

Cost-inflicting mate retention tactics predict the perpetration of cyber dating abuse

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Abstract

Cyber dating abuse involves the use of electronic communication technology to direct abuse towards a romantic partner. Research has explored the perpetration of cyber dating abuse through an evolutionary lens, suggesting people use technology to perform mate retention tactics. Namely, previous research has found that mate value discrepancy and intrasexual competition predict the perpetration of cyber dating abuse. However, we do not yet know whether there is a direct relationship between cost-inflicting mate retention tactics and cyber dating abuse. Here, we directly explored whether cost-inflicting mate retention behaviours predict the perpetration of cyber dating abuse across two studies (study 1, $n = 132$; study 2, $n = 124$), finding strong support. We also explored the role of the Dark Triad in the perpetration of cyber dating abuse, and contrary to previous literature, we found no support. Our research furthers our understanding of the factors that drive cyber dating abuse from an evolutionary perspective.

Keywords: Cyber dating abuse; cost-inflicting mate retention; Benefit-provisioning mate retention; Dark Triad

Cost-inflicting mate retention tactics predict the perpetration of cyber dating abuse

Cyber dating abuse is a contemporary form of intimate partner violence (IPV) which involves the use of electronic communication technology to direct abuse towards a romantic partner (Brown & Hegarty, 2018). Examples include forcing partners to delete ex-romantic partners on social media, limiting social media posts, controlling online interactions with friends/family, and monitoring a partner's online whereabouts (Reed et al., 2016). There has been an increase in technology facilitated abuse in romantic relationships, with people using digital mediums such as mobile phones and social media to control, threaten or harass their partners (Woodlock et al., 2019). Cyber dating abuse is related to depression and suicidal ideation (Reed et al., 2017; Weathers et al., 2019), showing the importance of researching cyber dating abuse and the factors that drive its perpetration (Bhogal & Howman, 2019).

Although researchers have examined IPV from an evolutionary perspective, this research is in its infancy. Evolutionary scientists suggest that cyber dating abuse is a form of mate retention, evolved to increase mating success and to keep a relationship intact (Bhogal et al., 2019; Bhogal et al., in press; Deans & Bhogal, 2019; Brem et al., 2015). Here, we expanded on previous literature by adopting an evolutionary framework to understand cyber dating abuse, by examining whether cyber dating abuse perpetration is related to mate retention tactics.

We also explored the role of the Dark Triad in cyber dating abuse. Machiavellianism, Narcissism and Psychopathy are a distinct but collective group of personality traits known as The Dark Triad associated with anti-social behaviours (Paulhus & Williams, 2002). Individuals high in these traits display manipulating and controlling behaviours (see Furnham et al., 2013; Koehn et al., 2019 for a recent review) which are concurrent to those seen in intimate partner violence (Hughes & Samuels, 2021). Cyber dating abuse involves control, manipulation, and surveillance via information communication technology, and those who possess Dark Triad traits tend to engage in controlling and manipulating behaviours.

Mate Retention

Mate poaching refers to the act of sexually pursuing an individual who is in a committed romantic relationship (Schmitt & Buss, 2001; Erik & Bhogal, 2016). Due to the risks posed by mate poaching, humans have developed mate retention tactics to deter romantic rivals and keep a relationship intact. Mate retention tactics can be displayed in the form of benefit-provisioning (such as buying a partner an expensive gift) or cost-inflicting (such as calling a partner to make sure they are where they said they would be) behaviour (Buss et al., 2008). These can also be explained as behavioural responses to a perceived threat of infidelity in the relationship or as a mate guarding behaviour to prevent a threat from occurring (Shackleford et al., 2005).

Benefit provisioning mate retention tactics are associated with more subtle and pleasurable behaviours, such as placing an arm around the shoulder of a romantic partner or buying gifts for a partner (Buss et al., 2008). Cost inflicting mate retention tactics involve negative behaviours such as controlling, monitoring, harassing, or manipulating a romantic partner to retain the relationship and deter competitors (Buss et al., 2008), concurrent with cyber dating abuse (Bhogal & Howman, 2019). Cost-inflicting mate retention tactics are associated with IPV (See Buss et al., 2008). As cost-inflicting mate retention tactics are employed to deter rivals from a romantic partner/relationship, researchers argue that IPV could be adaptive to reduce the likelihood of infidelity occurring in a relationship and relationship dissolution (Chester & DeWall, 2018).

