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Structural Modeling of Cyberbullying Based on Narcissistic Personality Traits and Feelings of Inferiority: The Mediating Role of Callous–Unemotional Traits among University Students

Abdullah Qasim Aliwi Al-Jubouri[1], Esmail Shiri[2]✉, Somayeh Keshavarz[3]

1. M.A. Student in General Psychology, Imam Khomeini International University, Qazvin, Iran
2. Assistant Professor, Imam Khomeini International University (IKIU), Qazvin, Iran, Shiri@soc.ikiu.ac.ir
3. Associate Professor, Department of Psychology, Faculty of Social Sciences, Imam Khomeini International University, Qazvin, Iran

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ABSTRACT

Objective: This study aimed to examine a structural model of cyberbullying based on narcissistic personality traits and feelings of inferiority, with callous–unemotional traits as a mediating factor among university students.

Methods: The research employed a descriptive–correlational design using structural equation modeling (SEM). The statistical population consisted of all students of Imam Khomeini International University in Qazvin during the 2025–2026 academic year. A total of 230 students were selected through convenience sampling. Data were collected using four standardized instruments: the Cyberbullying Questionnaire by Menesini et al. (2011), the Narcissistic Personality Inventory by Raskin and Hall (1988), the Inferiority Feelings Scale by Yao et al. (1997), and the Callous–Unemotional Traits Scale by Frick (2004). Data analysis was conducted using SPSS version 26 and SmartPLS version 3. Reliability and validity of the instruments were assessed through Cronbach's alpha, composite reliability, and convergent and discriminant validity. Model fit was evaluated, and research hypotheses were tested using bootstrapping and path coefficient analysis. A significance level of 0.05 and a t-value greater than 1.96 were considered indicators of significant structural relationships.

Results: The findings indicated that all direct and indirect relationships among the study variables were statistically significant. Narcissistic personality traits, feelings of inferiority, and callous–unemotional traits showed significant positive effects on cyberbullying. Moreover, callous–unemotional traits significantly mediated the relationship between narcissistic personality traits and feelings of inferiority with cyberbullying.

Conclusions: Overall, the proposed model demonstrated good fit and explained a substantial portion of the variance in cyberbullying. The results suggest that negative personality characteristics and negative self-perceptions contribute to cyberbullying behaviors among students through the reinforcement of emotional coldness and reduced empathy.

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Introduction

With the rapid expansion of communication technologies and social networking platforms, a substantial part of human interaction has shifted to digital environments. Although these technologies have created valuable opportunities for communication, learning, and information exchange, they have also provided new contexts for aggressive behaviors, including cyberbullying. Cyberbullying refers to intentional, repetitive, and harmful aggressive behaviors carried out through electronic means, often in situations involving a power imbalance between the perpetrator and the victim (Smith et al., 2008). In university settings, cyberbullying has become an important concern because it can occur through social media, messaging applications, online learning platforms, and student forums. Its consequences extend beyond immediate distress and may include depression, anxiety, loneliness, reduced academic engagement, poorer academic performance, impaired interpersonal relationships, and even suicidal ideation (Choi et al., 2022; Okumu et al., 2020; Zhang & Sha, 2024).

Compared with traditional bullying, cyberbullying is intensified by the structural characteristics of online environments, such as anonymity, reduced social accountability, rapid dissemination of content, identity manipulation, and the persistence of harmful material across time and platforms. These features may weaken moral restraint and make harmful behavior easier to initiate and maintain. From a psychological perspective, understanding why some individuals are more likely to engage in cyberbullying requires attention to both personal dispositions and the mechanisms through which these dispositions influence online aggression.

One of the most useful frameworks for explaining aggressive behavior is the General Aggression Model (Anderson & Bushman, 2002, 2018). According to this model, aggression results from the interaction between personal factors and situational factors, which affect cognition, emotion, and arousal, and ultimately shape behavior. In online contexts, situational factors such as anonymity, lack of face-to-face cues, and reduced supervision may increase the likelihood that aggressive thoughts and emotions are translated into cyberbullying behavior. At the same time, individual traits such as narcissism, low empathy, emotional coldness, and feelings of inadequacy may increase vulnerability to hostile interpretations and aggressive responses.

