RESEARCH ARTICLE

Personality Factors, Gender Differences, and Misrepresentation of Self on Online Dating Websites

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Abstract

Goal: The goal of the current study was to determine whether the interaction between gender and catfishing type behaviors (lying about aspects of the self) predicted differences in levels of dark triad-type traits, sadism, and online disinhibition.

Method: Data were collected in an online study from individuals who indicated that they had used at least one dating website.

Results: Men were significantly higher in the unempathetic component of sadism, the psychopathy aspect of the dark triad, and the toxic disinhibition component of online disinhibition. Those who engaged in catfishing were significantly higher in sadism, total Dark Triad scores, and toxic online disinhibition compared to those who did not catfish. Women reported being lied to on dating sites at a greater frequency than men.

Conclusions: Given that there are ample cases of women experiencing sexual assault, harassment, etc. linked to dating site use, findings that women are more likely to report being catfished and that those who catfished in the current study were higher in sadism, total Dark Triad scores, and toxic online disinhibition imply that dating sites may facilitate a harmful environment for women. These findings have implications for the possible responsibility and obligation of dating sites to screen for potentially aggressive and dishonest behaviors for the protection and welfare of their users.

Keywords

Online dating, dark triad, online disinhibition, sadism

Introduction

A recent study by Pew Research Cener (PRC; Vogels & McClain, 2023) found that about 30% of adults use dating websites and that the top place to find dates was online dating sites. Unfortunately, online dating websites aren't without risk, such as harassment, violence, and catfishing - all of which can be interconnected. Catfishing is known as misrepresenting oneself to potential romantic partners in online settings (Mosley *et al*., 2020). This misrepresentation of the self can occur via an online fake persona using perhaps fake pictures, fake information about one's job, income, personal life, etc. Past research (Mosley *et al*., 2020) on catfishing has shown that men are more likely to be "catfishers" compared to women and women are more likely to be targets of catfishing compared to men.

The dangers of online dating sometimes go beyond just using fake pictures and verbal harassment. In fact, Bates *et al*. (2022) found that almost 42% of respondents reported being catfished while using online dating sites with about a third of participants experiencing at least one type of harm (e.g. sexual violence, verbal abuse) as a result of using online dating websites.

Women were the most likely group to experience harm (Bates *et al.,* 2022). Women are also more likely to experience harassment in the form of being sent unsolicited sexually explicit messages or images, being repeatedly messaged after stating they were not interested, being called offensive names, and being threatened with physical harm (Gillett, 2018; Vogels & McClain, 2023).

Stories of women being raped and murdered by someone they met on an online dating site have increasingly become circulated in the news. Priscilla Castro was murdered by a man she met on an online dating site; a man who subsequently started one of the largest wildfires in California to hide her body (Byrne, 2020). Serial killer Danuel Drayton used Tinder to sexually assault and violently murdered Samantha Stewart and as many as six other victims (Thomas, 2021). The list goes on and is not exhaustive: Warriena Wright. Sydney Loofe. Francia Ibarra. Kevin Bacon.

Are steps being taken to ensure the safety of people using online dating sites? Match Group, who owns popular dating sites/apps such as Tinder, Match, OkCupid, and PlentyOfFish came under fire after cases such as the one wherein PlentyOfFish user Susan Deveau was matched with and was assaulted by three-time convicted rapist Mark Papamechail and after Carol Markin was matched with a six-time convicted rapist who assaulted her on their second date (Flynn *et al.*, 2019). While Match Group does now screen for sex offenders, it generally only does so for paid apps such as Match and not for services such as Tinder, OkCupid, PlentyOfFish, or any other free services. When analyzing over 150 incidents of sexual assault following meetups on online dating sites, it was found that in 10% of these cases the online dating platforms had matched the victim with a known sex offender with matches largely stemming from the free-to-use dating platforms and not the pay-to-use Match site (Flynn *et al.*, 2019). Classist implications surrounding the requirement to pay for safety and identity verification of users aside, it is important to note that screening may not be enough as the same report indicated that not all offenders had been registered. This implies that even if all sites were to diligently screen out sex offenders from their platforms, violent unregistered predators may still use such platforms as hunting grounds, indicating a need for further screening.

