Examining the Dark Tetrad and Its Links to Cyberbullying

William Michael Brown, PhD,[1] Sana Hazraty, MSc,[1] and Marek Palasinski, PhD[2]

Abstract

Cyberbullying is a growing problem in the fast-evolving world of social media. Although this problem has been studied extensively, there is relatively little research examining it from the angle of the dark tetrad (i.e., psychopathy, Machiavellianism, sadism, and narcissism), especially across different ethnicities. In other words, this research makes original contribution by exploring the predictive ability of the dark tetrad traits in individuals of different ethnicities and their subsequent willingness to engage in cyberbullying. The study ($n = 1,464$) explores whether there is a positive association between the dark tetrad personality traits and cyberbullying. The results reveal that all four traits predict cyberbullying in participants from across three different ethnicities (Asian, black, and white). Furthermore, female participants score less than their male counterparts across all four traits. Researchers, academics, and legislators might potentially benefit from this research by considering focusing their interventions on helping offenders minimize the display of certain personality traits, thus taking steps toward cyberbullying reduction.

Keywords: dark tetrad, correlation, cyberbullying

Introduction

TRADITIONALLY, THE DARK TRIAD consists of three malevolent personality traits that includes narcissism, psychopathy, and Machiavellianism.[1] However, in recent years sadism has also been incorporated into the dark triad to form the dark tetrad[2] due to the similarities with the other three personality traits.[3,4]

Aggressive behavior is reportedly interlinked with narcissistic personality,[5] which is associated with self-promotion in social media through selfies and other social media use.[6] More specifically, narcissism can be categorized into two types: grandiose (i.e., an unrealistic sense of superiority) and vulnerable (i.e., a constant victimization mentality requiring sympathetic attention), which are alternately dominant. Each type of narcissism predicts different types of violence, the former being more active denigration of others, and the latter being a form of apparent self-belittlement at the emotional cost of others.[7] It was also found that cyberaggression had a positive correlation with narcissism.[8] This is believed to be a defense mechanism against low self-esteem.[5] In addition to this, individuals experiencing social media addiction are more likely to score higher in narcissism.[9]

Other research[10,11] have revealed narcissism not to be a strong predictor of cyberbullying, which can be defined as repetitive, intentional, and harmful online action against those seen as vulnerable.[12] For example, only covert (i.e., less directly expressed), not overt (i.e., more directly expressed), form of narcissism was found to predict cyberbullying.[13]

It must be mentioned that deviant and risky behaviors were originally explained by Problem Behavior Theory,[14–16] its relevant essence here being that engaging in one form of cyberbullying increases the likelihood of engaging in another form of cyberbullying. Relatedly, offline psychopathy can be amplified online, facilitating antisocial behaviors through social media[4] to satisfy predatory desires without considering the well-being of others.[17]

Psychopathic individuals were found to be manipulative pathological liars using superficial charm to attract victims[18] both in the virtual and in the offline world. Results from previous research reported that psychopathy was a strong predictor of cyberbullying,[5,19] and it appears that psychopaths are impulsive with little, if any, empathy for others, and unaware of or uncaring about causing harm to others. Similarly, to narcissism, Machiavellians are selective when posting online, this is to promote their perfect-self on social media to gain trust of other users,[20] which is consistent with other related research.[11,21]

Sadism is a newly proposed trait in the dark triad that has now evolved into the dark tetrad, as it shared many similarities with psychopathic, narcissistic, and Machiavellian traits.[3,22] Those scoring high on sadism are described as

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[1]School of Psychology, Faculty of Creative Arts, Technologies and Science, University of Bedfordshire, Luton, United Kingdom.
[2]School of Natural Sciences and Psychology, Faculty of Science, Liverpool John Moores University, Liverpool, United Kingdom.

experiencing joy of others' pain,[23] having predatory tendencies and desire for power.[24] Quite recently, sadism was found to be related to cyberbullying.[25] It was also the only dark personality trait linked with immense time and energy spent committing hostile actions against innocent individuals.[2,26]

In more recent research,[27] it was shown that whereas cyberbullying fully mediated the relationship between Machiavellianism and problematic social media use (PSMU), narcissism was indirectly associated with PSMU through cyberstalking, which can be defined as deliberate, repeated, and malicious after harassment in cyberspace.[28,29] In the same research, it was also found that association between sadism and PSMU could be quite well explained by cyberbullying.

