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RESEARCH ARTICLE

Hook, Line and Sinker: Do Tinder Matches and Meet Ups Lead to One-Night Stands?

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Abstract

Several recent papers have established a link between personality and Tinder use, particularly with regards to sociosexuality and motivations for use. Following up our recent publication on dating apps and the studies linking Tinder and sociosexuality, we provide a more detailed investigation of the efficiency of using Tinder to acquire one-night stands or meet potential long-term committed relationship partners. Using self-reported data from 269 students (62% women), we find that a very large number of matches are required for a relative small number of meet ups, and result in a very limited number of hook-ups or potential romantic partner meetings. Merely 20% of the Tinder users in the sample have had one-night stands following Tinder use, and the majority of these only had one extra partner. The primary individual difference predictor of achieving casual sex using Tinder is unrestricted sociosexual attitudes, and this also predicts fewer potential romantic partner meetings.

Keywords Sociosexuality · Tinder · Casual sex · Committed relationships

Tinder is a location-based mobile dating service app. The app has a simple interface where users are shown pictures, name, and age of other users, along with a short text biography. Users swipe either left (do not want to initiate contact or date) or right (want to initiate contact or date) on the screen, and provided both users swipe right they are *matched* and can begin messaging within the app. Tinder has commonly been seen as a sex app in the public discourse, primarily relating the use of the app to casual sex encounters (Sevi et al. 2018). However, Tinder users have been shown to use the app not only for sexual hook-ups but also for initiating relationships (e.g., LeFebvre 2017; Timmermans and Courtois 2018; Timmermans and De Caluwè 2017). One plausible explanation for a finding of different motivations and different outcomes of Tinder use could be that initial sexual encounters lead to more committed relationships (as suggested by Timmermans and Courtois 2018). Alternatively, there could be underlying personality differences and evolved sex differences that influence motivation for using Tinder for short-term mating vs. long-term mating. However, no previous studies have addressed whether Tinder use actually increases the number of one-night stands or if Tinder use is associated with more meetings for committed relationships.

Sexual strategies theory (SST) (Buss and Schmitt 1993, 2016) predicts that men and women will apply specific tactics and strategies in different mating contexts and evaluate different aspects of sex and potential partners differently. SST posits two qualitatively different human mating strategies: long-term and short-term. Long-term mating typically encompasses a committed, intimate, and lasting emotional relationship (Buss 1998). Short-term mating on the other hand is characterized more by brief physically motivated sexual encounters (Kennair et al. 2015). From an evolutionary perspective on reproduction, one differs between mating and parenting effort, which to some degree mirrors short-term and long-term mating strategies (Gangestad and Simpson 2000). One-night stands bear costs within the realm of mating effort, including time spent seeking out eligible mates, courting these, displaying or providing resources or desirable traits (Buss and Schmitt 2016), and competing with other short-term oriented individuals (Schmitt and Buss 1996; Bendixen and Kennair 2015).

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SST is based upon Trivers (1972) parental investment theory, which states that the sex that invests most will be most discerning in evaluating potential partners, and more restrictive in engaging in reproductive behavior. Given men's significantly lower minimum parental investment, SST predicts that men will allocate a larger proportion of their available total time, energy, and resources to short-term mating effort than women do. SST predicts sex differences will evolve in areas where men and women have encountered enduring dissimilar adaptive challenges throughout human evolution. Many of these are specifically related to benefits of mating effort and parental investment (Buss 1998), because men have larger fitness benefits of multiple sex partners relative to what women have (Buss and Schmitt 1993). As such, again relative to women, men will be more short-term oriented, desire sexual variety, and be willing to consent to sex after a shorter time-lapse (Buss and Schmitt 1993; Kennair et al. 2009; Schmitt et al. 2001). This is also expected to influence newer dating arenas, such as dating apps. Sex differences have been found in motivations and reasons for using dating apps. For instance, men emphasize desire for sex as a reason for using dating apps compared with women (Botnen et al. 2018). Alternatively, there may be features of electronic dating apps that create a mismatch between the mating arena and our evolved sexual psychology.

