

A narrative review of motivations for dating app use and associated sexual behaviours: Recommendations to promote safe sex among Indian dating app users

Introduction

The introduction of smartphone-based GSN apps revolutionised the dating arena by allowing individuals to meet partners in one's geographical vicinity. GSN apps are an advancement to dating websites as they enable individuals to connect with others 'on the go' using the phone's global positioning system (GPS) while reducing much of the stigma attached to digital dating (Timmermans & De Caluwé, 2017). Dating apps are the most common venue for heterosexuals couples to meet (Rosenfeld, Thomas, & Hausen, 2019).

Tinder entered the Indian market in 2016, with currently over 7.6 million swipes per day, making it the most commonly used dating app in India (Chugh, 2019). However, online partner-seeking is not new to Indians. Online matchmaking in India dates back to the launch of the matrimonial website Shaadi.com, in the early 1990s (Sahoo, 2017). As arranged marriages in India emphasise caste and class compatibility, matrimonial websites include details enabling individuals to choose spouses within their caste, class, region, and linguistic background, thereby combining aspects of traditional arranged marriages and modern marriages based on love (Sahoo, 2017). Following the success of Tinder in India, several novel dating apps have been designed to strike a balance between casual dating and more serious relationship seeking goals of young adults in India such as Aisle, Sirf Coffee, Find Life Over Here (FLOH) and Truly Madly (Escobedo, 2017).

An extensive pool of research has explored motivations for using dating apps among heterosexual individuals from the USA and Europe. The most predominant motivations included

entertainment, socialisation, and seeking relationships (e.g., Griffin, Canevello, & McAnulty, 2018). Despite dating app usage extending worldwide, with several Asian nations having a large user-base for Tinder (Chugh, 2019), there is sparse and disparate research on motivations for, and sexual behavioural outcomes of, using dating apps among Asian samples. The dearth of research with Asian samples makes it difficult to determine the social, psychological and health implications that these new technologies have on dating and intimacy as the results from Western studies may not be applicable to dating app users from the East. Further, the studies that have been conducted to date in Asian countries such as China and the Philippines have largely been restricted to specific demographics such as men who have sex with men (MSM) making it difficult to draw conclusive inferences regarding a heterosexual population (Wu & Ward, 2019).

Barriers to safe sex behaviours in India: Lack of sex education and access to condoms

In India, the combined STI/RTI (Sexually Transmitted Infections/Reproductive Tract Infections) prevalence rate among the population (15-49 years) is 6% (NACO, 2017). One determinant of the increasing STI rates may be engagement in risky sex, especially in young people, who are under the influence of alcohol. This may be due to the lack of information on safe sex practices (Brahme et al., 2020), as sex is still considered a taboo in India (Majumdar, 2018). It is unsurprising that the Ministry of Human Resource Development (MHRD)'s introduction of sex education (termed as Family Life Educational; FLE) in Indian school curriculums invited strong opposition from parents and several state governments (Anandhi, 2007). Many of the ardent critics believed that it would corrupt the youth by promoting promiscuity (Tripathi & Sekher, 2013). However, there is no evidence for this claim, as Comprehensive Sex Education (CSE) is found to have benefits over an abstinence-only program,

as indicated by a reduction of teen pregnancies and delay in sexual initiation compared to students who received no sex education (Kohler, Manhart, & Lafferty, 2008). However, despite this evidence the FLE programme was banned in six states, which included Maharashtra, Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, and Karnataka (Ismail, Shajahan, Rao, & Wylie, 2015).

Nonetheless, the FLE curriculum has some inherent issues, particularly in relation to its narrow content which is focussed on the science of reproduction and reproductive health and not on risky sexual behaviours, preventive behaviours, and prevention of STIs (Brahme et al., 2020). This may be driven both by the state, but also by teachers, who are expected to conduct the course. For example, even school teachers (in both government and private schools in Delhi) who were in favour of introducing sex education, preferred to introduce topics such as reproductive anatomy, physiology, and birth control measures, and were opposed to covering topics such as abortion, premarital sex and masturbation (Bhasin & Aggarwal, 1999). With the growing incidence of STIs (World Health Organisation, 2019), coupled with a large number of dating app users in India, it may be critical to revisit the course content. Indeed, a perceived lack of sexual risk due to the provision of inadequate sexual health information may be an added disadvantage for young Indians who choose to be sexually active (Brahme et al., 2020), who form a large demographic of dating app users (The Economic Times, 2015).