Among individual predictors, narcissistic personality traits have received considerable attention. Narcissism is characterized by grandiosity, excessive self-focus, a strong need for admiration,

entitlement, hypersensitivity to criticism, and reduced empathy (American Psychiatric Association, 2022). In online environments, where self-presentation can be selectively managed and social feedback is immediate and visible, narcissistic tendencies may be reinforced. Individuals with higher narcissistic traits may use online aggression as a means of defending an idealized self-image, asserting superiority, gaining attention, or retaliating against perceived threats. Several studies have reported positive associations between narcissism and aggressive or controlling online behaviors (Bagatarhan et al., 2023; Di Giacomo et al., 2023; Xu et al., 2024). However, findings have not always been consistent. Some research has shown weak or non-significant links between narcissism and cyberbullying, suggesting that the relationship may depend on the type of narcissism examined, measurement tools, or contextual and cultural differences (Pascual-Sánchez et al., 2021). This inconsistency indicates the need to investigate mediating mechanisms rather than focusing only on direct effects.

Another important psychological factor is feelings of inferiority. From psychodynamic and social-cognitive perspectives, inferiority feelings are associated with perceived inadequacy, low self-worth, and a tendency to compensate for inner weakness through dominance, hostility, or control-seeking behaviors. Individuals who feel inferior may turn to online environments to regain a sense of power or reduce personal insecurity, especially because digital settings allow indirect aggression with less immediate confrontation. Thus, feelings of inferiority may function as a psychological risk factor for cyberbullying by motivating compensatory aggressive behavior.

A potentially important mechanism linking both narcissism and inferiority feelings to cyberbullying is callous–unemotional traits. These traits include emotional coldness, lack of empathy, reduced guilt, and indifference toward others' suffering. Previous studies have shown that callous–unemotional traits are strongly associated with antisocial and aggressive behaviors, including online aggression, because they reduce moral sensitivity and weaken concern about the consequences of one's behavior for others (Zhang et al., 2024). From this perspective, narcissistic traits and inferiority feelings may increase cyberbullying partly because they foster emotional detachment and reduced empathy, which in turn facilitate harmful online behavior.

The theoretical and empirical literature therefore suggests two converging pathways to cyberbullying. Narcissism may lead to cyberbullying through grandiosity, entitlement, and self-image protection, whereas inferiority feelings may contribute through compensatory attempts to

overcome perceived weakness. In both pathways, callous–unemotional traits may serve as an important psychological bridge by lowering empathy and moral inhibition. Despite the relevance of these variables, previous research has mostly examined their direct relationships with cyberbullying, and relatively few studies have tested them together within a single structural model, particularly among university students. This represents an important theoretical and methodological gap.

Prior studies provide partial support for the proposed model. Domestic studies have shown that dark personality traits, especially narcissism, are associated with aggressive interpersonal behavior and lower moral sensitivity among students (Jahanizangir et al., 2023). Other research has found that narcissistic traits are linked to reduced empathy and theory of mind, which may increase the risk of antisocial behavior in low-supervision environments such as cyberspace (Peyman-Nia et al., 2024). International studies also support the relevance of the proposed variables. Zhang et al. (2024), in a study of university students, found that callous–unemotional traits had a significant direct relationship with cyberbullying and could mediate the effects of maladaptive personality traits on online aggression. Likewise, Li et al. (2023) reported that narcissism influenced cyberbullying both directly and indirectly through emotional and interpersonal mechanisms such as poor emotion regulation and reduced empathy. Nevertheless, a comprehensive structural model integrating narcissistic personality traits, feelings of inferiority, callous–unemotional traits, and cyberbullying remains underdeveloped.

Accordingly, the present study was designed to address this gap by developing and testing a structural model of cyberbullying based on narcissistic personality traits and feelings of inferiority, with the mediating role of callous–unemotional traits among university students. The main research objective was to determine whether callous–unemotional traits mediate the relationships between narcissistic personality traits and cyberbullying, and between feelings of inferiority and cyberbullying. More specifically, the study examined: (1) the direct relationship between narcissistic personality traits and cyberbullying, (2) the direct relationship between feelings of inferiority and cyberbullying, (3) the direct relationship between callous–unemotional traits and cyberbullying, (4) the relationship between narcissistic personality traits and callous–unemotional traits, and (5) the relationship between feelings of inferiority and callous–unemotional traits.

