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Love me Tinder: The effects of women's lifetime dating app use on daily body dissatisfaction, disordered eating urges, and negative mood

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ABSTRACT

Dating apps may potentially serve as an environment that subjects young women to the harmful effects of appearance-related pressure. The current study assessed for the first time whether women's dating app use predicted body dissatisfaction (BD), urges to engage in disordered eating (DE), and negative mood in daily life. We also examined the unique effects of women's dating app partner preferences (i.e., seeking idealised versus non-idealised physical characteristics) on the aforementioned outcomes, and whether appearance-based rejection sensitivity (appearance-RS) moderated the effects of dating app use. Participants (N = 296; 100% women) first completed a baseline survey assessing lifetime dating app usage (i.e., current or former usage), partner preferences, and appearance-RS, followed by a 7-day smartphone-facilitated ecological investigation into momentary experiences of BD, DE urges (i.e., binge-eating/purging, dietary restraint, and exercise), and negative mood. Ninety-four women (32%) reported lifetime dating app usage, which, relative to non-use, predicted greater daily urges for binge-eating/purging and negative mood. However, appearance-RS failed to moderate these effects. Among dating app users, partner preferences were not a significant predictor of the central outcomes. These findings extend previous research by examining the unique effects of dating app use on everyday BD, DE urges, and negative mood. Replication and extension are encouraged.

1. Introduction

Offering ease of use and an abundance of potential partners, dating applications (apps) have become a ubiquitous form of contemporary dating for young adults (Chan, 2017; Tran et al., 2019). Popular dating apps such as Tinder and Bumble enable users to quickly appraise a large number of potential "matches" by viewing other profiles (primarily photos) and either "swiping right" (to like the profile) or "swiping left" (to reject it; Alexopoulos, Timmermans, & McNallie, 2020). An estimated 270 million people worldwide, predominately 18–34-year-olds, currently use dating apps (Curry, 2022); with the average user engaging two to three times per day (Strubel & Petrie, 2017) and for at least one year (Holtzhausen et al., 2020). To date, dating apps have received little attention within the body image and eating disturbance literature (Blake, Portingale, Giles, Griffiths, & Krug, 2021; Rodgers et al., 2020; Strubel & Petrie, 2017; Tran et al., 2019). This is surprising given that dating apps represent novel technological environments that are largely or exclusively image-focused; fostering rapid appraisals and evaluations from other users based on profiles that foreground visual representation whilst backgrounding textual description (David & Cambre, 2016; Rodgers et al., 2020; Yeo & Fung, 2016). Dating apps also provide real-time user feedback, via components such as matches, likes, and other-instigated conversations, through which users can assess their physical attractiveness (Griffiths et al., 2018; Strubel & Petrie, 2017).

The centrality of physical appearance within the interface design features of dating apps may constitute an appearance-related pressure that manifests in users' placing a disproportionate degree of importance on physical attractiveness and visual impression management (Strubel & Petrie, 2017). Such experiences are known to increase one's likelihood of experiencing body dissatisfaction (BD) and disordered eating (DE) symptoms (Hosseini & Padhy, 2020;

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Quittkat, Hartmann, Düsing, Buhlmann, & Vocks, 2019; Rodgers, 2016), which act as central aetiological factors in the development and maintenance of eating disorders (EDs; e.g., Frederick, Forbes, Grigorian, & Jarcho, 2007; Stice, 2002). Hence, there is good reason to suspect that dating app use may foster BD and DE symptoms.

The potential harms of dating app use may be particularly pronounced for women, who demonstrate alarmingly high rates of BD and DE symptoms (Striegel-Moore et al., 2009). Theoretically, women who use dating apps may be more susceptible to appearance-based concerns than men because men place greater value than women on physical appearance over non-physical cues when seeking a potential partner; desiring women with the idealised slim and toned body type (Glasser, Robnett, & Feliciano, 2009). Appearance-based concerns are also likely to exist among all women who use dating apps; irrespective of their sexual orientation. Theoretically, this is because all women are socialised by a heteronormative society that portrays powerful images and messages of ideal physical attractiveness (Henrichs-Beck & Szymanski, 2017; Smith, Telford, & Tree, 2019). Together, this necessitates research into the potentially detrimental effects of women's dating app use on their body image, eating behaviours, and emotional wellbeing.

1.1. An interpersonal model to understand the impact of dating app use on BD, DE, and mood

The pervasive experience of appearance-based evaluation within dating app environments can be conceptualised within Rieger and colleagues' (2010) ED specific model of interpersonal psychotherapy (IPT-ED). The model proposes that negative social evaluation leads to low self-esteem, BD, and negative affect, in turn, triggering DE behaviours that are perceived by the individual as a means to enhance social acceptance, esteem, and affect (Rieger et al., 2010). Previous research, although scant, provides empirical support for the IPT-ED framework (e.g., Raykos, McEvoy, & Fursland, 2017; Rieger, Dolan, Thomas, & Bell, 2017). Although the IPT-ED model neglects the differential repercussions of rejection from intimate others versus the broader social sphere, it provides a useful framework for understanding the effects of dating app use on eating pathology among women. For instance, decreased social desirability relative to other dating app users may foster appearance-based rejection, and subsequently, BD and negative mood, as discrepancies emerge between one's body and the idealised physique. In turn, triggering DE behaviours in a maladaptive attempt to enhance physical attractiveness and hence, dating app success, esteem, and positive affect

Research suggests that interpersonal evaluations—defined as actual or perceived feedback regarding one's value to another individual or group (Rieger et al., 2010)—within dating apps are guided by appearance ideals (Ward, 2017). However, the relationship between womens' dating app partner seeking tendencies and body image and eating disturbance remains unexamined within the existing dating app literature (Blake et al., 2021; Rodgers et al., 2020; Strubel & Petrie, 2017; Tran et al., 2019). The rationale for examining such is compelling, given that young adults generally judge idealised physical characteristics, such as slimness, muscle tone, and sex appeal as more important than attributes conveying health and intelligence when considering short-term, sexual partners (Jones et al., 2018; Lei & Perrett, 2020; Li & Kenrick, 2006; Sprecher & Regan, 2002) – i.e., the nature of relationships that is privileged by dating apps (Yeo & Fung, 2018). Such partner seeking tendency is concerning as it suggests an internalisation of appearance ideals (i.e., the belief that achieving a slim and toned body is necessary to be attractive) which is a well-established and prominent risk factor for BD, DE symptoms, and negative mood (Rodgers, Paxton, & McLean, 2014; Stice, 2001). This is because it may activate negative appearance-related schema about the ideal body and one's distance from this unrealistic goal, which subsequently leads to eating disturbances in an effort to change one's shape or weight. Adding to such concern, research suggests that women tend to misperceive and exaggerate the thinness that potential partners prefer, particularly within short-term relationship contexts (Lei & Perrett, 2020). Thus, potentially heightening the perceived unattainability of idealised standards of attractiveness among women who internalise these appearance ideals when seeking potential dating app partners. Moreover, dating app users often search for potential partners to provide clues on how to present themselves to attract others (Ward, 2017). Together, it is plausible that seeking idealised relative to non-idealised physical characteristics in potential dating app partners may foster BD, DE symptoms, and negative mood among women.