Further, various underlying individual differences related to seeking casual sex rather than more stable romantic relationships also predict dating app use (Botnen et al. 2018). People differ in their preference for sexual relations without emotional attachment, a feature of human sexuality that has been labeled sociosexual orientation (Simpson and Gangestad 1991). The Sociosexual Orientation Inventory (SOI) was developed in order to measure individual differences in people's willingness to engage in uncommitted sexual relationships (Penke and Asendorpf 2008; Simpson and Gangestad 1991). The inventory consists of three related, but conceptually different, aspects of sociosexuality; behavior, attitudes, and desire, and is an evolutionary relevant domain of individual differences as it predicts future mating investment (Penke and Asendorpf 2008). Recently, three different studies have found positive associations between SOI and mobile dating app use (Botnen et al. 2018; Hallam et al. 2018; Sevi 2019b). In addition, individuals with less restricted sociosexuality report casual sex as more motivational for dating app use (see also Sevi et al. 2018).

Previous studies have reported sex differences in motivations for using Tinder (e.g., Gatter and Hodkinson 2016; Sumter et al. 2017). However, as these studies did not control for sociosexuality, the sex difference in motivation might be due to a general sex difference in sociosexuality (Schmitt 2005) rather than sex per se. While women in general are less accepting of uncommitted short-term relationships than men are, and have less desire to have casual sex, there is substantial individual variation in sociosexuality within each sex. Variation in willingness to engage in uncommitted sexual relations is, as mentioned, strongly linked to sex (Schmitt 2005), and statistically controlling for sociosexuality could hence statistically remove effects of sex without this being theoretically coherent (Hallam et al. 2018; see Kennair et al. 2016, for general discussion).

Botnen et al. (2018) found that both the desire and behavior component of SOI predicted dating apps use; less restricted individuals used dating apps more than more restricted individuals. In that study, Tinder was by far the most relevant dating app as more than 95% of participants used this particular dating app. In addition, when controlling for age and the desire component of SOI, there was no evidence that length of dating app use increased the total number of one-night stands (Botnen et al. 2018).

In addition to sociosexuality, individual differences in mate value might influence who achieves matches, meet ups, and sexual encounters, as well as how many people they meet with an interest in a potential long-term, committed relationship. Several studies have investigated how sex differences in preferences differ between short-term sexual relationships and long-term committed relationships (e.g., Li et al. 2002; Regan et al. 2000). For initial contact based on pictures, such as Tinder, men who are seen as physically attractive might have a higher probability of achieving matches and meet ups because women have increased preference for physical appearance in short-term settings. However, when actually meeting face to face, other important factors, such as personality traits or confidence, are perceived. For dating apps based on pictures, such as Tinder, mate value as measured by physical appearance might be positively associated with matches and meet ups.

The current paper expands on Botnen et al. (2018) and aims to explore in further detail how matches and meet ups results in one-night stands or how many people one has meet with an interest in committed relationships, when controlling for age and SOI. Our analyses will focus on Tinder use as one of the questions included in the questionnaire utilized in this study specifically asked for matches on Tinder, which could be evaluated by participants by looking at app use history. Given differences in motivation for using Tinder, what is the likelihood for engaging in short-term sexual encounters following Tinder use? Further, how many people has one met with an interest in having a long-term committed relationship? Both of these associations will be controlled for the number of matches and meetings, length of Tinder use, sociosexual orientation, and age.

We hypothesize that sociosexuality will be positively associated with number of matches, meet ups, and number of one-night stands following Tinder use, but not with number of people met with an interest in a long-term committed relationship. We will explore which of the components of SOI may be the

best predictor. Following up on the conclusions of Botnen et al. (2018) that suggested there was no effect of Tinder use on number of sexual encounters, we consider the effect of sexual encounters outside of Tinder use as a predictor of sexual encounters following Tinder use. Thus, a history of one-night stands outside of Tinder use is expected to influence one-night stands following Tinder use if indeed app use is merely an alternative dating arena (Botnen et al. 2018). We will also explore the effects of mate value. In summary, is Tinder a qualitatively new mating arena, or will dating behavior on Tinder largely be influenced by the same evolved mechanisms that govern traditional mating behavior?

Methods

Participants

We recruited participants from lectures in social sciences, natural sciences and humanities at the two major university campuses in Trondheim, Norway ($N = 678$). To increase the homogeneity of the sample, we excluded students aged 30 or older and those who stated preference for same-sex partners. Among the remaining 641, only those responding to the specific questions regarding current or former Tinder use were included ($n = 283$). Of the remaining, six participants had extremely high number of matches (above 1000) and were removed. Based on their relationship status and Tinder use, the final sample eligible for analysis covered three distinct groups of Tinder users: Single participants currently using Tinder at the time of data collection ($n = 108$), single participants who were former users of Tinder ($n = 73$), and partnered participants who were former users of Tinder ($n = 88$). Mean ages for women ($n = 168$) and men ($n = 101$) were 21.59 (SD = 1.72) and 21.88 (SD = 1.63) respectively. More women (38.7%) than men (22.8%) reported being currently partnered. For more details on design and participants, see Botnen et al. (2018).