Based on the literature and theoretical framework, it was hypothesized that: (a) narcissistic personality traits would have a direct positive effect on cyberbullying; (b) feelings of inferiority would have a direct positive effect on cyberbullying; © callous–unemotional traits would have a direct positive effect on cyberbullying; (d) narcissistic personality traits would positively predict callous–unemotional traits; (e) feelings of inferiority would positively predict callous–unemotional traits; (f) callous–unemotional traits would mediate the relationship between narcissistic personality traits and cyberbullying; and (g) callous–unemotional traits would mediate the relationship between feelings of inferiority and cyberbullying.

In sum, this study seeks to contribute to the literature by offering a more comprehensive explanation of cyberbullying in university students and by identifying the psychological pathways through which maladaptive personality features and negative self-perceptions may lead to online aggression.

Material and Methods

This study was applied in terms of purpose and quantitative in nature, using a descriptive–correlational design conducted through Structural Equation Modeling (SEM). SEM is considered one of the most advanced multivariate statistical methods, as it allows the simultaneous examination of direct and indirect relationships among observed and latent variables (Hair et al., 2022). In the present study, cyberbullying was considered the outcome variable, narcissistic personality traits and feelings of inferiority were treated as predictor variables, and callous–unemotional traits were examined as the mediating variable.

The statistical population consisted of all students enrolled at Imam Khomeini International University, Qazvin, during the 2025–2026 academic year. Considering the nature of SEM and the need for an adequate sample size to obtain stable estimates, 230 students were selected using convenience sampling. The sample size was determined based on methodological recommendations suggesting that at least 200 participants are sufficient for structural models of moderate complexity (Hair et al., 2022; Kline, 2023).

The inclusion criteria were: being an enrolled university student, providing informed consent to participate, and regular use of the internet and social media. Incomplete or invalid questionnaires were considered exclusion criteria.

Instruments

Cyberbullying Questionnaire: Cyberbullying was measured using the Cyberbullying Questionnaire developed by Menesini et al. (2011). This instrument was designed to assess the extent of individuals' involvement in cyberbullying behaviors and evaluates different forms of aggressive behavior in online settings. Higher scores indicate greater involvement in cyberbullying. Previous studies have confirmed the construct validity and satisfactory reliability of this questionnaire (Menesini et al., 2011).

Narcissistic Personality Inventory: Narcissistic personality traits were measured using the Narcissistic Personality Inventory (NPI) developed by Raskin and Hall (1988). This is one of the most widely used measures of narcissism in personality research and assesses dimensions such as superiority, entitlement, power-seeking, and self-centeredness. Numerous studies have reported acceptable validity and reliability of this instrument in student samples (Raskin & Hall, 1988).

Inferiority Feelings Scale: Feelings of inferiority were assessed using the scale developed by Yao et al. (1997). This instrument measures individuals' perceptions of inadequacy, worthlessness, and personal inefficiency. Higher scores reflect stronger feelings of inferiority and a more negative self-view. Empirical evidence has supported the convergent validity and satisfactory reliability of this scale (Yao et al., 1997).

Callous–Unemotional Traits Scale: Callous–unemotional traits were measured using the scale developed by Frick (2004). This measure includes components such as lack of empathy, emotional indifference, absence of guilt, and reduced sensitivity to the harmful consequences of one's behavior. Previous studies have identified this instrument as one of the most valid measures of callous–unemotional traits (Frick, 2004).

Validity and Reliability of the Instruments

To evaluate the psychometric properties of the instruments, the measurement model was first assessed. Reliability was examined using Cronbach's alpha, Composite Reliability (CR), and rho_A reliability coefficient. Based on the recommendation of Fornell and Larcker (1981), values above 0.70 for Cronbach's alpha and composite reliability were considered indicative of satisfactory internal consistency.

Convergent validity was assessed using the Average Variance Extracted (AVE), with values above 0.50 indicating acceptable convergent validity. Discriminant validity was examined using the

Fornell–Larcker criterion and the Heterotrait–Monotrait ratio (HTMT). The results supported the validity and reliability of all study constructs.

