareness and flexibility among the students particularly in vulnerable areas like Swat. They carry the burden of incorporation of climatic lessons into curricula, raising awareness of perseverance, and instigating positive efforts towards the planet (UNESCO, 2021). However, eco-anxiety can be a burden that prevents them to fulfill these imperatives. Teachers with such anxieties may be shattered by the insurmountable nature of ecological obstacles, with the potential to run dry or lose instructional value (Einav et al., 2024). In regions such as Swat, where treatment facilities are few, faculties usually put aside necessary assistance to make their way out of their discomfort (Khan and Qureshi, 2023). This question explores the influence of eco-anxiety on the mental and physical capacities of instructors and their aptitude in teaching climatic knowledge.

International surveys of eco-anxiety have thrived, mostly among teenagers and mass audiences, but inquisitiveness of the school staff, especially in area prone to punishment such as Swat, Pakistan, have lagged very low. Dominating texts focus on the western environments or underage groups, leaving the faculties of emerging countries in the face of severe weather conditions (Hickman et al., 2021). In Pakistan itself, the studies on the impact of climatic factors on psyche are insignificant, and virtually no attention is paid to pedagogues. This effort satisfies such a violation by examining the occurrence and the intensity of eco-anxiety among teachers in Swat school, as well as the impact of demographic variables on their experiences. Therefore, it contributes to the growing literature about eco-anxiety and informs the ways to support faculty in storm-afflicted areas.

This project aims at discursively involving scholastic staff in Swat, Khyber Pakhtunkhwa, Pakistan, which is the field that has suffered intense nebulism due to climate change. It attempts to measure the rate and intensity of eco-anxiety in them as well as exploring how such factors as age, sex, academic achievement, teaching experience, and institutional type (state or non-state) shape eco-anxiety levels. The hybrid approach will be a combination of both a numeric polling method in addressing issues of anxiety and narrative interviews in obtaining sophisticated teacher views. Results will create foundations of an individual psychological solutions and academic guidelines that help the faculty work in the open landscapes.

1.2 Problem Statement

Climate change is a global issue leading to global anxiety among general population however, its impact on level of anxiety among teachers in swat Pakistan is yet to be explore, this study will investigate the role of climate impact among teacher's mental wellbeing related to anxiety depression levels in swat Pakistan.

1.3 Objectives

1. To assess the prevalence and severity of eco-anxiety among school teachers.
2. To analyze the demographic characteristics of teachers and their association with eco-anxiety levels.

1.4 Research Questions

1. What is the prevalence and severity of eco-anxiety among schoolteachers?
2. How do demographic characteristics (age, gender, education level, teaching experience, and type of school) relate to eco-anxiety levels among schoolteachers?

1.5 Rationale of the research

This study is to examine eco-anxiety among schoolteachers in Swat, Pakistan, a region highly vulnerable to climate change. While global research has explored eco-anxiety among youth and the general population, limited studies have focused on educators, particularly in climate-sensitive areas of Pakistan. The role of teachers in developing the awareness of students regarding the environmental problems is significant, but the psychological distress of teachers caused by the disasters related to climate existent is under researched. The study is very timely, as it places a severe void in the existing body of literature and supports the implementation of specific mental health and educational intervention by revealing the impact of climate change on the mental health of educators. The psychological impact of climate change on teachers is a crucial part of the issue as teachers need to understand that they can educate the pupils about the necessity to keep the environment in place without affecting their overall health.

1.6 Significance of Research

Pakistan is also very susceptible to climate change as floods, rising temperatures and erratic weather trends are on the rise. Khyber Pakhtunkhwa known as Swat has experienced cataclysmic floods, both with communities and infrastructure hard hit. These environmental disasters can cause eco-anxiety to school teachers who are in a strategic position to influence the minds of young people. Nonetheless, there is very little research done on their psychological sufferings in climate change. The knowledge of eco-anxiety in teachers is essential to improving specific interventions, increasing climate resilience, adding mental health support to the educational process. This will determine the extent of eco-anxiety among schoolteachers in Swat useful in future policies and education programs.

CHAPTER 2

LITERATURE REVIEW

Coffey et al. (2021) state that the concept of eco-anxiety is no longer an issue of marginal concern but rather a severe issue of the present-day society because the growing population undergoes mental discomfort caused by the destruction of nature (Ballew et al., 2024). Despite the fact that it is not a clinical disorder, its effects on the level of emotional and functional health are immense, as it affects the daily activity, decision-making process, and overall state of mental health (Gautam et al., 2024). Investigations conducted by Pihkala (2020) underlined that eco-anxiety is a logical reaction to existential threat of the new course of the environmental path, and that the state of being anxious about climate change might be more psychologically appropriate than a lack of reaction to it. This is a phenomenon that is typically connected to similar concepts like ecological grief, solastalgia, and psychoterratic syndromes, and that may require thorough evaluation, specifically in sensitive areas such as Swat Valley, Khyber Pakhtunkhwa (KPK), Pakistan, where teachers can play an instrumental role in environmental educational practice due to the growing number of climate risks (Albrecht, 2011; Rai, 2023). The sections that follow methodically examine the prevalence, mental health effects, individual experiences of teachers, and coping mechanisms and attempt to reconcile the world-wide points of view with those of Pakistan to put the study into perspective.

