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Tinder blue, mental flu? Exploring the associations between Tinder use and well-being

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ABSTRACT

While Tinder (i.e., a popular mobile dating app) has received quite some research attention, its effects on users' well-being have rarely been addressed. The present study investigates the extent to which Tinder users' compulsive use, motives, subjective online success and self-conscious social comparison are associated with their well-being (i.e., joviality, sadness, and anxiety). In total, 296 (39% females; 90% heterosexuals) emerging adults who were currently using Tinder completed an online survey. The results suggest that while using Tinder compulsively and for relationship seeking can increase joviality, they may trigger more negative than positive affect. Moreover, feeling unsuccessful on Tinder and making self-conscious social comparisons were positively associated with sadness and anxiety, and negatively associated with joviality. The results seem to imply that Tinder users need to be aware of their compulsive Tinder use, relationship seeking motive, unsuccessful feeling, and/or self-conscious social comparison tendency on Tinder to better understand the consequences of their Tinder use. Although the current study is based on cross-sectional data, the findings suggest an association between using Tinder and users' well-being. Future research could extend these findings by utilizing a longitudinal research design and including other aspects of well-being and psychopathology such as life satisfaction and depression.

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Tinder; mobile dating; online dating; well-being; social comparison theory; motives

In contemporary society, Tinder has become one of the most famous mobile dating applications (Jansen, 2019; Lusinski, 2018). In 2019, Tinder had 50 million users, 10 million daily active users, and 20 billion matches with approximately 26 million per day (Smith, 2019). Therefore, it is not surprising that Tinder and similar dating apps started to receive quite some research attention in recent years. Previous studies have investigated the use of online dating platforms from various perspectives, including the users' demographic background, personality traits, motives of use, and self-presentation strategies

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(e.g., Sumter & Vandenbosch, 2019; Timmermans & De Caluwé, 2017a, 2017b). However, despite convincing calls for action by both media and psychology scholars (e.g., Lomanowska & Guitton, 2016; Orosz et al., 2016; Strubel & Petrie, 2017), little research has focused on Tinder users' well-being.

Engagement in meaningful or intimate social interactions has an important influence on individuals' well-being (Kawachi & Berkman, 2001; Lomanowska & Guitton, 2016; Ryff & Singer, 2000). The shift from offline to online dating has created new ways to experience and actualize intimacy (i.e., love, closeness, and support), both in the context of pre-existing relationships and new relationships with strangers. However, these interpersonal relationships experienced in the online context may impact the users' health and well-being outcomes in the digital era (Lomanowska & Guitton, 2016). For instance, Clark et al. (2018) argued that 'social network sites benefit their users when they are used to make meaningful social connections and harm their users through pitfalls such as isolation and social comparison when they are not' (p. 32).

Therefore, the main goal of this study is to examine the impact of Tinder on users' well-being (particularly *joviality*, *sadness* and *anxiety*). First, we will explain how compulsive Tinder use and motives for using Tinder might be related to users' well-being. Next, we will focus on the extent to which users' mobile dating success might influence their well-being. Finally, based on Social Comparison Theory (SCT), we argue that Tinder users' social comparison tendency might be associated with their well-being.

Tinder use and well-being: focusing on *joviality*, *sadness* and *anxiety*

Well-being has been variously defined in terms of affective, cognitive, and psychological processes (Howell et al., 2010). Previous studies on well-being have focused on positive and negative affect, life satisfaction, quality of life, anxiety and stress level (Fischer & Boer, 2011; Howell et al., 2010; Kercher, 1992; Ryan & Deci, 2001; Watson & Clark, 1999). Since well-being is a subjective and relative, rather than an absolute and objective concept, assessing it appropriately can be challenging (Diener et al., 2009; McDowell, 2010). Despite of these, well-being at its core refers to contentment, feeling good, and functioning well and should be examined multidimensionally (Chen et al., 2013; Huppert, 2014; Kern et al., 2015; McDowell, 2010).

In the present study, we will first focus on individuals' *joviality* and *sadness*, which are two of the positive and negative affects from PANAS-X (Watson & Clark, 1999). As Strubel and Petrie (2017) have already indicated that Tinder users may experience lower body image satisfaction and self-esteem compared to non-users, our aim is to extend the knowledge on Tinder's impact on well-being by focusing on other aspects of psychological functioning. Studies suggest that while being unsuccessful on online dating platforms often causes frustration and influences users' mental states (Courtois & Timmermans, 2018; Heino et al., 2010; Hobbs et al., 2017), not being able to use the app may lead to unpleasant feelings (Orosz et al., 2016). Moreover, research showed that SNS users with high social comparison orientation, are more subject to negative affects such as sad and depressive feelings (Vogel et al., 2015). However, matching and befriending with others on dating apps can also make people happy and may ameliorate feelings of loneliness (Sumter et al., 2017). These studies thus suggest that aside from decreased body satisfaction and

low self-esteem, Tinder users are likely to encounter changes in both joviality and sadness because of using the app.