1.2. Support for the negative impact of dating app use on BD, DE, and mood

Preliminary cross-sectional research has demonstrated associations between dating app use with BD (Rodgers et al., 2020; Strubel & Petrie, 2017) and DE symptoms (Blake et al., 2021; Tran et al., 2019). In an initial study of 100 Tinder users and 847 non-users (79.6% women), Strubel and Petrie (2017) found that Tinder users reported significantly greater BD and body-shame, and more frequent body surveillance, appearance comparison, and internalisation of appearance ideals (*d*s ranged from.23 to.37). Rodgers and colleagues (2020), in a study of 170 participants (50% women), further examined associations between dating app use across various platforms (e.g., Tinder, Bumble, OkCupid, and Happn) and body image concerns. Frequent dating app use was positively associated with body shame (r = 0.27) among men, and women reported greater negative feelings during dating app use than men (35.3% vs. 18.6%). Additionally, in a recent study of 392 dating app users and 1334 non-users (63.6% women), Tran and colleagues (2019) demonstrated significantly higher levels of unhealthy weight control behaviours among app-users (*OR*s ranged from 2.7 to 16.2). Similarly, in a recent unpublished study comparing 310 dating app users and 380 non-users (77.1% women), Blake and colleagues (2021) demonstrated significantly higher levels of DE symptoms among app users (b = 0.07). Collectively, this small body of research suggests that dating app use is associated with BD and DE symptoms among community samples. However, there is limited support for the unique effects of dating app use among women.

Scant research has implicated dating app use in mood-based mental-health outcomes which display high comorbidity and a bi-directional relationship with eating pathology (Holtzhausen et al., 2020; Puccio, Fuller-Tyszkiewicz, Ong, & Krug, 2016). In a recent cross-sectional study comparing 129 current dating app users and 205 non-users (66.5% women), Holtzhausen and colleagues (2020) found significantly higher levels of psychological distress and depression among dating app users (*OR*s ranged from 1.91 to 2.51). Together, this preliminary research suggests that dating app use may increase one's risk of not just eating pathology, but also comorbid symptoms such as negative mood.

1.3. The moderating effects of appearance-based rejection sensitivity

As the IPT-ED model (Rieger et al., 2010) highlights the centrality of appearance-based rejection in the development of eating pathology, maladaptive cognitions related to this construct may underpin one's differential susceptibility to eating pathology following dating app use. With quick accept or reject decisions based on carefully curated visual profiles (De Paoli, Fuller-Tyszkiewicz, & Krug, 2017; Strubel & Petrie, 2017; Ward, 2017), and real-time evaluative components, cues to elicit concerns surrounding appearance-based rejection are salient within dating app environments. Appearance-based rejection sensitivity (appearance-RS), is defined as a socio-affective processing bias where individuals anxiously expect, readily

perceive, and overreact to real or imagined signs of rejection based on one's physical appearance (Park, 2007). Whilst dating app users are not explicitly aware of who has rejected them (Ward, 2017), those with appearance-RS are highly vigilant and vulnerable to the possibility of appearance-based rejection (Park, 2007). Therefore, they may interpret a lack of dating success, and ambiguous or neutral actions, such as receiving fewer matches, as appearance-based rejection. This may produce anxious and avoidant behaviour which inadvertently elicits rejection (Murray, Holmes, & Collins, 2006; Park & Pinkus, 2009) from potential partners.

Previous studies have supported the acute negative impact of actual or perceived appearance-based rejection on self and body evaluation and DE symptoms (e.g., De Paoli et al., 2017; Rieger et al., 2010). Theoretically, individuals with higher levels of appearance-RS may become motivated to engage in DE behaviours to enhance their perceived attractiveness, and thus, lessen anxious expectations surrounding appearance-based rejection (Linardon, Braithwaite, Cousins, & Brennan, 2017; Park & Pinkus, 2009). Therefore, it is plausible that appearance-RS may moderate the relationships between dating app use and BD, DE, and negative mood; such that the relationships may be stronger for women with higher trait-level appearance-RS.

1.4. Gaps in the literature

Despite preliminary evidence supporting associations between women's dating app use and BD, DE, and negative mood, this literature presents itself with numerous limitations. First, previous studies (Blake et al., 2021; Rodgers et al., 2020; Strubel & Petrie, 2017; Tran et al., 2019) have relied exclusively on cross-sectional data, namely, retrospective self-reports. Although informative, such methods of assessment are subject to recall biases (i.e., systematic errors or inaccuracies that occur in the recollection of past experiences; Heron & Smyth, 2013; Smyth et al., 2001). Curiously, research also suggests that body-image disturbed individuals display increased recall for appearance-related information (Lewer et al., 2017), and generally underestimate the frequency and severity of DE symptoms during retrospective assessment (Bardone et al., 2000). Offering a means of overcoming such shortcomings, researchers have begun to employ momentary assessment (EMA) methodology to investigate individuals' experiences of body image concerns and DE symptoms in their everyday lives (Smyth et al., 2009). By capturing participants' very recent cognitive or affective states, and behaviours within their natural environment (Shiffman, Stone, & Hufford, 2008), EMA methodology holds utility in reducing retrospective recall bias and enhancing ecological validity (i.e., the extent to which a study can be generalised to real-life settings; Smyth et al., 2009). Thus, providing support for the suitability of EMA to investigate a range of ED-related constructs (i.e., BD and DE).

Second, as the majority of current studies (e.g., Blake et al., 2021; Strubel & Petrie, 2017) assessed men and women together, there is limited knowledge regarding the unique effects of dating app usage on women. Third, existing research has neglected the role of partner seeking tendencies during dating app use in the development and/or perpetuation of body image concerns and eating pathology. Understanding such may foster more targeted prevention and early intervention strategies for common DE behaviours by prompting more informed dating app use. Lastly, trait-level differential susceptibility to eating pathology following dating app use remains unexamined. Investigating whether appearance-RS moderates the relationship between dating app use and BD, DE, and negative mood holds utility as it may suggest why individuals react differently following exposure to the same environmental influences, and therefore, may inform interventions. Without redressing these limitations, insights into the effects of dating app use on BD, DE, and mood among women are limited.

1.5. Proposed study and rationale

The present study was the first to use EMA to directly investigate the impact of women's lifetime dating app use on EMA-assessed BD, DE urges, and negative mood. This study also sought to rectify the scarcity of research on user engagement patterns by examining the unique effects of women's dating app partner preferences on BD, DE urges, and negative mood, and whether appearance-RS moderated the effects of lifetime dating app use on these outcomes. As the severity of eating pathology lies on a continuum from clinically severe EDs to sub-clinical forms of DE (Peck & Lightsey, 2008), assessing a community sample holds utility in informing prevention and early intervention strategies. Hence, to assess the current aims, we employed a community sample of women. Participants first completed a baseline assessment of demographic and trait variables (i.e., lifetime dating app usage [i.e., current or former usage], partner preferences, and appearance-RS). They were then required to download an EMA-based smartphone app and respond to short surveys asking about BD, DE urges, and negative mood six times per day, for 7 days.