Further complicating sexual risk outcomes among an Indian population, young adults who choose to be sexually active may face unique cultural barriers, such as social stigma associated with premarital sex and gender discrimination that inhibits women from purchasing and negotiating condom use (Santhya, Acharya, & Jejeebhoy, 2011). The persistence of misconceptions, such as the belief that one cannot get pregnant through one-time sexual activity

may lead to a perceived lack of risk in terms of pregnancies and STI contraction (Santhya et al., 2011). These factors all suggest that research examining dating app use and associated sexual behaviors is necessary to ensure that interventions can be tailored to an at-risk Indian population.

This narrative review aims to (i) identify motivations for dating app use, (ii) identify sexual behaviours among app users in comparison with non-users, (iii) examine body image and dating app use, (iv) introduce the psychological theory of self-affirmation as a potential framework to promote safe sex behaviours, particularly in terms of condom use, and (v) provide recommendations on methods to promote safe sex choices among dating app users in India.

Methods

Search strategy

A literature search for a narrative review was conducted (see Ferrari, 2015; Green et al., 2006). An electronic database search was carried out for articles published from 2016-2020 (due to the recent prominence of research on heterosexual dating app use since 2016) on Web of Science, PubMed and Google Scholar using the following terms: (i) dating applications, (ii) dating apps, (iii) dating app use, (iv) Tinder, (v) heterosexual, (vi) motivations, (vii) sexual risks, (viii) unsafe sex, (ix) sexually transmitted infections, and (x) sex behaviours.

Selection criteria

The inclusion criteria were empirical research (both quantitative and qualitative) that looked at (i) motivations for using dating apps and (ii) determinants of sexual behaviours in heterosexual male and female dating app users aged 18 years and above. The exclusion criteria were articles which: (i) looked at other topics linked to dating app use, e.g., rape (Thompson,

2018), (ii) pertained to individuals with sexual orientations other than heterosexual, (e.g., MSM, Miller & Behm-Morawitz, 2020; and bisexuals, Fields et al., 2020), and (iii) review articles. Overall, 1035 articles were identified for the initial screening. One author screened the articles with reference to the inclusion and exclusion criteria; 17 articles on dating app motivations worldwide (3 were specific to India) were eligible for inclusion. Seven articles on sexual behaviours of dating app users worldwide were identified (0 were specific to India). Tables 1 describes the studies on the motivations for using dating apps. Table 2 describes studies on risky sexual behaviour associated with dating app use.

Table 1: Worldwide studies on motivations for dating app use

Sl. No.	Author(s) and year	Method	Sample size	Country	All motivations identified
1	Carpenter & McEwan, 2016	Quantitative	83 male and 143 female college students	USA	<ul style="list-style-type: none">- Entertainment- Dating- Sex
2	Gatter & Hodgkinson, 2016	Quantitative	29 male and 46 female adults aged 18 and above (56 dating app users and 19 non-users)	Austria	<ul style="list-style-type: none">- Hook-up- To find a romantic partner- Fun- To make new friends- To keep in contact with existing friends
3	Madan & Jain, 2016	Qualitative	3 male and 5 female emerging adults	India	<ul style="list-style-type: none">- Socialisation- Curiosity
4	Ranzini & Lutz, 2017	Quantitative	278 males and 218 females aged 18 and above	USA	<ul style="list-style-type: none">- Entertainment- Relationship-seeking- Travelling- Hook-up- Friendship- Self-validation

5	Sumter, Vandenbosch, & Ligtenberg, 2017	Quantitative	83 male and 80 female emerging adults ¹	Netherlands	<ul style="list-style-type: none"> - Thrill of excitement - Trendiness - Love - Self-worth validation - Casual sex - Ease of communication
6	Timmermans & De Caluwé, 2017	Quantitative	208 male and 294 female emerging adults (378 dating app users; 124 non-users)	Belgium	<ul style="list-style-type: none"> - Entertainment - Curiosity - Socialisation - Social approval - Distraction - Relationship-seeking - Flirting - Sexual orientation - Travelling - Peer pressure - Sexual experience - Getting over an ex - Belongingness
7	Ward, 2017	Qualitative	11 male and 10 female dating app users	Netherlands	<ul style="list-style-type: none"> - Entertainment - Ego-boost - Relationship-seeking

