



Assessment of Psychological Well-being among Social Media Users Following Exposure to Climate Disaster Content: A Case of Pakistani University Students

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Abstract

This cross-sectional, correlational study documented responses of 101 Pakistani university students through convenience sampling to measure the relationship between exposure to climate disaster content on social media and post exposure psychological well-being among Pakistani university students. The findings of the research noted a significant positive correlation between the independent and dependent variables. The results revealed that female and undergraduate students were more exposed to climate disaster content on social media, and in turn suffered low psychological wellbeing (more stress) than male respondents and graduate students. The findings of this study may be used as a reference for taking measures for content regulation on social media, developing interventions to treating climate-induced stress and anxiety by the clinical psychologists, and raising awareness among communities to upload and get exposed to beneficial media content and avoid eco-anxiety.

Keywords: Climate Change, Eco-Anxiety, Psychological Well-being, University Students, Climate Disasters, Social Media

Introduction

Climate change has posed serious existential threat to life on earth in the recent times (Ayaz & Ahmed, 2024; Ayoub & Ahmed, 2024). Climate disasters have escalated both in frequency and intensity across the globe. Climate Risk Index 2025 has ranked Pakistan at the top of the worst-affected countries due to climatic calamities (Germanwatch, 2025). It has suffered extreme weather patterns, inundated floods, food and water scarcity, soil erosion, and reduction in agricultural produce. The situation has exacerbated socioeconomic vulnerabilities as well as public health (Ahmed & Luqman, 2024), intensely affecting both psychological and physical wellbeing of the individuals who fall victims to respiratory and skin diseases, and injuries as and when disasters take place. Furthermore, the disaster survivors often suffer depression, anxiety, trauma, and post-traumatic stress. Infrastructure destruction, economic loss and displacements, economic loss also add to mental distress (Ayoub & Ahmed, 2024). The increasing social media usage has revolutionized how individuals engage with global issues including climate change. Social media platforms play a significant role in initiating and shaping climate change conversations (Khan &

Ahmed, 2024). Instagram, Facebook and X, formerly known as Twitter have massively changed the way, information is shared, received and presented (Ahmed et al., 2023). These outlets have become significant in perception management, allowing for the quick spread of climate-related messages and encouraging public discussion on climate issues and disasters (Khan & Ahmed, 2024). Youth including university students have been the frontline workers of activist movements, key drivers of behavioral change in societies with respect to climate crisis, and also actively engaged with social media platforms (Younis & Ahmed, 2024). However, significant challenges including echo chambers, misinformation, literacy gaps, and distressing psychological effects have posed limitations in effectively fostering meaningful social media engagement (Nawaz et al., 2017).

Exposure to Climate Disaster Content: Social Media and Environmental Communication

Discourses on Climate change have become the epicenter of global media discussions in the 21st century (Ayaz & Ahmed, 2024). Social media platforms such as TikTok, Instagram and Twitter have become vital tools for real-time disaster reporting and environmental advocacy. The existing literature indicates that vivid imagery and emotional storytelling can increase awareness but may also lead to emotional burnout or eco-anxiety (S. Clayton et al., 2017). In Pakistan, Climate disasters are a lived reality, obvious through heatwaves, frequent floods, and glacial melts, causing destruction of infrastructure and increasing social challenges for communities (Ayoub & Ahmed, 2024). The videos of such disasters are accessible to the Pakistani youth on various social media platforms. The Pakistani youth make up the main social media audience, providing both an opportunity and challenge for climate discussion. The research by Khan and Ahmed (2024) focused on the importance of using social media platforms to increase awareness and boost audience engagement on climate disasters, especially among young Pakistani audiences. Similarly, according to Younis and Ahmed (2024), it is determined that social media platforms promote climate activism through the portrayal of videos regarding climate disasters. Consequently, it brings communities together and shares information through online campaigns with engaging visuals. The impact of social media portrayal of climate disaster videos is greater on Pakistani Youth than traditional media because social media platforms facilitate the users to obtain real-time updates and engage with the content through emotional storytelling videos and user-generated content that further raise the urgency of climate messages. Such as, it is supported by the research Khan and Ahmed (2024) that the young university students in Pakistan are proficient social media users and consider social media as a valuable tool to raise awareness about climate change and its disastrous effects with various psychological implications. Gul et al. (2024) discovered that social media platforms have become crucial in shaping opinion of Pakistani youth on climate change.