Dating app use was assessed at the trait level according to baseline reports of having used dating apps at least once throughout one's lifetime. Given the novelty of dating app use research, this single-item measure was chosen as it is a simple, concrete construct that is well understood and is consistent with the approaches taken in related dating app use research (Blake et al., 2021; Sawyer, Smith, & Benotsch, 2018). As this study focused on a community sample, urges to engage in DE were assessed as a proxy measure for actual DE behaviours. For each analysis, DE was separated into the urge to engage in one of the following behaviours; binge-eating/purging, dietary restraint, or exercise. This division was deemed necessary from a conceptual perspective. Binge-eating, although it may be directly related to BD, is frequently viewed as a distraction from negative thoughts, and accompanied by purging to alleviate feelings of guilt (Meyer & Waller, 1999). Comparatively, dietary restraint is often undertaken to directly address BD (Fitzsimmons-Craft, Ciao, & Accurso, 2016). Engaging in exercise for weight/shape control reasons is an alternative DE practice (Gonçalves & Gomes, 2012). Given our community sample, urges to engage in overeating (a construct that is associated with central features of binge-eating, such as loss of control eating; Engel et al., 2013; Goldschmidt et al., 2014), was assessed as a proxy measure for binge-eating behaviours.

Based on the aforementioned literature, the following hypotheses were formulated:

1) Lifetime dating app users would report higher levels of EMA-assessed BD, DE urges (dietary restraint, binge-eating/purging, and/or exercise), and negative mood, than non-dating app users (H1).
2) Lifetime dating app users who seek potential partners based on idealised physical characteristics (thinness/sliminess, muscle tone, and/or sex appeal)would report greater EMA-assessed BD, DE urges, and/or negative mood than those who seek non-idealised physical characteristics (health and/or intelligence) in potential partners (H2).
3) Appearance-RS would moderate the relationships between lifetime dating app use and the aforementioned outcomes; such that the relationships would be stronger among individuals with higher trait-level appearance-RS (H3).

2. Method

2.1. Participants

Following approval from the Research Ethics Committee at a university in Melbourne, participants were recruited through the

Table 1
Demographic characteristics of the total sample, and by dating app user status.

Demographic variable	Statistics				
	Lifetime dating app user (n = 94, 31.8%)	Lifetime dating app non-user (n = 202, 68.2%)	Total (N = 296)	t/χ^2	p
Age (M ± SD)	20.97 ± 4.54	20.36 ± 4.69	20.56 ± 4.64	1.44	.294
BMI (M ± SD)	21.77 ± 3.34	21.87 ± 4.06	21.83 ± 3.77	-0.23	.833
Ethnicity (n, %)				16.32	**.022**
Caucasian	47 (50%)	71 (35%)	118 (40%)		
Eastern Asian	16 (17%)	49 (24%)	65 (22%)		
Southern Asian/Southeast Asian	20 (21%)	59 (29%)	79 (26.5%)		
Other	11 (12%)	23 (12%)	34 (11.5%)		
Highest education completed (n, %)				7.11	.310
Year 12 or below	66 (70.2%)	151 (74.8%)	217 (73.3%)		
Certificate/diploma	6 (6.4%)	15 (7.5%)	21 (7.1%)		
Bachelor's degree	15 (16%)	24 (11.9%)	39 (13.2%)		
Postgraduate degree	7 (7.4%)	12 (5.9%)	19 (6.4%)		
Primary language (n, %)				6.86	**.009**
English	70 (74.5%)	117 (58%)	187 (63%)		
Other	24 (25.5%)	85 (42%)	109 (37%)		
Sexual orientation (n, %)				12.12	**.033**
Heterosexual	63 (67%)	167 (82.7%)	230 (77.7%)		
Homosexual	3 (3.2%)	3 (1.5%)	6 (2%)		
Bisexual	23 (24.5%)	24 (11.9%)	47 (15.9%)		
Asexual	0 (0%)	2 (1%)	2 (0.7%)		
Other	3 (3.2%)	2 (1%)	5 (1.7%)		
Prefer not to say	2 (2.1%)	4 (2%)	6 (2%)		
Marital status (n, %)				8.90	.064
Single	62 (66%)	125 (61.9%)	187 (63.2%)		
Married	0 (0%)	10 (5%)	10 (3.4%)		
De facto	0 (0%)	4 (2%)	4 (1.4%)		
Separated	1 (1.1%)	0 (0%)	1 (0.3%)		
In a relationship	31 (33%)	63 (31.2%)	94 (31.8%)		
Eating disorder diagnosed (n, %)				1.73	.188
Yes	11 (11.7%)	13 (6.4%)	24 (8.1%)		

Note. N = 296. Significant p values bolded. BMI = Body Mass Index (kg/m^2). M = mean, SD = standard deviation. t-test for continuous variables, chi-squared test for categorical variables.

university's Research Experience Program (REP) and several sources within the Australian community; including the university notice-board, social-media pages, ED organisations, personal contacts of the researchers, and snowballing methods. Of the initial sample who commenced the EMA phase (n = 373), 77 were excluded as they completed less than 50% of the EMA surveys (n_{max} = 42 assessments; six per day over 7-days). This approach was implemented to ensure that the participants retained in the sample completed a comparable number of surveys to related studies that observed effects between EMA-assessed variables within the body image and ED field (e.g., Fuller-Tyszkiewicz et al., 2019; Gittus et al., 2020; Tan et al., 2019). The current approach was also implemented to reduce biased results due to missing data (Shiffman et al., 2008). The final sample comprised 296 women, of whom, 94 were lifetime dating app users (i.e., had used a dating app at least once) and 202 were non-users. The overall sample was aged between 18 and 48 years, and with a mean body mass index (BMI) categorised as normal (M = 21.83, SD = 3.77).

Table 1 depicts the demographic characteristics of the sample. Lifetime dating app users and non-users differed significantly in terms of ethnicity, primary language, and sexual orientation. Dating app users were more likely to be Caucasian, speak English, and less likely to be heterosexual. However, these variables were not included as covariates in the main analyses, given that research has demonstrated a comparable prevalence of BD and DE symptoms across women's sexual orientation groups (Morrison, Morrison, & Sager, 2004; Yean et al., 2013). Research has also documented comparable experiences of BD and DE across women's ethnic groups (Grabe & Hyde, 2006; O'Neill, 2003) and non-significant associations between one's primary language and DE (Granillo, Jones-Rodriguez, & Carvajal, 2005). Importantly, there was no significant difference between the groups in BMI. Twenty-four women (8%) presented with a previous ED diagnosis.