¹ A developmental phase between adolescence and young adulthood, usually considered between the ages of 18 and 29 (Munsey, 2006)

8	Griffin et al., 2018	Quantitative	196 male and 213 female college students	USA	<ul style="list-style-type: none"> - Fun - Socialisation - Convenience - Relationship-seeking - Hook-up - Pressure from friends
9	LeFebvre, 2018	Quantitative	395 young adults, aged 18 to 34 years	USA	<ul style="list-style-type: none"> - Popularity - Design - Interpersonal relationships - Curiosity - Hook-up - Geo-locality - Entertainment
10	Sawyer, Smith, & Benotsch, 2018	Quantitative	147 male and 362 female undergraduate students (201 dating app users; 308 non-users)	USA	<ul style="list-style-type: none"> - Fun - Meet new people - Socialisation / chat with others - Flirt - Have interesting conversations - Find people to hang out with - Feel attractive - Relationship-seeking - Increase self-confidence - Shyness - Hook-ups - To upset someone

11	Shimokobe & Miranda, 2018	Quantitative	93 male and 36 female college students	USA	<ul style="list-style-type: none"> - Self-confidence boost - Dating - Relationship-seeking - Socialisation - Rebound - Trolling - Hook-up
12	Timmermans & Courtois, 2018	Quantitative	426 male and 612 female emerging adults	Belgium	<ul style="list-style-type: none"> - Relationship-seeking - Sexual experience - Socialisation
13	Chakraborty, 2019	Quantitative	174 male and 122 female emerging adults	India	<ul style="list-style-type: none"> - Playfulness
14	Sohail, Mahmood, Khan, & Gull, 2019	Quantitative	150 male and 150 female dating app users	Pakistan	<ul style="list-style-type: none"> - Relationship-building - Surveillance - Hook-up - Personal identity
15	Solis & Wong, 2019	Quantitative	249 male and 184 female dating app users	China	<ul style="list-style-type: none"> - Coolness - Fun and ease of connectivity - Socialisation - Self-esteem - Love - Sexual experience

16	Sumter & Vandenbosh, 2019	Quantitative	216 male and 325 female emerging adults	Netherlands	<ul style="list-style-type: none">- Thrill of excitement- Love- Self-worth validation- Trendiness- Ease of communication- Casual sex
17	Shah, 2020	Qualitative	17 male and 14 female emerging adults	India	<ul style="list-style-type: none">- Self-image enhancement

Table 2: Worldwide studies on sexual behaviours associated with dating app use

Sl. No.	Author(s) and year	Method	Sample size	Country	Questionnaires	Findings on sexual behaviours (users versus non-users)
1	Choi et al., 2016	Quantitative	296 male and 360 female college students (352 dating app users; 314 non-users)	Hong Kong	<ul style="list-style-type: none"> 1. Sexual behaviours - Ever had sexual intercourse - Age of first sexual intercourse* - Number of lifetime sexual partners* - Number of sexual partners in the past 3 months* - Number of sexual partners in the past month* - Number of sexual partners they had unprotected sex with* 	<p>Yes: 39.04% No: 60.51%</p> <p><16 years</p> <ul style="list-style-type: none"> - App users: 18.82% - Non-users: 5.56% <p>≥16 years</p> <ul style="list-style-type: none"> - App users: 81.18% - Non-users: 94.44% <p>- App users: 4.07 (3.82) - Non-users: 1.72 (2.59)</p> <p>- App users: 1.12 (0.73) - Non-users: 0.81 (0.56)</p> <p>- App users: 0.80 (0.60) - Non-users: 0.65 (0.56)</p> <p>- App users: 2.63 (2.79) - Non-users: 0.80 (1.40)</p>