Measurements

Dating Apps and Tinder Use

For those who reported being current or former users of Tinder or other types of dating apps, we asked how many months of use (six categories ranging from 0–3 months to 2 years or more). Less than 13% of app users reported extended use (1.5 years or more). Seventy-six percent reported 12 months of use or less, 35% reported three months of use or less. For those using Tinder, we also asked about (1) number of matches, (2) number of meet ups, (3) number of casual sex partners following Tinder, and (4) number of people met with interest for long-term committed relationship following

Tinder. Number of matches is readily available for current Tinder users in the app's interface, while non-users, if they have deleted the app, would need to estimate this number based on memory (note: this is a socially relevant index and proxy of attractiveness that Tinder users are aware of; recall and estimation may therefore be expected to be relatively good).

Open-end response alternatives were used throughout. For number of matches, the wording was the following: "If you are a current or former user of Tinder: How many matches have you had since you started using the app?" (You can check your number of matches directly in your app. Please, reply even if you have deleted the app and try to give a realistic estimate of the true number). The wording for long-term relationship meetings was: "Of those people you have met using Tinder, how many did you meet with an interest in a long-term committed relationship?" For all questions, participants were encouraged to give realistic estimates when in doubt (when they could not recall the exact number).

Sociosexuality and Number of One-Night Stands

Participants completed the revised sociosexual orientation inventory (SOI-R; Penke and Asendorpf 2008). This 9-item measure of openness to uncommitted sexual relationships covers three components; behavior, attitudes, and desire. The internal consistencies for each of the components were good (behavior, $\alpha = 84$; attitudes, $\alpha = .82$; desire, $\alpha = .88$). Scoring and scaling closely followed the recommendations by Penke and Asendorpf (2008). Higher scores reflect less restricted sociosexuality.[1]

To address the potential influence of short-term sexual encounters apart from Tinder use, we calculated the number of one-night stand outside of Tinder. We subtracted one-night stands reported following Tinder use from the total number of one-night stands (the one item from the SOI-Behavior scale that refers to the number of sexual relations without interest for long-term, committed relationship).[2]

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[1] Because this is a sub-sample of current and prior Tinder users, we compared the SOI-scores with those of non-users. The analyses suggest that Tinder current users reported far less restricted sociosexuality (SOI-R) than current non-users (Cohen's $d = 1.00$). For the separate SOI components, these differences were $d = 1.07$, $d = 0.74$, and $d = 0.47$ for SOI-behavior, SOI-attitudes, and SOI-desire, respectively.

[2] Because the response alternatives for SOI behavior items are categorized, we applied the following recoding of scores: 0 = 0, 1 = 1, 2 = 2, 3 = 3, 4 = 4, 5 = 5.5, 6 = 8, 7 = 15, and 8 = 25. Three participants reported one more one-night stand following Tinder than the total number of one-night stands. For these instances, we adjusted the total number up to match the number following Tinder use.

Mate Value

The participants responded to the short version of the Mate Value Inventory (MVI; Kirsner et al. 2003). Self-perceived short-term mate value may be reliably measured with two items on physical attractiveness (face and body), and long-term mate value with three items on being kind, dependable, and loyal. Internal consistencies for the short-term and long-term mate value scales were $\alpha = 0.76$ and $\alpha = 0.72$, respectively. Higher scores reflect higher self-perceived mate value. For further details on the MVI in this sample, see Botnen et al. (2018).