Procedure

After obtaining the necessary approvals from the university authorities and observing research ethics principles, the questionnaires were distributed to eligible students. Before completing the instruments, the purpose of the study was explained to the participants, and their informed consent was obtained. Participants were also assured that the collected data would be used solely for research purposes and that the confidentiality of their responses would be fully maintained.

Data Analysis

The data were analyzed at both descriptive and inferential levels. In the descriptive section, indices such as mean, standard deviation, minimum, and maximum scores were calculated. At the inferential level, the statistical assumptions, including normality of data, absence of outliers, and adequacy of sample size, were first examined. The results of the Kolmogorov–Smirnov test indicated that the distribution of the study variables had acceptable normality.

To test the conceptual model, SmartPLS version 3 and the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach were used. In the first step, the measurement model was evaluated through factor loadings, Cronbach's alpha, composite reliability, AVE, and discriminant validity. In the second step, the structural model was assessed using path coefficients, coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and the overall model fit index. To examine the significance of direct and indirect relationships, the bootstrapping method with 5,000 resamples was employed. In this study, t-values greater than 1.96 and p-values less than 0.05 were considered the criteria for confirming the hypotheses.

Ethical Considerations

All stages of the study were conducted in accordance with ethical principles in behavioral science research. Participation was completely voluntary, and participants were free to withdraw from the study at any stage. Confidentiality of information and anonymity of respondents were guaranteed, and the data were used exclusively for scientific research purposes.

If you want, I can also shorten this into a journal-style Methods section with more concise academic wording.

Results

Before testing the research hypotheses, the data were examined in terms of descriptive characteristics, normality of distribution, and adequacy of the measurement model. The results of the Kolmogorov–Smirnov test indicated that the significance level for all study variables—including cyberbullying, narcissistic personality traits, feelings of inferiority, and callous–unemotional traits—was greater than 0.05. Therefore, the assumption of normality was confirmed, and the use of parametric statistical methods and structural equation modeling was considered appropriate.

The results of the correlation matrix also indicated that all study variables were positively and significantly related to one another. The strength of correlations ranged from moderate to strong, with the strongest correlation observed between feelings of inferiority and callous–unemotional traits. These findings indicated that the data were suitable for proceeding with structural model analysis.

Evaluation of the Measurement Model

To assess the quality of the measurement instruments, Cronbach's alpha, Composite Reliability (CR), Average Variance Extracted (AVE), and discriminant validity were calculated. The results showed that all constructs demonstrated satisfactory internal consistency, with Cronbach's alpha and composite reliability values exceeding the acceptable threshold of 0.70. Additionally, AVE values for all constructs were above 0.50, indicating adequate convergent validity.

Discriminant validity was examined using the Fornell–Larcker criterion. The results showed that the square root of the AVE for each construct was greater than its correlations with other constructs. Therefore, the constructs demonstrated adequate conceptual distinctiveness, and the measurement model showed satisfactory quality.

Evaluation of the Structural Model

After confirming the measurement model, the structural model was evaluated using the Partial Least Squares (PLS) method and the bootstrapping technique. Model fit was assessed using the coefficient of determination (R^2), path coefficients, and t-statistics. The results indicated that the proposed model demonstrated acceptable fit and explained a considerable proportion of the variance in cyberbullying. Furthermore, all hypothesized paths in the model were statistically significant at the 0.05 level.

Testing the Direct Hypotheses

The results of the first hypothesis test showed that narcissistic personality traits had a significant direct effect on cyberbullying ($\beta = 0.485$, $t = 2.661$, $p = 0.008$). Therefore, the first hypothesis was supported. This finding indicates that higher levels of narcissistic traits are associated with increased cyberbullying behavior among students.

The results of the second hypothesis test indicated that feelings of inferiority had a significant direct effect on cyberbullying ($\beta = 0.433$, $t = 2.393$, $p = 0.017$). Accordingly, the second hypothesis was supported.

Testing the third hypothesis showed that callous–unemotional traits had a significant direct effect on cyberbullying ($\beta = 0.099$, $t = 2.065$, $p = 0.039$). Although the magnitude of this effect was smaller compared with other predictor variables, it was statistically significant. Therefore, the third hypothesis was also supported.

