



Predictive Role of Cyberbullying and Victimization on General Psychological Distress among PhD Students

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HIGHLIGHTS

- Cyberbullying and cyber victimization significantly positively predict general psychological distress among PhD students, after controlling for demographic variables.
- Cyber victimization strongly predicted anxiety, while cyberbullying was more linked to depression, highlighting the distinct effects on emotional well-being.
- Hierarchical stepwise regression analysis verified that cyberbullying uniquely contributed to each DASS-21 subscale and the general psychological distress.

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ABSTRACT

The study examines the predictive impact of cyberbullying and cyber victimization on general psychological distress (stress, anxiety, and depression) among PhD students. A total of 250 doctoral participants in 2025 (male = 122, female = 128, age mean = 28.02, standard deviation = 2.66) from Banaras Hindu University and Aligarh Muslim University were assessed. A self-prepared demographic survey, Cyber-Bullying and Cyber-Victimization Experience Questionnaire (CBVEQ-E $\alpha = .89$) and depression, anxiety, and stress scale-21 (DASS-21.89) were used for the purpose. Hierarchical stepwise regression analysis was employed and revealed that cyberbullying significantly positively predicted higher levels of stress ($\beta = 0.236$, $p < .001$), anxiety ($\beta = 0.261$, $p < .001$), depression ($\beta = 0.260$, $p < .001$), explaining 5 to 6.3% of the variance in individual general psychological distress dimensions. Cyberbullying also emerged as a significant predictor of general psychological distress ($\beta = 0.280$, $p < .001$), contributing 7.1 per cent of the variance. These findings underscore the adverse effects of cyberbullying on the mental health of doctoral students due to high-pressure academic environments. The study emphasizes the need for mental health interventions, institutional support systems, and anti-bullying policies to mitigate the negative impact of cyberbullying in academic settings.

INTRODUCTION

The increasing prevalence of digital communication has transformed academic environments, achievement motivation, encouragement, empowerment, and extension services for more impactful outcomes (Nain et al., 2019; Yadav & Dube, 2025).

However, it has also presented opportunities for negative interactions, such as cyberbullying and social media addiction using artificial intelligence and machine learning (Smith et al., 2008; Khanganbi & Priya, 2024). Cyberbullying, defined as deliberate and repeated aggressive behaviors through the use of electronic devices (Hinduja & Patchin, 2014), has emerged as a significant

psychological consequence among university students. Cyber victimization is defined as the experiences and psychological impacts faced by individuals targeted by such online aggression. The doctoral life, characterized by stress, rigorous coursework, high research expectations, intense workload, social isolation, and financial burdens, may be vulnerable to the detrimental effects of cyberbullying on mental health in academic settings (Campbell et al., 2013; Kowalski et al., 2024).

Previous research consistently demonstrated a significant association between cyberbullying and stress, anxiety, and depression symptoms in adolescent undergraduates and young adult populations (Moore et al., 2021; Nixon, 2024). Experience of digital harassment, whether as a perpetrator (cyberbullying) or a target (cyber victimization), has been associated with increased levels of general psychological distress (Tokunaga, 2010; John et al., 2018). The widespread reach of the internet can exacerbate psychological distress, leading to feelings of hypervigilance, helplessness, sleep disturbances, low self-esteem, and social isolation among victims (Beren & Li, 2007). However, limited studies have focused on doctoral students, who face various stressors such as publication pressure, prolonged periods of isolation, and financial instability (Levecque et al., 2017). These stressors make it mandatory to examine the population specifically. From the perspective of form and context, younger populations typically face peer-based cyberbullying (Aoyama, Barnard-Brak, & Talbert, 2013), and doctoral students may be subjected to cyber victimization in academic and semi-professional contexts (Phelps et al., 2021).

The depression, anxiety, and stress scale (DASS-21), a well-validated measure, has been widely used to measure general psychological distress in academic settings (Lovibond & Lovibond, 1995; Antony et al., 1998). It's confirmed the capability of capturing depression, anxiety, and stress symptoms across diverse populations by previous studies (Antony et al., 1998; Henry & Crawford, 2005). Previous studies have shown a link between cyber victimization and increased symptoms of depression, which is mediated by low self-esteem and social isolation (Campbell et al., 2013). Previous research also utilized this scale and has shown strong associations between cyberbullying experiences and increased levels of depression, anxiety, and stress (Tokunga, 2010; John et al., 2018).