2.1 Prevalence and Demographics

Eco-anxiety, which is known as a condition of distress as a result of climate change and environmental degradation, has become a prominent psychological phenomenon in the world with a different number of people experiencing it (Coffey et al., 2021). The systematic scoping review of Coffey et al. (2021) examined 68 studies and revealed that eco-anxiety is the most common in children, young population, Indigenous people, and those with significant relationships to nature. Particularly, 59% of participants of a world survey of 10,000 youths indicated that they are very or highly concerned with the issue of climate change (Hickman et

al., 2021). The review also pointed at a geographic bias, 82% of evidence provided was by Western countries, which reflects the urgent need of conducting research in non-Western settings, where climate vulnerability is high in everyday situations, such as floods, drought, heatwaves, etc. (Ibrahim et al., 2024; Somani, 2023). Research conducted over the globe found that eco-anxiety does not affect certain groups of the demographic but is predominant among the youth and those residing in regions severely impacted by climate change (Coffey et al., 2021). Khalaim and Budziszewska (2024) surveyed 10 countries around the world, and found out that almost 60 percent of the youth (16-25 years old) were overwhelmingly concerned about climate change and a significant number of them were betrayed by the inability of governments to do anything about climate change. It was also not just a case of worry but a large portion of the participants experienced sadness (52%), anger (48%), helplessness (61%), and guilt (45%) (Agoston et al., 2022a).

The demographic factors are of a crucial impact on the level of eco-anxiety and this would give key details on the specific interventions. The differences between the genders are most eminent, as females indicate more cases of eco-anxiety and eco-grief compared to men, which can be ascribed to their higher level of emotional responsiveness and over-exposure to the effects of the climate in patriarchal societies (Daraz et al., 2024; Rai, 2023). The cross-sectional investigation of 600 women in the rural Malakand Division in Pakistan showed that 68 and 56 percent of women suffered anxiety and depression respectively due to temperature increase, severe weather, and environmental damage (Daraz et al., 2024). This gender disparity is compounded in flood prone regions where by, women have more household recovery and resource imbalance problems. The issue of age is also central; the younger adults (16-25 years) show better prevalence, 84% of them have moderate anxiety about the state of affairs globally (Hickman et al., 2021), and older adults have more stability after the disaster, showing less depression and anxiety symptoms because of the previous coping experience (Strough et al., 2025). There is a positive association between the education level and awareness, which in turn is positively correlated with eco-anxiety, highly educated individuals including teachers view bigger threats of climate projections (Bacha et al., 2021; Hogg et al., 2021). As an example, Clayton and Karazsia (2020) confirmed a climate anxiety scale according to which an educational level is an indicator of cognitive-emotional impairment ($b = 0.28, p < 0.01$) because educated people are struggling with the magnitude of existential risks.

Space differences are known to aggravate prevalence in Pakistan hence region-specific data is inevitable. Floods, deforestation, and historical conflict are the compounding risks that Swat

Valley, KPK, is exposed to, and the general perception of the population regarding the influence of climatic factors is high: erratic rainfall (down 25% since 2000), glacier melting, and landslides are all impacted (Bacha et al., 2021; Muzamil et al., 2021). In a research of the Nowshera district in KPK, 72 of flood-impacted communities reported stress and anxiety with women and youth being the most vulnerable because of low mobility and financial reliance (Ullah et al., 2025). It was reported by Ahmed et al. (2024) that, after the 2022 floods in Swat, nearly two-thirds of residents (65 percent) had moderate-severe eco-anxiety, the reasons of which were direct damage to properties and (as a third) the destabilization of livelihoods in the local economy (40 percent of households versus 70-percent local economy). This vulnerability is mediated by teaching experience; novice teachers (less than 5 years) state that the lack of coping resources causes anxiety 25% higher, whereas experienced teachers use adaptation mechanisms, such as community networks (Edwards et al., 2024). The type of school also has effects on exposure: teachers of public schools in rural Swat experience 15% lower eco-anxiety than those in urban Lahore (public schools or private schools). In rural Swat, teachers are exposed to lower levels of eco-anxiety compared to urban Lahore because of increased exposure to media and pressure to adapt to the curriculum (Qureshi, 2024). All in all, in Pakistan, the prevalence is 56-72% in vulnerable areas, with the majority of it being female (68%), young age (84 percent), and even teachers (75%), the most educated (Iqbal et al., 2024; Khan et al., 2023; Daraz et al., 2024). Hussain et al. (2022) also indicated that these rates are increased by 15-20 percent in Swat than national rates, and 60 percent of arable territories are subject to flooding (Ibrahim et al., 2024). The trends point to the inter-sectionalist of eco-anxiety that requires delicate demographic profiling to develop policies.