The aim of this article is to take into account quite neglected ethnicity (potentially implying diverse cultural values) and investigate whether there is a predictive link between dark tetrad personality traits and subsequent tendency to engage in cyberbullying. Thus, although there is already substantial research on the relationship between personality and PSMU,[6] in this article we answer the call for neglected research on the dark triad in cyberspace.[11]

Based on previous research,[4,11] it was hypothesized (H1) that sadism, Machiavellianism, and psychopathy (but not narcissism) would be positively correlated with cyberbullying. Although previous studies have investigated cyberbullying in single cultures (e.g., Chinese, Mexican, Spanish),[30–33] there is a current lack of literature focusing on the role that ethnicity has in mediating the relationship between cyberbullying and dark tetrad traits. Therefore, it was also hypothesized (H2) that ethnicity would be a moderating variable expected to influence the strength of correlation between dark tetrad scores and cyberbullying outcome.

Methods

Design

This study followed a correlational design using standard multiple regression, the predictor variables being personality types as determined by the dark tetrad characteristics, and the outcome variable being measured by scores on the cyberbullying scales described hereunder.

Participants

Participants (age: mean = 22.48, standard deviation = 5.95 years) were recruited through social media to maximize their diversity. Twitter was used to spread the study due to its popularity among young adults. Initially, a sample size power analysis was performed by G*Power that established that 260 male participants and 260 female participants were needed to reach a statistical significance with the five predictors (dark tetrad subscales and gender) of cyberbullying outcome variable with 80% of the time. However, once the survey was posted, the number of participants exceeded the baseline required. Upon removal of repeat IP addresses, underage participants, and unknown gender and ethnicities, we had 1,310 females and 790 males.

Materials

The dark tetrad personality traits. The dark triad[34] was used to measure each participant's personality. The test comprises 27 items that assess the three recognized person-

ality traits (each trait consists of 9 items): psychopathy, narcissism, and Machiavellianism. A 5-point Likert rating scale is used that ranges from "disagree strongly" to "agree strongly." Moreover, an additional measure "sadism" was included due to its similarities with the other three traits of dark triad. With the inclusion of the 10 items Short Sadistic Impulse Scale,[35] the "dark triad" evolved into the "dark tetrad."[4] A few examples of Machiavellianism, narcissism, psychopathy, and sadism are "you should wait for the right time to get back at people"; "have been compared to famous people"; "people who mess with me always regret it"; and "I have fantasies which involve hurting people." The Cronbach's alpha value = 0.88.

Cyberbullying perpetration scale. The subscale "Social exclusion perpetration" of Cyberbullying Perpetration[36] constitutes six items, using the 5-point Likert-type response scale; its Cronbach's alpha value is 0.93. The scale featured the following items: *I have blocked someone in a chat room to harm the person; I have blocked someone on an instant messenger to upset the person; I have rejected someone's request playing online games together to harm the person; I have excluded someone from online community groups to make them feel left out; I have never excluded someone from online group activities to make them feel left out; I have ignored someone's comments on social community online to embarrass the person.*

Global assessment of Internet trolling. The Global Assessment of Internet Trolling[4] was also used in this study. This measure consists of four items. The Cronbach's alpha value is 0.82, which demonstrated fine internal consistency. The scale featured the following items: *I have sent people to shock websites for the lulz; I like to troll people in forums or the comments section of websites; I enjoy griefing other players in multiplayer games; The more beautiful and pure a thing is, the more satisfying it is to corrupt.*

Procedure

The electronic survey was advertised through Twitter and Instagram using Qualtrics. Tweets were posted describing the study and requesting for participants, those who volunteered had the option to click on the link that directed them to the questionnaire.

Results

Influence of dark tetrad subscales on cyberbullying by gender

Narcissism. Unexpectedly, results indicate that there are significant simple positive associations between mean narcissism scores and total cyberbullying scores (male = R^2 = 0.03, $F(1, 788) = 24.40$, $p < 0.001$), (female = $R^2 = 0.03$, $F(1,1306) = 42.67$, $p < 0.001$), implying that higher levels of narcissism are a significant predictor of cyberbullying.