This study aimed to assess the predictive role of cyberbullying on stress, anxiety, depression, and general psychological distress among PhD students. Based on prior research, we hypothesized that cyberbullying would significantly positively predict increased levels of general psychological distress, with cyber victimization being particularly associated with anxiety, and overall cyberbullying contributing to depression and stress. The findings aim to contribute empirical evidence on the consequences of cyberbullying in PhD education, informing educational institutional policies to mitigate its adverse effects.

METHODOLOGY

The current study involved 250 PhD students; male students ($n = 122$, 48.8%) and females ($n = 128$, 51.2%) aged between 22 and 36 years ($M = 28.02$, $SD = 2.66$). There are two major variables, namely cyberbullying (predictor variable) and DASS, generally

called general psychological distress (criterion variable), and demographic variables (controlled variables). A self-prepared survey featuring demographic questions, a reliable, validated cyber-bullying and cyber-victimization experience questionnaire, and a DASS-21 questionnaire was used to measure responses. A total sample of PhD students was selected by a convenient sampling technique from the Banaras Hindu University, Varanasi, and Aligarh Muslim University, Aligarh, in Uttar Pradesh.

Cyber-bullying and cyber-victimization experience questionnaire (CBVEQ) developed by Antoniadou et al., (2016) assesses the occurrence of direct and indirect CB/CV behaviours. It has a 5-point frequency scale ranging from 1 (Never) to 5 (Every Day), measuring samples. It consists of 24 items with two parts, i.e., 12 items for cyberbullying and 12 for cyber victimization, on a 5-point frequency scale ranging from 1 (Never) to 5 (Every Day). The Cronbach coefficient for the cyberbullying in this sample was determined to be .89, for the total amount of cyberbullying.

To measure levels of general psychological distress, the stress, anxiety, and depression (DASS-21) scale was used due to their recent validation studies. The DASS-21 items are a short-form version of the original 42-item scale developed by Lovibond and Lovibond (1995). It is divided equally into three subscales, and each item is scored on a 4-point Likert scale, ranging from 0 (Did not apply to me at all) to 3 (Applied to me very much or most of the time). The DASS-21 has been shown to have good internal consistency in this sample ($\alpha = .89$) (Antony et al., 1998; Lovibond & Lovibond, 1995).

The purpose of this study was to assess the relative significance of cyberbullying, cyber victimization, and cyberbullying in general for PhD students at universities. The researcher built rapport with PhD students and used straightforward, secure, and effective methods to perform this study in order to get better responses. All participants gave their consent before data were collected, and they were then given the right instructions on how to complete the questionnaire. The questionnaire is solely used for this study, and all answers are kept confidential. The data were statistically examined using hierarchical step-wise regression analysis, and scoring was completed following the handbook Andy Field's (2008) recommendations.

RESULTS

According to SPSS output, the following table summarises the findings of the hierarchical stepwise regression analysis:

In hierarchical stepwise regression analysis, demographic variables (age, gender, marital status, family type, family status, religion, and category) were entered in the first step, and all the dimensions of cyberbullying were entered in the second step. It is visible from the results presented in Table 1 that cyberbullying overall emerged as a significant predictor of DASS-Stress of the PhD students. Table values reveal that cyberbullying overall was found to be significantly positively associated with DASS-Stress ($\beta = .236$, $p < .001$) of the PhD students, and it explains 5.0% of the total variance in explaining DASS-Stress.

In hierarchical stepwise regression analysis, demographic variables (age, gender, marital status, family type, family status, religion, and category) were entered in the first step, and all the

dimensions of cyberbullying were entered in the second step. It is visible from the results presented in Table 2 that cyber victim emerged as a significant predictor of DASS-Anxiety of the PhD students. Table values reveal that cyber victim was found to be significantly positively associated with DASS-Anxiety ($\beta=.261$, $p<.001$) of the PhD students, and it explains 6.3 per cent of the total variance in explaining DASS-Anxiety.