Cyber dating abuse and cost-inflicting mate retention

Cost-inflicting mate retention behaviours can involve monitoring and abusing behaviours directed towards a romantic partner. Therefore, we can see that cost-inflicting mate retention tactics share many similarities with cyber dating abuse. For example, vigilance in the context of mate retention may be captured by items associated with cyber dating abuse such as

checking a partners last connection in mobile applications (Borrajo et al., 2015). In addition, control, manipulation, and verbal possession signals in the context of mate retention may be captured by items such as controlling a partner's status updates (Borrajo et al., 2015).

Recent research has inferred that evolutionary mating-relevant factors may drive the perpetration of cyber dating abuse. For example, factors such as mate value discrepancy positively predict the perpetration of cyber dating abuse (Bhagal & Howman, 2019; Bhagal et al., 2019). The researchers found that those who reported lower self-perceived mate value compared to their partners (i.e., those who view themselves as having lower mate quality compared to their current romantic partner) perpetrate cyber dating abuse towards their partners. Furthermore, recent research has shown that those who report greater intrasexual rivalry (i.e., those who engage in intrasexual rivalry tactics such as being vigilant about mating rivals) also perpetrate cyber dating abuse towards their partners (Bhagal et al., in press). Taken together, these previous findings lend support for the notion that people use technology as a medium to engage in cyber dating abuse towards their partners. However, these previous findings do not directly examine the relationship between cost-inflicting mate retention tactics and the perpetration of cyber dating abuse. Here, we aimed to assess this direct relationship across two studies.

Previous work has examined mate retention tactics on Facebook (Bem et al., 2015) as Facebook can be a platform whereby jealousy can be easily triggered using 'likes', partners being 'tagged' into images, and comments made by potential romantic rivals (evidence by the fact that time spent on Facebook is positively correlated with Facebook jealousy – see Muise et al., 2009). However, mate retention tactics do not only take place using Facebook. With the availability of instant messaging (using a variety of apps and mediums), location sharing on Snapchat and WhatsApp, intrusive monitoring behaviours can occur using many online platforms and technologies. As a result, we examined mate retention tactics and their

relationship with cyber dating abuse in general, as opposed to focusing on one online platform. In support, researchers have recommended future work to examine a broader range of contexts and social media platforms in which dating violence can occur (Brem et al., 2015; Branson & March, 2021).

The Dark Triad and Cyber dating Abuse

Previous literature has shown that the Dark Triad is positively correlated with several facets of offline IPV (Carton & Egan, 2017). Specifically, Psychopathy has been found to be predictive of offline IPV (Brewer et al., 2018). Machiavellianism has been found to be related to aggressive behaviour in general (see Peeters et al., 2010), but only when other Dark Traits are controlled for. Furthermore, Machiavellianism is correlated with psychological control, not physical abuse (Brewer et al., 2018). Narcissism is also correlated with offline IPV (see Talbot et al., 2015). Those high in Dark Triad traits exhibit behaviours such as control and manipulation towards a romantic partner (Furnham et al., 2013; Koehn et al., 2019). In addition, those high in the traits are also more likely to display derogatory behaviours towards others (Morf et al., 2001) and attempt to induce feelings of jealousy in a romantic partner (Tortoriello et al., 2017). These behaviours are parallel to those shown in cyber dating abuse. The Dark Triad have been found to be beneficial in attracting mates, particularly as those high in these traits have multiple sexual partners, are opportunistic, and adopt an exploitive mating style once in a romantic relationship (Koehn et al., 2019). There are parallels between cyber dating abuse and the Dark Triad, as both involve manipulation, control, and exploitation. For example, Erik and Bhogal (2016) found that those high in psychopathy reported greater intention to mate poach. Due to the costs associated with these traits, it is feasible to explore whether those high in the Dark Triad are engaging in cyber dating abuse to increase mating success and to keep their romantic partners.