Psychological impact: Youth and Climate Anxiety

Studies have revealed the relationship between climate disasters and mental health. Ahmed et al. (2025) explored out a moderate correlation between social media use and eco-anxiety among Pakistani climate journalists while documenting responses of 167 study participants of a cross-sectional survey. The researchers estimated 20 % of variance in eco-anxiety, with female journalists reporting increased social media use and greater eco-anxiety than their male counterparts; higher level of social media use among younger journalists, and greater eco-anxiety among older journalists. Younger people are more susceptible to climate anxiety because they have limited control over the negative effects of climate change due to excessive social media usage. Hickman conducted an extensive study of climate anxiety among children and youth around the world to conclude that climate change has caused widespread concern among respondents worldwide, with over 50% experiencing negative emotions such as sadness, anxiety, anger,

powerlessness, helplessness and guilt (Hickman et al., 2021). During this research, many respondents revealed that they felt the future to be frightening as the people have failed to take care of the planet. Pera & Aiello (2024) focused on the powerful role played by social media in creating awareness, driving focus and attracting public attention to the required climate actions globally through video portrayals of climate disasters. They found that social media had a remarkable potential to educate and motivate actions to counter climate change through visuals. Their study concluded that the visuals involving flooding, displacement of people, and destruction of infrastructure and livelihoods caused fear and empathy among social media users and triggered their emotions that one hand depicted anxiety and guilt, and on the other, a motivation for eco-friendly practices and efforts. Morris et al., (2019) demonstrated the influence of the concreteness of climate change videos on the responses of the audience through emotional valence. They discovered that climate disaster images and videos promoted negative feelings, and encouraged concern and behavioral intentions among the social media users. the study also explored that climate disaster videos left detrimental impact on the mental health of youth. Soomro et al. (2024) explored that eco-anxiety leads to various mental health disorders including depression to which children and young people are more susceptible, and suffer from higher levels of anxiety due to detrimental environmental issues.

Influence of Climate Disaster videos on Environmental Awareness and Behavior among Pakistani Youth

Social media platforms have witnessed widespread acceptance and usage in the recent years in Pakistan (Ahmed & Yousaf, 2023; Khan & Ahmed, 2024; Sultan et al., 2023; Younis & Ahmed, 2024). Pakistani youth, including the university students, heavily rely on digital platforms to satisfy their cognitive, social, and personal integrative needs (Ahmed et al., 2023; Ahmed et al., 2025; Nisa et al., 2025). While being such heavy users of social media, youngsters may come across climate disaster videos and share information with each other in search of gratification of their needs (Younis & Ahmed, 2024). By doing this, they may seek public support to climate activism at their part (Ayaz & Ahmed, 2024) or get into anxiety and depression due to exposure to disaster-oriented content (Ayoub & Ahmed, 2024). The role of media, being the agenda setter for society, cannot be ignored. Such as the portrayal of climate disasters through videos may help increase awareness and understanding of the current happenings and make people conscious to take preventive measures or encourage them to actively participate in campaigns that persuade people to actively work on counterstrategies for climate change. At the same time, many people psychologically suffer due to exposure to digital contents involving climate-induced disasters.

Research Gap

It is evident from the extensive literature review that a lot of literature is available that deals with people's perception about climate change, individuals' social media usage patterns and level of awareness about climate change, and media's reporting patterns and challenges faced by the journalists about climate change. However, there is scarcity of literature, especially with reference to Pakistan, that deals with the psychological impacts of (social)media portrayals of climate change on users of various digital platforms. Hence, the current study estimates the level of psychological well-being among social media users in view of their exposure to climate disaster content on various digital platforms with a focus on Pakistani university students as study population.