Table 1. Summary of hierarchical stepwise regression analysis for cyberbullying, DASS-stress, and demographics

Model	Variables	DASS-Stress	
		Step 1	Step 2
Simultaneous regression (Step1)	Demographic variables (Control Variables)	Beta (β)	Beta (β)
	Age	-.039	-.044
	Gender	.165	.237
	Marital Status	-.079	-.065
	Family Type	.100	.090
	Family Status	-.037	.003
	Religion	.057	.072
	Category	-.009	-.012
Stepwise regression (Step2)	Cyberbullying overall		.236***
<i>R</i>		.261	.344
<i>R</i> ²		.068	.118
<i>R</i> ² change		.068	.050
<i>F</i> change		2.522*	116.986***

a- Step 1 degree of freedom= 7, 242; Step 2 degree of freedom = 1, 241
* $p<.05$, *** $p<.001$

Table 2. Summary of hierarchical stepwise regression analysis for cyberbullying, DASS-anxiety, and demographics

Model	Variables	DASS-Anxiety	
		Step 1	Step 2
Simultaneous regression (Step1)	Demographic variables (Control Variables)	Beta (β)	Beta (β)
	Age	-.048	-.036
	Gender	.060	.138
	Marital Status	-.083	-.069
	Family Type	.067	.059
	Family Status	-.021	.017
	Religion	.035	.039
	Category	-.029	-.036
Stepwise regression (Step2)	Cyber victim		.261***
<i>R</i>		.155	.295
<i>R</i> ²		.024	.087
<i>R</i> ² change		.024	.063
<i>F</i> change		.846	16.591***

Dimensions of Cyberbullying (Cyberbullying, Cyber Victim, and Cyberbullying Overall) as predictor variables

Stepwise regression (Step2)	Cyber victim		.261***
<i>R</i>		.155	.295
<i>R</i> ²		.024	.087
<i>R</i> ² change		.024	.063
<i>F</i> change		.846	16.591***

a- Step 1 degree of freedom= 7, 242; Step 2 degree of freedom = 1, 241
*** $p<.001$

Table 3. Summary of hierarchical stepwise regression analysis for cyberbullying, DASS-depression, and demographics

Model	Variables	DASS-Depression	
		Step 1	Step 2
Simultaneous regression (Step1)	Demographic variables (Control Variables)	Beta (β)	Beta (β)
	Age	-.037	-.064
	Gender	.048	.110
	Marital Status	-.106	-.093
	Family Type	.055	.044
	Family Status	-.066	-.025
	Religion	.086	.115
	Category	-.016	-.014
Stepwise regression (Step2)	Cyber bullying		.260***
<i>R</i>		.182	.308
<i>R</i> ²		.033	.095
<i>R</i> ² change		.033	.062
<i>F</i> change		1.189	16.385***

Dimensions of cyberbullying (Cyberbullying, Cyber Victim, and Cyberbullying Overall) as predictor variables

Stepwise regression (Step2)	Cyber bullying		.260***
<i>R</i>		.182	.308
<i>R</i> ²		.033	.095
<i>R</i> ² change		.033	.062
<i>F</i> change		1.189	16.385***

a- Step 1 degree of freedom= 7, 242; Step 2 degree of freedom = 1, 241
*** $p<.001$

In hierarchical stepwise regression analysis, demographic variables (age, gender, marital status, family type, family status, religion, and category) were entered in the first step, and all the dimensions of cyberbullying were entered in the second step. It is visible from the results presented in Table 3 that cyberbullying emerged as a significant predictor of DASS-Depression of the PhD students. Table values reveal that cyber bullying was found to be significantly positively associated with DASS-Depression ($\beta=.260$, $p<.001$) of the PhD students, and it explains 6.2% of the total variance in explaining DASS-Depression.

In hierarchical stepwise regression analysis, demographic variables (age, gender, marital status, family type, family status, religion, and category) were entered in the first step, and all the dimensions of cyberbullying were entered in the second step. It is visible from the results presented in Table 4 that cyberbullying overall emerged as a significant predictor of DASS-Overall of the PhD students. Table values reveal that cyberbullying overall was found to be significantly positively associated with DASS-Overall ($\beta=.280$, $p<.001$) of the PhD students, and it explains 7.1 per cent of the total variance in explaining DASS-Overall.

DISCUSSION

The findings revealed that cyberbullying significantly contributes to general psychological distress and its dimensions. These findings underscore the detrimental psychosomatic effects of cyberbullying, which acts as an additional significant psychological stressor in the academic setting. The social isolation nature of doctoral programs, PhD students facing cyberbullying can experience severe hopelessness, low self-worth, and limited peer support, which further amplifies to increased risk of depression (Campbell et al., 2013).