2.2. Procedure

2.2.1. Phase 1 (trait-based assessment)

Respondents were first provided with a web link to access the online Qualtrics survey platform. Those who consented provided their email and a self-generated unique identifier (ID), then completed a baseline survey, which collected demographic information and measures of the trait-level variables of interest. Following completion, participants were emailed detailed instructions on how to download and use the custom-built EMA smartphone app *SEMA3* (Koval et al., 2019). Each participant also received a unique numeric code, randomly generated by *SEMA3*, which experimenters manually entered into Qualtrics to link the Phase 1 and Phase 2 data. Participants were encouraged to complete as many surveys as possible and informed that their compliance rate (as a proportion of surveys released) would be monitored daily, following recommendations for maximising compliance in EMA studies (Wrzus & Mehl, 2015).

2.2.2. Phase 2 (EMA)

The morning after Phase 1 completion, *SEMA3* began sending push-notifications six times per day, at semi-random intervals (approximately every 1–2 h) between 9:00 AM and 10:00 PM, for seven days (maximum of 42 assessments). At each signal, participants were required to complete a brief 1–2-min assessment containing items measuring BD, DE urges, and mood. Related EMA studies have shown support for similarly demanding protocols (e.g., Drutschinin, Fuller-Tyszkiewicz, Paoli, Lewis, & Krug, 2018). Random interval scheduling functioned to remove response bias due to habituation, and the brief design of each survey intended to balance participant burden from repeated assessment (Fuller-Tyszkiewicz et al., 2019). Participants had a 30-min window to complete each survey. After that time, the survey expired, and the data point was coded as missing. Researchers maintained regular contact with participants

throughout the EMA phase to provide support, as well as prompts and incentives for survey completion. Specifically, participants whose compliance fell below 50% were emailed friendly reminders (no more than once every two days; with a maximum of two emails over the 7-day period) to complete more surveys if they wished to receive full compensation. This approach is consistent with recommendations for maximising compliance in EMA studies (Chia et al., 2018; Zunker et al., 2011). Upon completion of the study, participants were debriefed. Those recruited through the university received 2 h worth of REP credit, and those from the wider community were entered into a draw to win one of five $100 e-gift cards.

2.3. Materials

2.3.1. Baseline measures

2.3.1.1. Demographics. Participants provided information regarding age, current self-reported height and weight (through which BMI was calculated), ethnicity, primary language, educational attainment, sexual orientation, marital status, and current and lifetime ED diagnosis.

2.3.2. Trait-based measures

2.3.2.1. Lifetime dating app use. Participants reported whether they had ever used dating apps, with responses coded as 2 (*yes*) and 1 (*no*). We then collected additional information by evaluating which dating app(s) the user's had used, and their motivation(s) for using dating apps by asking whether they used them for Casual Sex, Ease of Communication, Self-Worth Validation, Thrill of Excitement, Trendiness, or Love (Sumter, Vandenbosch, & Ligtenberg, 2017).

2.3.2.2. Dating app partner preferences. Participants who reported lifetime dating app usage indicated which physical characteristic(s) they seek in a perfect match/partner from one or more of the following options; (1) *thinness/slimness,* (2) *muscle tone,* (3) *sex appeal,* (4) *healthy-looking,* (5) *intelligent-looking*, and (6) *other.* These items were then combined into three dummy variables; representing *idealised* physical characteristics (options 1–3), *non-idealised* physical characteristics (options 4–5), and *both* when at least one idealised and non-idealised physical characteristic was selected (options 1–5). Each dummy variable was coded as 1 for observations at that level and 0 for all others. These categories were adapted from previous research examining idealised and non-idealised physical characteristics (e.g., Ghaznavi & Taylor, 2015; Sprecher & Regan, 2002; Steinfeld, Hartmann, Waldorf, & Vocks, 2020), and were coded as such to reduce the number of variables during analysis.

2.3.2.3. Appearance-based rejection sensitivity. The shortened version of the appearance-RS scale (Park, 2007) was used, which consisted of 10 scenarios in which individuals might anxiously expect to be rejected based on their appearance (Park & Pinkus, 2009). Across each scenario (e.g., *"You are leaving your house to go on a first date when you notice a blemish on your face*"), participants indicated, on a 6-point scale, their anxiety about being rejected (affective component; *1 = very unconcerned, 6 = very concerned*), and their expectation of rejection (cognitive component; *1 = very unlikely, 6 = very likely*). Appearance-RS was calculated by multiplying and averaging the scores of the affective and cognitive components of each scenario, leading to a mean score with a range of 1–36. Higher scores indicated greater appearance-RS. The version used in the current study has demonstrated acceptable construct validity and high internal reliability (Park & Pinkus, 2009). In the present study, internal consistency for this scale was strong (Cronbach's alpha =0.93).

2.3.3. Ecological momentary assessment measures

2.3.3.1. Body dissatisfaction. Participants indicated their *current* level of body satisfaction with the item, *"How satisfied are you with your appearance right now?",* on an 11-point scale (*0 = extremely dissatisfied, 10 = extremely satisfied*). This item was reverse-coded, with higher scores indicating greater state BD. This measure has been validated in prior EMA-based investigations (Chia et al., 2018; Gittus et al., 2020; Rodgers, Fuller-Tyszkiewicz, Holmes, Skouteris, & Broadbent, 2018).

2.3.3.2. Urges to engage in disordered eating. Participants indicated whether they had experienced, since the last survey, an urge to; (a) "*consciously restrict food intake to control weight/shape*" (dietary restraint); (b) *"eat a large amount of food relative to what others would eat in the same situation/time",* (c) "*engage in self-induced vomiting to control weight/shape"* (binge-eating/purging); and (d) "*engage in at least 15 min of exercise to control weight/shape"* (exercise). Responses were coded as 1 (*yes*) and 0 (*no*). Previous EMA studies assessing DE behaviours have used similar single-item measures (Carels et al., 2019; Gittus et al., 2020; Mason, Smith, Crosby, Engel, & Wonderlich, 2019). The validity of these measures has been demonstrated in terms of association with related DE constructs (e.g., mood and loss of control eating; Engel et al., 2013; Goldschmidt et al., 2014).

2.3.3.3. Negative mood. Participants indicated their *current* mood with the item, *"How happy are you right now?",* on an 11-point scale (*0 = not at all, 10 = completely*). Responses were reverse-coded with higher scores reflecting greater state negative mood. This single-item measure was adapted from previous EMA studies investigating negative mood (e.g., Chia et al., 2018; Gittus et al., 2020).

