

Dark Triad Traits and Cyberbullying: The Mediating Role of Moral Disengagement and the Moderating Role of Self-Esteem Among University Students

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Abstract: *In the past, the Dark Triad traits of Machiavellianism, narcissism, and psychopathy have been inconsistently related to cyberbullying. This research question was: is there a mediating role of moral disengagement between Dark Triad traits and cyberbullying (perpetration and victimization) and a moderating role of self-esteem between Dark Triad traits and cyberbullying amongst university students in Pakistan? The sample consisted of 200 undergraduate students (100 men, 100 women; the mean age is 21.2 years, SD = 1.8) at the University of Peshawar who were asked to take part in the study and complete the Short Dark Triad scale, the European Cyberbullying Intervention Project Questionnaire, the Moral Disengagement in Cyberbullying Scale, and the Rosenberg Self-Esteem scal. No direct relationship was found between the three Dark Triad traits when used as a composite score and cyberbullying. But moral disengagement completely explained the indirect association (between the composite Dark Triad measure and perpetration, indirect effect = .077, 95% CI [.028, .136]) and victimization (indirect effect = .055, 95% CI [.017, .106]). Looking at its individual traits, the only significant predictor of perpetration (= .227, p = .001) and victimization (= .241, p = .001) was psychopathy. Self-esteem did not mediate any of the hypothesized relations but had a direct negative effect on engaging in cyberbullying. These results imply that moral disengagement can be a more effective intervention focus as compared to personality change in order to curb online aggression in college students. Shortcomings are cross-sectional design, use of self-report measures and low internal consistency of certain subscales.*

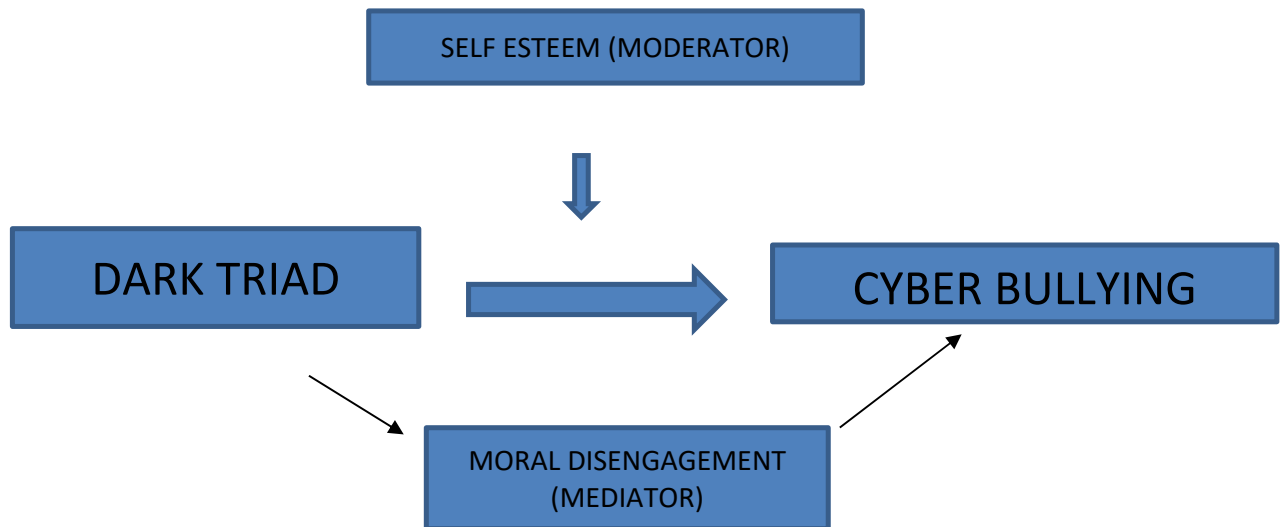
Keywords: *Dark Triad, cyberbullying, Moral disengagement, Self-esteem, Higher education, Pakistan*