The results of the fourth hypothesis indicated that narcissistic personality traits had a positive and significant effect on callous–unemotional traits ($\beta = 0.392$, $t = 2.276$, $p = 0.023$). Thus, the fourth hypothesis was confirmed.

The results of the fifth hypothesis also showed that feelings of inferiority had a positive and significant effect on callous–unemotional traits ($\beta = 0.396$, $t = 2.249$, $p = 0.025$). Accordingly, the fifth hypothesis was supported.

Testing the Mediating Hypotheses

To examine the mediating role of callous–unemotional traits in the structural relationships of the study, indirect effects were tested using the bootstrapping method. The results indicated that callous–unemotional traits had a significant mediating role in the relationship between narcissistic personality traits and cyberbullying. Furthermore, the indirect effect of feelings of inferiority on cyberbullying through callous–unemotional traits was also significant. Therefore, the sixth and seventh hypotheses, which proposed the mediating role of callous–unemotional traits in the relationships between the predictor variables and cyberbullying, were confirmed.

Overall, the results of the structural equation modeling indicated that all proposed direct and indirect paths in the model were statistically significant. The findings demonstrated that narcissistic personality traits, feelings of inferiority, and callous–unemotional traits were significant predictors of cyberbullying among university students. In addition, callous–

unemotional traits played a significant mediating role in transmitting the effects of narcissistic personality traits and feelings of inferiority on cyberbullying. Consequently, the final research model showed adequate explanatory power and successfully explained the structural relationships among the study variables.

Final Research Model

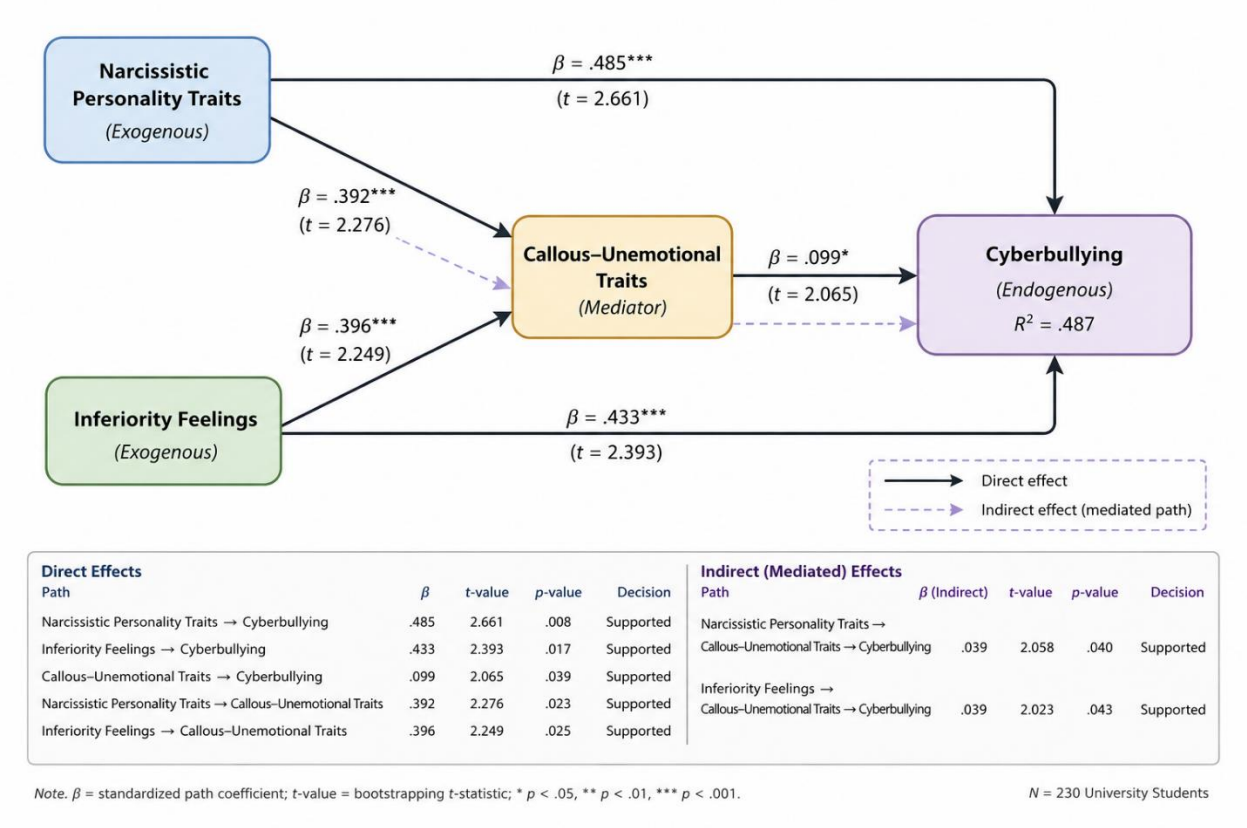
Figure 1 presents the final structural model of the study, in which the effects of narcissistic personality traits and feelings of inferiority on cyberbullying were examined with the mediating role of callous–unemotional traits. According to the structural equation modeling results, narcissistic personality traits had a positive and significant direct effect on cyberbullying ($\beta = 0.485$, $p < 0.05$), indicating that increased narcissistic tendencies—such as feelings of superiority, entitlement, and the need for admiration—are associated with a higher likelihood of cyberbullying behaviors among students.