2.4. Data analytical plan

2.4.1. Data screening and preliminary analyses

The quality of the baseline and EMA data was checked prior to the main analyses. There was no missing data in the Level 2 (trait-based) variables as participants were required to answer all questions on Qualtrics during Phase 1. Although no data within-time points were missing during the EMA phase, participants differed in the number of EMA surveys completed (out of a possible 42). Several preliminary tests were undertaken to assess potential bias in the EMA data (i.e., threats to the generalisability of findings). First, compliance rates (i.e., the number of EMA surveys completed) were correlated with scores on baseline demographic and trait-based variables to delineate systematic differences in completion (Howard, Klettke, Ling, Krug, & Fuller-Tyszkiewicz, 2019). Second, all EMA-assessed variables used as outcomes in the hypothesis testing (i.e., BD, DE urges, and negative mood) were evaluated for time-related and reactivity effects; given concerns that reports of these outcomes may vary as a function of time of day (coded in hourly blocks), day of the week (weekday vs. weekend), and/or the order of assessment across the EMA phase (from the first to the last survey over the 7-days; e.g., Fuller-Tyszkiewicz et al., 2020; Howard et al., 2019). Any significant time-related or reactivity effects were retained in the final models as covariates to account for their influence on modelled outcome variables.

2.4.2. Hypothesis testing

Hypothesis testing was undertaken using multilevel modelling to handle the non-independence of data arising from repeated assessment in the EMA phase. The assessed sample size varied across hypotheses as a function of the predictor variables. H1 and H3 assessed lifetime dating app usage and were tested using data obtained from the whole sample (N = 296). H2 assessed trait-based

partner preferences and was tested using data obtained from lifetime dating app users (n = 94).

We adopted a bottom-up approach to data analysis by incrementally increasing the complexity of our models. First, null models comprising only the Level 1 outcome variables (i.e., BD, negative mood, and DE urges) were tested for between-person differences. The multilevel modelling approach was justified and utilised when significant variance was observed across individuals (i.e., intraclass correlation coefficients > 5%; Hofmann, 1997; LeBreton & Senter, 2008). Second, the Level 2 predictors (i.e., lifetime dating app usage and partner preferences) were entered individually into the models to assess the strength of their effects on each Level 1 outcome variable. Finally, the moderating effect of the Level 2 trait variable (i.e., appearance-RS) was assessed for relationships in H1 with significant group differences. In each model, age and BMI were included as covariates, given their substantiated influence on BD and DE (e.g., Davison, Markey, & Birch, 2003). In models assessing lifetime dating app usage, trait-level BD and DE were included as covariates. These Level 2 covariates and the Level 2 moderator (i.e., appearance-RS) were grand-mean centred to aid the interpretation of effects and reduce issues of multicollinearity (Enders & Tofighi, 2007). A Binomial distribution was assumed for models with binary outcomes, a Gaussian distribution was assumed for continuous outcomes, and a zero-inflated Poisson distribution was assumed for the count outcome (Fitzmaurice, Laird, & Ware, 2012). All data preprocessing and analyses were conducted in RStudio version 4.0.2 (Team, 2018).

3. Results

3.1. Preliminary analyses

3.1.1. Compliance

The average number of EMA surveys completed per participant was 33.74 (*SD* = 5.70) out of a possible 42 assessments (80.33%). Compliance rates for EMA surveys were not significantly associated with trait appearance-RS (p = .37), lifetime dating app usage (p = .72), or demographic variables including age (p = .11), BMI (p = .83), primary language (p = .89), ethnicity (p = .96), marital status (p = .13), sexual orientation (p = .26), educational attainment (p = .62), or ED diagnosis (p = .50).

3.1.2. Time-related and reactivity effects

Small but significant reactivity effects were observed for all Level 1 outcome variables (see Table 2). BD and negative mood scores increased over Phase 2, whilst urges for dietary restraint, binge-eating/purging, and exercise decreased. Additionally, lower negative mood, dietary restraint, and exercise scores, and higher binge-eating/purging scores, were shown to be reported later in the day. As such, order of assessment and time of day were included as covariates in the main analyses.

3.1.3. Descriptive statistics

Table 3 presents the means, standard deviations, and possible range for continuous variables, and frequencies for categorical variables included in the main analyses. On average, there were moderate levels of EMA-assessed BD and negative mood. EMA-assessed urges for binge-eating/purging was reported relatively infrequently, whilst urges for dietary restraint and exercise were reported more frequently. The average level of trait appearance-RS was slightly above the scale midpoint, with a relatively large dispersion of scores relative to the mean.

Of interest, 32% of participants reported lifetime dating app usage. The majority of whom (52%) endorsed both idealised and non-idealised characteristics in their ideal partner, with fewer (31%) seeking non-idealised characteristics alone, and a smaller minority

Table 2
Effects of order of assessment, time of day, and day of week on BD, negative mood, and DE urges.

Predictors	Body dissatisfaction			Negative mood			Urge for dietary restraint			Urge for binge-eating/purging			Urge for exercise		
	b (95% CIs)	*t*	*p*	b (95% CIs)	*t*	*p*	b (95% CIs)	*z*	*p*	b (95% CIs)	*z*	*p*	b (95% CIs)	*z*	*p*
Order of assessment	.006 (0.003,.009)	4.11	**< 0.001**	.007 (0.003,.01)	4.11	**< 0.001**	-0.025 (−0.024, −0.02)	-7.17	**< 0.001**	-0.02 (−0.02, −0.01)	-3.97	**< 0.001**	-0.018 (−0.02, −0.01)	-5.26	**< 0.001**
Time of day	.000 (−0.008,.008)	0.002	.998	-0.02 (−0.03, −0.01)	-4.09	**< 0.001**	-0.05 (−0.07, −0.03)	-5.18	**< 0.001**	.026 (0.007,.045)	2.72	**< 0.001**	-0.07 (−0.08, −0.05)	-6.77	**< 0.001**
Day of week	.041 (−0.03,.11)	1.16	.248	-0.069 (−0.14,.004)	-1.83	.067	.014 (−0.14,.17)	0.18	0.855	-0.169 (−0.35,.01)	-1.83	.067	-0.04 (−0.21,.12)	-0.53	.595

Note. N = 296. CI = confidence interval. z-value for categorical/count variables, t-value for continuous variables. Significant p values are bolded.

Table 3
Descriptive statistics for Level 1 and Level 2 variables, and covariates.

Variable	Lifetime dating app use status				Range
	User (n = 94)	Non-user (n = 202)	Total (N = 296)		
	M ± SD	M ± SD	M ± SD	ICC_{BP}	
Level 1					
Body dissatisfaction	5.40 ± 2.08	5.09 ± 2.38	5.19 ± 2.29	0.60	0–10
Urge for dietary restraint (n, %)	39 (41.5%)	58 (28.7%)	97 (32.77%)	0.46	0–1
Urge for binge-eating/purging (n, %)	9 (9.5%)	17 (8.4%)	26 (8.78%)	0.35	0–2
Urge for exercise (n, %)	29 (30.9%)	66 (32.7%)	95 (32.09%)	0.35	0–1
Negative mood	4.77 ± 2.11	4.12 ± 2.27	4.31 ± 2.23	0.48	0–10
Level 2					
Appearance-RS	19.51 ± 8.50	17.34 ± 8.65	18.03 ± 8.64	n/a	1–36
Dating app partner preferences (n, %)				n/a	
Idealised characteristics	8 (8.5%)	n/a	n/a	n/a	0–3
Non-idealised characteristics	29 (30.9%)	n/a	n/a	n/a	0–2
Both characteristics	49 (52.1%)	n/a	n/a	n/a	0, 2–5
Other characteristics	8 (8.5%)	n/a	n/a	n/a	0–1

Note. N = 296. M = mean, SD = standard deviation, n/a = not applicable, ICC_{BP} = the proportion of total variance attributable to between-person variation. % = proportion of "yes" responses. Level 1 variables are state measures, whereas Level 2 variables are trait measures.