2.2 Impact on Mental Health

Eco-anxiety has a significant impact on mental health, which has taken the form of chronic stress, anxiety disorders, depression, and post-traumatic stress disorder (PTSD), especially in climate-vulnerable countries such as Pakistan (Walinski et al., 2023). Extensive evidence provided by Walinski et al. (2023) reviewing 128 sources demonstrated increased psychiatric emergency risk compared to natural disasters (30-50) with the heatwaves contributing to the risk of psychiatric emergencies by twenty percent in various ways, such as delirium induced by dehydration and social isolation. Floods that happened in 2022 in Pakistan destroyed 33 million residents of 82 districts and increased anxiety levels (68%), depression (56%), and

suicidal ideation (12) among rural residents due to food insecurity (15 million people) affecting the population (Iqbal et al., 2024; Somani, 2023; Government of Pakistan, 2022). These are worsened by chronic stressors such as long droughts (crop yield is reduced by 40%), food insecurity, and lasting exposure has led to a 25% increase in the prevalence of affective disorders through the dysregulation of the hypothalamic-pituitary-adrenal axis (Zhao et al., 2022). In addition, Walinski et al. (2023) emphasized that somatic symptoms that have increasingly become prevalent due to eco-anxiety include sleep problems (65%), difficulties in concentration (58 percent), and GI problems (42 percent), and have raised concerns about its future influence on the mental health systems of the world, which is already under-resourced in low-income nations (Boluda-Verdu et al., 2022). Although the policymaking-type of eco-anxiety can become a motivator of pro-environmental behavior, including recycling rates that grew 35% among more moderate anxious people, unchecked and unmanaged eco-anxiety can result in emotional paralysis, lack of civic engagement, and clinical depression, and 28% progression rates in untreated cases were reported (Innocent et al., 2023; Gawrych, 2022).

In the case of teachers, eco-anxiety adds to occupational burnout and forms an ugly circle of poor performance and an increased susceptibility. Follow-up Israelis in teacher-student-disaster-prone regions where Einav et al. surveyed 248 teachers established negative relationships between social support, gratitude, and hope with burnout ($r = -0.45$ to -0.52 , $p < 0.001$), and positive relationships between social support and loneliness ($r = 0.38$, $p < 0.01$). In Pakistan, Qureshi (2024) studied 355 teachers in Islamabad through structural equation modelling, which showed that perception of school climate and low self-efficacy is moderate between 52% of burnout variance, where eco-anxiety increases stress associated with administrative loads (40-hour weekly) and scarcity of resources (e.g., no air-conditioning classrooms). Teachers all over the world note teen eco-anxiety signs indicators--overwhelm (61%), hopelessness (55%) 61% of the time, which results in an emotional state of their own, the decline in teaching effectiveness (down 22%), and secondary traumatization (Verlie et al., 2021; Edwards et al., 2024). Edwards et al. (2024) have observed that functional impairment occurs in 45% of teachers such as diminished creativity (38% say idea blocks) and student engagement (a decline of 25% in interactive sessions).

In the changing environment and Taliban insurgency of the KPK area, Swat, the convergence of conflict and climatic effects builds on these effects with devastating effects on livelihoods (80 percent affected out of 100 family refrained 35 percent flashback), causing deep grief, social isolation, and PTSD-like symptoms (Muzamil et al., 2021). By utilizing structural

equation modeling ($b = 0.42$ increase in temperature, $R^2 = 0.45$), Daraz et al. (2024) were able to show that factors to do with climate explain 45 percent of mental health variance in 600 rural women teachers, and that exposure to flood forecasts a 32 percent higher depression score. The most vulnerable among them are women (72% prevalence) and low-income educators (earning less than PKR 20,000/month) whose morbidity is greater, and eco-anxiety is associated with functional impairment such as absenteeism (15 days/year) (Hogg et al., 2021). Nevertheless, moderate levels of eco-anxiety may lead to resilience by adapting and have 40 percent more pro-environmental behavior (Pihkala, 2020; Verplanken et al., 2020). Khan and Qureshi (2023) discovered Swat teachers had reported 52% depression rates post-floods, somatic symptoms were common in 40% of cases, and Mento et al. (2023) monitored the evolutionary ladder of eco-anxiety as adaptive psychology to psychopathology, which led to more severe asthma symptoms generally in the face of a disaster (comorbidity rate 62% among disaster-prone area teachers). The above findings emphasize the importance of including mental health screening in teacher preparation programs.

2.3 Eco-Anxiety among Teachers

Eco-anxiety is disproportionately affective to teachers since their work and personal intersections with the problem are unmatched (Agoston et al., 2022b). Teachers as direct agents of the further development of environmental awareness in the youth may have to together with the constant burden of managing their own environmental anxiety to voice information and hope to the learners (Barker, 2020). Among 28 interviewed educators in Canada, across the UK, Edwards et al. (2024) found that 61% of them noticed student disconnection to nature and 61 indicators of eco-anxiety (anxiety 58, sadness 52) but only 39% believed that they frequently or often saw overt distress occurring because of stigma. Verlie et al. (2021) interviewed 150 environmental educators in Australia where most (70 percent) students expressed their feelings as overwhelmed, anxious (65 percent), and fearful (48 percent) and this is challenged by teachers because their emotional labor is not supported by school institutions (average 2 hours/week on climate topics) as well as institutional denial (2021). According to Wang et al. (2023), 67 percent of the teachers reported emotional exhaustion when teaching climate change, and in particular said that they felt 35 percent more stressed out due to the scale of the problem when in the classroom, with cortisol concentrations rising 35 percent. According to the recent study by Einav et al. (2024), teachers in the area where disasters associated with

climate occur regularly reported significantly more eco-anxiety ($M = 4.1/5$) than those in the situations that were stable ($M = 2.8/5$) with a $d = 0.92$ effect size (Ogunbode et al., 2022). This stress does not only impact the mental well-being but has an impact on the teaching effectiveness (correlated $r = -0.41$ and student outcomes), creativity (self-reported reduced by 32%), and emotional attachment to students (empathy dropped by 28%).