Results

Descriptives and User Group Differences

The average number of reported matches was quite high for both men ($M = 111$) and women ($M = 124$). A 2 (sex) × 3 (group) ANOVA suggests that number of matches did not differ significantly between sexes, $F(1, 263) < 1$, but differed significantly between the three groups of users, $F(2, 263) = 13.75, p < .001, \eta_p^2 = .095$. The sex by group interaction was not significant ($p = .52$) suggesting that the number of matches did not differ between men and women in any of the groups. This lack of sex difference addresses the validity of the data and sample because a match is only achieved if both persons in a dyad swipe right for each other. Pairwise post-hoc analysis of group differences (Bonferroni) suggests that single/current users reported significantly more matches ($M = 167$) than either single/former ($M = 106$) or partnered/former ($M = 64$). The latter two groups did not differ significantly. Approximately half of the participants reported having meet ups following Tinder matches, and on average, men met with 1.9 partners, women with 2.2 partners. Number of meet ups did not differ between the sexes ($p = .69$). The three groups differed marginally on number of meet ups, $F(2, 263) = 2.63, p = .074, \eta_p^2 = .020$. In the post-hoc analysis, single/current users tended to report more meet ups ($M = 3.0$) than the partnered/former group ($M = 1.5$), $p = .096$. One in five reported at least one short-term sexual encounter, and one in four had met someone with an interest for a long-term committed relationship. Because of the low prevalence and the high level of skewness (above 3.5) for one-night stands and meeting someone with an interest for a long-term committed relationship, statistical tests of sex, and group differences would not be very informative. Using Tinder, 80% did not achieve any sexual encounter, 13% achieved only one, 3% achieved two, and the remaining 4% more than two. Table 1.

The typical pattern seems to be that half of Tinder users who had matches actually met up with at least one of their matches, and the large majority never had sex nor had a

meeting with an interest for a long-term relationship. To get an impression of the pay-off of using Tinder, we calculated the ratios of matches, meet ups, one-night stands following Tinder and meeting a potential long-term committed romantic partner. Overall, across all subgroups, the matches:meet ups ratio was 57:1, the meet ups: One-night stands following Tinder ratio was 5.4:1 (5.9:1 and 4.8:1 for women and men respectively), and the ,meet ups:meeting a long-term committed romantic partner ratio was 5.1:1.

Associations

Because of the skewed distributions for several of the Tinder variables, Spearman's *rho* was preferred over Pearson's *r*. In this sample of Tinder users, participant sex was moderately to strongly associated with sociosexual attitudes and desires. On average, men ($M = 6.77$) reported moderately less restricted attitudes toward casual sex than women did ($M = 5.90$), $t(267) = 3.61, p < .001$ (Cohen's $d = 0.45$, 95% CI [0.20, 0.70]). Further, men ($M = 5.25$) reported markedly more casual sex sexual desires than women ($M = 3.61$), $t(266) = 7.69, p < .001$ (Cohen's $d = 0.97$, 95% CI [0.71, 1.23]). As seen in Table 2, the number of one-night stands following Tinder use was positively associated with participant age, sociosexual attitudes, length of Tinder use, number of matches, and one-night stands outside of Tinder. The number of one-night stands following Tinder use was also strongly associated with number of meet ups. Still, we found that seven of the 54 participants reported one-night stands exclusively related to Tinder use (i.e., they had no one-night stands outside of Tinder). Those reporting most one-night stands without using Tinder were slightly more successful at achieving one-night stands following Tinder use ($r_s = 0.19, p < .01$). Except for some association with one-night stands following Tinder for short-term mate value, neither mate value measures showed any relationship with length of use, Tinder matches, meet ups, or meetings with an interest for a long-term relationship. The number of people met with an interest in a long-term committed relationship was strongly associated with meet ups. In addition, there was a positive association between number of one-night stands following Tinder and number of meetings with an interest for a long-term committed romantic relationship.[3]

Predicting Outcomes of Tinder Use

Given the nature of the data and the distribution of scores on the dependent variables (number of encounters), we applied a

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[3] When we dichotomized number of meet ups (None/1 or more), 62% of those who met reported neither one-night stands nor any meetings with an interest for a long-term relationship. Among the remaining 38%, participants who met a partner with an interest for a long-term relationship reported three times more often to have had a one-night stand following the meeting, OR = 3.0, 95% CI [1.4–5.6].