In addition to joviality and sadness, we were also interested in associations between Tinder use and *anxiety*, which can be regarded as another dimension of well-being (Fischer & Boer, 2011; Huntington & Bender, 1993). In *Alone Together*, Sherry Turkle (2017) argued that human beings feel anxious about relationships and intimacy, and that technology on one hand makes us more anxious, while on the other hand protects us from anxiety. Research on social media use confirmed a link between compulsive SNS use (i.e., the inability to control consumption) and increased anxiety (Dhir et al., 2018). Scholars also suggest that Tinder use can actually reduce users' anxiety: People high in rejection sensitivity might perceive the negative feedback as less explicit because of the swiping logic (i.e., users will only be notified when they match with someone, not when someone rejected them; Orosz et al., 2016). Nevertheless, several researchers suspect a potential relation between Tinder use and anxiety (e.g., Hobbs et al., 2017; Strubel & Petrie, 2017), which has not been empirically tested. Taking all these into account, well-being in this paper entails an increase in joviality and/or a decrease in sadness or anxiety.

Investigating links between compulsive Tinder use, Tinder motives and well-being

Studies of social media often reveal that using SNSs may cause poorer well-being and lower life satisfaction, depending on, for instance, one's frequency of use (amount of use per time frame) or how one used it (addictively/dependent or not) (Błachnio et al., 2016; Jeri-Yabar et al., 2019; Kross et al., 2013). Although Tinder is not the same as SNSs, Tinder users might still encounter more or less similar outcomes. As Orosz et al. (2016) advised, Tinder use can have similar psychological background mechanisms to SNS use and the negative consequences on users' well-being may be comparable. Furthermore, research showed that longer Tinder experience (the longer it has been since Tinder was first used) is negatively associated with the users' mood right after use (Courtois & Timmermans, 2018) and that compulsive use of dating apps is positively associated with negative outcomes of online dating, such as feeling worthless offline but worthy online (Coduto et al., 2020). Compulsive use refers to 'an abnormality in controlling behavioral consumptions where an individual is unable to rationally manage his/her routined performances' (Dhir et al., 2018, p. 143; Hirschman, 1992). While the concept has been primarily studied in the context such as excessive food intake and drug abuse, it has recently been used to examine the consequences of various forms of new media use (Dhir et al., 2018). As the aforementioned studies suggest that compulsive Tinder use can have an impact on Tinder users' well-being, the first hypothesis is formulated as follows:

H1: Tinder users' compulsive use of Tinder is negatively associated with their well-being.

Based on Uses and Gratifications (U&G) theory, instead of treating media users as passive consumers, it is important to study the active role of media users and their 'motives' of use, focusing on 'how' media users utilize media to satisfy their special social/psychological needs (Rubin, 1993). People use media to satisfy needs, and while their needs are gratified, these gratifications in turn construct needs, implying that they are more likely to use media to satisfy their needs again (Katz et al., 1973, 1974). Despite that research on the association

between motives and well-being when using online media seems scarce, a few studies (e.g., Park & Lee, 2012; Shen & Williams, 2011; Young et al., 2017) have drawn attention to it, showing that one's motives for using online media can be related to one's well-being.

In the current study, we particularly examine the extent to which using Tinder for *entertainment* (e.g., to use the app just for fun or to pass time when feeling bored), *social approval* (e.g., to seek validation from other users in the form of matches), *romantic relationship seeking*, and *sexual experience* are related to well-being, as these motives were shown to occur commonly among Tinder users (Timmermans & De Caluwé, 2017a). Previous research has shown that entertaining pastimes such as music, games, movies and social media is relaxing and can make our life pleasant, exciting and fulfilling, and contribute to improved well-being (e.g., Bartsch & Oliver, 2016). As the users/audiences seem to seek for their own sake, regardless of other goals and incentives than the entertainment experience itself, it is likely associated with improved well-being (Bartsch, 2012; Bartsch & Oliver, 2016). As a result, we can assume that for those Tinder users who use the app for entertaining pastimes (i.e., using Tinder to entertain oneself when feeling bored), their well-being is likely to increase rather than decrease or stay unchanged.

H2: Tinder users' pass time/entertainment motive is positively associated with their well-being.