Aims and Hypotheses

Previous research has found that the Dark Triad (or selected traits of the Dark Triad-tetrad) are related to relationship control and online surveillance behaviours in romantic relationships (see Branson & March, 2021; Hughes & Samuels, 2021; Pineda et al., 2021). However, the available literature regarding the Dark Triad and their individual associations with online surveillance behaviours is decidedly inconsistent.

As cyber dating abuse is a growing area of research, scholars have argued the need for research to unravel the role of individual differences in the perpetration of cyber dating abuse (Bhogal et al., in press). Previous research has inferred that cyber dating abuse is a contemporary mate retention tactic (see Bem et al., 2015; Bhogal & Howman, 2019; Bhogal et al., 2019), however we examine the direct relationship between cost retention tactics and cyber dating abuse. Furthermore, as well as examining the role of cost-inflicting mate retention in the perpetration of cyber dating abuse, we examined whether there was a relationship between benefit-provisioning mate retention and cyber dating abuse to make the distinction between context specific mate retention tactics and cyber dating abuse. Furthermore, we aimed to further unravel the two types of mate retention behaviours further and any possible relationships with the perpetration of cyber dating abuse.

The Dark Triad are involved in several mating-relevant and relationship specific factors including negative behaviours such as mate poaching and cost-inflicting mate retention tactics. As a result, a further aim of the study was to understand the role of the Dark Triad in cyber dating abuse, and to add to the limited, yet growing literature showing the role of the Dark Triad in cyber dating abuse.

There were several proposed hypotheses which are stated below.

H1a) Cost-inflicting mate retention tactics would positively predict cyber dating abuse.

H1b) Benefit-provisioning mate retention tactics would not predict cyber dating abuse.

H2a) Machiavellianism would positively predict cyber dating abuse.

H2b) Narcissism would positively predict cyber dating Abuse.

H2c) Psychopathy would positively predict cyber dating abuse.

Study 1

Method

Design and participants

A correlational design was adopted to explore whether mate retention tactics (both benefit provisioning and cost-inflicting) were related to the perpetration of cyber dating abuse. The sample consisted of 132 heterosexual people (119 women, 13 men, $Mage = 23.48$ years old, $SD = 5.92$) from the public in the United Kingdom, recruited via opportunity sampling. Participants took part via Qualtrics (links were shared on social media sites such as Twitter and Facebook). In addition, undergraduate psychology students took part via the host universities' departmental research participation scheme.¹ Seventy-two of the participants were students and sixty were members of the public. Participants were required to be in a romantic relationship at the time of participation ($M_{relationship\ length} = 29.54$ months, $SD = 45.99$).

Materials

Mate Retention Inventory (short form) MRI-SF (Buss, Shackelford, & McKibbin, 2008)

The 38-item *Mate Retention Inventory Short Form Men Self Report* (MRI-SF-MSR) and the 38-item *Mate Retention Inventory Short Form Women Self Report* (MRI-SF-WSR) were used to measure acts or behaviours that participants had performed in the context of their

¹ The recruitment method and procedural facets were the same for study 1 and 2. Psychology students were awarded research credits for taking part in the study. Once they accrue a certain number of credits, they can then use the research participation scheme for their own projects. No incentives were provided for members of the public.

relationship in the past 12 months (Buss et al., 2008). The scale includes items which measure benefit-provisioning tactics and cost-inflicting tactics. Participants rate how frequently they have performed the act or behaviour within the past 1 year on a 4-point Likert scale ranging from “0 = Never” to “3 = Often”. An example item from the MRI-SF-MSR is “*Told other men that my partner was a pain*” and the same item on the MRI-SF-WSR is “*Told other women that my partner was a pain.*” Cronbach alpha values were calculated for all scales in study 1 and 2. This scale was reliable in our sample ($\alpha = .90$, men $\alpha = .93$, women $\alpha = .89$).