Considering that online dating websites already use practices such as administering questionnaires with the goal of "matching" users with each other, it would seem prudent for dating websites to use questionnaires to flag potentially dangerous users. Although some research (Jonason & Bulyk, 2019) has examined dark triad traits in those who use versus those who don't use online dating sites such as Tinder, there is a paucity of research centering around catfishing, dating site violence/aggression, and personality factors in general, including dark type triad traits – all of which can be connected.

Personality Factors and Online Dating

Past research has examined factors such as online dating harassment from the perspective of those on the receiving end of harassment (generally women; see Shaw, 2016; Tweten, 2014; Vitis & Gilmour, 2017). Some research has generally looked at online toxic disinhibition (Suler, 1999; Suler & Phillips, 1998), but online disinhibition has not been looked at in the context of dating sites. Online disinhibition can be divided into toxic and benign disinhibition (Udris 2014). Individuals may experience online disinhibition when they believe their identity is anonymous and there is a perceived lack of authority present to monitor behavior (Udris, 2014). Benign disinhibition refers to engaging in non-harmful behaviors online when one believes they are anonymous. For example, some individuals value online anonymity when it comes to expressing their true (non-harmful) feelings or thoughts or because it is easier to connect with others online than it is face to face. Toxic online disinhibition refers to the increased propensity to insult others when online because individuals perceive there are no consequences as a result of anonymity and not being face to face with others, etc. (Udris 2014). Research (Henry & Powell, 2018) has shown that men are more likely than women to use online technology to engage in toxic and sexually violent discourse/acts.

Other research has examined personality characteristics related to possible risky behavior

in online dating (Blackhart *et al.*, 2014), characteristics related to propensity for false self-representation and manipulative behavior (Toma *et al.*, 2008), as well as personality characteristics such as the Dark Triad - which is made up of narcissism, Machiavellianism, and psychopathy - related to trolling, (e.g. online communication intended to offend, provoke, or intimidate others; Bishop, 2014; March *et al.*, 2017). Narcissism is generally defined as having a grandiose view of the self and one's importance as well as an exaggerated sense of entitlement (Paulhus *et al.*, 2002). Machiavellianism refers coldness and the propensity to manipulate others (Paulhus *et al.*, 2002). The final aspect of the Dark Triad, psychopathy, refers to being high in impulsivity and thrill-seeking as well as being low in empathy (Paulhus *et al.*, 2002). Sadism is defined as taking pleasure in the suffering of others and the desire to dominate others (O'Connell & Marcus, 2019). On average, men tend to be higher in narcissism (see meta-analysis by Grijalva *et al.*, 2015; Chiorri *et al.*, 2019), Machiavellianism (Chiorri *et al.*, 2019 ; Collison *et al.*, 2021), psychopathy (Cale *et al.*, 2002; Chiorri *et al.*, 2019), and sadism (Plouffe *et al.*, 2019) compared to women.

Because higher levels of dark triad-type traits and sadism are also related to manipulation, lying, sexual exploitation, and aggression (e.g., Figueredo *et al.* 2015; Thomas & Egan, 2022), further exploring their role in the context of catfishing/lying on online dating sites is beneficial to prevent catfishing, verbal harassment, and physical violence against others. Thomas and Egan (2022) found in a meta-analysis of 48 studies that there was a moderate relationship between sadism and online aggressive behavior. A meta-analysis of 29 studies (Moor & Anderson, 2019) found that narcissism, psychopathy, psychoticism, and sadism were related to several harmful online behaviors, including (but not limited to) non-consensual engagement of sex-based texting, cyberstalking, technology-aided sexual violence, and the use of technology to engage in infidelity. The authors (Moor & Anderson, 2019) found that trait psychopathy was the strongest predictor of the aforementioned behaviors. However, little research has examined personality dark triad type traits, sadism, and online disinhibition and their relationship to things such as catfishing or misrepresenting the self in an online dating context. Furthermore, research has not thoroughly examined whether gender and the propensity to lie on dating sites interact with each other and are related to differences in the aforementioned traits.