Similarly, feelings of inferiority showed a positive and significant direct effect on cyberbullying ($\beta = 0.433$, $p < 0.05$). This suggests that students who hold more negative self-perceptions and experience stronger feelings of inadequacy and worthlessness are more likely to engage in aggressive behaviors in online environments.

Furthermore, both exogenous variables had significant positive effects on callous–unemotional traits. Narcissistic personality traits ($\beta = 0.392$, $p < 0.05$) and feelings of inferiority ($\beta = 0.396$, $p < 0.05$) were able to explain part of the variance in this construct. The results also indicated that callous–unemotional traits directly and significantly predicted cyberbullying ($\beta = 0.099$, $p < 0.05$). Additionally, the significance of the indirect effects indicated that callous–unemotional traits played a significant mediating role in the relationship between narcissistic personality traits and cyberbullying, as well as between feelings of inferiority and cyberbullying.

Overall, the structural model findings suggest that maladaptive personality traits and negative self-evaluations can contribute to cyberbullying behaviors through the reinforcement of emotionally cold characteristics, reduced empathy, and weakened moral inhibition. The proposed model therefore demonstrated satisfactory fit and provided a meaningful explanation of the psychological mechanisms underlying cyberbullying among university students. These findings are consistent with the theoretical framework of the study and with previous research in the fields of personality,

antisocial behavior, and cyberbullying, highlighting the key mediating role of callous–unemotional traits in explaining online aggressive behaviors.



Direct Effects

Path	β	t-value	p-value	Decision
Narcissistic Personality Traits → Cyberbullying	.485	2.661	.008	Supported
Inferiority Feelings → Cyberbullying	.433	2.393	.017	Supported
Callous–Unemotional Traits → Cyberbullying	.099	2.065	.039	Supported
Narcissistic Personality Traits → Callous–Unemotional Traits	.392	2.276	.023	Supported
Inferiority Feelings → Callous–Unemotional Traits	.396	2.249	.025	Supported

Indirect (Mediated) Effects

Path	β (Indirect)	t-value	p-value	Decision
Narcissistic Personality Traits → Callous–Unemotional Traits → Cyberbullying	.039	2.058	.040	Supported
Inferiority Feelings → Callous–Unemotional Traits → Cyberbullying	.039	2.023	.043	Supported

Note. β = standardized path coefficient; *t*-value = bootstrapping *t*-statistic; * $p < .05$, ** $p < .01$, *** $p < .001$. $N = 230$ University Students

Figure 1. Final research model

Discussion

The results of the structural equation modeling indicated that the proposed conceptual model demonstrated a satisfactory fit and was able to meaningfully explain the relationships among narcissistic personality traits, feelings of inferiority, callous–unemotional traits, and cyberbullying. Evaluation of the measurement model indices showed that the study constructs possessed adequate reliability and validity. Specifically, Cronbach's alpha, composite reliability, and average variance extracted (AVE) values were within acceptable ranges, and both convergent and discriminant validity were confirmed. Furthermore, structural model fit indices indicated that the proposed model had sufficient adequacy for testing the causal relationships among the variables.