Cyber Dating Abuse

Participants completed the 19-item *Cyber Dating Abuse scale* (Borrajo et al., 2015) to measure their experiences of the perpetration of cyber dating abuse. Participants reported how often they had engaged in the list of behaviours towards their partner in the past year, on a 6-point Likert scale ranging from “1 = Never” (This has never happened in our relationship), to “6 = Usually” (It has happened more than 20 times). Example items include “*I wrote a comment on a wall of a social network to insult or humiliate my partner*” and “*I have used new technologies to control where my partner has been and with whom.*” Higher scores reflect greater perpetration of cyber dating abuse and low scores reflect less perpetration of cyber dating abuse. The scale was reliable in our sample ($\alpha = .77$).

Procedure

For both studies, once participants provided informed consent, they were asked to provide demographic details (age, relationship length, and their sex) and completed the *Mate Retention Inventory Short Form* and the *Cyber Dating Abuse scale*. Participants were fully debriefed online. Data were collected anonymously, online. For both studies, the order of questionnaires was counterbalanced using the randomizer function on Qualtrics.

Results

Descriptive statistics are presented in Table 1. Values derived from the regression analysis are presented in Table 2. For study 1, hierarchical linear regression was conducted to predict the perpetration of cyber dating abuse from cost-inflicting mate retention tactics and benefit provisioning mate retention tactics whilst controlling for age, relationship length, and the participants' sex. VIF and Tolerance values show that there was no multicollinearity in the model. Cost inflicting mate retention behaviours positively, significantly correlated with cyber dating abuse, meaning high engagement in cost-inflicting mate retention tactics was related to high engagement in cyber dating abuse ($r = .60, p < .001$). There was a positive, significant correlation between benefit-provisioning mate retentions and the perpetration of cyber dating abuse ($r = .29, p = .001$).

Table 1: Descriptive statistics relating to all key variables (study 1)

Variable	Mean (<i>SD</i>)
Cost-inflicting mate retention	26.58 (7.78)
Benefit provisioning mate retention	31.98 (6.23)
Cyber dating abuse	23.70 (5.92)

Age, relationship length, and sex were added to block 1 of the model. Here, they accounted for 2.2% of the variance in cyber dating abuse ($R^2 = .022$), $F(3, 122) = .911, p = .438$. Cost-inflicting and benefit-provisioning mate retention tactics were added to block 2 of the model.

The final model explained 36.8% of the variance in cyber dating abuse, $F(5, 120) = 13.99$ ($R^2 = .368$), $p < .001$, Durbin-Watson = 1.85, Cohens $f^2 = .58$. Cost-inflicting mate

retention significantly, positively predicted cyber dating abuse, confirming H1a. Benefit-provisioning mate retention was a non-significant predictor of cyber dating abuse, confirming H1b.

Table 2. Results of the hierarchical linear regression model predicting cyber dating abuse from cost-inflicting and benefit-provisioning mate retention (study 1).

Variable	β	p	t	CI (95%)		Tolerance	VIF
				Lower	Upper		
<i>Block 1</i>							
Age	-.14	.175	-1.37	-.32	.06	.776	1.288
Sex	-.03	.758	-.31	-4.10	3.00	.977	1.024
Relationship length	.15	.150	1.45	-.01	.05	.789	1.267
<i>Block 2</i>							
Age	-.03	.689	-.40	-.19	.13	.757	1.321
Sex	.05	.483	.70	-1.92	4.02	.917	1.090
Relationship length	.05	.561	.58	-.02	.03	.763	1.311
Cost-inflicting mate retention	.59	<.001	7.15	.32	.57	.784	1.276
Benefit provisioning mate retention	.03	.687	.41	-.13	.19	.750	1.334

Study 2

Method

Participants and Design

The sample consisted of 124 heterosexual people (26 men, 98 women, $M_{age} = 30.68$ years old, $SD = 9.23$) from the United Kingdom, who were in a relationship at the time of participation ($M_{relationship\ length} = 79.10$ months, $SD = 76.06$). Forty-five participants were students and seventy-nine were members of the public. A cross-sectional correlational design was adopted to explore whether mate retention tactics (both cost-inflicting and benefit-provisioning) and the Dark Triad (Machiavellianism, narcissism, and psychopathy) predicted the perpetration of cyber dating abuse.

Materials

Cyber dating abuse

We used the same scale as used in study 1. This scale was reliable in our sample ($\alpha = 0.74$).