					<ul style="list-style-type: none"> - Type of sexual partner during last sexual intercourse* <ul style="list-style-type: none"> Committed partner <ul style="list-style-type: none"> - App users: 121 (71.18) - Non-users: 84 (93.33) Casual partner <ul style="list-style-type: none"> - App users: 49 (28.82) - Non-users: 6 (6.67)
				<ul style="list-style-type: none"> 2. Frequency of condom use* <ul style="list-style-type: none"> Inconsistent <ul style="list-style-type: none"> - App users: 134 (78.82) - Non-users: 52 (57.78) Consistent <ul style="list-style-type: none"> - App users: 36 (21.18) - Non-users: 38 (42.22) 	
				<ul style="list-style-type: none"> 3. Whether a condom was used during last intercourse* <ul style="list-style-type: none"> Yes <ul style="list-style-type: none"> - App users: 72 (42.35) - Non-users; 61 (67.78) No <ul style="list-style-type: none"> - App users: 97 (57.06) - Non-users: 28 (31.11) 	
2	Shapiro et al., 2017	Quantitative	78 male and 337 female emerging adults (166 dating app users; 249 non-users)	Canada	<ul style="list-style-type: none"> 1. The sexual compulsivity scale (e.g. my sexual thoughts and behaviours are causing problems in my life) <ul style="list-style-type: none"> - No difference in sexual compulsivity between app users and non-users 2. The Brief Sexual Attitudes Scale <ul style="list-style-type: none"> - Permissiveness (e.g. casual sex is acceptable)* <ul style="list-style-type: none"> - Higher sexual permissiveness among app users

- | | |
|--|--|
| - Birth control (e.g. birth control is part of responsible sexuality) | - No difference in birth control use among users and non-users |
| - Communion (e.g. sex is usually an intensive, almost overwhelming experience) | - No difference in communion between users and non-users |
| - Instrumentality (e.g. sex is primarily a bodily function, like eating) | - No difference in instrumentality between users and non-users |
| 3. Need for Sexual Intimacy Scale | |
| - Need for sex* | - Higher need for sex among app users |
| - Need for affiliation | - No difference in need for affiliation between users and non-users |
| 4. Age of first sexual intercourse | - No difference in age of first sexual intercourse between users and non-users |
| 5. History of STI | - No difference in history of STI contraction between users and non-users |

					6. Vaccination against HPV	- No difference in vaccination against HPV between users and non-users
					7. Condom use at last intercourse	- No difference in condom use between users and non-users
					8. Previous number of partners*	- Users had five or more previous sexual partners
					9. Non-consensual sex*	- Users had a higher likelihood of engaging in non-consensual sex
3	Sawyer et al., 2018	Quantitative	147 male and 362 female undergraduate students (201 dating app users; 308 non-users)	USA	1. Total number of sexual partners over the past 3 months*	- App users: 1.15 (1.27) - Non-users: 0.90 (1.12)
					2. Total number of unprotected vaginal or anal sex acts in the past 3 months*	- App users: 6.52 (12.32) - Non-users 6.50 (15.53)
					3. Total number of lifetime sexual partners*	- App users: 6.57 (7.96) - Non-users: 3.39 (4.62)
					4. Sex after having too much to drink, past 3 months*	- App users: 43.3% - Non-users: 28.6%

					5. Sex after using drugs, past 3 months*	- App users: 29.4% - Non-users: 16.6%
					6. Unprotected (no condom used) vaginal or anal sex, past 3 months*	- App users: 56.2% - Non-users: 43.2%
					7. Multiple sexual partners in the past 3 months*	- App users: 22.4% - Non-users: 11.7%
4	Andersson, Preuss, Boman, & Nylander, 2019	Quantitative	574 males and 367 females visiting an STI clinic	Sweden	1. Alcohol use before sex occasionally, most often or always*	- App users: 52.4% - Non-users: 44.5%
					2. More than 3 partners in the last 12 months*	- App users: 84.2% - Non-users: 50.2%
					3. Multiple partners at a time*	- App users: 17.4% - Non-users: 7.3%
					4. Heterosexual sex only*	- App users: 77.8% - non-users: 94.4%
					5. Unprotected sex with new partner*	- App users: 67.1% - Non-users: 48.3%
					6. Bored of sex with only one person*	- App users: 38.5% - non-users: 21.3%
					7. Excited by sex with new partners*	- App users: 88.8% - Non-users: 60.7%