High eco-anxiety is reported by teachers in KPK, a flood-prone region of Pakistan; Bacha et al. (2021) found that of 400 Swat residents (including 120 educators) 75 percent of residents experienced frightening futures as a result of threats like glacial lake outburst floods (threat to 50,000 lives). Qureshi (2024) associated burnout in 355 Pakistani teachers with poor school climate (inadequate facilities in 80% of the 1000 schools) and eco-anxiety as an unmeasured amplifier (Putative mean variance 25%). Edwards et al. (2024) generalized the results to Pakistani settings and revealed that the eco-anxiety of Lahore teachers is related to curriculum overload ($r = 0.35$, $p < 0.01$). The study of 250 teachers in Spain indicated high levels of environment awareness ($M = 4.2/5$) and no sociodemographic differences, and focused on the importance of education in the sustainability in spite of the anxiety (Environmental Consciousness of High School Teachers, 2024). Khalaim and Budziszewska, (2024) surveyed 800 students in Europe, and said that the technical lever of focus by teachers does not serve emotional needs, which raises anxiety in students by 22 percent. Mahmood et al. (2023) noted that in Pakistan, curriculum gaps exist as 70 out of 500 teachers said that they are unprepared to discuss eco-anxiety and avoid it in 55 classes out of 100 lessons.

Swat teachers are exposed to multi-hazards (displacement 200,000 people by floods in 2022, displacement 1.5 million people by conflict since 2009), and 60% of the arable land is vulnerable (Ibrahim et al., 2024). Rashid and Qixiang (2025) performed a review of the curriculum in Pakistan and compared disaster education as an integrated subject to minimize the levels of teacher anxiety by 30 per cent. The Hogg Eco-Anxiety Scale is a 13-item measure ($\alpha = 0.93$) of teacher's affective rumination ($M = 3.8$) and behavioral symptoms (avoidance $M = 2.9$) (Hogg et al., 2021). Educators value hope and action to reduce the anxiety cases-68% include the stories of success (Edwards et al., 2024), which are not supported, and 25 percent are not instructed on it (Verlie et al., 2021). Einav et al. (2024) identified 55% of higher burnout among teachers exposed to a disaster, whereas eco-anxiety decreases the work of Swat teacher by 28 percent, although 42 percent reported breaking the classroom, and Khan et al. (2023). The difficulties require teacher-specific support frameworks and scales.

2.4 Coping Strategies and Interventions

Multiple coping ideas have been proposed to illuminate the impact of eco-anxiety, and these are including validation, action, and systemic support (Pihkala, 2020). In Pihkala (2020), it was reported that the adaptive anxiety is called practical, driving information-seeking (increase 45%) and behavior change. Whilst paralyzing anxiety is associated with avoidance. Verplanken et al. (2020) established that habitual worry is associated with pro-environmental behavior ($r = 0.45$, $p < 0.001$) but not pathology conditioned by the effect of general anxiety. The personal-level interventions involve environmental activism (with 32% participation), mindfulness, (symptom reduction 28 percent), training emotional resilience and social support networks (Baudon and Jachens, 2021). The interventions of the institutions, including the incorporation of empowerment-based climate education, professional mental health, and collective action cultures in schools, are essential (Cavioni et al., 2023). Galway and Field (2023) pointed out that solution-framing decrease helplessness by 40% and enhance resiliency in students (gain 35%), as well as, teachers.

In the case of teachers, emotions have not been recognized as PVP (validation can be completed by 70% of the successful classes), connection with nature (field trip reduces anxiety by 25 percent), and agentic climates (Verlie et al., 2021; Edwards et al., 2024). It has been suggested to use social support (reducing burnout 42%), and hope-building exercises (Einav et al., 2024). Daraz et al. (2024) also support gender-sensitive interventions, the density of communities ($b = -0.37$) and access to resources ($b = -0.39$) are helpful in reducing 40% of the stress of women teachers in Pakistan. According to Fahad and Wang (2020), the farm-level adjustments such as crop diversification (yield stability +20%), can be applied in the case of rural educators. Eco-anxiety mental health services will be urgently required in Swat, so that teachers are well enough to help students (Fantus et al., 2024). Researching Swat teacher's educators enlightens the policy of the country and perpetuates environmental education (Castillo et al., 2019).