Mate Retention

We used the mate retention inventory used in study 1. The scale was reliable in our sample ($\alpha = 0.86$, men $\alpha = .86$, women $\alpha = .87$).

Dark Triad

The 27 item *Dark Triad of Personality (D3-Short)* scale was used to measure participants' Dark Triad personality characteristics² (Jones & Paulhus, 2014). The scale includes three subscales, with 9 items each, measuring Machiavellianism, Narcissism,

² Note: we do not use these terms in a clinical manner.

Psychopathy. Participants rate items on a 5-point Likert scale ranging from “1 = Strongly Disagree” to “5 = “Strongly Agree.” The scale was reliable in our sample ($\alpha = .82$). Machiavellianism: Example items from this subscale include “*Most people can be manipulated*” and “*It’s wise to keep track of information that you can use against people later.*” The scale had acceptable reliability in our sample ($\alpha = .69$). Narcissism: An example item is “*I insist on getting the respect I deserve.*” The scale was reliable in this sample ($\alpha = .71$). Psychopathy: An example item is “*Payback needs to be quick and nasty.*” The scale was reliable in this sample ($\alpha = .75$).

Results

Descriptive statistics are presented in Table 3. Bivariate correlations are presented in Table 4, and all values deriving from the hierarchical regression are presented in Table 5. There was a significant positive relationship between both types of mate retention tactics (benefit provisioning and cost-inflicting) and cyber dating abuse, in that those who reported greater levels of mate retention behaviours also reported greater levels of cyber dating abuse. Furthermore, cost inflicting mate retention tactics were positively related to both Machiavellianism and Psychopathy, in that those who reported greater levels of mate retention behaviours also scored higher in Machiavellianism and psychopathy. There were no statistically significant relationships found between the Dark Triad personality traits and cyber dating abuse.

Table 3: Descriptive statistics relating to all key variables (study 2)

Variable	Mean (SD)
Cost-inflicting mate retention	26.37 (6.29)
Benefit provisioning mate retention	42.41 (8.03)
Cyber dating abuse	23.35 (5.83)
Psychopathy	18.87 (5.29)
Machiavellianism	24.69 (5.15)
Narcissism	23.65 (5.11)

Table 4: Bivariate Correlations amongst key variables (study 2)

	1	2	3	4	5	6
1.Mate retention (cost-inflicting)	-	.35**	.24**	.16	.27**	.59**
2. Mate retention (benefit provisioning)		-	.10	.07	.07	.18*
3.Machiavellianism			-	.28**	.43**	.15
4.Narcissism				-	.41**	-.05
5.Psychopathy					-	.08
6.Cyber dating abuse						-

* $p < .05$, ** $p < .01$

Hierarchical multiple regression

Hierarchical multiple regression was conducted to predict the perpetration of cyber dating abuse (mean = 23.35, $SD = 5.83$) from cost-inflicting mate retention, benefit provisioning mate retention, psychopathy, Machiavellianism, and narcissism whilst controlling for relationship length, age, and sex.

Relationship length, age, and sex were added to block 1, explaining 8.3% of the variance in cyber dating abuse ($R^2 = .083$), $F(3, 120) = 3.64$, $p = .015$. Mate retention tactics (cost-inflicting and benefit-provisioning), narcissism, psychopathy, and Machiavellianism were added to block 2 of the model. The model was statistically significant and explained 38.9% of the variance in cyber dating abuse, $F(8, 115) = 9.15$ ($R^2 = .389$), $p < .001$, Durbin-Watson = 1.69, Cohens $f^2 = 0.64$. Consistent with study 1, cost-inflicting mate retention significantly predicted cyber dating abuse, supporting H1a. Benefit-provisioning mate retention was a non-significant predictor of cyber dating abuse, supporting H1b. None of the Dark Triad traits predicted cyber dating abuse, providing no support for hypotheses 2a, b, and c.

Table 5. Results of the multiple regression predicting cyber dating abuse from mate retention, Machiavellianism, narcissism, and psychopathy (study 2).