Research Objectives

- RO1. To measure the relationship between exposure to climate disaster content on social media and psychological wellbeing among Pakistani university students

RO2. To estimate the differences among demographic groups (gender and academic qualification) on the variables of exposure to climate disaster content on social media and psychological wellbeing among Pakistani university students

Research Hypotheses

- H1. Increased exposure to climate disaster content on social media is positively correlated to decreased psychological wellbeing among Pakistani university students.
- H2. There exist significant differences among gender and academic qualification groups of Pakistani university students on the variables of exposure to climate disaster content on social media and psychological wellbeing.

Conceptual Framework

The conceptual framework for this study has been guided by the Uses and Gratifications Theory (Katz et al., 1974) and Cognitive Appraisal Theory of Emotion (Lazarus, 1991). While examining the association between social media exposure of the Pakistani university students to climate disasters (portrayed on social media platforms) and eco-anxiety among them. In view of the Uses and Gratifications Theory, university students use social media to gratify their needs including cognitive (information seeking), social interactive (interaction with family, friends and peers), personal integrative (activism), affective (emotional engagement) and escapist (relieving anxiety and depression). During their exposure to climate-related content, they may fulfill any of or group of these needs but it may also induce among them the salience of environmental intimidations. Similarly, the Cognitive Appraisal Theory explains the psychological lens to comprehend how this exposure may translate into emotional responses among the social media users. When the university students encounter climate disaster content, they engage themselves in primary appraisal, evaluating the severity and personal relevance to the event portrayed on social media. Subsequently, the secondary appraisal governs their perceived (coping) ability to take some action. Highly-perceived threats combined with the low-perceived control may trigger eco-anxiety among the university student, actively using social media.