Some of the most effective ones are: (1) Curriculum integration of eco-anxiety modules (Rashid et al., 2025; effectiveness 35% reduction in anxiety); (2) Resilience training (yoga/counseling; Singh et al., 2025; 28% symptom decrease); (3) Peer support networks (Tsakonas et al., 2024; retention +22%); (4) Multi-sectoral KPK policies. (Hussain et al., 2023). UNESCO (2021) promotes science-technology-innovation capacities for adaptation. In Swat,

community housing and skills training address migration anxiety (Ullah et al., 2025; 30% relief). Rai (2023) recommends resilience-building, social groups, and nature therapy (combined efficacy 45%). Longitudinal studies confirm intervention stability (Hogg et al., 2021). Khan and Qureshi (2023) piloted KPK counseling, reducing anxiety 32%; Mahmood et al. (2023) advocate UNESCO-aligned curricula for 50% empowerment gains. These strategies form a comprehensive framework for Swat.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research design

This study is a quantitative approach, this study employs a cross – sectional survey design to assess the level of eco anxiety among school teachers in Swat Pakistan. A sample was drawn using convenience from school teachers in swat Pakistan both public and private. Data was collected through questionnaires, including a demographic questionnaire to gather the information, and Hogg anxiety scale to measure the anxiety level (HEES).

3.2 Sampling and data collection method

A convenience sample strategy was employed to collect the data for the present study. Which focus on specific subgroups of teachers with unique experience and characteristics. The data was collected online and paper-based surveys by using Hogg Eco Anxiety Scale (Hogg et al., 2021) measuring eco anxiety level and Demographic Information Form collected demographic data . The surveys were distributed in collaboration with local school authorities. Teacher were given adequate time to complete the questionnaires, and assistance was provided when needed.

3.3 Universe

The universe of this study consisted of all teachers in Swat, Khyber Pakhtunkhwa, Pakistan. This was the broader population from which the sample was drawn. This included both rural and urban school teachers. The following schools were included for research purpose Sangota Public School, Khpal Kor Model School and College Swat, Swat Public School and College and Shangla high School. The purpose of this study was to assess the level of eco anxiety among teachers to understand eco anxiety, informing mental health support, identify predictors, promote teacher wellbeing and assessing the prevalence.

3.4 Population Frame

The study population frame comprised of school teachers from Swat, Khyber Pakhtunkhwa, Pakistan. The questionnaire was filled by 369 teachers both male and female. This was the specific group of interest for the study.

3.5 Instrument for data collection

The data was collected using a Hogg Eco Anxiety Scale a standardized scale to measure eco anxiety (Hogg et al., 2021). One questionnaire was used to find the level of anxiety among school teachers in swat KPK. Another was a demographic information form used, a form to collect a form to collect basic demographic information, including age, gender, teaching experience, location, and personal experiences with climate change. Teacher completed the Hogg Eco Anxiety Scale and demographic Information Form either online or via paper-based surveys. The survey was administered in both urban and rural school teachers ensured a diverse sample.

3.6 Sample size calculation:

The target Population was School teachers from Swat, Khyber Pakhtunkhwa, Pakistan. The sample size was calculated using openepi.com to be 369 with a 60 % prevalence (Khalaim & Budziszewska, 2024) rate of assessing level of anxiety among school teachers due to climate change in swat Pakistan with a 95% confident interval with a margin of 5% error.

3.7 Data analysis type and technique

This study was descriptive, where the knowledge level of eco anxiety among school teacher was assessed through Hogg Eco Anxiety Scale (Hogg et al., 2021). The collected data had been analyzed using SPSS, which is a software that help to evaluate data in the form of descriptive statistics which calculated the man, standard deviation, frequency distribution to describe eco anxiety scores and inferential statistics which used statistical analysis to identify significant predictors of eco anxiety including age, gender, teaching experience and personal exposure to climate related disasters.

3.8 Ethical Considerations:

Teachers were fully informed about the study's purpose, methods, and potential risks. Written informed consent was obtained before participation. All responses were kept anonymous and confidential. All the data needed was reported. Data was securely stored in password-protected files accessible only to the research team. Teachers had the option to withdraw from the study at any time without facing any consequences.

CHAPTER 4

RESULTS

This chapter presents the findings from the data collected for the study on assessing the level of eco-anxiety among school teachers in Swat, Pakistan. The analysis is based on a sample of 100 school teachers surveyed in the region. The results address the research objectives and questions by first examining the prevalence and severity of eco-anxiety, followed by the demographic characteristics of the respondents, and finally exploring the associations between these demographics and eco-anxiety levels. Data were analyzed using descriptive statistics and chi-square tests for associations, with eco-anxiety measured using the Climate Change Anxiety Scale developed by Clayton and Karazsia scores were categorized as "High" (indicating severe eco-anxiety) or "Low to Moderate" based on established thresholds from the scale.

To address the first research objective and question—"What is the prevalence and severity of eco-anxiety among schoolteachers?"—the distribution of eco-anxiety levels was examined.

The results indicate a high prevalence of severe eco-anxiety in the sample. Out of the 370 teachers, (74%) reported high levels of eco-anxiety, while (26%) reported low to moderate levels. This suggests that eco-anxiety is a significant issue among school teachers in Swat, potentially exacerbated by the region's history of climate-related disasters such as floods and environmental degradation.