Machiavellianism. Results indicate that there is a significant positive association between Machiavellianism and cyberbullying scores (male = $R^2 = 0.06$, $F(1,789) = 52.93$, $p < 0.001$), (female = $R^2 = 0.09$, $F(1, 1308) = 129.70$, $p < 0.001$), implying that higher levels of Machiavellianism are a significant

Table 1. Summary of Multiple Regression Analyses for Predictive Ability of Dark Tetrad Variables and Tendency to Engage in Cyberbullying in Males and Females

Predictor variable	Male			Female		
	B	Part R^2	p	B	Part R^2	p
Nar	0.05	0.00	0.150	0.03	0.00	0.204
Mac	0.10	0.01	0.001	0.13	0.03	0.001
Psy	0.15	0.03	0.001	0.14	0.02	0.001
Sad	0.02	0.00	0.010	0.00	0.00	0.820

Male model $R^2 = 0.11$, $F(4, 784) = 24.51$, $p < 0.001$; female model $R^2 = 0.12$, $F(4, 1303) = 42.8$, $p < 0.001$.
Mac, Machiavellianism; Nar, narcissism; Psy, psychopathy; Sad, sadism.

predictor of cyberbullying. Thus, ∼6.3% of the variation in cyberbullying scores could be accountable to Machiavellianism traits for male participants, whereas ∼9% of the variation could be accounted to Machiavellianism in females.

Psychopathy.   Results indicate that there is a significant simple positive association between mean psychopathy scores and mean cyberbullying scores (male = $R^2 = 0.09$, $F(1, 789) = 73.00$, $p < 0.001$), (female = $R^2 = 0.08$, $F(1, 1307) = 118.10$, $p < 0.001$), implying that higher levels of psychopathy is a significant predictor of cyberbullying.

Sadism.   There was a significant (although weak) positive association between psychopathy and cyberbullying scores in both genders (male = $R^2 = 0.03$, $F(1, 789) = 25.63$, $p < 0.001$) and (female = $R^2 = 0.01$, $F(1, 1307) = 9.54$, $p = 0.002$).

Dark tetrad (overall scores) and unique predictors of cyberbullying

Results indicate that there is a significant simple positive association between overall mean dark tetrad scores and mean cyberbullying scores (male = $R^2 = 0.08$, $F(1, 789) = 65.48$, $p < 0.001$), (female = $R^2 = 0.05$, $F(1, 1308) = 63.99$, $p < 0.001$), implying that a mean combination of sadism, Machiavellianism, narcissism, and psychopathy traits is positive pre-

dictors of cyberbullying. Secondary analyses suggest Machiavellianism and psychopathy are independent positive predictors of cyberbullying in both genders, whereas narcissism and sadism are not (Table 1).

Ethnicity

Tables 2–4 indicate little ethnic variation among dark tetrad, its subscales, and cyberbullying. Specifically, results for individuals who identified as ''white'' as demonstrated in Table 2 show that mean cyberbullying scores demonstrated weak to moderate positive correlations with other traits: narcissism (male $r = 0.25$, $p = 0.001$, $n = 294$; female $r = 0.16$, $p = 0.001$, $n = 371$), Machiavellianism (male $r = 0.24$, $p = 0.001$, $n = 294$; female $r = 0.28$, $p = 0.001$, $n = 371$), psychopathy (male $r = 0.34$, $p = 0.001$, $n = 294$; female $r = 0.29$, $p = 0.001$, $n = 371$) and sadism trait (male $r = 0.11$, $p = 0.051$, $n = 294$; female $r = 0.13$, $p = 0.01$, $n = 371$). Finally, a significant positive correlation was found between mean cyberbullying scores and mean dark triad scores (male $r = 0.25$, $p = 0.001$, $n = 294$; female $r = 0.24$, $p = 0.001$, $n = 371$).