Purpose and Hypotheses

The purpose of the current study was to examine the effects of the potential interaction of gender and catfishing propensity (lying vs. not lying while online dating) dark triad-type traits, sadism, and online disinhibition. Although negative outcomes (e.g. lying, catfishing) being a product of maladaptive personality characteristics may seem like an intuitive connection, it is important to support this claim. Quantitative evidence may potentially influence dating sites to take greater steps to protect clients (potentially via screening measures), or to provide information to potential dating site users on how to best protect themselves. Based on past research (e.g. Chiorri *et al.*, 2019; Henry & Powell, 2018; Plouffe *et al.*, 2019) it was hypothesized that men would be higher in dark triad type traits, sadism, and toxic online disinhibition when compared to women and that those who engage in any form of catfishing will also be higher in dark triad type traits, sadism, and toxic online disinhibition compared to those who do not engage in catfishing.

Method

Participants

There were originally 345 participants in the study. However, 2 participants identified as different gender minorities and thus could not be analyzed when comparing gender group differences (due to small sample sizes that could not be compared statistically in SPSS), so their data were removed. Data were analyzed for 343 participants (Males = 93, Females = 250). Participants were students from a Western university. All participants had indicated that they had used at least one type of dating website.

Measures

Sadism - Assessment of Sadistic Personality (Plouffe *et al.*, 2017). The Assessment of

Sadistic personality is a 9-item measure scored on a 5-point (1 = *strongly disagree* to 5 = *strongly agree*) Likert scale designed to assess subjugation, pleasure, and unempathetic aspects of sadism. An example item is, "I have made fun of people so that they know I am in control." The Cronbach's alpha reliability analysis for the total scale was .79.

Short Dark Triad (Jones & Paulhus, 2014). The Short Dark Triad is a 27-item measure scored on a 5-point (1 = *Disagree strongly* to 5 = *Agree strongly*) Likert scale designed to measure Machiavellianism, narcissism, and psychopathy. Example items include, "I'll say anything to get what I want." The Cronbach's alpha reliability analysis for the total scale was .85.

Online Disinhibition (Udris, 2014). The Online Disinhibition scale is an 11-item measure scored on a 4-point Likert scale (1 = *Disagree* to 4 = *Agree*). The scale measures both benign and toxic online disinhibition. Benign online disinhibition refers to the propensity for online 'anonymity' to promote openness, kindness, and generosity. Toxic online disinhibition refers to use of rude language, hatred, and threats. An example item is, "Writing insulting things online is not bullying." The Cronbach's alpha reliability analysis for the total scale was .76.

Results

When it came to participants being catfished, 87% of participants indicated that they had been lied to on dating sites in some fashion (e.g. the other person used fake pictures, lied about their age, height, job, etc.). Pearson Chi-Square analyses showed that female-identifying individuals were more likely to be lied to (224/250 = 90%) compared to male-identifying participants (76/93 = 82%), $\chi^2 = 3.84$, $p < .05$.

Overall, about 27% of the participant sample reported having lied about something on their dating profiles (91/343). Pearson Chi-Square analyses showed that there was not a significant difference between genders in frequency of lying on dating profiles $\chi^2 = 3.03$, $p = .082$ (Men: 31/93 = 33% lied; women: 60/250 = 24% lied).

Sadistic Personality

Total Scale Analyses: A 2 (gender - males, females) x 2 (lie status - did or did not lie on profile) factorial ANOVA indicated that there was a significant main effect of lying status (did or did not lie) on participant total scores of sadistic personality, $F (1, 339) = 5.79$, $p = .017$, $\eta p^2 = .017$. Participants who lied were significantly higher in total sadism scores compared to participants who did not lie. See Table 1 for descriptives.

Table 1. Descriptives for Gender, Lie Status, and Dependent Variables.