Introduction

In recent 20 years, scholars have paid much attention to three socially repulsive, but conceptually different personality characteristics that are commonly referred to as the Dark Triad (Paulhus and Williams, 2002). Machiavellianism is defined as manipulation, cynicism and emotionlessness; narcissism as grandiosity, entitlement and constant need to be admired; and psychopathy as impulsivity, absence of empathy as well as antisocial behavior (Paulhus and Williams, 2002; Jones and Paulhus, 2014). There has been a considerable amount of evidence that has associated these characteristics with aggression in the face-to-face situations (Jonason et al., 2012; Muris et al., 2017). Nonetheless, it is not until recently that scholars start to carefully study the manifestation of these characteristics of personality in online contexts (Giumetti et al., 2012; Kowalski et al., 2014). The spread of the web has

opened up new channels of human abuse. Cyberbullying, a deliberate, frequent aggressive act committed via electronic devices against a person who struggles to protect themselves (Smith et al., 2008), has become an important health issue of concern (Patchin and Hinduja, 2020). Compared to the old bullying, cyberbullying overcomes the physical limits, is able to cover very large audiences simultaneously, and in many cases, it allows the bullies to stay anonymous (Kowalski and Limber, 2013; Suler, 2004). The impact is also quite high: victims often complain of high depression rates, anxiety, difficulties at school, and suicidal thoughts (Van Geel et al., 2014; Hinduja and Patchin, 2018). Remarkably, the aggressors of online violence also have negative psychological consequences, such as behavioural issues and emotional disturbances (Tokunaga, 2010). To explain the reasons why certain individuals become cyber bullies, it is crucial to not only consider personality dispositions, but also the cognitive processes that can help individuals to justify the use of harmful behavior. The idea of moral disengagement (Bandura, 1999, 2002) constitutes a beneficial concept that can be used by social cognitive theory. This model recognizes eight thinking methods such as moral justification, euphemistic labelling, diffusion of responsibility and dehumanisation which enable people to think and act contrary to their own moral principles without the feeling of guilt or self condemnation (Bandura, 2002). Online spaces can make it easier to engage in moral disengagement by creating a physical distance between the victim, decreasing instantaneous feedback, and inducing a feeling of anonymity (Runions and Bak, 2015; Suler, 2004). The empirical studies have shown that people who have a higher degree of moral disengagement are more inclined to engage in cyberbullying (Paciello et al., 2013, 2020; Bussey et al., 2015). These dynamics can be further affected by self-worth or self-esteem which is a global sense of self-worth in an individual (Rosenberg, 1965). It has been found that low self-esteem leads to aggression and is more susceptible to victimization at all stages of development (Donnellan et al., 2005; Orth and Robins, 2014). On the other hand, more esteemed people might have more mental resources to deal with conflict in the society, which can decrease the chance of retaliating aggressively and the threat of being a victim (Barry et al., 2007; Baumeister et al., 1996). Although there is increased focus on such relationships, there are critical gaps. The majority of current studies have focused on direct correlations between Dark Triad traits and antisocial behavior in general (Furnham et al., 2013), and have not focused on particular online behaviors or the psychological processes that underlie the correlations (Giumetti et al., 2012). Moreover, the domain has mainly been concerned with Western samples, raising doubts about the relevance of the results to non-Western cultural settings, including Pakistan, a nation where internet adoption is growing rapidly and whose social fabric has distinct social dynamics (Khan et al., 2020). The current research fills these gaps by experimenting with an integrated model, where moral disengagement mediates, and self-esteem is a moderator, the association between Dark Triad traits and becoming a cyber-bully.