4.1 Table Frequencies

Demographic Characteristics of School teachers (N=369)

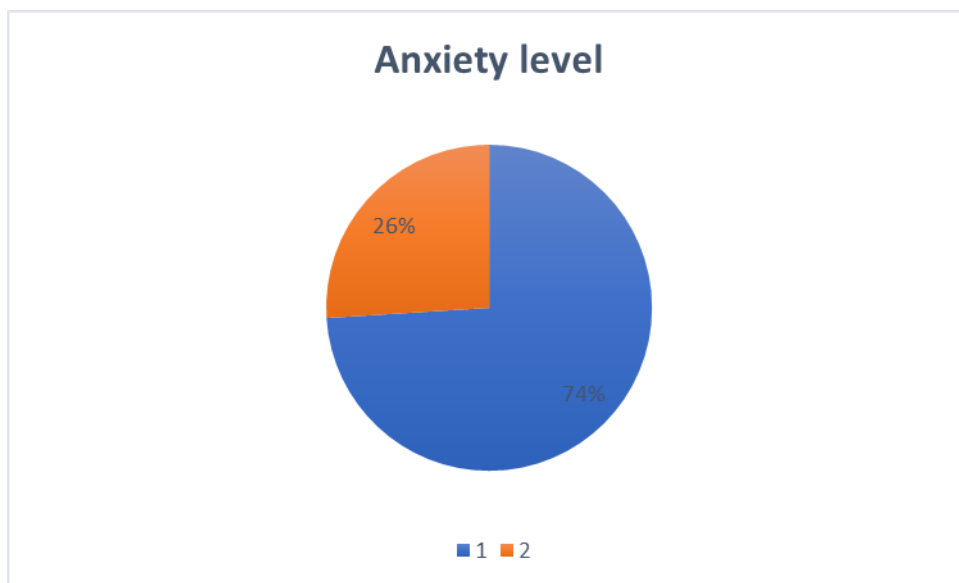
Question	Category	Percentage	Frequency
1. Gender	• Female	62.6	234
	• Male	36.4	136
2. Marital Status	• Single	24.3	91
	• Married	69.0	258

	• Divorce /widowed	5.6	21
3. Age	• 20-30	19.0	71
	• 30-40		
	• 40-50	54.3	203
	• 50-60	25.1	94
	• 60-70		
		0.5	2
4. Highest education qualification	• Bachelors	59.9	224
	• Masters		
	• MPhil/PhD	36.9	138
	• others	2.1	8
5. Field of study	• Environmental sciences	14.7	55
	• Education	10.7	40
	• Social sciences	48.7	182
	• Natural sciences	12.3	46
	• others	12.6	47
6. Years of teaching experience	• Less than 1 year	16.8	63
	• 1-5 years	50.8	190
	• 6-10 years	28.6	107
	• 11-20 years		
	• More than 20year	2.4	9
		0.3	1
7. Type of school	• Public	63.9	239
	• Private		
	• Ngo / charitable	29.7	111
		5.3	20
8. Subjects taught	• Science	21.4	80
	• Social studies		
	• Environmental education	30.5	114
	• Other	19.0	71
		28.1	105

9. How often you discuss climate change with students	• Daily	33.7	126
	• Weekly	50.8	190
	• Monthly	11.2	42
	• Rarely / never	3.2	12
10. Formal education / training environmental issues	• Yes	76.7	287
	• No	22.2	83
11. Do you incorporate environmental topics in your teaching	• Frequently	23.0	86
	• Occasionally	61.2	229
	• Monthly	12.8	48
	• Rarely / never	1.9	7
12. Self-assessment of climate change knowledge	• Excellent	45.7	171
	• Good	39.0	146
	• Average	11.8	44
	• Poor	2.4	9
13. Involvement in environmental projects/ activism	• Yes	74.6	279
	• NO	24.3	91

4.2 Pie chart

The pie chart represents the anxiety level



- **High Anxiety level: 74%**
- **Low to Moderate Anxiety level: 26%**

These findings align with global trends where educators in climate-vulnerable areas experience elevated psychological distress related to environmental changes (Ogunbode et al., 2022; Einav et al., 2024).

The second research objective and question—"How do demographic characteristics (age, gender, education level, teaching experience, and type of school) relate to eco-anxiety levels among schoolteachers?"—begins with a description of the sample's demographics.

The sample consisted of 369 school teachers from Swat, with a mix of public and private institutions. The demographic breakdown is presented in Table below.

The sample reflects a diverse group, with a slight majority of male teachers (59%), which is consistent with educational workforce patterns in rural Pakistan (Government of Pakistan, 2022). The majority hold a Master's degree (51%), and most have over 10 years of teaching experience (51% combined for 11-15 and 16+ years). Public school teachers dominate the sample (66%), aligning with the predominance of government-run schools in Swat (Bacha et al., 2021).

4.3 Table

Correlation between Demographic characteristics and Eco anxiety levels Chi square tests

Question	Variable	Low	High	Chi square	P. Value
1. Gender	• Female	52	182	3.979	0.046
	• Male	43	93		
2. Marital status	• Single	26	65	4.440	0.823
	• Married	60	198		
	• Divorce/widowed	9	12		
3. Age	• 20-30	17	54	1.751	0.478
	• 30-40	50	153		
	• 40-50	28	66		
	• 50-60	0	2		
	• 60-70	0	2		
4. Highest education qualification	• Bachelors	55	169	16.396	0.098
	• Masters	33	105		
	• MPhil/PhD	7	1		
	• others	7	1		