Variable	Gender	Lie Status	Mean	SD
Sadism Total	**Male**	Did not lie	16.69	5.05
		Lied	18.16	4.48
		Total	17.18	4.89
	Female	Did not lie	14.37	5.39
		Lied	16.30	5.74
		Total	14.84	5.53
	Total	Did not lie	14.94	5.39
		Lied	16.93	5.39
		Total	15.47	5.46
Sadism Subjugation	**Male**	Did not lie	5.06	1.87
		Lied	5.55	2.10

		Total	5.23	1.95
	Female	Did not lie	4.45	1.97
		Lied	5.22	2.24
		Total	4.63	2.06
	Total	Did not lie	4.60	1.96
		Lied	5.33	2.19
		Total	4.79	2.05
Sadism Pleasure	**Male**	Did not lie	7.31	2.87
		Lied	7.26	2.73
		Total	7.29	2.81
	Female	Did not lie	6.20	2.77
		Lied	6.98	3.20
		Total	6.39	2.89
	Total	Did not lie	6.47	2.83
		Lied	7.08	2.03
		Total	6.63	2.89
Sadism Unempathetic	**Male**	Did not lie	4.32	1.77
		Lied	5.35	1.96
		Total	4.67	1.89
	Female	Did not lie	3.73	1.80
		Lied	4.10	1.72
		Total	3.82	1.76
	Total	Did not lie	3.87	1.81
		Lied	4.53	1.89
		Total	4.05	1.85
SD3 Total	**Male**	Did not lie	73.79	12.23
		Lied	78.55	12.23
		Total	75.38	12.43
	Female	Did not lie	68.73	12.73
		Lied	71.200	11.06
		Total	69.32	12.37
	Total	Did not lie	69.98	12.79
		Lied	73.70	11.93
		Total	70.97	12.66

SD3 Machiavellianism	**Male**	Did not lie	27.65	6.01
		Lied	29.42	5.95
		Total	28.24	6.02
	Female	Did not lie	26.27	5.70
		Lied	27.37	5.65
		Total	26.54	5.70
	Total	Did not lie	26.61	5.79
		Lied	28.07	5.81
		Total	27.00	5.82
SD3 Narcissism	**Male**	Did not lie	25.31	5.33
		Lied	27.06	4.32
		Total	25.89	5.06
	Female	Did not lie	24.98	5.14
		Lied	25.12	4.89
		Total	25.01	5.07
	Total	Did not lie	25.06	5.18
		Lied	25.78	4.77
		Total	25.25	5.08
SD3 Psychopathy	**Male**	Did not lie	20.84	5.52
		Lied	22.06	5.07
		Total	21.25	5.38
	Female	Did not lie	17.48	5.19
		Lied	18.72	5.27
		Total	17.78	5.22
	Total	Did not lie	18.31	5.46
		Lied	19.86	5.42
		Total	18.72	5.48
Online Disinhibition Total	**Male**	Did not lie	24.56	6.28
		Lied	27.26	6.23
		Total	25.46	6.36
	Female	Did not lie	23.63	5.07
		Lied	25.22	5.51
		Total	24.01	5.21

	Total	Did not lie	23.86	5.39
		Lied	25.91	5.81
		Total	24.40	5.57
Online Disinhibition Benign	**Male**	Did not lie	18.47	4.55
		Lied	20.32	4.42
		Total	19.09	4.57
	Female	Did not lie	18.36	4.18
		Lied	19.15	4.17
		Total	18.55	4.18
	Total	Did not lie	18.38	4.27
		Lied	19.55	4.27
		Total	18.69	4.29
Online Disinhibition Toxic	**Male**	Did not lie	6.10	2.60
		Lied	6.94	3.20
		Total	6.38	2.83
	Female	Did not lie	5.27	1.93
		Lied	6.07	2.43
		Total	5.46	2.08
	Total	Did not lie	5.47	2.14
		Lied	6.36	2.73
		Total	5.71	2.34

There was a significant main effect of gender on total sadism scores, $F(1, 339) = 8.79$, $p = .003$, $\eta p^2 = .025$. Males were significantly higher in sadism than were females. See Table 1 for descriptives.

Although there were significant main effects of lying status and gender on total sadism scores, there was no significant interaction effect of the two variables, $F(1, 339) = .11$, $p = .745$, $\eta p^2 = .000$.

Subscale Analyses: When examining the specific subscales of the sadism measure, a factorial multivariate analysis of variance (MANOVA) indicated that there was an overall significant main effect of gender, $V = .04$, $F(3, 337) = 5.11$, $p = .002$, $\eta p^2 = .043$. Men were significantly higher in scores for the Unempathetic subscale of sadism compared to women (see Table 2 for inferential statistics and Table 1 for descriptive statistics). There were no significant differences between genders in sadism or subjugation subscales.