Table 4. Summary of hierarchical stepwise regression analysis for cyberbullying, DASS-overall, and demographics

Model	Variables	DASS-Overall	
		Step 1	Step 2
Simultaneous regression (Step1)	Demographic variables (Control Variables)	Beta (β)	Beta (β)
	Age	-.047	-.052
	Gender	.101	.187
	Marital Status	-.101	-.085
	Family Type	.083	.071
	Family Status	-.048	.000
	Religion	.068	.086
	Category	-.020	-.024
Dimensions of cyberbullying (Cyberbullying, Cyber Victim, and Cyberbullying Overall) as predictor variables			
Stepwise regression (Step2)	Cyberbullying overall		.280***
R		.217	.344
R ²		.047	.118
R ² change		.047	.071
F change		1.708	19.380***

a- Step 1 degree of freedom= 7, 242; Step 2 degree of freedom = 1, 241

*** $p < .001$

In the first regression model, demonstrated that overall cyberbullying was a significant positive predictor of DASS-stress levels ($b = 0.236$, $p < .001$), explaining an additional 5% of the variance beyond demographic variables. These output supports and verify previous research indicating that online harassment can elicit chronic psychological stress, particularly in high-pressure academic settings (Kowalski et al., 2024). The doctoral students often face intense workload, uncertainty, high performance expectations, and publication pressure, which may amplify the negative impact of cyberbullying behaviours. It's the limitation of this study that constantly connecting to social media can contribute to distress. Future research may use a multivariate approach that includes these context-specific variables to better understand their relative and combined effects. Similarly, the dimension of cyberbullying named cyber victimization emerged as a significant predictor of anxiety levels ($\beta = 0.261$, $p < .001$), accounting for 6.3 per cent of the variance in DASS-anxiety scores among PhD students. These findings align with studies showing that victims of cyber aggression often experience heightened anxiety symptoms due to the unpredictable and pervasive nature of online harassment (Nixon, 2024). Currently demanding nature of digital communication in academic and professional settings, these findings is noteworthy. Cyber victimization can occur persistently at any time and in multiple digital spaces, which are linked with exacerbating anxiety-related symptoms, hypervigilance, sleep disturbances, and feelings of helplessness (Beren & Li, 2007). Those PhD students, whose professional reputation is closely tied to online, may lead to chronic anxiety about their career, future victimization, and public shaming. These findings are consistent supports studies that have a strong link between cyber victimization and anxiety in adolescents and young adults (Moore et al., 2021), suggesting a similar dynamic may be at play among PhD students.

The strongest significant positive association was found between cyberbullying and depression ($\beta = 0.260$, $p < .001$), explaining 6.2 per cent of the variance in DASS-depression scores. These findings are consistent with previous meta-analytic evidence that highlights the link between cyber victimization to depressive symptoms among PhD students (John et al., 2018). Cyberbullying or the potential of online aggression can lead to feelings of isolation, low self-esteem, and a sense of worthlessness, which are core clinical pictures of depression (Tokunaga, 2010). Importantly, the study also measured the cumulative impact of cyberbullying on general psychological distress (DASS-overall), and cyberbullying again emerged as a significant positive prediction ($\beta = .280$, $p < .001$), contributing to 7.1 per cent of the variance in general psychological distress. These findings indicate and provide a comprehensive picture of the negative impact of cyberbullying on the general mental health of PhD students. It is important to note that the variance contributed by cyberbullying in each subscale of DASS and overall score is statistically positively significant it representing a moderate proportion of the total variance. These findings suggest that cyberbullying plays a crucial role in predicting mental health outcomes; other factors, such as academic pressure, financial concerns, social support, and individual coping mechanisms, also contribute significantly to the stress, anxiety, depression, and general psychological distress experienced by doctoral students.

CONCLUSION

The study robustly demonstrates the significant predictive role of cyberbullying and cyber victimization experience on general psychological distress (stress, anxiety, and depression) among PhD students beyond demographic factors. Hierarchical stepwise regression analysis exhibited that cyberbullying uniquely and significantly predicted and additionally accounted for all dimensions of general psychological distress. The strongest associations were found that cyber victimization emerged as a key predictor of anxiety, while cyberbullying emerged as a significant predictor of depression, underscoring the profound emotional and psychosomatic toll of online aggression in academic settings. Furthermore, cyberbullying overall significantly contributed to general psychological distress. These findings contributed to prior research, suggesting that the persistent and invasive nature of cyberbullying and the cyber victim experience exacerbate mental health issues due to a socially isolating and high-pressure academic environment in doctoral students. These results emphasize the critical need for targeted interventions and institutional policies to mitigate cyberbullying in academia.

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