The results of the direct hypotheses showed that narcissistic personality traits had a positive and significant effect on cyberbullying ($\beta = 0.485$, $p < 0.05$). This finding suggests that increases in characteristics such as grandiosity, entitlement, need for admiration, and self-centeredness are associated with a greater likelihood of engaging in cyberbullying behaviors among university students. Similarly, feelings of inferiority had a positive and significant direct effect on cyberbullying ($\beta = 0.433$, $p < 0.05$), indicating that students with more negative self-perceptions and stronger experiences of inadequacy are more prone to participate in aggressive behaviors in online environments. In addition, callous–unemotional traits showed a significant direct effect on cyberbullying ($\beta = 0.099$, $p < 0.05$), highlighting the important role of reduced empathy, lack of guilt, and emotional indifference in the development of online abusive behaviors.

Another important finding was that narcissistic personality traits had a positive and significant effect on callous–unemotional traits ($\beta = 0.392$, $p < 0.05$). Likewise, feelings of inferiority positively and significantly predicted callous–unemotional traits ($\beta = 0.396$, $p < 0.05$). These findings suggest that both personality-related variables may contribute to the development of callous characteristics by weakening empathy, reducing emotional sensitivity, and strengthening self-centered attitudes.

The results of the indirect effects using the bootstrapping method further indicated that callous–unemotional traits played a significant mediating role in the relationship between narcissistic personality traits and cyberbullying, as well as between feelings of inferiority and cyberbullying. The significance of these indirect paths suggests that part of the influence of narcissism and inferiority feelings on cyberbullying is transmitted through the enhancement of callous–unemotional traits. Therefore, callous–unemotional traits can be considered one of the key psychological mechanisms explaining how maladaptive personality characteristics contribute to aggressive behaviors in online settings.

Overall, all research hypotheses were supported at the 0.05 significance level, and the final model explained a substantial proportion of the variance in cyberbullying. Based on these findings, it can be concluded that narcissism and feelings of inferiority influence cyberbullying not only directly but also indirectly through the reinforcement of callous–unemotional traits. Cyberbullying can therefore be conceptualized as a multidimensional phenomenon, shaped by the interaction of maladaptive personality traits, dysfunctional self-evaluations, and deficits in emotional–moral

processes. The present findings provide empirical support for the study's theoretical framework and underscore the importance of addressing personality and emotional components in efforts to prevent and reduce cyberbullying among university students.

Research Implications and Recommendations

In light of the findings, future research is recommended to employ longitudinal and experimental designs to examine causal relationships among narcissistic personality traits, feelings of inferiority, callous–unemotional traits, and cyberbullying. Additionally, investigating other potential mediating and moderating variables—such as empathy, cognitive emotion regulation, moral disengagement, self-control, and social support—may contribute to the development of more comprehensive explanatory models of cyberbullying.

Conducting similar studies across different universities, age groups, and cultural contexts is also necessary to enhance the generalizability of the findings.

From a practical perspective, university counseling centers and educational planners are encouraged to design interventions aimed at enhancing empathy, improving emotion regulation skills, strengthening positive self-concept, and promoting digital/media literacy to reduce cyberbullying behaviors. Identifying students with high levels of narcissism, inferiority feelings, and callous–unemotional traits and providing targeted preventive and therapeutic interventions may help decrease aggressive online behaviors and promote students' mental health.

Limitations

Despite the use of a coherent theoretical model and structural equation modeling, this study has several limitations that should be considered when interpreting the findings. First, the cross-sectional and correlational nature of the study limits definitive causal inferences among the variables; the results can only be interpreted within the framework of structural and predictive relationships (Kline, 2023).

Second, the data were collected using self-report instruments, which may be subject to social desirability bias, perceptual errors, and participants' tendency to present themselves in a favorable manner (Podsakoff et al., 2003).

Third, the statistical population was limited to students of Imam Khomeini International University (Qazvin) during the 2025–2026 academic year. Therefore, caution should be exercised in generalizing the findings to other age groups or sociocultural contexts.

Finally, although the present model examined the mediating role of callous–unemotional traits, other potentially relevant variables—such as empathy, emotion regulation, moral disengagement, perceived social support, and self-esteem—were not included in the model. The omission of these variables represents a theoretical limitation and suggests directions for future research.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by ethics committee of Imam Khomeini International University.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

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

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