Results for individuals who identified as ''black'' as demonstrated in Table 3 show that mean cyberbullying scores demonstrated weak to moderate positive correlations with other traits: narcissism (male $r = 0.25$, $p = 0.001$, $n = 90$; female $r = 0.30$, $p = 0.001$, $n = 350$), Machiavellianism (male $r = 0.24$, $p = 0.001$, $n = 90$; female $r = 0.28$, $p = 0.001$, $n = 350$), psychopathy (male $r = 0.48$, $p = 0.001$, $n = 90$; female

Table 2. Summary of Pearson's Correlation Coefficient Scores Signaling Strength of Correlations Between Dark Tetrad Variable Scores and Cyberbullying Scores in White Participants (294 Male Participants Above the Diagonal; 371 Female Participants Below the Diagonal)

Variable	White					
	Nar	Mac	Psy	Sad	DT	CB
Nar	—	0.35**	0.45**	0.09	0.41**	0.25**
Mac	0.43**	—	0.51**	0.26**	0.57**	0.24**
Psy	0.38**	0.54**	—	0.29**	0.60**	0.34**
Sad	0.17**	0.26**	0.25**	—	0.90**	0.11
DT	0.48**	0.59**	0.56**	0.90**	—	0.25**
CB	0.16**	0.28*	0.29**	0.13*	0.24**	—

*$p < 0.05$; **$p < 0.01$.
CB, cyberbullying; DT, dark tetrad.

Table 3. Summary of Pearson's Correlation Coefficient Scores Signaling Strength of Correlations Between Dark Tetrad Variable Scores and Cyberbullying Scores in Black Participants (90 Male Participants Above the Diagonal; 350 Female Participants Below the Diagonal)

Variable	Black					
	Nar	Mac	Psy	Sad	DT	CB
Nar	—	0.16	0.35**	0.05	0.33**	0.25**
Mac	0.37**	—	0.48**	0.31**	0.58**	0.24**
Psy	0.47**	0.54**	—	0.35**	0.65**	0.48**
Sad	0.17**	0.26**	0.25**	—	0.90**	0.26*
DT	0.48**	0.59**	0.56**	0.90**	—	0.40**
CB	0.30**	0.34**	0.37**	0.11*	0.24**	—

*$p < 0.05$; **$p < 0.01$.

TABLE 4. SUMMARY OF PEARSON'S CORRELATION COEFFICIENT SCORES SIGNALING STRENGTH OF CORRELATIONS BETWEEN DARK TETRAD VARIABLE SCORES AND CYBERBULLYING SCORES IN ASIAN PARTICIPANTS (329 MALE PARTICIPANTS ABOVE THE DIAGONAL; 448 FEMALE PARTICIPANTS BELOW THE DIAGONAL)

	Asian					
Variable	*Nar*	*Mac*	*Psy*	*Sad*	*DT*	*CB*
Nar	—	0.31**	0.36**	0.16**	0.43**	0.13*
Mac	0.25**	—	0.51**	0.15**	0.46**	0.25**
Psy	0.16**	0.42**	—	0.24**	0.54**	0.22**
Sad	0.17**	0.31**	0.24**	—	0.90**	0.24*
DT	0.48**	0.54**	0.57**	0.90**	—	0.30**
CB	0.07	0.34**	0.37**	0.11*	0.27**	—

*$p < 0.05$; **$p < 0.01$.

$r = 0.37$, $p = 0.001$, $n = 350$), and sadism trait (male $r = 0.26$, $p = 0.003$, $n = 90$; female $r = 0.11$, $p = 0.01$, $n = 350$). Finally, a significant positive correlation was found between mean cyberbullying scores and mean dark triad scores (male $r = 0.40$, $p = 0.001$, $n = 90$; female $r = 0.24$, $p = 0.001$, $n = 350$).