					8. Chlamydia infection rates	- No difference in chlamydia infection rates between users and non-users
5	Sevi, 2019	Quantitative	97 males and 85 females aged 18 and above	USA	1. Sexual disgust scale (e.g. hearing two stranger having sex)*	- App users: 2.40 (1.18) - Non-users: 2.97 (1.47)
					2. Health/Safety Risk Taking (e.g. engaging in unprotected sex)*	- App users: 3.38 (1.29) - Non-users: 2.79 (1.14)
6	Fansher & Eckinger, 2020	Quantitative	490 male and 803 female undergraduate students (421 dating app users; 872 non-users)	USA	1. Sexual behaviours scale (number of sexual partners in the last six, months, frequency of sex after drinking alcohol, and frequency of sex after binge drinking)*	- App users: 0.81 (0.77) - Non-users: 0.56 (0.67)
					2. Sexual deception ^{2*}	- App users: 2.77 (2.99) - Non-users: 1.22 (1.93)
					3. Sexual compulsivity ^{3*}	- App users: 1.40 (0.51) - Non-users: 1.26 (0.42)

² Defined as engaging in sexual behaviours as a result of deceit through acts such as lying (Fansher & Eckinger, 2020)

³ Defined as disruptive sexual thoughts that may have a negative consequence on one's personal life (Fansher & Eckinger, 2020)

					4. Explicit messaging*	- App users reported higher rates of sending and receiving explicit messages
7	Tomaszewska & Schuster, 2020	Quantitative	196 male and 295 female young adults (277 dating app users; 214 non-users)	Germany	1. Risky sexual script ^{4*}	- App users: 8.21 (1.79) - Non-users: 7.34 (1.97)
					2. Casual sexual script*	- App users: 13.52 (3.23) - Non-users: 12.07 (3.59)
					3. Communication script	- App users: 3.39 (2.16) - Non-users: 2.78 (2.03)
					4. Alcohol script	- App users: 3.66 (2.96) - Non-users: 3.21 (2.39)
					5. Sexual self-esteem ⁵	- App users: 3.87 (0.58) - Non-users: 3.94 (0.59)
					6. Risky sexual behaviour*	- App users: 0.18 (0.55) - Non-users: -0.10 (0.47)
					7. Casual sex*	- App users: 0.45 (0.91) - Non-users: -0.24 (0.75)
					8. Sexual communication	- App users: 1.69 (0.59); - Non-users: 1.56 (0.53)
					9. Alcohol in sexual situations	- App users: 2.89 (0.98) - Non-users: 2.98 (0.87)

⁴ Sexual scripts are mental representations of consensual sexual interactions

⁵ Defined as affective reactions to subjective appraisals of sexual thoughts, feelings and behaviours (Zeanah & Schwarz, 1996)

10. Refusal assertiveness	- App users: 3.46 (0.98)
	- Non-users: 3.88 (0.85)
11. Initiation assertiveness	- App users: 3.42 (0.77)
	- non-users: 3.53 (0.78)
5. Acceptance of sexual coercion	- App users: 1.30 (0.74)
	- Non-users: 1.16 (0.51)

*Significant difference in scores between dating app users and non-users

Current literature on motivations for and sexual behaviours associated with dating app users

Motivations for dating app use (see Table 1)

Since its release in 2012, a range of motivations for using Tinder have been identified, some of the most prominent of which are entertainment, socialisation, forming relationships, gaining social approval, and getting an ego-boost as opposed to only engaging in casual sex. A common assumption is that Tinder is used merely to ‘hook-up’ with others (Timmermans & De Caluwé, 2017); this view is not supported by the literature for all users. Seeking casual sex/hook-ups were reported as one of the least important motives among participants from the USA (e.g., Griffin et al., 2018), the Netherlands (Sumter et al., 2017; Sumter & Vandenbosh, 2019), Belgium (Timmermans & De Caluwe, 2017) and China (Solis & Wong, 2017). Of the 17 studies examined in this review, only one study in Austria reported hooking-up as the major motive for dating app use (Gatter & Hodkinson, 2016). Other studies found that using dating apps to seek love and relationships was a stronger motive than casual sex among Dutch dating app users (Sumter et al., 2017), and seeking meaningful relationships was a major motive to use Tinder in Belgian dating app users (Timmermans & Courtois, 2018). Interestingly, another 4 studies in this review found that entertainment, rather than casual sex, emerged as the primary motive for dating app use. Some less reported motivations for dating app use are ease of communication, belongingness, pressure from friends, and to upset someone (e.g., Griffin et al, 2018; Sawyer et al., 2018).