There was also an overall significant main effect of lying status on the subscales of the sadism measure, $V = .03$, $F(3, 337) = 3.80$, $p = .011$, $\eta p^2 = .033$. Those who lied were significantly higher in scores for the subjugation and unempathetic subscales, but not the pleasure subscale of sadism. See Table 2 for inferential statistics and Table 1 for descriptive statistics.

There was not an overall significant interaction effect of gender and lying status on the

DVs, V = .01, F (3, 337) = 1.58, p = .195, ηp^2 = .014.

Dark Triad

Total Scale Analyses: A 2 (males vs. females) x 2 (lied on dating profile vs. did not lie on dating profile) factorial ANOVA was conducted to examine the differences in Dark Triad traits between genders and those who did and did not lie on dating websites. There was a significant main effect of gender on overall scores of the Short Dark Triad measure, F (1, 339) = 14.38, p = .001, ηp^2 = .041. Men were significantly higher than women in overall Dark Triad scores. See Table 1 for descriptives.

There was a significant effect of lie status (whether or not a participant lied) on overall Dark Triad measure scores, F (1, 339) = 4.88, p = .028, ηp^2 = .014. Those who lied were significantly higher in Dark Triad total scores compared to those who did not lie. See Table 1 for descriptives.

There was not a significant interaction effect of gender and lie status on overall Dark Triad scores, F (1, 339) = .49, p = .484, ηp^2 = .001.

Subscale Analyses: In addition to examining the total scale scores of the Short Dark Triad measure, total scores for each of the subscales were individually examined with a multivariate factorial analysis of variance. The MANOVA indicated that there was a significant overall main effect of gender when examining the subscales individually, V = .07, F (3, 337) = 8.03, p = .001, Np^2 = .067. Men were significantly higher in Machiavellianism and psychopathy scores when compared to women. There was no significant difference between men and women in narcissism subscale scores. See Table 2 for inferential statistics and Table 1 for descriptive statistics.

Table 2. Analyses of Main and Interaction Effects on Subscales.

IV	Subscale	DF	*F*	*p*	Effect size (partial eta squared)
Participant gender main effects	**Sadism: Subjugation**	1, 339	3.18	.077	.009
	Sadism: Pleasure	1, 339	3.31	.070	.010
	Sadism: Unempathetic	1, 339	15.10	.001	.043
	Dark Triad: Machiavellianism	1, 339	5.01	.026	.015
	Dark Triad: Narcissism	1, 339	2.87	.091	.008
	Dark Triad: Psychopathy	1, 339	23.17	.001	.064
	Online Disinhibition: Benign	1, 339	1.28	.258	.004
	Online Disinhibition: Toxic	1, 339	7.84	.005	.023
Whether participant lied main effects	**Sadism: Subjugation**	1, 339	5.49	.020	.016
	Sadism: Pleasure	1, 339	.94	.334	.003
	Sadism: Unempathetic	1, 339	8.71	.003	.025

	Dark Triad: Machiavellianism	1, 339	3.51	.062	.010
	Dark Triad: Narcissism	1, 339	1.99	.159	.006
	Dark Triad: Psychopathy	1, 339	3.13	.078	.009
	Online Disinhibition: Benign	1, 339	5.47	.020	.016
	Online Disinhibition: Toxic	1, 339	7.30	.007	.021
Interaction between gender and lie status	Sadism: Subjugation	1, 339	.29	.594	.001
	Sadism: Pleasure	1, 339	1.20	.274	.004
	Sadism: Unempathetic	1, 339	1.91	.168	.006
	Dark Triad: Machiavellianism	1, 339	.20	.656	.001
	Dark Triad: Narcissism	1, 339	1.45	.229	.004
	Dark Triad: Psychopathy	1, 339	.00	.993	.000
	Online Disinhibition: Benign	1, 339	.88	.349	.003
	Online Disinhibition: Toxic	1, 339	.004	.947	.000

The MANOVA indicated there was not a significant overall main effect of participant lie status when examining the subscales individually, V = .01, $F(3, 337) = 1.62$, $p = .184$, $\eta p^2 = .014$. See Table 2 for inferential statistics.