Rationale of the Study: Past studies have generally focused on simple traits-behavior relationships, but have not studied the underlying mechanisms or situational variables that can be used to understand when and why the relationships are present (Baron and Kenny, 1986).). This research undertakes a theoretically based model that orders moral disengagement to play out as a mediator, and self-esteem as a moderator. This paper will combine independent research streams into one analytic approach to elucidate the processes that connect personality and online aggression as well as pinpoint possible points of leverage that can be used to intervene. Besides, sampling university students in Pakistan, this research therefore goes beyond mostly Western samples, providing the initial indications into the cross-cultural relevance of the known theoretical models.



Method

Participants A total of 200 undergraduate students were recruited to the study as part of different departments of the University of Peshawar, Pakistan, through convenience sampling. There were 100 male and 100 female students, aged between 18 and 24 years ($M = 21.2$, $SD = 1.8$). Participation was not paid. The departmental ethics committee gave consent to the study procedure and informed written consent was given by all the participants before being enrolled.

Objectives

1. To find out if Dark Triad traits are predictors of cyberbullying perpetration.
2. To find out whether Dark Triad traits are predictors of cyberbullying victimization.
3. To investigate the role of moral disengagement between Dark Triad traits and the outcomes of cyberbullying.
4. To test to investigate whether these relationships are moderated by self-esteem.

Hypotheses

- H1: There will be a positive relationship between the dark triad traits and perpetration of cyberbullying.
- H2: Dark Triad traits will have a positive relationship with victimization due to cyberbullying.
- H3: Dark Triad traits will be mediated by moral disengagement to mediate the relationship between perpetration and Dark Triad traits.
- H4: There will be a mediating effect on dark triad traits and victimization by moral disengagement. H5: There will be a moderation effect of self-esteem between Dark Triad traits and engagement in cyberbullying.

Instruments

1. **Short Dark Triad (SD3; Jones & Paulhus, 2014).** This scale consists of 27 items and there are nine items in each subscale (Machiavellianism, narcissism, psychopathy). The items are rated by the respondents on a 5 point Likert scale between 1 (strongly disagree) and 5 (strongly agree). Internal consistency was acceptable with Machiavellianism ($\alpha = .57$), psychopathy ($\alpha = .51$), marginal with narcissism ($\alpha = .57$) and modest with the composite scale ($\alpha = .59$).
2. **European Cyberbullying Intervention Project Questionnaire (ECIPQ; Del Rey et al.,**

2015). This measure is a 22-item scale that measures cyberbullying perpetration (11 questions) and cyberbullying victimization (11 questions) on a 5-point frequency scale with 1 (never) to 5 (more than once a week) as the response range. Both subscales had a high internal consistency with the current sample (perpetration $\alpha = .94$; victimization $\alpha = .94$).

3. **Cyberbullying Scale of moral disengagement (Bussey et al., 2015).** The scale is a 14 item one that gauges the level at which people use cognitive justification in committing online aggressive behavior. The items will be rated using a Likert scale of 5 points (strongly disagree) to 5 (strongly agree). The level of internal consistency was satisfactory (.84).
4. **Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965).** This is a 10 item measure that measures global self-worth on a 4 point likert scale of 1 (strongly agree) to 4 (strongly disagree). The reverse-scoring of the items was based on negative words whereby a high score would mean the individual had a high self-esteem. The current sample had a satisfactory internal consistency ($\alpha = .61$).

Procedure

Research assistants went into the classrooms in various departments and a short explanation of the purpose of the study and the confidentiality measures was given and questionnaire packets were given to the interested volunteers. The measures were taken by participants themselves in usual classroom time and it took approximately 20-25 minutes. There was no identification of the respondents and all the answers were anonymous. All the analyses were performed with the help of SPSS Version 26 with the Version 3.5 of the PROCESS macro (Hayes, 2018). The initial analyses looked at descriptive statistics, internal consistency as well as bivariate correlations. The simple linear regression was used to test the direct relationships between the composite Dark Triad score and perpetration and victimization (Hypotheses 1-2). Each of the Dark Triad traits was determined by separate regression analyses. To estimate the indirect effects, mediation tests (Hypotheses 3-4) incorporated PROCESS Model 4 and 5, 1000 bootstrap resamples resulted in the creation of 95% confidence intervals. Hypothesis 5 was done by moderation analyses (PROCESS Model 1). As recommended by Zhao et al., (2010) indirect-only mediation is denoted when the direct impact is not important but the indirect one is.