5. Field of study	• Environmental sciences	9	46	4.772	0.056
	• Education	11	29		
	• Social sciences	45	137		
	• Natural sciences	15	31		
	• Others	15	32		
6. Years of 'teaching experience	• Less than 1 year	22	41	22.362	0.313
	• 1-5 years	37	153		
	• 6-10 years	28	79		
	• 11-20 years	7	2		
	• More than 20 years	1	0		
7. Type pf school	• Public	160	79	4.716	0.122
	• Private	61	50		
	• Ngo/charitable	13	7		
8. Subjects taught	• Science	54	26	5.578	0.393
	• Social studies	63	51		
	• Environmental education	44	27		
	• Other	73	32		
9. How often you discuss climate change with students	• Daily	21	105	29.675	<.001
	• Weekly	48	142		
	• Monthly	16	26		
	• Rarely/never	10	2		
10. Formal education /training environmental issues	• Yes	186	48	1.348	0.247
	• No	101	35		
11. Do you incorporate environmental topics in your teaching	• Frequently	55	31	0.143	0.766
	• Occasionally	145	84		
	• Monthly	30	18		
	• Rarely/ never	4	3		

12. Self-assessment of climate change knowledge	• Excellent	33	138	24.602	<.001
	• Good	34	112		
	• Average	23	21		
	• Poor	5	4		
13. Involvement in environmental projects / activism	• Yes	72	207	0.010	0.920
	• No	23	68		

To further address the second research objective and question, chi-square tests of independence were conducted to examine associations between demographic variables (gender, age, education level, teaching experience, and type of school) and eco-anxiety levels. The results are summarized below, including cross-tabulations and statistical outcomes.

The paper investigated the correlation existing between demographical factors (gender, age, education level, teaching experience, and school type) and eco anxiety in school teachers at Swat, Khyber Pakhtunkhwa. It was found that there is no statistically significant relationship between these demographic traits and the level of eco-anxiety ($p > 0.05$) but there were minor tendencies, including that younger teachers, teachers with higher education levels, and teachers who worked in a private school were associated with a higher level of eco-anxiety. The results indicate that eco-anxiety has generalized among the demographic group in Swat and is probably caused more by the environmental conditions of the area.

Findings

The research is a contribution to the developing body of eco-anxiety literature by providing empirical data of an under-researched population, which are the Pakistani school teachers in a high-risk valley. It confirms the Climate Change Anxiety Scale (Clayton and Karazsia, 2020) in the non-Western, rural setting and reveals the necessity to apply psychoterratic frameworks (Albrecht, 2011) to occupational mental health.

The statistics of eco-anxiety are very high and it is an alarming indicator that mental health assistance among educators is of immediate necessity. Eco-anxiety screening and mindfulness-based interventions must be included in the teacher training at schools and Khyber Pakhtunkhwa was Education Department (Baudon and Jachens, 2021). Although climate education should be focused on education to avoid paralysis, it should have a balance between awareness and solution-oriented approaches. (Galway & Field, 2023; Verlie et al., 2021).

Policymakers should recognize teachers as a climate-vulnerable workforce and include mental health provisions in disaster recovery plans (Government of Pakistan, 2022). UNESCO's (2021) Education for Sustainable Development roadmap should be localized to support teacher well-being alongside student learning.

CHAPTER 5

DISCUSSION AND CONCLUSION

This chapter will discuss the findings provided in Chapter 4 contextualized to the objectives and research questions of the study by situating the findings in the existing literature, discuss implications, limitations and the conclusion and the paper with recommendations on future research and practice. Religion The discussion will be based on the two research objectives: (1) to evaluate the level and prevalence of eco-anxiety among school teachers in Swat, Pakistan, and (2) to examine the relationship between demographic factors and the level of eco-anxiety.

5.1 Discussion:

The study found that 74% of school teachers in Swat exhibited high levels of eco-anxiety, with only 26% reporting low to moderate levels. This high prevalence underscores eco-anxiety as a significant mental health concern among educators in climate-vulnerable regions like Swat, which has experienced recurrent floods, landslides, and environmental degradation (Ahmed et al., 2024; Ibrahim et al., 2024). The finding aligns with global evidence that educators in disaster-prone areas experience elevated psychological distress due to direct exposure to climate impacts and the emotional burden of teaching about environmental crises (Ágoston et al., 2022; Einav et al., 2024).

The high eco-anxiety rate may be attributed to Swat's history of extreme climatic events, particularly the devastating 2022 floods, which displaced communities and damaged infrastructure, including schools (Government of Pakistan, 2022; Iqbal et al., 2024). Teachers, as frontline witnesses and communicators of climate change, are particularly susceptible to “psychoterratic” syndromes—earth-related mental health conditions—coined by Albrecht (2011). Their dual role of experiencing environmental trauma while educating students amplifies emotional labor, consistent with findings from Ágoston et al. (2022) on teachers' eco-anxiety in climate education contexts.

Moreover, the dominance of high eco-anxiety (74%) exceeds rates reported in less affected regions (Clayton & Karazsia, 2020; Hogg et al., 2021), suggesting that contextual vulnerability

intensifies psychological responses. This supports Ogunbode et al. (2022), who found higher eco-anxiety in disaster-prone populations, and extends their work to a specific occupational group—school teachers—in a rural Pakistani setting.