The MANOVA indicated there was not a significant interaction effect of gender and lie status when examining the subscales individually, V = .01, $F(3, 337) = .58$, $p = .628$, $\eta p^2 = .005$. See Table 2 for inferential statistics.

Online Disinhibition

Total Scale Analyses: A 2 (males vs. females) x 2 (lied on dating profile vs. did not lie on dating profile) factorial ANOVA was conducted to examine the differences in Online Disinhibition total scores between genders and those who did or did not lie. There was a significant overall effect of gender on online disinhibition, $F(1, 339) = 4.19$, $p = .041$, $\eta p^2 = .012$. Males were significantly higher in total scores of online disinhibition compared to females. See Table 1 for descriptives.

There was a significant effect of lie status on online disinhibition, $F(1, 339) = 8.66$, $p = .003$, $\eta p^2 = .03$. Those who lied were significantly higher in total scores of online disinhibition compared to those who did not lie. See Table 1 for descriptives.

There was not a significant interaction of gender and lie status on total scores of online disinhibition, $F(2, 338) = .57$, $p = .449$, $\eta p^2 = .002$. See Table 1 for descriptive statistics.

Subscale Analyses: In addition to examining the total scale scores of the Online Disinhibition measure, total scores for each of the subscales were individually examined with a multivariate factorial analysis of variance. The MANOVA indicated that there was a significant overall main effect of gender when examining the subscales individually, $V = .02$, $F (2, 338) = 3.93$, $p = .021$, $\eta p^2 = .023$. Males were higher in toxic online disinhibition subscale scores compared to females. There were no differences in benign online disinhibition subscale scores. See Table 2 for inferential statistics and Table 1 for descriptive statistics.

There was also an overall significant main effect of lie status when examining individual subscales, $V = .02$, $F (2, 338) = 4.76$, $p = .009$, $\eta p^2 = .027$. Participants who lied were higher in both toxic and benign online disinhibition. See Table 2 for inferential statistics and Table 1 for descriptive statistics.

There was not a significant interaction effect between gender and lie status when examining the subscales, $V = .02$, $F (2, 338) = .48$, $p = .622$, $\eta p^2 = .003$.

Discussion

The goal of the current study was to determine whether there were differences between genders in sadism, dark triad type traits (narcissism, psychopathy, machiavellianism), and online disinhibition. Another goal was to examine whether there were differences between those who did and did not lie on dating sites (e.g. engage in "catfishing", lie about intentions, lie about aspects of the self, etc.) in sadism, dark triad traits, and online disinhibition. A final goal was to see whether gender and propensity to lie significantly interacted to contribute to levels of sadism, dark triad traits, and online disinhibition.

Determining whether gender and propensity to lie on dating sites results in differences in levels of harmful types of traits can play a role in helping to protect users of online dating sites from harm. Past research has shown that a large percentage of people using dating sites have experienced sexual assault, verbal abuse, and other types of harm (e.g. Bates *et al.*, 2022). Dating sites have also become a hunting ground for violent offenders who would even murder their victims. The mechanisms of reporting abuse are all but useless as offenders can repeatedly make new profiles and re-offend. Dating websites take very little responsibility in taking steps to promote safety for their users when they have a variety of resources (e.g., screening ability) at their fingertips.

The current study found that, compared to women, men were significantly higher in the unempathetic component of sadism, the psychopathy aspect of the dark triad, and the toxic disinhibition component of online disinhibition. While it is a failing of the current study that it was not determined whether high levels of aggression-related traits translated into behavior (e.g. harassing and assaulting people on online dating sites), such findings may indicate a need for dating sites to screen for negative traits to protect users from harassment. Contrary to hypotheses, there were no significant gender differences in other aspects of sadism or in the narcissism and Machiavellianism aspects of the Dark Triad.

The current study also determined that women reported being lied to/catfished at a greater frequency than men, which supports past research (Mosley *et al.*, 2020). Note, however, that there was no gender difference among participants in the frequency to which they reported that they themselves lied - only in whether they had been lied to by someone on a dating site. However, it is conceivable that individuals may under-report their own lying behaviors.