Results

Table 1. Descriptive Statistics and Reliability

Variable	Mean	SD	Cronbach's α
Dark Triad (Composite)	84.11	10.10	.59
Machiavellianism	29.98	5.17	.57
Narcissism	27.80	3.92	.57
Psychopathy	26.32	5.53	.51
Moral Disengagement	36.01	10.20	.84
Self-Esteem	29.38	3.57	.61
Cyberbullying Perpetration	18.31	9.23	.94
Cyberbullying Victimization	19.77	8.35	.94

Table 1 presents means, standard deviations, and Cronbach's alpha coefficients for all study variables. The perpetration and victimization subscales demonstrated excellent reliability ($\alpha = .94$ each). Moral disengagement showed acceptable reliability ($\alpha = .84$). Internal consistency for the Dark Triad subscales ranged from marginal to acceptable: Machiavellianism ($\alpha = .57$), narcissism ($\alpha = .57$), and psychopathy ($\alpha = .51$). Self-esteem reliability was acceptable ($\alpha = .61$).

Table 2. Linear Regression Predicting Cyberbullying Perpetration From Composite Dark Triad

Predictor	B	SE	β	*p*	95% CI
Dark Triad (Composite)	.078	.065	.085	.229	[-.050, .206]

Table 3. Linear Regression Predicting Cyberbullying Victimization From Composite Dark Triad

Predictor	B	SE	β	*p*	95% CI
Dark Triad (Composite)	.094	.058	.114	.108	[-.021, .209]

Note. B=Unstandardized coefficient,SE= standard error, β =standardized coefficient

Contrary to Hypotheses 1 and 2, simple linear regression revealed that the composite Dark Triad score did not significantly predict cyberbullying perpetration ($\beta = .085$, $*p* = .229$; see Table 2) or victimization ($\beta = .114$, $*p* = .108$;, with $R^2 = .013$) see Table 3).

Table 4. Trait-Level Regression Analyse

Predictor	Outcome	B	SE	B	p
Machiavellianism	Perpetration	-.112	.058	-.138	.051
Machiavellianism	Victimization	-.061	.056	-.078	.277
Narcissism	Perpetration	.031	.062	.036	.616
Narcissism	Victimization	.044	.060	.053	.463
Psychopathy	Perpetration	.219	.064	.227	.001
Psychopathy	Victimization	.233	.063	.241	.001

Note. B=Unstandardized coefficient,SE= standard error, β =standardized coefficient

When each Dark Triad trait was examined separately (see Table 4), psychopathy emerged as the only significant predictor of both perpetration ($\beta = .227$, $*p* = .001$) and victimization ($\beta = .241$, $*p* = .001$). Machiavellianism showed a marginally significant negative association with perpetration ($\beta = -.138$, $*p* = .051$) but no association with victimization ($\beta = -.078$, $*p* = .277$). Narcissism did not significantly predict either outcome.

Mediation Analyses

Table 5. Moral Disengagement as a Mediator Between Dark Triad Traits and Cyberbullying Perpetration

Path	B	SE	T	P	95% CI
Dark Triad → Moral Disengagement	.243	.070	3.49	.001	[.106, .380]
Moral Disengagement → Perpetration	.318	.062	5.11	<.001	[.195, .441]
Dark Triad → Perpetration (Direct)	.001	.063	.01	.990	[-.123, .125]
Indirect Effect	.077	.028	—	—	[.028, .136]

Note. Bootstrap resamples = 5,000. Indirect effect is significant when CI does not include zero.