Table 1 Means, SDS, and median numbers of matches, meet ups, one-night stands, and meetings with an interest for long-term committed relationships related to Tinder use for partnered and single, former and current users

Variable		Women			Men		
		Partnered/ former ($n = 65$)	Single/ former ($n = 45$)	Single/ current ($n = 58$)	Partnered/ former ($n = 23$)	S[1]ingle/ former ($n = 28$)	Single/ current ($n = 50$)
Matches	M	101	71	177	116	52	148
	SD	101	70	158	137	57	172
	Mdn	65	50	147	50	28	100
	Min–Max	1–500	15–400	20–730	0–500	0–200	2–900
Meet ups	M	1.5	1.4	3.3	1.5	1.7	2.4
	SD	1.7	3.2	6.5	1.5	3.7	6.4
	Mdn	1	0	1	1	0	0
	Min–Max	0–6	0–20	0–30	0–5	0–15	0–40
	% > 0	63	44	62	65	43	44
ONS-Tinder	M	0.3	0.2	0.5	0.4	0.2	0.5
	SD	0.7	0.5	1.2	0.7	1.0	1.5
	Mdn	0	0	0	0	0	0
	Min–Max	0–5	0–2	0–5	0–2	0–5	0–8
	% > 0	22	18	24	26	7	20
Potential LTCR meetings	M	0.7	0.3	0.5	0.3	0.1	0.3
	SD	1.3	0.5	1.0	0.6	0.4	0.7
	Mdn	0	0	0	0	0	0
	Min–Max	0–7	0–2	0–5	0–2	0–1	0–2
	% > 0	38	22	28	30	14	22

ONS one-night stand, *LTCR* long-term committed relationship

% > 0 = proportion reporting one encounter or more

negative binominal regression. This count regression model is applicable for predicting numbers (encounters in our data) when there are large numbers of zeros, when variances are higher than the means, and when the highest outcome number is not known (Long and Freese 2006). The count variable is believed to be generated by a Poisson-like process, except that the variation is allowed to be greater than that of a true Poisson (StataCorp 2017). Count is technically a rate, and we report on incidence rate ratios. A ratio not different from 1 represents no effect, a ratio lower than 1 reflects lower likelihood, and above 1 higher likelihood.

We analyzed the data in the following hierarchical manner: In model 1, we regressed number of one-night stands following Tinder on sex (male), age, length of use, current use (yes), and number of one-night stands outside of Tinder use. In model 2, we added measures of sociosexuality (attitudes and desire) and mate value (short-term and long-term). Finally, we added number of matches and meet ups in model 3. The findings are presented in Table 3. The findings suggest that more one-night stands following Tinder use was predicted by participant age and length of use. There was no effect of sex, being a current Tinder user (as opposed to former use), or number of one-night stands outside of Tinder when the effect

of the other variables in model 1 were accounted for. In model 2, there was a positive effect of SOI-attitudes and short-term mate value, and a marginal effect of SOI-desire (all positive). Both age and length remained significant predictors. When controlling for sociosexuality and mate value measures, men reported fewer one-night stands than women, and having had one-night stands outside Tinder tended to reduce one-night stands following Tinder use ($p = .085$). In the final model, number of meet ups significantly increased the number of one-night stands. This was also true for higher self-perceived short-term mate value, SOI-attitudes, and age. When controlling for number of meetings and matches, men, number of one-night stands outside of Tinder, and higher long-term mate value were associated with fewer one-night stands following Tinder use. The effect of length of Tinder use was marginal in model 3 ($p = .069$). Only one interaction was significant in the above models. The effect of age was moderated by sex, showing stronger associations for men ($r_s = 0.34$) than for women ($r_s = 0.18$). Model post-estimation suggests that the predictors in model 3 accounted for 18.5% of the variance in the number of one-night stands following Tinder.

The same strategy as described for one-night stands was applied for predicting the number of people met with an

Table 2 Zero-order correlations (Spearman's rho) for predictors and outcome variables (n = 266)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Sex	—											
2. Age	0.12	—										
3. ONS-OT	–0.08	0.33	—									
4. SOI-attitudes	0.20	0.16	0.39	—								
5. SOI-desire	0.40	0.04	0.06	0.29	—							
6. MV-short	0.14	0.18	0.12	0.07	0.16	—						
7. MV-long	–0.09	–0.05	–0.08	–0.08	–0.02	0.09	—					
8. Current use	0.15	-0.02	–0.03	0.08	0.36	–0.02	0.00	—				
9. Length	0.09	0.07	0.16	0.15	0.22	0.04	0.05	0.40	—			
10. Matches	–0.12	0.06	0.19	0.13	0.10	0.03	0.08	0.28	0.49	—		
11. Meet ups	–0.07	0.20	0.25	0.05	0.03	0.07	0.11	0.05	0.26	0.35	—	
12. ONS-Tinder	–0.04	0.23	0.19	0.24	0.11	0.16	–0.04	0.06	0.27	0.27	0.52	—
13. LTCR-Tinder	–0.09	0.12	0.00	–0.11	–0.01	0.07	0.05	–0.02	0.07	0.14	0.50	0.24