Aside from entertainment, Tinder users also commonly report to use Tinder to boost their ego and assess their market value, which means they are looking for social approval (Timmermans & De Caluwé, 2017a). Previous studies found that looking for social approval can be related to self-esteem (Franks & Marolla, 1976; MacDonald et al., 2003) and using Tinder can be negatively associated with self-esteem (Strubel & Petrie, 2017). Furthermore, Young et al. (2017) found that using social media for social belongingness is associated with experiencing online aggression, which leads to depression and poor well-being among victims. Besides, Tinder users with motive social approval might care about the attention and feedback they receive from the others more, which may lead to higher anxiety when the motive is not fulfilled. Therefore, we predict a negative association between the social approval motive and well-being.

H3: Tinder users' social approval motive is negatively associated with their well-being.

Studies often suggest that negative affects and feelings happen more frequently when people are in contact with family members, close friends and partners than when in contact with strangers, implying that the better and the more serious the interpersonal relationship, the more likely people are susceptible to being hurt after rejection or exclusion (Leary et al., 1998; Rosen et al., 1987; Whitesell & Harter, 1996). Similarly, Finkel et al. (2012) indicate that the success or failure of romantic relationships plays a central role in individuals' well-being. Even if Tinder users may not know each other beforehand, their well-being might still be influenced by one and another, especially when one is actively pursuing connections (whether in the form of a serious relationship or a casual sexual encounter) and thus might be more sensitive to rejection. Moreover, Sumter and Vandembosch (2019) suggest that mobile dating may be seen as a somewhat risky activity, especially for those with a romantic relationship or sexual experience motive.

Given that Tinder users with a relationship or sexual motive are more likely to report face-to-face meetings in order to satisfy their need to find a romantic relationship or a

sexual encounter (Timmermans & De Caluwé, 2017a), they will need to succeed in getting matches and convincing other users to meet up. Yet, several studies have indicated that getting matches is not that easy for everyone, as the platform tends to create a rejection mindset among its users (Pronk & Denissen, 2020). Additionally, an online dating study that measured online daters' electrocortical and cardiac responses to romantic interest and rejection showed that being rejected by other users was experienced as painful (van der Veen et al., 2019). Although the aforementioned study did not measure participants' online dating motives, it might be possible that the rejection could be more painful for someone with a romantic or sexual motive compared to an entertainment motive, as people with the latter are not necessarily looking for matches or online dating success. Hence, we hypothesize that:

H4: Tinder users' relationship seeking motive is negatively associated with their well-being.

H5: Tinder users' sexual experience motive is negatively associated with their well-being.

The impact of Tinder users' subjective online success (SOS) and self-Conscious social comparison (SCSC) on well-being

We further expect that Tinder users' online success (e.g., matches and conversations with other users) may also influence their well-being. When two Tinder users like (i.e., swipe right) each other, there is a 'match' and they can start a conversation (Hobbs et al., 2017). It is highly plausible that merely the presence or absence of receiving matches may influence users' well-being. For instance, Strubel and Petrie (2017) showed that Tinder can negatively affect users' body image confidence and level of self-esteem given its evaluation and objectifying process in the form of (dis)likes and with it matches. Additionally, Tinder success can be positively related to Tinder satisfaction, and such satisfaction is positively associated with the user's current mood (Courtois & Timmermans, 2018). Thus, those who are not successful are likely to feel being ignored and/or not validated by others, thereby boosting negative affect (Courtois & Timmermans, 2018; Strubel & Petrie, 2017).

Moreover, research showed that the lack of quality and quantity in online dating interaction (e.g., superficial interactions, interest turns out to be one-sided) may lead to frustrations among online daters (Heino et al., 2010; Schwartz & Velotta, 2018; Zytka et al., 2014). Furthermore, LeFebvre (2018) showed that about half (50.4%) of the Tinder users had deleted their Tinder accounts between one and seven times, and 34.7% deleted it due to being unsuccessful. Last but not least, while social media users' well-being can be impacted negatively when his or her post does not gain many likes, online daters' well-being might likewise decrease if he or she does not receive desirable matches or messages initiated by others, for it might be regarded as more personal and direct feedback (Bäck et al., 2019). All of the abovementioned studies serve as an indication that a lack of online success on Tinder might indeed influence users' well-being.

Since approximately one-third to almost half of online daters have never gone on a date with someone they met online (Smith & Anderson, 2016; Timmermans & Courtois, 2018), the current study focuses on Tinder users' online success in order to include all of the users rather than solely those who experienced (successful) offline encounters. Besides, since 'a lack of success' or 'being unsuccessful' may differ from user to user (e.g., five matches in a

week can be a lot for some but a few for the others), Tinder users' subjective online success (SOS) is used as a predictor for well-being. Taking these into account, the next hypothesis is formulated as follows:

H6: Tinder users' SOS is positively associated with their well-being.