The current study also found that those who lie tended to be higher in many negative traits such as aspects of sadism, overall Dark Triad scores (but not individual subscales of the Dark Triad), and toxic online disinhibition. It is important to note that, because there were no significant gender differences in catfishing/lying, there was no significant interaction between catfishing and gender.

Because being high in sadism is related to propensity to harm others (Thomas & Egan, 2022), it would be beneficial for dating sites to screen for sadism to protect other users. Because online disinhibition may be perpetuated by the anonymity dating sites provide, keeping track of user identification could help dating sites enforce accountability and help

prevent harassment. Dating sites could ask for official identification to verify identities without necessarily showing this information to other users. This could even be made optional by having a program wherein users can select to not receive messages or contact from non-verified users. Those who do not wish to provide identity verification can still create profiles, but they cannot contact those who do not wish to be contacted by unverified accounts. Verified profiles reported for harassment could be banned. Although such people could make an unverified profile and although unverified users can repeatedly make profiles, the ability for other users to require verification for other profiles to contact them could drastically reduce harassment. For the protection of users of dating sites, identity verification and background checks for sexual violence should not be provided behind paywalls at the very least. Considering that past research has shown that women are more vulnerable to dating-site related violence and aggression, the current research provides important information that should be taken into consideration when designing dating services in ways to mitigate harm and violence against women.

Limitations

This study is a correlational design with no variables being manipulated. The current study also did not look at the relationship between the propensity to react with aggression when rejected on online dating sites and whether such behavior is more prominent in those who have higher levels of dark triad traits. Past research (Woerner *et al.*, 2018) has shown that in simulated online dating scenarios, men who have hostile perceptions of women tended to respond aggressively to female agents in dating scenarios. Because aggression in "romantic" contexts often happens in the context of rejection, future research might benefit from either analyzing actual conversations collected from dating sites to code for things such as reactions to rejection. Future researchers could also do things like have people imagine they are using online dating sites and present them with different rejection scenarios and ask participants how (e.g. aggressively or not aggressively) they'd like to respond to their rejector if there were no consequences following their response.

There were unequal group sizes of gender in the current study. An attempt was made to collect data from only males for over a year to get equal group sizes, but student samples are often comprised largely of females. Although current sophisticated statistical software can account for unequal group sizes, having a larger sample of males would be useful.

The study also relied on participants to be truthful about whether they lied/catfished without also assessing constructs such as positive self-representation to control for participants who may avoid being honest about harmful behaviors. Unwillingness to "look bad" may have resulted in participants underreporting lying and catfishing type behaviors, which in turn could explain why there was no gender difference in self-reported lying when there was a gender difference in males and females reporting being lied to by others. This could also explain why there were no significant interaction effects between gender and lie status on all measures.

The study did not assess whether levels of the traits measured were predictive of real-life harm. Although assessment of harmful behaviors such as propensity to lie and catfish was done, the propensity to engage in physical violence was not assessed. Future research should focus on whether people who are high in these maladaptive traits and who use online dating sites commit violence against or engage in the harassment of people they meet on these sites.

Conclusions

Current and past research suggests that there is a need for accountability and oversight for online dating platforms. The current study indicates that women tend to be catfished (lied to) more often than men, supporting past research (e.g. Mosley *et al.*, 2020). The current study adds new information to the field of personality and online dating site research by indicating that those who catfish tend to be higher in toxic online disinhibition and sadism. This may imply that women are at a greater risk for experiencing online dating aggression than men because women are more likely to be catfished and sadism as well as toxic online disinhibition (traits in which catfishers are higher than non-catfishers) predict abusive

behavior (e.g. Figueredo *et al.* 2015; Thomas & Egan, 2022). Online dating sites, at the very least, need to provide greater oversight and administrative intervention in screening for, halting, and preventing both deceptive behavior online aggression when reported by verifying accounts, removing accounts of aggressive offenders and/or catfishers, and preventing said offenders from making new accounts.

Declarations

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The sole author of this paper designed the study, submitted the protocol to the institution's IRB, collected the data, analyzed the data, and wrote the manuscript.

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