(9%) seeking idealised characteristics alone. The majority of lifetime dating app users reported using Tinder (86%) or Bumble (34%) and were motivated by the thrill of excitement (54%) and self-worth validation (52%). Fewer were motivated by communication (48%), love (46%), sex (36%), and trends (21%).

3.2. Multilevel models

3.2.1. Lifetime dating app use and dating app partner preferences predicting EMA-assessed BD, negative mood, and DE urges (H1-2)

Partially consistent with H1, lifetime dating app use, relative to non-use, predicted greater average levels of the urge for binge-eating/purging across the EMA period (see Table 4). However, lifetime dating app use was not significantly related to EMA-assessed ratings of BD, negative mood, and urges for dietary restraint or exercise.

Inconsistent with H2, women's dating app partner preferences at the trait-level, did not significantly predict EMA-assessed ratings of BD, DE urges, or negative mood. As an exploratory analysis, each characteristic was entered into the model separately. However, all remained non-significant predictors.

3.2.2. Moderating effect of appearance-RS on the relationship lifetime dating app use and EMA-assessed BD, negative mood, and DE urges (H3)

Inconsistent with H3, results indicated a non-significant moderation effect for trait-based dating app use and appearance-RS when predicting EMA-assessed ratings of binge-eating/purging (b = −0.004, 95% CIs: −0.07, 0.06, p = .900). For this relationship, the main effect of appearance-RS on EMA-assessed binge-eating/purging was also non-significant (b = 0.08, 95% CIs: −0.02, 0.17, p = .107).

3.2.3. Supplementary analyses of the effects of dating-app use on BD, DE urges, and mood at the state level

In the present study, we also obtained data regarding state-based dating-app usage during the EMA phase. However, the current sample of active dating app users (n = 11) during the EMA phase was insufficiently powered (Maas & Hox, 2005) to meaningfully assess the effects of dating app use on changes in BD, DE urges, and negative mood at the state-level. Nonetheless, preliminary analyses of these relationships suggested that state-based dating-app usage may predict greater urges for binge-eating/purging and negative mood throughout daily life (see Supplementary material Table 1).

4. Discussion

The current study tested the hypotheses that dating app use and seeking idealised characteristics in potential dating app partners may be related to greater BD, DE urges, and negative mood among women throughout daily life. We also predicted that appearance-RS may moderate the relationship between dating app use and the aforementioned outcome variables. Using a naturalistic EMA paradigm, the present study provided limited support for these effects within the context of a young, community-based sample of women. Overall, findings suggested that the DE symptoms and correlates that may be directly attributable to lifetime dating app use are limited to urges for binge-eating/purging and negative mood. Among lifetime dating app users, partner preferences were not a significant predictor of the outcome variables. Appearance-RS was not found to moderate the effects of lifetime dating app use on the central outcomes.

4.1. Lifetime dating app use predicting binge-eating/purging symptomatology and associated negative mood

As expected, women who had used dating apps at least once throughout their lifetime, tended to report greater daily urges for binge-eating/purging and associated negative mood, relative to non-users. One interpretation of this finding, in line with the central premise of Rieger and colleagues (2010) IPT-ED model, is that dating apps provide users with indirect feedback regarding appearance-based rejection. Thus, triggering negative mood and motivation to engage in binge-eating/purging in a maladaptive attempt to enhance their perceived attractiveness, and thus, dating app success. However, as such interpretations of DE urges and associated concerns are contingent on contextual sources of feedback, they may more appropriately link to state-level dating app use. Instead, the IPT-ED model's (Rieger et al., 2010) theorised role of social evaluative concerns (e.g., fear of negative evaluation) in the development of eating pathology and related symptoms may provide insight into the relationship between lifetime dating app use and greater daily urges for binge-eating/purging and negative mood. This is because social evaluative concerns may endure across contexts, irrespective of feedback regarding appearance-based rejection. Indeed, fear of negative evaluation has been shown to predict bulimic symptoms over time among young, nonclinical women (e.g., Gilbert & Meyer, 2005). It is plausible that dating app use at least once throughout a woman's lifetime may contribute to a fear of negative evaluation more generally, and thus, urges for binge-eating/purging and associated negative mood over time. However, such differentiation of

Table 4
Multilevel modelling results for dating app use and dating app partner preferences predicting BD, negative mood, and DE urges.

Predictors	Body dissatisfaction			Negative mood			Urge for dietary restraint			Urge for binge-eating/purging			Urge for exercise		
	b (95% CIs)	*se*	*p*	*b* (95% CIs)	*se*	*p*	*b* (95% CIs)	*se*	*p*	*b* (95% CIs)	*se*	*p*	*b* (95% CIs)	*se*	*p*
Lifetime dating app use	0.19 (−0.21, 0.60)	0.21	.350	0.41 (−0.01, 0.81)	0.21	**.047**	0.47 (−0.13, 1.08)	0.31	.127	0.69 (0.09, 1.29)	0.31	**.024**	-0.15 (−0.71, 0.42)	0.29	.616
Dating app partner preferences															
Idealised characteristics	-0.91 (−2.21, 0.39)	0.71	.214	0.22 (−1.27, 1.72)	0.79	.779	0.80 (−2.31, 3.91)	1.59	.614	0.99 (−1.05, 3.03)	1.04	0.344	1.35	1.31	.303
Non-idealised characteristics	0.74 (−0.72, 2.19)	0.76	.337	0.31 (−0.89, 1.52)	0.63	.623	1.49 (−1.06, 4.04)	1.30	.252	0.42 (−1.40, 2.24)	0.93	0.652	2.02	1.07	.057
Both characteristics	0.21 (−1.17, 1.59)	0.73	.774	-0.06 (−1.21, 1.09)	0.60	.920	0.69 (−1.74, 3.12)	1.24	.577	-0.02 (−1.81, 1.77)	0.91	0.981	1.99	1.02	.051

Note. *b* = unstandardised coefficients, CI = confidence interval, *se* = standard error. Significant *p* values are bolded. Lifetime dating app use; *N* = 296. Dating app partner preferences; *n* = 94. Covariates omitted from table for simplicity (information available from corresponding author upon request).

appearance-based rejection into state and trait level components is speculative, and the mechanisms by which trait-level dating app use predicts urges for binge-eating/purging and negative mood remain unclear.