According to Festinger (1954), human beings have an innate drive to evaluate themselves by examining their qualities in comparison with others. Essentially, social comparison helps individuals to confirm or deny various aspects of their identity by comparing whether features are similar or dissimilar to others (Festinger, 1954; Lewallen & Behm-Morawitz, 2016). Such comparison can be realized in many domains, including interpersonal relationships and social media, in which individuals compare their abilities or appearances with people in their daily lives and/or media models (Lewallen & Behm-Morawitz, 2016; Ozimek et al., 2018; Ruble et al., 1980).

According to Reaves (2011), competition is a likely underlying motivation for social comparison and 'the evolutionary roots of social comparison are similar to social rank in animal behaviour (inferior-superior; weaker-stronger; upward-downward)' (p. 122). There are two main kinds of social comparison: downward and upward (unflattering), and both of them can cause positive and negative effects (Rosenthal-von der Pütten et al., 2019). In this study, we are predominately interested in the negative aspects of upward social comparison in the world of online dating. With a growing body of literature and research on social comparison theory in social media contexts, it has been suggested that online communication can harm well-being due to upward social comparison (Appel et al., 2016; Burke & Kraut, 2016; Lee, 2014). Social media facilitate upward social comparison, in which users compare themselves to someone who performs better, possibly decreasing their well-being when dissimilarity between one's successes, abilities or attractiveness and those of others occurs (Lewallen & Behm-Morawitz, 2016; Rosenthal-von der Pütten et al., 2019).

Unlike social media users, who can see the amount of success (e.g., amount of likes and/or views) the other users have, the amount of success each Tinder user has is not public. Due to this affordance difference, it is more difficult for Tinder users to compare one's success with that of others'. Despite that direct and explicit comparison is not possible on Tinder, it is unknown whether Tinder users compare themselves with other users self-consciously. That is, while Tinder users cannot see other users' online success, they might still self-consciously think that others are more successful than themselves. For example, some mobile dating app users felt that only the top attractive people can be successful on the network (Hobbs et al., 2017), which indicates that at least some users self-consciously compare themselves with others. It is thus important to measure the extent to which Tinder users agree or disagree with statements like 'I think other Tinder users have more matches than me'. Besides, research showed that social comparison can occur on social media partly because the users seem to be 'sensitive' to the amount of likes they receive (Rosenthal-von der Pütten et al., 2019). Thus, when comparing one's success on Tinder with that of others, Tinder users might even more so be sensitive to their own success, which may in turn impact their well-being. Therefore, the final hypothesis is formulated as follows:

H7: Tinder users' self-conscious social comparison is negatively associated with their well-being.

Method

Participants and procedure

Tinder users who used the app in the past one week were recruited through Amazon Mechanical Turk. We targeted emerging adults (i.e., 18–29 year old, see Arnett, 2000) as this age group uses mobile dating apps more frequently compared to other age groups (Smith & Anderson, 2016). An anonymous online survey was used to protect the respondents' privacy and to make them feel comfortable while expressing their well-being status (Bryman, 2012; Gilbert, 2008). Participants were informed about the topic and were asked to give consent before they could proceed with the survey. Every participant received an incentive of one US dollar after successfully completing the survey.

In total, 351 US residents completed the survey (completion rate: 75%). After excluding participants who were older than 29 years old ($n = 50$), and those who filled in neither female or male ($n = 2$), neither straight nor LBGTQ+ ($n = 2$) or neither single nor in a relationship ($n = 1$), 296 participants who were between 18–29 years old ($M = 26.30$; $SD = 2.90$) remained in our sample, with 61% males, 90% identifying as straight and 70% identifying as single.

Measures

Compulsive Tinder use

We adapted the five-point Likert (1 = never; 5 = always) compulsive use of social media scale (see Dhir et al., 2018) by replacing the word 'Facebook' with 'Tinder'. See Table 1 for more information on descriptives.

Table 1. Measurement descriptives.

	Item(s)	<i>N</i> items	Scale range	<i>M</i>	<i>SD</i>	<i>α</i>
Compulsive Tinder use	To what extent have you felt an urge to use Tinder more and more?	4	1–5	2.86	.96	.84
Entertainment Motive	I use Tinder to pass time.	7	1–7	5.08	1.11	.88
Social Approval Motive	I use Tinder to get compliments.	6	1–7	4.65	1.33	.88
Relationship seeking	I use Tinder to fall in love.	5	1–7	4.34	1.44	.87
Sexual experience	I use Tinder to find a one-night-stand.	6	1–7	4.36	1.49	.90
Subjective online success (SOS)*	SOS1: I think that I have many matches on Tinder.	4	1–5	3.26	.94	.84
	SOS2: I think that I receive many conversations initiated by other users on Tinder.					
	SOS3: I think that I have many continuous conversations (that people you chat with respond to you when you write him/her) on Tinder.					
	SOS4: I consider myself being successful on Tinder.					
Self-conscious social comparison (SCSC)*	SCSC1: I think that most Tinder users have more matches than me.	3	1–5	3.30	1.06	.88
	SCSC2: I think that most Tinder users have more conversations initiated by other users than me.					
	SCSC3: I think that most Tinder users have more continuous conversations (that people you chat with respond to you when you write him/her) than me.					
Joviality	After using Tinder, I have felt delighted.	8	1–5	3.10	1.02	.94
Sadness	After using Tinder, I have felt blue.	5	1–5	2.27	1.06	.90
Anxiety	After using Tinder, I have worried that others don't like me.	5	1–5	2.68	1.10	.92