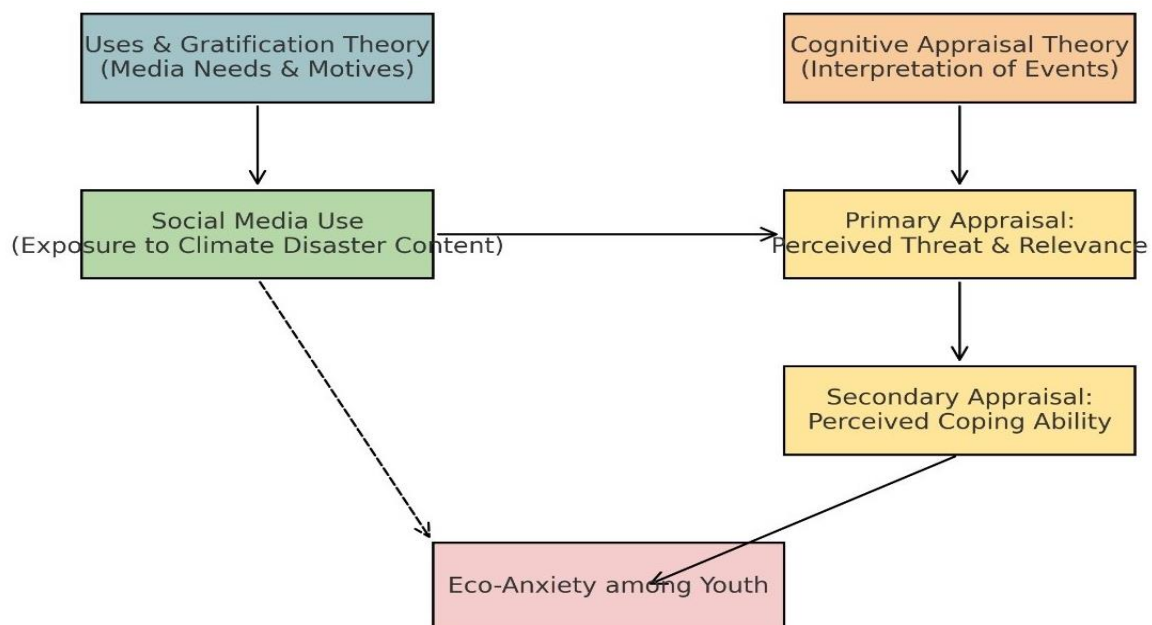


Figure 1: Conceptual Framework for the Study

Methodology

This cross-sectional, correlational research measured the relationship between the exposure of Pakistani university students to climate disasters content on social media and psychological well-being among them through quantitative survey. This study assessed climate disaster content consumption patterns by adapting 15-item Content-based Media Exposure Scale (Hamer et al., 2017) and psychological well-being by adapting 18-item Psychological Wellbeing Scale (Ryff & Keyes, 1995). For the independent variable, Exposure to Climate Disaster Content on Social Media, the nature of items dealt with frequency and patterns of climate disaster content consumption these sites. Likewise, the study constructs on Psychological Well-Being included environmental awareness, emotional state of youth and pro-active environmental behavior. The researchers disseminated the study questionnaire via Google Docx to more than 340 university students, mostly based on their acquaintance. They documented responses online from a sample of 101 Islamabad-based study participants. During data collection, the researchers were aware about the ethical concerns. They first reached out to the target audience (university students) for their informed consent. The respondents were also informed about the objectives of the research. They were also assured of data confidentiality and the use of personal information as well as responses on statements only for the research purpose. The researchers took into account Gender (Male/Female), and Academic Qualification (Undergraduate/Graduate) as the demographic (groups) to estimate any possible difference among them of the variables of Exposure to Climate Disaster Content on Social Media and Psychological Well-Being. They recorded responses on five-point Likert Scale where the values read as Strongly Disagree=1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5).

Table 1: Reliability Analysis of Scales (N = 101)

Scales	No. of items	α
Adapted version of Content-based Media Exposure Scale (Hamer et al., 2017) for Exposure to Climate Disaster Content on Social Media	15	.85
Adapted version of Psychological Wellbeing Scale (Ryff & Keyes, 1995) for Psychological Wellbeing	18	.84

The reliability analysis demonstrated a strong internal consistency of items used for both scales, with Cronbach's alpha (α) value of 0.851 for Exposure to Climate Disaster Content on Social Media and 0.845 for Psychological Well-Being. Both the values depicted good reliability for the scales used.

Data Analysis

The analysis of data involved exploring descriptive statistics, application of Pearson's Correlation Analysis to measure the relationship between exposure to climate disaster content on social media and psychological well-being followed by regression analysis. Similarly, the researchers also used independent sample t-test to evaluate differences among gender and academic qualification groups.

Table 2: Demographic Profile of Study Sample (N=101)

Variables	Categories	F	%
Gender	Male	27	26.7
	Female	74	73.3
Academic Qualification	Undergraduate	65	64.4
	Graduate	36	35.6

The table 2 above reflected the demographic profile of the sample (N = 101). It demonstrated the female respondents= 73.3% (n=74) as the dominant gender group among the respondents as compared to the male respondents=26.7% (n=27). Moreover, the responses from the undergraduate university students=64.4% (n=65) outnumbered graduate students= 35.6% (n=36).

Table 3: Descriptive Statistics of the Study Variables (N=101)

Variables	M	SD	Range		Skewness	Kurtosis
			Actual	Potential		
Exposure to Climate Disaster Content	3.16	0.62	1.40–4.93	1–5	0.17	0.96
Psychological Well-being	3.27	0.55	1.72–4.89	1–5	0.48	0.98