Alternatively, psychosocial gratifications—defined as needs that have a psychological origin but interact with social variables (Sumter et al., 2017)—may provide insight into the relationship between lifetime dating app usage and increased urges for binge-eating/purging and negative mood. Whilst beyond the scope of the current analyses, in this study, the most widely endorsed motivations for lifetime dating app usage concerned the psychosocial gratifications of the thrill of excitement (54%) and self-worth validation (53%). Indeed, research has shown that women frequently use dating apps to validate their self-worth based on their physical or sexual attractiveness (Sumter et al., 2017). As DE behaviours tend to reflect an attempt to overcome states of low self-worth that are not being satisfied through social interaction (Rieger et al., 2010), it is plausible that women who have used dating apps at least once throughout their lifetime have a greater psychosocial need for self-worth validation than non-users. Thus, underpinning their urge for binge-eating/purging and associated negative mood throughout daily life.

As an additional explanation, the thrill of excitement motive is theoretically related to impulsivity; a personality factor characterised by the drive for appetitive or rewarding stimuli and disinhibited behaviour without regard for consequences (Dawe & Loxton, 2004; Waxman, 2009). Impulsivity is considered causal in the development and maintenance of binge-eating behaviours; presumably, because poor impulse control characterises excessive eating and loss of control whilst eating (Dawe & Loxton, 2004; Pearson, Wonderlich, & Smith, 2015; Waxman, 2009). Supporting this claim, cross-sectional research has demonstrated significant associations between dating app users and higher trait impulsivity scores than non-users (Sawyer et al., 2018). Hence, it is plausible that lifetime dating app users may have a greater tendency for impulsivity than non-users. Thus, underpinning their vulnerability to urges for binge-eating/purging and associated negative mood throughout everyday life. However, future longitudinal research is needed to test these possible moderation effects directly.

4.2. Non-significant impact of lifetime dating app use on BD, dietary restraint, and exercise

Despite increased urges for binge-eating/purging and negative mood, lifetime dating app users were no more likely to report urges for dietary restraint or exercise than their non-user counterparts, nor did they experience elevated patterns of cognition commonly associated with DE, such as negative feelings towards ones' body shape or weight (i.e., BD). Given the salience of appearance-based rejection within dating app environments, these findings are inconsistent with the IPT-ED model's (Rieger et al., 2010) premise that BD mediates the effect of appearance-based rejection on eating pathology. Instead, the current findings provide support for a direct relationship between appearance-based rejection and eating pathology. Indeed, prior research has observed direct effects between related constructs (e.g., interpersonal functioning deficits) and binge-eating behaviour (e.g., Blomquist, Ansell, White, Masheb, & Grilo, 2012; Levinson et al., 2013). As the majority of evidence in support of this model derives from experimental (Rieger et al., 2017) and cross-sectional (Raykos et al., 2017) research, future EMA research using mediation path analyses is needed to test a revised version of the model that includes this direct effect.

It is also worth noting that individuals with eating pathology may be more inclined to attribute negative social evaluations (i.e., real or perceived rejection) within dating app environments to their 'poor' appearances and exhibit negative cognitive biases. Given that the current sample comprised predominately of women who self-

reported as not having an ED (92%), one additional explanation for the present null finding is that real or perceived appearance-based rejection within dating environments may not have been strong enough to trigger negative feelings towards ones' appearance in the current community-based sample. It is also possible that individuals without eating pathology do not experience an augmentation in BD following appearance-based rejection. Ultimately, we anticipate that a relationship between dating app use with BD and associated maladaptive coping behaviours (i.e., urges to engage in dietary restraint or exercise) may exist in a clinical ED sample. Future studies should consider exploring these two potential explanations in a clinical ED sample comprising distinct ED sub-types (e.g., bulimia nervosa, anorexia nervosa, binge eating disorder etc.) to assess whether they are differentially susceptible to the effects of dating app use on BD, DE urges, and negative mood.

4.3. Non-significant impact of dating app partner preferences on BD, DE urges, and mood

This study was the first to date to examine the potentially adverse consequences of women's dating app partner seeking tendencies on BD, DE urges, and mood. Contrary to predictions, seeking idealised versus non-idealised characteristics did not predict changes in EMA-assessed BD, DE urges, or negative mood among the current community-based sample. One potential explanation is that women's dating app partner preferences at the trait level do not predict increases in the key outcome variables (i.e., BD, DE urges, and negative mood) assessed in the current study. This may be because women experience varying preferences throughout daily life, rather than a stable preoccupation toward certain characteristics. Indeed, research has shown that women experience systematic changes across the ovulatory cycle in partner-related preferences for short-term relationships (Gildersleeve, Haselton, & Fales, 2014). When fertile, women are particularly attracted to idealised characteristics such as muscularity (Gangestad, Garver-Apgar, Simpson, & Cousins, 2007). As dating app users often search for potential partners to provide clues as to how to present themselves to attract others (Ward, 2017), this suggests that women who use dating apps may be more susceptible to DE symptoms, BD, and negative mood during this time window. Future EMA research should seek to assess which time of the cycle these women are in, as well as the degree of variance and correlation between women's dating app partner preferences at the trait and state levels, and their subsequent effects on DE symptoms and related concerns. Such undertakings may also elucidate specific time windows where women who use dating apps are more vulnerable to body image and eating disturbance.

4.4. The non-moderating effect of appearance-RS

Inconsistent with predictions, appearance-RS did not significantly moderate the relationships between lifetime dating app use and EMA-assessed urges for binge-eating/purging or negative mood in the current community-based sample of women. One possible interpretation concerns sampling limitations. In an endeavour to sufficiently power the sample of dating app users, this variable was quantified as lifetime use. The resultant variation in this sample in terms of current versus former use may have reduced statistical power to detect a random effect. Nonetheless, future investigation into the novel moderating effect of appearance-RS, with a sufficiently powered sample of dating app users, may help to disentangle which dating app users are most at risk of developing DE symptoms and related concerns such as BD and negative mood.

4.5. Implications

Before recommendations at the practical level can be given, the present findings must be replicated. Insofar as future research can confirm associations between lifetime dating app use and established risk factors for EDs (i.e., DE urges and negative mood), primary prevention or early intervention strategies targeted towards EDs and individuals at risk of EDs and DE could focus on dating app literacy. In seeking to enable users to critically analyse the content, form, and purpose of social media (Halliwell, Easun, & Harcourt, 2011; McLean, Wertheim, Masters, & Paxton, 2017), contemporary social-media literacy programmes, although scant, could be extended to dating apps. These programmes could help to educate young women, particularly university students (the predominant group in the current sample), on the potentially detrimental consequences that dating app usage may have on their eating behaviours and emotional well-being. Such awareness may inoculate against harmful, self-destructive dating app use, by encouraging informed, self-regulated use. Furthermore, drawing attention to the psychosocial gratifications and personality traits (e.g., impulsivity) underlying dating app use, and a reminder of the eating pathology and related concerns that may ensue, may motivate women to be more cognisant of their reasons for use. Therefore, potentially helping women to maintain their emotional well-being and reducing their risk of eating pathology. However, research is yet to test prevention and early intervention strategies designed to promote more informed dating app use.