Notes: * As we designed these scales ourselves, all items are shown in the table. For all other scales, only an example item is provided. *M* and *SD* were calculated using the sum scores divided by the number of items.

Tinder motives

Four motives (i.e., entertainment, relationship seeking, sexual experience and social approval) from the Tinder Motives Scale (TMS; Timmermans & De Caluwé, 2017a) were used in this study. See Table 1 for more information on descriptives.

Subjective online success (SOS)

Using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), we created a scale in which participants were asked to indicate the extent to which they agree or disagree with statements such as: 'In the past one week I have thought that I have many matches on Tinder'. See Table 1 for more information on descriptives and scale items.

Self-conscious social comparison

Tinder users' self-conscious social comparison was measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). See Table 1 for more information on descriptives and scale items.

Well-being

Participants were instructed to answer the well-being questions based on how they felt after using Tinder in the past week. First, the subscales joviality and sadness from PANAS-X (an expanded version of PANAS) were used (Watson & Clark, 1999). Participants were asked to report the extent to which they felt the emotions of joviality and sadness using a five-point Likert scale (1 = very slightly or not at all; 5 = extremely). Additionally, we adapted the anxiety scale developed by Dhir et al. (2018). We adjusted this five-point scale (1 = *always*; 5 = *never*) to the intended time frame and to Tinder use. The dependent variables joviality, sadness and anxiety were all normally distributed, for the absolute skewness values being all below 2 and the absolute kurtosis values being all below 7 (Kim, 2013). See Table 1 for more details on the descriptives.

Perceived physical attractiveness

Participants rated their perceived physical attractiveness based on a 9-point Likert scale, ranging from 1 (being very unattractive) to 9 (being very attractive) ($M = 6.74$, $SD = 1.53$; Courtois & Timmermans, 2018).

Current mood

We controlled for participants' current mood by asking them to give a score of their current mood on a scale from 1 (very unhappy) to 10 (very happy) ($M = 7.17$, $SD = 1.86$; Weinstein et al., 2007).

Data analysis

Multiple hierarchical linear regression analyses using IBM SPSS 24.0 will be carried out for hypothesis testing. The regression analyses consist of six control variables (Block 1): age, gender, sexual identity, relationship status, perceived attractiveness and current mood, and seven main predictors (Block 2): compulsive Tinder use, four Tinder motives, SOS and SCSC. The analyses were run for three outcomes separately: joviality, sadness and anxiety. The control variables were used as they served as significant predictors in previous Tinder

research (e.g., Courtois & Timmermans, 2018; Strubel & Petrie, 2017; Weiser et al., 2018). Moreover, it is important to account for the participants' current mood in order to ensure their response to well-being is not biased by their mood during participation.

By performing hierarchical regression analyses in two steps, the changes in variance explained after adding the predictors can be clearly observed. As there are moderate correlations between our predictors and outcomes (see Table 2), for each outcome, all predictors will be tested in one model in order to understand its independent effect and to avoid potential confounders. Moreover, Tinder users are likely to fulfill more than one of our predictors' described situations (e.g., one uses Tinder compulsive but also uses it for relationship seeking), which makes testing the independent effects more important. Since multiple outcomes will be tested in the regression models, False Discovery Rate (FDR) using R 3.4.2 will be performed, by which p -values are adjusted to reduce the likelihood of type I error arising from multiple testing (Benjamini & Hochberg, 1995; Chen et al., 2017; R Core Team, 2017). As three tests will be performed for a single hypothesis (three outcomes measuring well-being), all predictors will be adjusted for three tests.