As shown in Table 5, the composite Dark Triad score significantly predicted moral disengagement ($B = .243$, $*p = .001$), which in turn significantly predicted cyberbullying perpetration ($B = .318$, $*p < .001$). The direct effect of Dark Triad on perpetration was non-significant ($B = .001$, $*p = .990$), whereas the indirect effect through moral disengagement was significant (indirect effect = .077, 95% CI [.028, .136]). Following Zhao et al. (2010), this pattern indicates **indirect-only mediation** (rather than full mediation), suggesting that moral disengagement completely transmits the effect of Dark Triad traits to perpetration.

Table 6. Moral Disengagement as a Mediator Between Dark Triad Traits and Cyberbullying Victimization

Path	B	SE	T	P	95% CI
Dark Triad → Moral Disengagement	.243	.070	3.49	.001	[.106, .380]
Moral Disengagement → Victimization	.228	.062	3.96	.001	[.114, .341]
Dark Triad → Victimization (Direct)	.039	.063	.67	.502	[-.076, .154]
Indirect Effect	.055	.028	—	—	[.017, .106]

Note. Note. Bootstrap resamples = 5,000.

A parallel pattern emerged for victimization (see Table 6). Dark Triad predicted moral disengagement ($B = .243$, $*p = .001$), and moral disengagement predicted victimization ($B = .228$, $*p = .001$). The direct effect was non-significant ($B = .039$, $*p = .502$), but the indirect effect was significant (indirect effect = .055, 95% CI [.017, .106]), again indicating indirect-only mediation.

Direct Effects of Self-Esteem

Table 7. Self-Esteem Regression Analyses

Outcome	B	SE	β	P
Perpetration	-.184	.061	-.232	.002
Victimization	-.201	.059	-.271	<.001

Note. B=Unstandardized coefficient, SE= standard error, β =standardized coefficient

Self-esteem negatively predicted both perpetration ($\beta = -.232$, $*p = .002$) and victimization ($\beta = -.271$, $*p < .001$; see Table 7), indicating that students with lower self-worth reported greater involvement in cyberbullying as both perpetrators and victims.

Table 8. Moderation Analyses Involving Self-Esteem

Outcome Variable	β (Interaction)	T	P
Moral Disengagement	-0.024	-1.11	2.68
Cyberbullying Perpetration	0.004	0.21	.835
Cyberbullying Victimization	-0.002	-0.08	.934

Contrary to Hypothesis 5, self-esteem did not significantly moderate the relationship between Dark Triad traits and moral disengagement, nor the relationships with perpetration or victimization (see Table 8). All interaction terms were non-significant.

Discussion

This study sought to clarify how Dark Triad traits relate to cyberbullying by examining moral disengagement as a mediator and self-esteem as a moderator among Pakistani university students. Several findings warrant discussion.

Null Findings for Composite Dark Triad and Individual Trait Differences

Upon the combination of the three Dark Triad traits into a composite measure, there were no direct correlations with cyberbullying. This null result is consistent with prior research indicating that when these conceptually different traits are combined, then a meaningful difference in their behavioral correlates may be obscured (Muris et al., 2017; Furnham et al., 2013). Looking at each of the traits separately, the situation was different: it was only psychopathy that was a significant predictor of perpetration and victimization. The trend is in line with the meta-analytic findings that have found psychopathy to be the Dark Triad element most reliably linked to aggression in different situations (Muris et al., 2017; Vize et al., 2020). Why could psychopathy be of special interest in the context of cyberbullying? The neurobiological studies provide physically possible processes. People with high levels of psychopathic traits tend to have lower levels of amygdala activation to the distress of other people, and decreased prefrontal activity in areas of impulse control and emotion regulation (Blair, 2013; Anderson and Kiehl, 2014). The neural patterns can be converted into reduced affective empathy towards possible victims and reduced inhibition of aggressive impulses. Psychology has also connected psychopathy to the online trolling, cyber aggression, and other aggressive online actions (Buckels et al., 2014; Pfabigan et al., 2021). The insignificant results on Machiavellianism and narcissism should be interpreted. It may be that these characteristics are expressed differently on the Internet. Machiavellian individuals are more likely to use calculated, manipulative tactics without damaging social status, which may avoid overt forms of cyberbullying, which can be easily detected (Jones & Paulhus, 2014). Apple is one such situation, which can be prone to cyberbullying under certain conditions (i.e. narcissistic injury) which are context-dependent and therefore cross-sectional designs may not be able to detect (Bushman and Baumeister, 1998). Alternatively, the marginal negative relationship between Machiavellianism and perpetration (-0.138 , $*p = .051$) leaves the possibility of Machiavellian individuals in this sample having evaded blatant aggression being a strategic decision. This finding, however, is exploratory due to the low level of significance, and low level of reliability of Machiavellianism measure.