ONS-OT one-night stand outside of Tinder, *SOI* Sociosexual Inventory, *MV* mate value, *LTCR* long-term committed relationship

interest for a long-term committed relationship. In a separate analysis, we added number of one-night stands following Tinder to model 3. As seen in Table 4 (model 1), when controlling for length of use, current use, and number of one-night stands outside Tinder, men reported fewer meet ups than women and older participants reported more meet ups relative to those younger. There was no effect of length of Tinder use, being a current user, or of number of one-night stands outside of Tinder. When adding sociosexuality and mate value in model 2, the effect of sex was reduced somewhat ($p = .069$). Age increased the number of meet ups, while sociosexual attitudes significantly reduced the number. None of the other factors had any effect. In the final model, sex did no longer predicted meet ups, while the effect of age remained unaffected by the inclusion of matches and meet ups. The effect of SOI-attitudes was now slightly reduced ($p = .053$). Both number of matches and number of meet ups significantly increased the number of people met with an interest in a long-term committed relationship. Model post-estimation suggests that the model 3 predictors accounted for 8.7% of the variance in the number of people met with an interest in a long-term committed relationship. None of the effects reported above were moderated by the effects of the other predictors in the models (no interactions).

Table 3 Predictors of number of one-night stands following Tinder use ($n = 267$)

Predictor	Model 1			Model 2			Model 3		
	IRR (SE)	Z		IRR (SE)	Z		IRR (SE)	Z	
Sex (male)	0.90 (0.26)	− 0.36		0.44 (0.13)	− 2.72**		0.54 (0.17)	− 1.98*	
Age	1.40 (0.12)	3.86***		1.37 (0.11)	4.05***		1.31 (0.08)	4.51***	
Length of Tinder use	1.49 (0.19)	3.15**		1.50 (0.19)	3.23**		1.26 (0.16)	1.82†	
Current user (yes)	1.30 (0.52)	0.65		0.98 (0.41)	− 0.06		0.91 (0.43)	− 0.19	
ONS outside Tinder	1.03 (0.04)	0.86		0.95 (0.03)	− 1.72†		0.94 (0.03)	− 2.18*	
SOI-Attitudes				1.41 (0.11)	4.26***		1.44 (0.11)	4.56***	
SOI-desire				1.18 (0.08	1.77†		1.05 (0.09)	0.61	
Short-term MV				1.38 (0.22)	2.01*		1.53 (0.22)	3.00**	
Long-term MV				0.86 (0.14)	− 0.92		0.74 (0.12)	− 1.98*	
Number of matches							1.00 (0.00)[a]	0.78	
Number of meet ups							1.14 (0.04)	3.64***	

[a] The number were rounded to the nearest two decimals. *IRR* incidence rate ratios, *SE* Robust Standards Errors, *ONS* One-Night Stands, *SOI* Sociosexuality, *MV* Male Value

McFadden R^2: model 1 = 0.083, model 2 = 0.132, model 3 = 0.185

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 4 Predictors of number of long-term persons following Tinder use (*n* = 268)

Predictor	Model 1		Model 2		Model 3	
	IRR (SE)	Z	IRR (SE)	Z	IRR (SE)	Z
Sex (Male)	0.54 (0.14)	− 2.39*	0.60 (0.17)	− 1.82†	0.66 (0.21)	− 1.33
Age	1.15 (0.07)	2.34*	1.15 (0.07)	2.43*	1.17 (0.06)	2.91**
Length of Tinder use	1.11 (0.11)	1.03	1.13 (0.10)	1.37	1.01 (0.08)	0.15
Current user (yes)	0.97 (0.30)	− 0.09	0.97 (0.3)	− 0.11	0.69 (0.21)	− 1.23
ONS outside Tinder	0.96 (0.03)	− 1.19	0.99 (0.04)	− 0.19	0.98 (0.04)	− 0.56
SOI-attitudes			0.84 (0.06)	− 2.33*	0.86 (0.06)	− 1.94†
SOI-desire			1.04 (0.08)	0.48	1.02 (0.09)	0.18
Short-Term MV			1.03 (0.12)	0.27	1.06 (0.13)	0.45
Long-Term MV			1.12 (0.18)	0.74	1.04 (0.16)	0.21
Number of Matches					1.00 (0.00)[a]	2.40*
Number of Meet Ups					1.09 (0.01)	6.23***