Following replication of the present findings, dating app developers could also aim to foster positive and healthful dating app use among women. Implementing a disclaimer before use could highlight the potentially adverse consequences of using simplified, appearance-centric heuristics to find a potential partner, and conversely, the benefits of a detailed filtering process—such as enhanced quality matches (Alexopoulos et al., 2020). Users could then be provided with the choice to use a simplified or detailed filtering process, with the latter entailing non-swiping mechanisms, minimum profile viewing times, and more substantiated biographies. Thus, helping to attenuate the potential negative impact of dating app use on their eating behaviours and emotional well-being whilst matching users with similarly motivated individuals. The current findings, if replicated, could also be incorporated into practices that protect against the development of eating pathology and related symptomatology in vulnerable women. For instance, a short pre-screening instrument on trait impulsivity and the need for self-worth validation would provide opportunities to educate high scoring women on alternative, healthful strategies to satisfy their needs.

4.6. Limitations and future directions

It is essential to interpret the present findings in the context of several design decisions and limitations. First, in an endeavour to balance scope and frequency of assessment with participant burden, EMA-assessed constructs were captured using coarse, single-item measures. This means that nuances associated with the measured constructs may have been missed, such as the affect and cognitions underpinning DE urges. Such measurement decision may have also produced a less precise estimate of the true effect of the predictor variables. For instance, drawing from Rieger and colleagues (2010) IPT-ED model, the impact of dating app use on eating pathology may depend on actual or perceived appearance-based rejection in real-time; with different predictions made for users' who are frequently evaluated positively by others, versus those who were frequently rejected. Future EMA research would benefit from operationalising these constructs at the state level.

Second, whilst our decision to assess DE urges (rather than actual behaviours) allowed for a broad collection of data within a community-based non-clinical population, it may have created complications for capturing certain DE behaviours, such as binge eating (or specifically, overeating, which was a proxy measure for binge eating in the current study). For instance, overeating might emerge as a behavioural consequence following emotional distress whilst eating, rather than as a specific desire prior to eating. Thus, leading to fewer reported urges. Nonetheless, the current study still captured a high frequency of overeating urges relative to prior EMA studies that measured binge eating behaviours (e.g., Tan et al., 2019). Future studies should consider assessing actual binge-eating behaviours (i.e., consuming unusually large amounts of food and experiencing a sense of loss of control) for greater clarity.

Third, our measure of lifetime dating app use was ill-equipped to tease apart the possible positive and negative effects on body image and eating pathology that are attributable to dating app use. For instance, users may experience rejection, however, they also attract partners. Thus, it is unclear whether the net effect of dating app use is more negative, more positive, or washed out. Whilst beyond the scope of the current study, future EMA research may benefit from a more nuanced investigation into additional measures at the state level, such as dating app 'success' (e.g., the number of matches relates to right swipes made), and at the trait level, such as the frequency and recency of dating app use, motivations for use, and other factors such as marital status that are likely to impact DE outcomes. For instance, in a recent unpublished cross-sectional study, Blake and colleagues (2021) found that self-worth validation and ease of communication were the only dating app use motivations positively associated with DE. Hence, providing a novel and important avenue for future EMA research.

A fourth limitation pertains to the measurement of dating app partner preferences. Although participants were grouped into idealised or non-idealised categories based on the contingency of a zero score in the other, the majority of participants endorsed characteristics from both categories. Thus, the present null findings may be attributable to insufficiently powered idealised and non-idealised groups. To address this limitation, future studies could attribute each participant a weighting (percentage score) per category and increase the number of characteristics in each.

Lastly, although we intended to explore the novel effects of state-based dating app use on the key state-based outcome variables, the current sample of active dating app users during the EMA phase (n = 11) was insufficiently powered to meaningfully assess these relationships at the state level. Therefore, gaps in knowledge remain. To address such, future studies could be powered more efficiently by following a larger, carefully chosen sample of high-frequency dating app users over an extended EMA time frame. For instance, future studies could consider utilising a novel measurement burst EMA design, such as three one-week EMA assessments of the same individual over one year. During this time, passive dating app use data could also be collected (e.g., number of matches received, number of right versus left swipes) to offer a more precise estimate of the true effect of dating app use. Although no published EMA studies to date have employed this design, it holds utility in enhancing data collection whilst retaining data quantity and quality by reducing participant response burden; that is, relative to a longer EMA phase (e.g., > 7 days) over a single period (Fuller-Tyszkiewicz et al., 2013).

4.7. Conclusions

This study extends cross-sectional findings on the associations between women's dating app use with DE and its correlates, through the use of EMA. Present preliminary findings suggest that lifetime dating app use, relative to non-use, predicted greater EMA-assessed urges for binge-eating/purging and associated negative mood. Despite such, lifetime dating app use did not correspond with EMA-assessed urges for dietary restraint and exercise, or BD. Moreover, women's dating app partner preferences failed to predict changes in the aforementioned outcomes, and appearance-RS failed to moderate the relationship between lifetime dating app use and the central outcomes. Nonetheless, the present study provides promising evidence for the notion that dating app use could activate a dysfunctional system of self-evaluation that may ultimately trigger maladaptive eating behaviours and associated negative mood. Replication and extension are encouraged, with particular attention drawn to sufficiently powering the sample of active dating app users, and validating the partner preferences measure. Next steps in this field include exploration of trait-based moderation effects (e.g., appearance-RS) and moderation effects (e.g., impulsivity and the need for self-worth validation), state-based relationships (e.g., dating app use and partner preferences), and other contexts (e.g., clinical ED or male samples). Ultimately, this study constitutes the starting point of future EMA-based investigations into the psychological effects of dating apps that by their very design, encourage evaluations of the self and others, rather than a critical interrogation of their effects. Such undertakings could enhance current understandings of potential contextual triggers of EDs and offer informative implications for prevention and early intervention strategies.

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Compliance with Ethical Standards

This study was performed in line with the principles of the Declaration of Helsinki.

Ethical approval

Approval was granted by the Behavioural and Social Science Human Ethics Sub-Committee of the University of Melbourne (Date: 5.12.2014; ID: 1441553).

Consent

Informed consent was obtained from all individual participants included in the study.

CRediT authorship contribution statement

Jade Portingale: Conceptualization, Methodology, Formal analyses, Investigation, Writing- Original Draft. **Matthew Fuller-Tyszkiewicz**: Software, Formal analyses, Validation, Writing- Review & Editing. **Shanshan Liu**: Investigation, Data Curation, Writing- Review & Editing. **Sarah Eddy**: Investigation, Data Curation, Writing- Review & Editing. **Xinyue Liu**: Investigation, Data Curation. **Sarah Giles**: Investigation, Data Curation, Writing- Review & Editing. **Isabel Krug**: Conceptualization, Methodology, Writing- Review & Editing, Supervision, Project administration.

Conflict of Interest

The authors have no conflicts of interest to declare that are relevant to the content of this article.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.bodyim.2022.01.005.

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