Moral Disengagement as an Explanatory Mechanism

The outcomes of the mediation process are a great rationale to implement the social cognitive theory (Bandura, 1999, 2002) to online aggression. Moral disengagement completely explained the correlation between Dark Triad traits (composite) and both types of cyberbullying, and aligns with the indirect-only pattern of mediation (Zhao et al., 2010). The implication of this finding is that Dark Triad traits are not directly linked to cyberbullying behavior but seem to work by some cognitive processes that allow individuals to put their moral norms on hold in the short term. Moral disengagement strategies can be adopted by people with high Dark Triad scores especially easily as these people already have less empathy and more lenient moral judgments (Paulhus and Williams, 2002; Paciello et al., 2013). This process is probably enhanced by the online setting, where anonymity and decreased feedback and less tangible harm are more likely to occur (Suler, 2004; Runions and Bak, 2015). These results are consistent with longitudinal studies that indicate that moral disengagement is a mediator between personality and behavior through time (Paciello et al., 2013, 2020) and those that specifically focus on cyber-related moral disengagement (Bussey et al., 2015; Kowalski et al., 2014).

Self-Esteem: Direct but Not Moderating Effects

None of the hypothesized relationships were mediated by self-esteem, although it was an independent predictor of perpetration and victimization. The immoderation could suggest that the Dark Triad traits have fairly consistent effects that cannot be largely mitigated or enhanced by global self-worth. Measurement limitations can also have contributed, however. The self-esteem scale revealed fair, but not good reliability ($\alpha = .61$) which might have led to weakening of the interaction effects (Aiken and West, 1991). The immediate consequences of self-esteem are however worthy. Reduced self-esteem was linked with increased cyberbullying including both as perpetrator and victim. This trend is in line with the vulnerability model, which suggests that low self-worth contributes to the risk of experiencing the negative social life (Donnellan et al., 2005; Orth and Robins, 2014). It is also consistent with the evidence that low self-esteem is predictive of the aggression and victimization in the developmental periods (Baumeister et al., 1996; Barry et al., 2007). Nevertheless, the cross-sectional type of design does not allow drawing conclusions regarding directionality; it is also quite possible that the involvement in cyberbullying leads to the loss of self-esteem in the long term.

Cultural Considerations

The study is one of the initial studies to look at these relationships within a Pakistani sample. Although the main patterns (the effects of psychopathy, mediation of moral disengagement) repeat the Western results on a more general level, cultural aspects might have affected the outcomes. Pakistan is a collectivist culture where the importance of family honor, respect to authority and harmony in relationships is very high (Hofstede, 2001). Such values may quash straightforward cyberbullying behavior, which could be the reason behind the relatively low mean scores on perpetration in this sample (see Table 1). Alternatively, cultural norms can influence the methods of application of moral disengagement strategies (e.g., in collectivist cultures, dehumanization can manifest itself in other ways). These possibilities have to be systematically tested in future cross-cultural research.