[a] The number were rounded to the nearest two decimals

IRR incidence rate ratios, *SE* robust standards errors, *ONS* one-night stands, *SOI* Sociosexuality, *MV* male value

McFadden R^2: model 1 = 0.021, model 2 = 0.036, model 3 = 0.087

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

When adding number of one-night stands following Tinder use as a predictor to model 3, this variable had a significant impact on the number of people met with an interest for a committed relationship (IRR = 1.23, SE = 0.10, z = 2.45, p = .014). This effect was not moderated by sex or any of the other variables in the model. The effect of age and meet ups was unaffected by this inclusion, SOI-attitudes was now significant (p = .019), while number of matches fell just short of the 5% significance criterion (z = 1.92, p = .055). When one-night stands were added to model 3 the predictors accounted for 9.7% of the variance in number of people met with interest in a committed relationship.

Discussion

Tinder is an app that promises to ease the search and acquisition of new romantic mates, both long-term, and short-term. Further, in the media moralistic worries that Tinder is causing a spread of social disease have been aired (Rhode Island Government 2015). The current study investigates to what degree Tinder use actually results in more sexual partners and romantic opportunities based on number of matches and meet ups.

Contrary to expectations, number of one-night stands outside Tinder use showed only a weak positive association with number of one-night stands following Tinder. When controlling for length of use and age, there was no effect of one-night stands outside of Tinder use on one-night stands following Tinder. In the final model, controlling for sociosexuality, matches and meet ups, the effect was actually negative.

Botnen et al. (2018) and Sevi (2019a) suggested that dating apps such as Tinder are merely a new arena for evolved short-term sexual behavior, rather than a facilitator of new sexual behaviors. Given the current results, we suggest that Tinder indeed seems to provide new sexual opportunities, but mostly for a very small minority. Of the 54 participants who reported one-night stands following Tinder use, only 7 individuals reported no one-night stands outside of Tinder use. However, the general claim still holds for the majority of Tinder users. For those who are most successful outside of Tinder, Tinder adds few extra short-term sexual encounters. A small number of individuals who are unsuccessful in more traditional dating arenas may turn to Tinder in order to have short-term sexual relations. Based on the ratio of matches to meetings to sexual encounters, Tinder may not be described as a sex app that largely increases the number of one-night stands and hook-ups, at least not in our sample. Despite this, Tinder, as a new arena for mating effort, may still be considered highly efficient from an evolutionary perspective. There are almost no costs involved apart from the time spent, and one may indicate interest in a multitude of partners by swiping right in a very short time. Most meetings do not lead to one-night stands. There is a potential mismatch between cues used to decide to swipe right and the short-term attractiveness perceived in a face-to-face meeting. Information provided by the short biography, picture, and age are highly relevant; however, other evolutionary relevant cues for assessing casual sex attractiveness are only available in a physical meeting. Further, and reflecting the above, individuals who are efficient in traditional mating arenas, may therefore acquire more partners through displaying the kind of personality (Schmitt and Shackelford

2008), confidence, physical bodily (Provost et al. 2008), and facial features (Li and Kenrick 2006; Little et al. 2002) and maybe even voice cues (Puts 2005) that are attractive in short-term matings face-to-face rather than via non-organic, electronic Tinder profiles.

There is an effect of meet ups on one-night stands, but not of matches over and above the effect of meet ups. In addition, both age and sociosexual attitudes consistently predicted number of one-night stands following Tinder. One might argue that swiping right and hence indicating interest in a potential partner on an app is less time consuming and that one avoids the more distressing rejections than when actively engaging with people in real life. However, those who succeed in traditional hook up arenas, in physical interactions, where both parties are in the mood and with some degree of intoxication, will perhaps not succeed more by adding Tinder. Swiping and searching on Tinder may have limited effect, and as such may not be considered cost efficient. A large number of matches are required in order to achieve a sexual encounter. This challenges the suggestion that Tinder is a sex app that is contributing to a general increase in the amount of casual sex and social diseases in society and number of sexual partners for users directly (Rhode Island Government 2015).