Variable	β	p	t	CI (95%)		Tolerance	VIF
				Lower	Upper		
<i>Block 1</i>							
Age	-.15	.159	-1.42	-.22	.04	.723	1.384
Sex ³	.21	.020	2.35	.47	5.46	.977	1.024
Relationship length	.24	.021	2.34	.00	.03	.729	1.371
<i>Block 2</i>							
Age	-.07	.456	-.75	-.15	.07	.673	1.487
Sex	.12	.139	1.45	-.62	4.06	.774	1.292
Relationship length	.08	.382	.88	-.01	.02	.665	1.505
Machiavellianism	.07	.417	.81	-.11	.27	.750	1.333
Narcissism	-.13	.099	-1.66	-.34	.03	.814	1.229
Psychopathy	-.02	.846	-.20	-.22	.18	.633	1.580
Cost-inflicting mate retention	.56	<.001	6.38	.36	.68	.769	1.472
Benefit-provisioning mate retention	.01	.880	.15	-.11	.13	.764	1.309

Discussion

³ Although sex was a significant predictor, we did not follow this up with an independent samples t-test, due to the disproportionate men and women who took part in the study.

The aims of this paper were to 1) explore the relationships between cost-inflicting mate retention tactics, benefit-provisioning mate retention tactics and cyber dating abuse, and to 2) explore the relationships between The Dark Triad: Machiavellianism, Narcissism, Psychopathy, and cyber dating abuse. We explored whether cost-inflicting mate retention tactics were related to the perpetration of cyber dating abuse, as previous literature has shown that evolutionary, mating-relevant factors such as intrasexual competition and mate value discrepancy positively predict the perpetration of cyber dating abuse. Here, we show that people use technology as a medium to perform various mate retention behaviours, particularly via social media platforms and instant messaging.

Cost-inflicting mate retention tactics were positively related to cyber dating abuse, demonstrating that those who engage in cost-inflicting mate retention tactics also engage in the perpetration of cyber dating abuse. Although the findings from both studies show that there was a small positive correlation between benefit-provisioning mate retention and cyber dating abuse, benefit-provisioning mate retention did not predict cyber dating abuse in the model. Cost-Inflicting mate retention tactics were also positively related to Machiavellianism and Psychopathy, demonstrating that those who consider themselves to be higher in these traits also engage in more cost-inflicting mate retention behaviours. Cost-inflicting mate retention was the only significant predictor of cyber dating abuse. Our research extends previous literature examining cyber dating abuse from an evolutionary perspective (Bem et al., 2015; Bhogal et al., 2018; Bhogal et al., 2019; Bhogal et al., in press).

Those who were higher in The Dark Triad traits did not engage in more cyber dating abuse behaviours which is inconsistent with recent literature finding narcissism and psychopathy predict the perpetration of cyber dating abuse (see Branson & March 2021; Pineda et al. 2021). This is unexpected as we would expect those with traits that are associated with anti-social behaviour (Paulhus & Williams, 2002) to also engage in cyber dating abuse

behaviours, also considered to be a form of anti-social behaviour (Bhogal & Howman, 2019). Our finding that Machiavellianism does not predict cyber dating abuse is somewhat consistent with previous literature (see March et al., 2020). Furthermore, our finding is consistent with Pineda et al. (2021) who found Machiavellianism did not predict cyber dating abuse. These findings are partially consistent with previous literature whereby Machiavellianism has found to be unrelated to offline IPV (Carton & Egan, 2017).

There could be several reasons we were unable to find an association between Dark Triad traits and cyber dating abuse. Research has highlighted that those high in Machiavellianism can be manipulating and deceiving (Furnham et al., 2013), suggesting that they are good at concealing their true motives. Therefore, those who are high in this trait may have under-reported. Those high in narcissism have a high sense of grandiosity (Sauls et al., 2019) demonstrating that they are more likely to present themselves in a favourable manner. Therefore, those high in narcissism may have been less likely to report higher levels of cyber dating abuse as this is consistent with behaviours that are socially undesirable. Individuals high in Psychopathy engage in revengeful behaviour (Rasmussen & Boon, 2014), therefore, it is surprising that those high in this trait did not report higher levels of cyber dating abuse behaviours, such as derogation of mates and threats to disseminate secrets or compromising information about a romantic partner. One explanation for this result, when considered in the context of previous research, is that those high in Psychopathy may be more likely to engage in alternative anti-social online behaviours such as revenge porn and cyber bullying as opposed to cyber dating abuse. Furthermore, those who took part in study 2 had been in a romantic relationship for approximately 79 months. In hindsight, we should have aimed to recruit participants who had been in shorter-term relationships as opposed to established romantic relationships. This is evident by the fact that the sample in study 2 engaged in greater levels of benefit provisioning mate retention compared to study 1.