The descriptive statistics as demonstrated at Table 3 revealed the mean score for exposure to climate disaster content on social media (M = 3.16, SD = 0.62) based on the potential scale range (1 – 5). It indicates a moderate exposure level within the studied sample. The actual score range remained between from 1.40 to 4.93 that suggested some fluctuation in the extent to which the respondents came across climate disaster content on social media. Furthermore, the skewness value of 0.17 indicated a slight positive skew, signifying a small tendency of the study participants towards lower-than-average exposure. Similarly, the kurtosis value of 0.96 suggested close to normal distribution with no significant peaks. On the other hand, mean score for the dependent variable of psychological well-being was somewhat higher (M = 3.27, SD = 0.55). The actual values ranged from 1.72 to 4.89 that fell within the 1–5 potential range, reflecting that the respondents, on average, reported comparatively stable psychological well-being in spite of differences in terms of their exposure to climate disaster content. The skewness value of 0.48 showed a mild positive skew, suggesting that majority of the respondents reported slightly below-average well-being scores. The kurtosis value of 0.98 also fell within the acceptable limits.

Table 4: Estimation of Relationship between Exposure to Climate Disaster Content on Social Media (and its subscales) and Psychological Wellbeing (and its subscales) among Pakistani University Students (N=101)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Exposure to Climate Disaster Content (overall)	—	.82***	.79***	.77***	.81***	.80***	.391***	.34***	.29**	.26**	.32***	.28**	.31**
2. Frequency of Exposure	.82***	—	.65***	.61***	.64***	.62***	.28**	.25**	.21*	.20*	.26**	.19*	.24**
3. Emotional Engagement	.79***	.65***	—	.59***	.63***	.60***	.35***	.31**	.27**	.25**	.33***	.28**	.30**
4. Perceived Realism	.77***	.61***	.59***	—	.60***	.58***	.26**	.23**	.20*	.18*	.25**	.21*	.22**
5. Attention and Focus	.81***	.64***	.63***	.60***	—	.61***	.31**	.27**	.23**	.22**	.30**	.26**	.29**
6. Personal Relevance	.80***	.62***	.60***	.58***	.61***	—	.38***	.35***	.29**	.28**	.37***	.30**	.33***
7. Psychological Well-being (overall)	.391***	.28**	.35***	.26**	.31**	.38***	—	.85***	.82***	.80***	.83***	.81***	.84***
8. Self-Acceptance	.34***	.25**	.31**	.23**	.27**	.35***	.85***	—	.68***	.66***	.70***	.67***	.69***
9. Positive Relations	.29**	.21*	.27**	.20*	.23**	.29**	.82***	.68***	—	.65***	.69***	.64***	.66***
10. Autonomy	.26**	.20*	.25**	.18*	.22**	.28**	.80***	.66***	.65***	—	.67***	.63***	.65***
11. Environmental Mastery	.32***	.26**	.33***	.25**	.30**	.37***	.83***	.70***	.69***	.67***	—	.66***	.68***
12. Purpose in Life	.28**	.19*	.28**	.21*	.26**	.30**	.81***	.67***	.64***	.63***	.66***	—	.65***
13. Personal Growth	.31**	.24**	.30**	.22**	.29**	.33***	.84***	.69***	.66***	.65***	.68***	.65***	—

Note: $p < .05$; $p < .01$; $p < .001$.

Table 4 above demonstrated the estimation of relationship between Exposure to Climate Disaster Content on Social Media (and its five subscales) and Psychological Wellbeing (and its six subscales) through Pearson's Product Moment Correlation test. The findings revealed a statistically positive correlation between the (overall) exposure to climate disaster content on social media and psychological well-being

($r = .391, p < .001$), indicating that psychological wellbeing scored correspondingly change with an increase in social media exposure to climate disaster content. All five subscales or dimensions of exposure to climate disaster content on social media were positively related to psychological well-being of Pakistani university students, with Personal Relevance depicting the strongest association ($r = .38, p < .001$). Furthermore, within the variable of psychological well-being, the researchers observed strongest inter-correlations between self-acceptance and overall well-being score ($r = .85, p < .001$). All sub-scale of the social media exposure to climate disaster content were positively interrelated. Moreover, the subscales of psychological well-being were significantly positively interrelated, indicating that improvement or decline in one variable and its subscales were associated with the same patterns in the other variable and its subscales.