Results

The regression analyses first showed that the model with joviality as outcome was significant, $F(13, 282) = 33.214$, $p < 0.001$. When sadness and anxiety were used as outcomes with the same IVs, significant models were also found ($F_{\text{sadness}}(13, 282) = 12.253$, $p < 0.001$; $F_{\text{anxiety}}(13, 282) = 12.776$, $p < 0.001$), implying that at least one predictor is important. By including the predictors next to the controls, the variance explained by all models increased (see Table 3). Our results suggested that while using Tinder compulsively has a positive but weak association with joviality, it is at the same time positively related to both sadness and anxiety, indicating that H1 could be partially supported. Secondly, motive relationship seeking showed a positive association with joviality yet a positive correlation with sadness and anxiety (see Table 3), thereby partially supporting H4. However, even if H1 and H4 were both only partially confirmed, the results suggest that using Tinder compulsively and for relationship seeking may still yield more sadness and anxiety than joviality. That is, based on the raw coefficients, we can argue that with one unit increase in compulsive use, a 0.129 unit increase in joviality, a 0.508 unit increase in sadness and a 0.428 unit increase in anxiety can be observed (motive relationship seeking follows the same principle; see Table 3), implying that the increase on sadness and anxiety is larger

Table 2. Correlations between the predictors and the outcomes ($N = 296$).

Variables	1	2	3	4	5	6	7	8	9	10
1. Compulsive use	–									
2. Motive – Entertainment	.30**	–								
3. Motive – Social approval	.52**	.64**	–							
4. Motive – Romantic	.41**	.10**	.35**	–						
5. Motive – Sexual experience	.43**	.36**	.55**	.26**	–					
6. SOS	.61**	.33**	.49**	.36**	.38**	–				
7. SCSC	.28**	.08	.24**	.37**	.16**	–.03	–			
8. Joviality	.54**	.28**	.47**	.35**	.41**	.65**	–.05	–		
9. Sadness	.35**	–.05	.16**	.32**	.15**	–.02	.39**	–.00	–	
10. Anxiety	.35**	.12*	.24**	.34**	.05	.03	.48**	.03	.59**	–

Note: Significance levels: * $p < .05$; ** $p < .01$. All correlations were rounded to two-decimal position.

Table 3. Multiple hierarchical linear regression models ($N = 296$).

Variables	Joviality		Sadness		Anxiety	
	<i>b</i> (SE)	<i>b</i> *	<i>b</i> (SE)	<i>b</i> *	<i>b</i> (SE)	<i>b</i> *
Constant	0.278 (0.455)		0.751 (0.601)		0.493 (0.614)	
Block 1						
Age	−0.008 (0.014)	−0.022	0.032 (0.019)	0.087	0.020 (0.019)	0.052
Gender	−0.022 (0.089)	−0.011	0.110 (0.118)	0.051	−0.067 (0.120)	−0.030
Sexual identity	−0.150 (0.137)	−0.044	−0.006 (0.181)	−0.002	0.316 (0.185)	0.086
Relationship status	0.123 (0.090)	0.055	0.087 (0.118)	0.038	−0.042 (0.121)	−0.018
Attractiveness	0.081 (0.035)	0.121†	0.035 (0.047)	0.051	0.002 (0.048)	0.003
Current mood	0.165 (0.029)	0.299†††	−0.169 (0.038)	−0.294†††	−0.095 (0.039)	−0.160†
Block 2						
Compulsive use	0.143 (0.058)	0.135*	0.493 (0.076)	0.446***	0.427 (0.078)	0.376***
Entertainment	−0.057 (0.047)	−0.062	−0.117 (0.063)	−0.123	0.028 (0.064)	0.029
Social approval	0.109 (0.047)	0.141†	0.056 (0.062)	0.070	0.094 (0.063)	0.114
Relationship seeking	0.075 (0.032)	0.106*	0.141 (0.043)	0.192**	0.134 (0.044)	0.176**
Sexual experience	0.070 (0.034)	0.101†	0.017 (0.045)	0.024	−0.109 (0.046)	−0.147†
SOS	0.190 (0.065)	0.174**	−0.251 (0.086)	−0.222**	−0.189 (0.087)	−0.162*
SCSC	−0.175 (0.043)	−0.182***	0.187 (0.056)	0.186**	0.321 (0.057)	0.312***
Adjusted R^2	0.587		0.332		0.342	
F for R^2 change	12.623†††		19.406†††		22.856†††	

Note: Dummies: gender (female = 0; male = 1), sexual identity (straight = 0; LBGQT+ = 1), relationship status (single = 0; in a relationship = 1).

Significance levels: † $p < .05$; †† $p < .01$; ††† $p < .001$; * FDR-corrected p -value $< .05$; ** FDR-corrected p -value $< .01$; *** FDR-corrected p -value $< .001$.

than joviality. As the scales of the three outcomes were identical, such comparison can also be made visible using the standardized beta. Nevertheless, H2, H3 and H5 could not be supported.