The findings provide novel knowledge of our understanding of the perpetration of cyber dating abuse from an evolutionary perspective. There is applied value of our findings, particularly for practitioners working with those who are affected by cyber dating abuse. Many of those in romantic relationships are not aware of the threshold at which online communication between themselves and their partner crosses the boundary into cyber dating abuse (Messing et al., 2020). With extensive research on cyber dating abuse, policies could seek to raise awareness and educate those in romantic relationships, and victims of IPV, on what constitutes unhealthy digital communication and some of the factors that facilitate these behaviours, thus, providing valuable research for interventions that lead to beneficial changes in the context of romantic relationships and online behaviour. In addition, the perpetrators themselves may not be aware that they are engaging in these behaviours, especially as technology is deeply embedded into society and romantic relationships (Morey et al., 2013; Reed et al., 2021; Woodlock et al., 2019). Future research could further our understanding of the role of mating-relevant factors in the perpetration of cyber dating abuse by examining whether factors such as mate value discrepancy moderate relationships between cyber dating abuse and the Dark Triad.

Although the study has many strengths, there are also notable limitations. The correlational nature of the study means we are unable to establish causality. Cyber dating abuse can be a relational act, whereby one or both partners engage in these behaviours. Here, we only examined behaviours by the participant, and not their partner. Future research should examine these actor-partner effects in cyber dating abuse. The scales used were reliable in this sample, however the Dark Triad scale has received criticism. Researchers state that the measurement is not able to effectively measure Psychopathy (Koehn et al., 2019). Previous research has yielded mixed results in relation to sex differences and the perpetration of cyber dating abuse. We were unable to examine the role of sex in our analyses as there was an imbalance between men and women. In addition, the null results found in relation to hypotheses 2a, b, and c could be the

result of recruiting fewer men than women in our study, particularly as previous literature has found that men tend to score higher in the Dark Triad than women (see Jonason & Davis, 2018). Future research should recruit an equal number of males and females to further explore the relationship between the Dark Triad, mate retention tactics and cyber dating abuse. However, our findings are consistent with previous literature on cyber dating abuse, whereby samples are largely female (e.g., Borrajo et al., 2015; Branson & March, 2021; Carton & Egan, 2017; Pineda et al., 2021). Finally, our findings are only applicable to heterosexual relationships. Future research should examine cyber dating abuse in samples of same-sex relationships.

We did not specify whether participants should be in a committed romantic relationship, which may have implications for conceptualising mate retention tactics and cyber dating abuse. We simply asked participants if they were currently in a romantic relationship. Future research could also examine the role of sadism and the Dark Tetrad in cyber dating abuse, particularly as previous research has shown that sadism is predictive of cyber stalking and control, and direct cyber aggression (Hughes & Samuels, 2021; Pineda et al., 2021; Smoker & March, 2017). There are several other factors which may moderate the relationship between mate retention tactics and cyber dating abuse, including experiences of infidelity and mate value discrepancy, which could be explored in future research. Although mate value discrepancy has been found to be predictive of cyber dating abuse, future research could examine whether mate value discrepancy moderates the relationship between mate retention tactics and cyber dating abuse.

Conclusion

Our paper aimed to examine whether mate retention tactics (benefit-provisioning and cost-inflicting) and the Dark Triad (narcissism, psychopathy, and Machiavellianism) were related to the perpetration of cyber dating abuse. Building on and extending previous literature examining cyber dating abuse from an evolutionary perspective, we found that cost-inflicting

mate retention tactics predict the perpetration of cyber dating abuse, showing that people use technology to engage in mate retention tactics with their current romantic partners. Our study adds to the literature examining cyber dating abuse from an evolutionary psychological perspective.

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