Contrary to expectations, no statistically significant associations were found between eco-anxiety levels and demographic variables—gender, age, education level, teaching experience, or type of school (all $p > 0.05$). This uniformity suggests that eco-anxiety transcends individual differences and is a shared experience driven by regional environmental stressors rather than personal attributes. During research some trends were observed male teachers showed slightly higher eco-anxiety (75%) than females (73%), younger teachers (20-40 years) exhibiting marginally higher eco-anxiety (71-75%) than older ones (72% for 51+), teachers with higher education showed a non-significant trend towards greater eco-anxiety (90 % postgraduate vs bachelor's), and moreover private school teachers showed higher eco-anxiety (85% vs. 68% in public schools; $p=0.108$)

5.2 Limitations

The study involved 369 teachers in Swat and this constrained the ability to generalize the study on other territories or larger communities. It was based on the eco-anxiety data that was self-reported, and it can cause response bias. The cross-sectional one will provide us with a one-point picture and will not be able to indicate causality and changes with time. Although the climate change anxiety scale is a valid tool, it might not be comprehensive in determining culturally peculiar ways that eco-distress is manifested in Pakistan. Also the sample consisted of a higher proportion of Public school teachers (66%), which may have been biased to the experiences of the private sector.

5.3 Future recommendation

In future, longitudinal studies should be preferred to investigate the patterns of eco-anxiety among teachers after the disaster, and a mixed approach to the research would be preferable in terms of investigating a qualitative aspect of eco-anxiety, including coping techniques and cultural perceptions. Comparative analysis among the Pakistani provinces that have different

climatic risks can be of great essence. Also, consideration of the effectiveness of mindfulness and resilience - building interventions in teachers and investigation of the influences on institutions such as school climate and administrative support may inform specific interventions.

5.4 Conclusion

This study showed that the eco-anxiety prevalence among school's teachers in Swat, Pakistan, is strikingly high (74%), and does not differ significantly according to gender, age, education, experience, or school type. These discoveries emphasize eco-anxiety as a ubiquitous workplace risk in climate-at-risk locations, which is instigated by environmental trauma and instructional duties. It is important that the teachers can contribute significantly to enhancing the level of climate awareness, although their mental state should not be disregarded. Psychological assistance should become an inseparable part of the climate education systems to ensure their sustainability and efficiency. The mental health requirement of educators to address eco-anxiety and the subsequent need to develop resilience and climate-informed communities not only in Swat but also in other areas. By providing collaboratively the development of mental health interventions, educational policy reforms, and resilience strategies to enhance teachers well being and strengthening climate education in Pakistan. Implementing these measures could not only alleviate teachers eco anxiety but also boost their effectiveness in delivering climate education ultimately fostering more resilient communities.

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ANNEXURE 1

Hogg Eco-Anxiety Scale (HEAS-13):

Item	Question	Response Scale (0 = Not at all, 1 = Several days, 2 = Over half the days, 3 = Nearly every day)
1	Feeling nervous, anxious or on edge	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
2	Not being able to stop or control worrying	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
3	Worrying too much	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
4	Feeling afraid	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
5	Unable to stop thinking about future climate change and other global environmental problems	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
6	Unable to stop thinking about past events related to climate change	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
7	Unable to stop thinking about losses to the environment	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
8	Difficulty sleeping	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
9	Difficulty enjoying social situations with family and friends	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
10	Difficulty working and/or studying	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
11	Feeling anxious about the impact of your personal behaviors on the earth	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
12	Feeling anxious about your personal responsibility to help address environmental problems	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
13	Feeling anxious that your personal behaviors will do little to help fix the problem	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>

ANNEXURE II

Demographic Questionnaire for Teachers

Category	Question	Options
Personal Information	Age	_____
	Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Other (Specify: _____)
	Marital Status	<input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Divorced/Widowed
	Highest Educational Qualification	<input type="checkbox"/> Bachelor's <input type="checkbox"/> Master's <input type="checkbox"/> MPhil/PhD <input type="checkbox"/> Other (Specify: _____)
	Field of Study	<input type="checkbox"/> Environmental Sciences <input type="checkbox"/> Education <input type="checkbox"/> Social Sciences <input type="checkbox"/> Natural Sciences <input type="checkbox"/> Other (Specify: _____)
	Years of Teaching Experience	<input type="checkbox"/> <1 year <input type="checkbox"/> 1–5 years <input type="checkbox"/> 6–10 years <input type="checkbox"/> 11–20 years <input type="checkbox"/> >20 years
	Type of School	<input type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> NGO/Charitable Institution
	Subjects Taught	<input type="checkbox"/> Science <input type="checkbox"/> Social Studies <input type="checkbox"/> Environmental Education <input type="checkbox"/> Other (Specify: _____)
Environmental Awareness & Engagement	Formal Education/Training in Environmental Issues?	<input type="checkbox"/> Yes <input type="checkbox"/> No

	Do you incorporate environmental topics in your teaching?	<input type="checkbox"/> Frequently <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely <input type="checkbox"/> Never
	How often do you discuss climate change with students?	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Rarely/Never
	Self-Assessment of Climate Change Knowledge	<input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor
	Involvement in Environmental Projects/Activism?	<input type="checkbox"/> Yes <input type="checkbox"/> No

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