Next, SOS robustly predicted the three outcomes: joviality, sadness and anxiety, showing that the more SOS one had in the past one week of Tinder experience, the more jovial and less sad and anxious one felt (see Table 3). Therefore, H6 could be supported. Finally, SCSC had a negative association with joviality but a positive relationship with both sadness and anxiety (see Table 3), confirming H7. In other words, the more one self-consciously compared oneself with other Tinder users, the lower one's well-being was. It is also worth noting that even though several variables were moderately correlated to each other, there is no multicollinearity in our data, as all the VIFs were below 2.620.

Additional exploratory mediation analyses

In addition to the main analyses for hypothesis testing, exploratory mediation analyses were performed using structural equation modeling in R 3.4.2 (with R package lavaan 0.6–3), given the potential interesting relationships between the variables as suggested by one of the reviewers. Among all the possible pathways, several theoretically and empirically meaningful paths are presented in Figure 1 and 2. In Figure 1, the results showed that compulsive Tinder use mediates the relationships between SOS and the well-being measures: The higher one scored on SOS, the more one compulsively used Tinder, which may further lead to increased joviality, sadness and anxiety. This is not surprising, when taking into account that Tinder users who feel more successful need to continue using the app in order to generate even more success. Moreover, Figure 2 suggests that the relationship seeking motive has a negative association with joviality and a positive relationship with sadness and anxiety through SCSC.

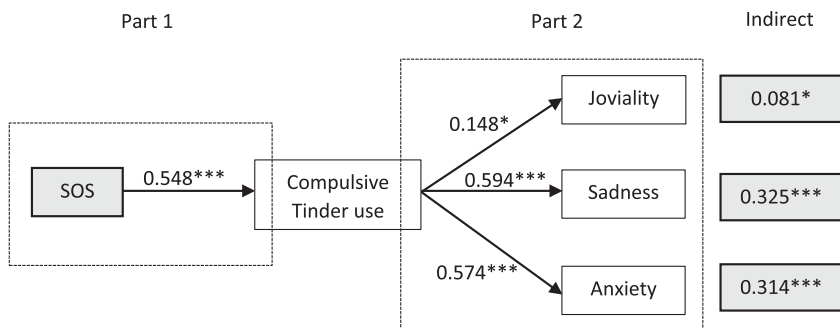


Figure 1. Mediation effects on possible pathways I.

Note: Significance levels: * $p < .05$; ** $p < .01$; *** $p < .001$ (no multiple testing was performed). Displayed effects are standardized ones. Only indirect and significant effects are shown. For the paths of Part 1, age, gender, sexual identity, relationship status and perceived attractiveness were used as controls. For the paths in Part 2, current mood was added as well, since well-being was modeled as the outcome.

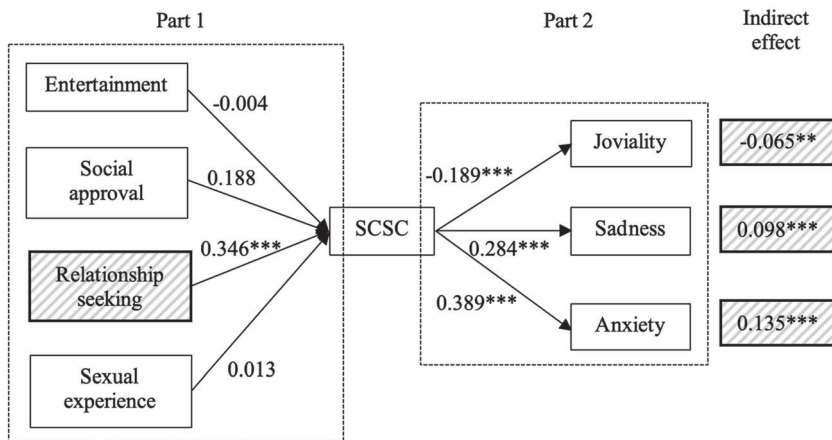


Figure 2. Mediation effects on possible pathways II.

Note: Significance levels: * $p < .05$; ** $p < .01$; *** $p < .001$ (no multiple testing was performed). Displayed effects are standardized ones. Only indirect and significant effects are shown. For the paths of Part 1, age, gender, sexual identity, relationship status and perceived attractiveness were used as controls. For the paths in Part 2, current mood was added as well, since well-being was modeled as the outcome.