Table 5: Regression Coefficient of Exposure to Climate Disaster Content on Social Media on Psychological Wellbeing among Pakistani University Students (N=101)

Variable	<i>B</i>	β	<i>SE</i>	<i>F</i>
Constant	20.96	1.78	—	11.77
Exposure to Climate Disaster Content	0.56	0.09	.49	6.22
R ²	.27			

Note: N=101, $p < .001$

The table 5 above provides regression analysis that revealed that exposure to climate disaster content on social media had strong predictive effect on psychological wellbeing with $R^2 = .27$ among the Pakistani university students. The findings underscored that exposure to climate disaster content on social media was not merely related to eco-anxiety, but also eloquently influenced psychological well-being in quantifiable manner. It highlighted the substantial psychological impact of climate-related content on social media.

Table 6: Statistics of Independent Samples t-test: Exposure to Climate Disaster Content on Social Media and Psychological Wellbeing for Gender and Age Groups of Pakistani University Students (N = 101)

Variable	Group	n	M	SD	T	df	p	Cohen's d
Exposure to Climate Disaster Content	Male	27	2.94	0.58	— 2.47	99	.015*	0.51
	Female	74	3.23	0.61				
Psychological Well-being	Male	27	3.41	0.49	— 2.12	99	.036*	0.44
	Female	74	3.20	0.56				
Exposure to Climate Disaster Content	Undergraduate	65	3.22	0.63	2.03	99	.045*	0.41
	Graduate	36	3.02	0.58				
Psychological Well-being	Undergraduate	65	3.21	0.54	— 2.28	99	.025*	0.45
	Graduate	120	48.70	8.09				

Note: *** $p < .001$, ** $p < .01$

The table 6 presents the findings of the independent samples *t*-test that examined the differences in terms of exposure to climate disaster content on social media and psychological well-being across the demographic groups of gender and academic qualification among Pakistani university students. The results indicated that female study participants ($M = 3.23$, $SD = 0.61$) scored significantly greater than male respondents ($M = 2.94$, $SD = 0.58$) on the variable of exposure to climate disaster content on social media. Likewise, the female respondents ($M = 3.20$, $SD = 0.56$) scored significantly lower on the variable of psychological well-being compared to their male counterparts ($M = 3.41$, $SD = 0.49$). Similarly, the researchers also documented statistically significant differences between the undergraduate and graduate respondents, indicating that the undergraduate respondents ($M = 3.22$, $SD = 0.63$) scored significantly higher on the variable of exposure to climate disaster content on social media than the graduate respondents ($M = 3.02$, $SD = 0.58$). On the other hand, the undergraduate study participants ($M = 3.21$, $SD = 0.54$) scored significantly lower on the variable of psychological well-being as compared to the graduate fellows ($M = 3.40$, $SD = 0.56$). These findings suggested that female and undergraduate respondents were exposed to climate disaster content on social media more than male and graduate respondents and simultaneously experienced increased psychological distress than their counterparts.

Findings

Having the statistically tested the responses of the study participants, the researchers found that:

1. The results indicated a statistically positive relationship (overall) between the exposure to climate disaster content on social media and psychological well-being ($r = .391$, $p < .001$) among Pakistani university students. It revealed that the score on the variable of psychological wellbeing harmoniously changed with an increase in social media exposure to climate disaster content among the study participants. Similarly, all five subscales of the exposure to climate disaster content on social media were positively related to psychological well-being of Pakistani university students and its subscales. These findings supported Hypothesis 1 of the study that proposed that “Increased exposure to climate disaster content on social media is positively correlated to decreased psychological wellbeing among Pakistani university students.”
2. Independent Samples *t*-test for demographic groups of gender (male, female) and academic qualification (undergraduate, graduate) demonstrated that female respondents reported significantly higher scores on the variable of exposure to climate disaster content on social media than their male counterparts. Similarly, they also reported lower psychological well-being as compared to male respondents. Moreover, the undergraduate respondents also scored significantly higher on the variable of exposure to climate disaster content on social media than the graduate respondents, and reported lower psychological well-being as compared to the graduate respondents. These results also supported hypothesis 2 of the study that proposed that “there exist significant differences among gender and academic qualification groups of Pakistani university students on the variables of exposure to climate disaster content on social media and psychological wellbeing.”