Limitations and Suggestions

There are a number of limitations that curb conclusions that can be drawn out of this study.

1. **Measurement limitations.** The most severe restriction is that of the internal consistency of certain measures. The narcissism subscale (.57), psychopathy subscale (.51) and self-esteem scale (.61) had lower values than the traditional levels of good reliability (Nunnally and Bernstein, 1994). Low reliability dilutes effect sizes that are observed, and it raises the chances that Type II errors (lacking true effects) will be committed. This low reliability of the narcissism subscale, in particular, indicates that the SD3 did not work as intended in this Pakistani sample, perhaps because of cultural differences in the meanings of items, or because of translation problems. The next studies involving Pakistani populations ought to use other measures of Dark Triad, like the Dirty Dozen (Jonason and Webster, 2010) or the Short Dark Triad with items modified to the culture.
2. **Cross-sectional design.** All the data were measured at one time, which does not allow making any causal conclusions. Though, the mediation model suggests the presence of a temporal sequence (personality → moral disengagement → cyberbullying) the cross-sectional mediation analyses can not determine directionality (Maxwell and Cole, 2007). The proposed causal ordering requires longitudinal studies that have three or more time points in order to test it. Stronger causal evidence could be obtained by experimental designs, which control moral disengagement (e.g. by priming or perspective-taking intervention).
3. **Common method bias.** Every measure was self-report-based and this casts doubts on common method variance (Podsakoff et al., 2003). There is a possibility that social desirability could have affected responses especially in socially undesirable constructs such as Dark Triad traits

and perpetration of cyberbullying. Multi method techniques such as peer reports, digital trace information or observational measures should be included in future research.

4. **Sample characteristics.** Only a sample comprising of undergraduate students at a single university in Peshawar, Pakistan was used. The results might not be relevant to other age groups (e.g., adolescents, working adults), learning environments, or geographical areas in Pakistan. External validity was also restricted through convenience sampling.
5. **Cultural specificity.** Although current study is a good source of data in a non-Western setting, cultural variables (e.g., collectivism, honor concerns) were not included in the study as a measured construct. The cultural dimensions should be directly measured in future studies to determine the moderating effect of the dimensions.
6. **Effect sizes.** The effect sizes in this study were small and Dark Triad traits and moral disengagement only accounted a section of the variance in cyberbullying. This model excludes other important factors, including peer norms, parental monitoring, school climate, and digital literacy, which are likely to be important (Hinduja and Patchin, 2018; Kowalski et al., 2014).

Future Research Directions

Longitudinal designs to trace the development of Dark Triad traits, moral disengagement, and cyberbullying over a period are desperately required. Comparative studies involving other cross-cultural samples might shed light on the possibility of the patterns observed being cross-cultural, on the digital cultures and social norms. Intervention studies could examine the effectiveness of programs to decrease moral disengagement (e.g., empathy training, perspective-taking exercises) in decreasing cyberbullying in people with high Dark Triad scores. Lastly, qualitative studies might contribute to the knowledge about the conceptualization and experience of cyberbullying as perceived by Pakistani university students in the cultural and technological context of their country.

Conclusion

The researchers discovered that moral disengagement is a complete explanation of the connection between Dark Triad traits and cyberbullying in Pakistani university students, and the only individual trait that has a direct connection with perpetration and victimization is psychopathy. These relationships were not mediated by self-esteem but instead self-esteem was a predictor of reduced cyberbullying involvement. Such results indicate that the focus of interventions aimed at minimizing moral disengagement instead of trying to change the personality characteristics can be a viable and effective method of minimizing online aggression. Meanwhile, the shortcomings of the measurement and the cross-sectional nature of the design highlight the necessity of replication using better measures and longitudinal designs. To teachers and mental health practitioners who deal with students in universities, these findings illuminate the need to treat cognitive explanations to malicious online conduct in addition to focusing on the self-esteem of the students around the world.

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