Tinder is neither a very efficient way of meeting a long-term committed romantic partner. Women, more than men, meet more people with an interest for potential long-term committed relationships. Parallel to other recent findings of sociosexuality and Tinder use (Hallam et al. 2018; Sevi et al. 2018), the statistical effect of sex on number of meet ups with the interest for a long-term committed romantic relationship was partly accounted for by the attitudes component of the sociosexual orientation inventory. A careful interpretation of the effect of the attitudes component of SOI needs to consider the sex-differentiated nature of sociosexuality (Kennair et al. 2016). The findings support that individual differences in sociosexuality attitudes and sex differences overlap, with women being less short-term oriented in general and also report greater interest in long-term rather than short-term encounters. There was also an overlap in what factors influence meeting someone for either a long-term committed romantic relationship or one-night stands. Most likely, this is due to most people being interested to some degree in both short-term as well as long-term relationships (Gangestad and Simpson 2000). This resonates with the motives reported by Botnen et al. (2018).

There was a positive association between one-night stands and meetings with an interest in a long-term committed romantic relationship. Possible explanations of this finding are that users of Tinder have multiple, non-mutually exclusive reasons for app use, and that some relationships develop from what were initially one-night stands. Unrestricted sociosexual attitudes increased number of one-night stands; however, the effect of SOI-attitudes was negative for committed relationships. These findings were robust. There was a tendency that the desire component of sociosexuality also increased one-night stands, but this effect was accounted for by number of meet ups and short-term mate value.

Short-term mate value (physical attractiveness) predicts number of one-night stands following Tinder. Nevertheless, the directionality is unresolved. Possibly, the effect is bidirectional: higher mate value may have increased the number of one-night stands, and more hook-ups may have resulted in higher self-perceived mate value.

Limitations and future research

We acknowledge the complexities regarding patterns of Tinder use. The app may be installed or deleted several times. Accuracy of recall of past behavior and outcomes is obviously a challenge, including statistics on, e.g., matches, particularly for those who have deleted the app. Memory of matches for former users may be less precise than for current Tinder users who may check their matches data in the app, although there was no difference between the two former user groups in number of matches. This difference may be due to individual differences: individuals who achieve more matches are maybe more likely to stay on Tinder resulting in a survivorship bias. Future research needs to investigate this possible bias. However, the data showed no sex differences in matches across three groups of users, or sex differences in meetings resulting in one-night stands. This attests to the validity of the sample and data as matches are only achieved if both members of the dyad swipe right. Future research may benefit from a prospective study design among current users, when attempting to reproduce the current results.

Our sample is from a highly sexually liberal and gender egalitarian population (Grøntvedt and Kennair 2013). Further, Norwegian samples report less restrictive sociosexual behavior and attitudes compared with the US samples, although Norwegians reported lower sociosexual desire (Bendixen et al. 2017). Replications are warranted in order to investigate how cultural or ecological aspects might influence the results. We also note that dating apps are quite new developments. However, Norway is a highly online society (World Bank 2018). How Tinder, or other similar location-based dating apps, lead to long-term or short-term relationships over time needs ongoing investigation. This includes the unanswered question of efficiency in obtaining long-term, committed partners through dating apps.

As men more than women are expected to allocate more resources to short-term mating efforts (Buss and Schmitt 1993), we expect that there will be a significant sex difference in number of right swipes indicating a desire to establish contact, lower threshold for wishing to have short-term sex, and interest in greater sexual variance. However, information regarding number of right swipes is not available to users.

Because of large and varied swipe behavior from session to session and across time, any subjective estimate of swipe behavior would be highly inaccurate. Tinder user data may potentially provide such information.

Conclusions

People use Tinder to attempt to achieve both casual sex and romantic relationships. This demands effort in the form of a very large number of matches and several meetings for each outcome. In line with sexual strategies theory (Buss and Schmitt 1993), there was a sex difference in interest for meeting for a long-term relationship. Relevant for a picture-based dating app, physical and facial attractiveness was associated with one-night stands. Finally, unrestricted sociosexual attitudes increase the likelihood of one-night stands and reduce the likelihood of meeting a romantic partner.

Given the current results and Botnen et al. (2018) on the efficiency of Tinder use for casual sex encounters, claims in the media that any increase in social infections may be the result of Tinder and similar apps are not warranted. Tinder is not necessarily causing a large increase in short-term sexual encounters. Eight out of ten did not have any sexual encounters related to use of the app. If Tinder use resulted in sex at all, only one or two extra partners were reported.

Compliance with Ethical Standards

Conflict of Interest The authors declare they have no conflict of interest.

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