Discussion:

The current study assessed the relationship between exposure to climate disaster content on social media and psychological well-being among Pakistani university students. This intersection between media psychology and climate communication has marked an important contribution to the budding body of literature, particularly in context of Pakistani, a society that has suffered the

most from climatic calamities during recent times. This research found out that Pakistani female university students were exposed more to the climate disaster content on social media and suffered greater climate-induced stress (lower psychological wellbeing) as compared to male university students. Ahmed et al. (2025) also found out while conducting a study on the relationship between social media use and eco-anxiety among Pakistani journalists that female respondents were more inclined towards social media use and also suffered eco-anxiety more than their male colleagues. The pattern also echoes the global research studies, indicating that the consumption of digital media disproportionately affects young women psychologically. Twenge and Martin (2020) analyzed responses of over 221,000 adolescents from UK and US and found a negative relationship between heavy use of digital media and (psychological) well-being, substantially greater for females and males. Clayton et al. (2023) also reported that females between 16-25 years of age depicted greater concerns with negative emotional responses in terms of eco-anxiety as compared to their male counterparts.

Similarly, the undergraduate students were also more exposed to the content related on climate disasters and ultimately suffered psychologically more than the graduate students. While specific literature relating to social media usage and psychological wellbeing is scarce, the findings of this study reveal vulnerability of the students, mainly due to age-specific factors and lower resilience. A study by Calandri et al. (2021) depicts that the effect of exposure to disturbing media content can be buffered by self-efficacy (emotional) that generally develops with increasing age and maturity.

Limitations and Future Recommendations

This study was a cross-sectional correlational survey that quantitatively documented responses of Pakistani university students. Hence, in-depth qualitative insights could not be gathered. Future studies may focus on longitudinal research as well as focus group discussions and in-depth interviews along with enhancing the scope of target populations to get a wider picture of the impact of social media contents in context of climatic calamities and psychological sufferings. Keeping in view the nature of this research asking responses from the study participant about their psychological wellbeing, many individuals opted out just because of the prevailing stereotypes about mental health in Pakistani society. The future research may be designed in way to eliminate personal (respondent) biases and social stigma(s) associated with mental health.

Study Implications

The government bodies including Ministry of Climate Change and Environmental Coordination, NGOs working for climate protection, resilience, and mitigation, and civic groups must consider importance of social media and content uploaded on various platforms. Social media content must be monitored and regulated by the authorities. Public awareness campaigns, involving government, academic institutions, NGOs, media houses and civil society must be planned and executed to educate communities, particularly youth about hazards associated with irresponsible use of social media, and effects on mental health. Parents must keep a check on their children about the type of content they are exposed to while using social media. They must also consider psychological well-being of their children and consults clinicians in case of any alarming signs.

Conclusion

This cross-sectional, correlational research is a noteworthy contribution to the existing literature on media psychology that too in context of climate-induced anxiety and stress. It is novel contribution to existing scholarship on climate change communication and media psychology in

Pakistani context as well. It assessed the relationship between exposure to climate disaster content (on social media) and post exposure psychological well-being among Pakistani university students. It documented a significant positive correlation between the independent and dependent variables. The study found that female and undergraduate students were more exposed to climate disaster content on social media, and in turn suffered low psychological wellbeing (more stress) than male respondents and graduate students. Findings of this study may be used as a reference for taking measures for content regulation on social media, developing interventions to treating climate-induced stress and anxiety by the clinical psychologists, and raising awareness among communities to upload and get exposed to beneficial media content and avoid eco-anxiety.

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