Discussion

This study explored and investigated links between Tinder use and well-being. More specifically, we examined the main effects of compulsive Tinder use, Tinder motives, SOS and self-conscious social comparison on users' joviality, sadness and anxiety. The findings suggest that while Tinder users who use the app compulsively may feel sad and anxious afterwards, they can simultaneously experience joy. Remarkably, however, compulsive use's positive association with sadness and anxiety are both stronger than its relationship with joviality, suggesting that those users who are addicted to Tinder are still more likely to experience decreased overall well-being after using the app. This is in line with previous research on social media, which showed that addiction to SNSs is negatively related to well-being

(Blachnio et al., 2016; Dhir et al., 2018). Keeping in mind that our participants were asked to report their well-being after Tinder use and that we relied on self-report measurements, it might not be surprising that compulsive Tinder use may generate joviality. Rather than actually experiencing more joy, it might be that compulsive Tinder users want to believe or convince themselves that Tinder brings them more happiness, as a way to justify their compulsive use.

Tinder users who use the app to find a relationship may be subjected to decreased well-being. Although users' feeling of joviality can increase after using Tinder, it may not be enough to compensate feeling blue and worried. This suggests that Tinder might not be ideal to use for those who look for a romantic partner. We further discovered that the more one uses Tinder for relationship seeking, the more one self-consciously compares him/herself to others, which may further decrease joviality and provoke more sadness and anxiety. These indirect effects add to the relationship seeking motive's direct association with decreased well-being, implying that using Tinder with such motive is likely to contribute to poor mental health, either through self-conscious social comparison or not. Overall, the findings are in line with previous claims that motive of using online communication or media technologies can influence one's well-being (Park & Lee, 2012; Young et al., 2017).

Regarding SOS, the results imply that the higher a Tinder user's SOS is, the better his/her well-being status may be, thereby indicating that feeling successful on Tinder can function similar to positive feedback on social media (Bäck et al., 2019; Clark et al., 2018). This confirms the previous studies on online dating which posit that having experienced rejection, a lack of attention and one-sided interest can be all associated with decreased well-being (Heino et al., 2010; Schwartz & Velotta, 2018; van der Veen et al., 2019; Zytka et al., 2014). Furthermore, acknowledging that low SOS is related to poor well-being, it is not surprising that users might regulate their emotions by deleting their accounts as noted by LeFebvre (2018). It is worth mentioning that although increased SOS may improve the users' well-being, it can also worsen sadness and anxiety, given that users with high SOS are likely to be compulsive Tinder users, as suggested by our mediation analyses.

Despite that seeing how successful others are on Tinder can be difficult, our findings suggest that the more one self-consciously compares oneself on Tinder with other Tinder users, the worse one's well-being may be, which is in line with a qualitative study in which participants reported having compared themselves with other users even if they did not see the others' success (see Hobbs et al., 2017). This implies that social comparison theory may also be applicable in the context of mobile dating and that such comparison can also happen without having a concrete comparison object (e.g., the amount of matches other users have). Our results demonstrate that even without witnessing other people's success, one might still self-consciously compare oneself with other people.

The current study advances the literature on mobile dating platforms by showing that mobile dating apps share many similarities with SNSs, especially in terms of their relationship with the users' well-being after use and how the well-being can be impacted (i.e., using compulsively, feeling unsuccessful, comparing oneself with the others). It also demonstrates that using Tinder can be related to not only body dissatisfaction and appearance comparison (Strubel & Petrie, 2017), but also joviality, sadness and anxiety.

However, the current study is not without limitations. Due to the cross-sectional and self-reported nature of the data, causal interpretations of the associations are limited. Moreover, by solely focusing on negative (i.e., sadness) and positive (i.e., joviality)

affects after using the app, we cannot make claims about Tinder's impact on well-being in the long run in both positive (e.g., increased life satisfaction) or negative (e.g., increased depression) ways. Hence, to examine the causality of our findings and to broaden our knowledge on associations between Tinder and well-being, a longitudinal research design (e.g., experience sampling) encompassing more aspects of well-being could further aid in a better understanding of this topic.

Conclusion

The present study shows that Tinder use can have detrimental consequences for users' well-being, in particular for compulsive users, those seeking a romantic partner and people who have the tendency to compare themselves with others. Contrarily, for some people, using Tinder might actually improve their well-being. For instance, being successful on Tinder increases feelings of joviality and decreases sad and anxious feelings. In fact, this finding stresses the importance of also including positive affects in order to avoid telling only one part of the story. This is in line with a study that showed that their participants were more likely to report increased relational happiness rather than increased relational jealousy because of their Facebook use (Utz & Beukeboom, 2011). By only focusing on the negative effects of Tinder use on well-being, we might underestimate the potential positive outcomes. Furthermore, our findings have practical relevance, as they can help users understand how to best use the app: Online daters who are looking for a romantic relationship can be advised to use alternative online dating tools that are focused on relationship seeking specifically, as they might be at higher risk of decreased well-being when looking for a romantic partner on Tinder.

Disclosure statement

No potential conflict of interest was reported by the author(s).


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