Results for individuals who identified as ''Asian'' as demonstrated in Table 4 show that mean cyberbullying scores demonstrated weak to moderate positive correlations with other traits: narcissism (male $r = 0.13$, $p = 0.02$, $n = 329$; female $r = 0.07$, $p = 0.13$, $n = 448$), Machiavellianism (male $r = 0.25$, $p = 0.001$, $n = 329$; female $r = 0.34$, $p = 0.001$, $n = 448$), psychopathy (male $r = 0.22$, $p = 0.001$, $n = 329$; female $r = 0.37$, $p = 0.001$, $n = 448$), and sadism trait (male $r = 0.24$, $p = 0.01$, $n = 329$; female $r = 0.11$, $p = 0.01$, $n = 448$). Finally, a significant positive correlation was found between mean cyberbullying scores and mean dark triad scores (male $r = 0.30$, $p = 0.001$, $n = 329$; female $r = 0.27$, $p = 0.001$, $n = 448$).

Discussion

Our results are consistent with the findings from a related study[5] showing that dark triad predicts cyberbullying. Our small associations between narcissism and cyberbullying are in line with other research showing that narcissism was also a predictor for cyberbullying tendencies.[19] The significant positive correlation between psychopathy and cyberbullying tendency was found in both genders, which is consistent with previous research.[4,17,19,26] Furthermore, related research investigating the link between dark triad personality trait and Twitter usage found that both psychopathy and Machiavellianism were associated with the use of derogatory language including swear words and anger outbursts online.[37] This may explain why individuals who score highly on psychopathy predicted cyberbullying on Twitter due to psychopathy influencing their malicious interpersonal communications.[17,38]

Our results also showed that Machiavellianism was a significant predictor for cyberbullying for both genders, even though male participants often score higher, which is in line with other past research.[9,19,37] Consistent with previous work, the results found that sadism was (albeit weak) predictor of cyberbullying.[17,26] It appears, then, that sadistic individuals might be stimulated by hurting others and seeing the victims suffer as they find it gratifying,[23] which becomes easier and anonymous in cyberspace.

The findings generalize across white, black, and Asian participations. This is surprising given cultural variation in personality and social behaviors, such as aggression.[39,40] It was found, for example, that Asians are from a collective society and dislike narcissistic individuals,[41] which is in line with a more recent study,[39] demonstrating that participants from Japan scored lower in cyberbullying and are interdependent self-construal compared with participants from the United States. Nonetheless, given the very weak correlation, the ethnicity results should be treated with extra caution as they seem to require more clarification in further research.

To sum up, the first hypothesis was partially supported as all four of dark tetrad traits were predictors of cyberbullying. However, findings indicate that in our ethnically diverse sample, Machiavellianism and psychopathy are better predictors of cyberbullying than narcissism or sadism. Surprising there was little gender or ethnic variation in the associations between the dark tetrad and cyberbullying. Since women have been found to experience more sexual harassment than men online,[42] future work may reveal gender differences in the associations between dark tetrad scales and being a victim of cyberbullying.

Despite some weaknesses of this research associated with survey-based research, like the lack of control over confounding variables, ''demand characteristics,'' or measuring intention rather than actual behavior, the results tie up with and contribute to previous research.[4,17] In other words, the dark tetrad does appear to predict cyberbullying tendencies. The differences were small between ethnicities, which also seems consistent with past research.[30,43] Although our data interpretation may leave some questions open and generate new questions (e.g., about other PSMU), the decision was made to adopt a rather conservative and relatively cautious approach so to avoid engaging in speculation unwarranted by the results.

Future studies could perhaps focus on analyzing the predictive ability of more culturally diverse samples to determine whether some cultures are at greater risk of being a victim of cyberbullying. Such studies might also examine the mediating role of antisocial online behaviors between the dark tetrad and other types of social interaction in cyberspace.

Finally, it is worth pointing out the possibility that small associations between cyberbullying and dark tetrad traits could be caused by Internet norms facilitating condition-dependent ''psychopathic-like'' behavior among non-psychopaths. If this is the case, then it could (at least to some extent) explain some of the small associations between dark tetrad traits and cyberbullying (i.e., some people bully online even though they do not exhibit socially aversive traits face-to-face). Future research could provide evidence for such condition-dependent cyberbullying among those relatively free of socially aversive personalities.

Author Disclosure Statement

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Address correspondence to:
Dr. William Michael Brown
School of Psychology
Faculty of Creative Arts, Technologies and Science
University of Bedfordshire
Park Square, Luton LU1 3JU
United Kingdom

E-mail: william.brown@beds.ac.uk