However, there were gender differences between dating app users' motivations. In the USA, women used dating apps for friendship and self-validation (Ranzini & Lutz, 2017), or socialising and relationship goals (Griffin et al., 2018). Men's motives were to hook-up (e.g.,

Gatter & Hodkinson, 2016), meet partners while travelling, and seek relationships (Ranzini & Lutz, 2017). These gender differences were attributed to safety concerns experienced by women while using dating apps (Griffin et al., 2018) and the permissive sexual attitudes that men hold in general (Gatter & Hodkinson, 2016).

In India, both males and females used Tinder mainly to socialise and out of a sense of curiosity (Madan & Jain, 2016). However, playfulness was the strongest motivator to use dating apps (Chakraborty, 2019). Use of dating apps and matrimonial sites differ in their motivations for use; self-image enhancement was a significant motive for dating app use, while matrimonial websites were used to satisfy family members' values on marriage (Shah, 2020).

It is not clear if self-esteem (i.e., the positive and negative appraisals individuals make of themselves, Rosenberg, 1965) is related to dating app use. Comparisons of dating app users and non-users show mixed results: one study found that dating app users reported lower self-esteem than non-users (Strubel & Petrie, 2017) and a further study found no differences in self-esteem among dating app users and non-users; although this study found that increasing self-confidence was the main motivation for use (Shimokobe & Miranda, 2018). However, two studies found that those with high self-esteem were more likely to use dating apps for romantic relationship seeking and those with low self-esteem were more likely to use it for hook-ups (Kim, Kwon, & Lee, 2009; Bryant & Sheldon, 2017).

Research suggests that dating app users employ several self-presentation techniques (i.e., strategies used by individuals to manage how they are perceived by others, Dolezal, 2017), such as generating a more appealing version of themselves through profile descriptions and using more attractive photographs of themselves to enhance their chances of securing more online matches (Ellison, Hancock, & Toma, 2012). Since dating apps are designed in a way whereby

the individual needs to make instant decisions on whether they like or do not like a certain user profile, it subliminally strengthens a decision-making pathway focussed primarily on the physical attractiveness of the pictures displayed, which can be a highly objectifying process that can affect an individual's self-esteem (Anderson, Holland, Koc, & Haslam, 2018; Strubel & Petrie, 2017). Dating app users, both worldwide, and in India, employed various strategies to present themselves in ways that align with their motivations (Ward, 2017). For example, individuals who use dating apps for friendship were more likely to present themselves authentically (i.e., not using self-presentation strategies) compared to users of which their motive was to seek hook-ups (Ranzini & Lutz, 2017).

Studies on dating motivations have also shown that motivations do not remain constant; they change over time. For example, in a qualitative study, Ward (2017) noted how participants who initially downloaded Tinder to boost their ego after a breakup later used the app to actively seek a relationship. Further, when initial motivations are not met, there is a possibility of deleting the app (Madan & Jain, 2016).

Sexual behaviours among dating app users versus non-users (see Table 2)

There is evidence that heterosexual dating app users perform some risky sexual behaviours more than non app users. Of the 7 related articles identified in this review, 3 of the studies (2 in the US and 1 in Hong Kong) found that dating app use was associated with a higher likelihood of engaging in unprotected sex (Choi et al., 2016; Sevi, 2019), a higher number of lifetime sexual partners in 3 out of the 7 studies (e.g., Fansher & Eckinger, 2020; Sawyer et al., 2018) and riskier sexual scripts⁶ (Tomaszewska & Schuster, 2020) compared to non-users.

⁶ Sexual scripts are defined as culturally appropriate sequences of behaviour that are used to predict and direct sexual interactions (Ryan, 2011).

Other risky sexual behaviours associated with dating app use were having sex under the influence of drugs and alcohol (Tomaszewska and Schuster, 2020). Dating app users also reported sexual deception, sexual compulsivity, and explicit messaging (Fansher & Eckinger, 2020). However, Shapiro et al. (2017) found that despite dating app users reporting higher sexual permissiveness, there were no differences in age of sexual debut, STI contraction or condom use during last sexual intercourse between dating app users and non-users. This was partially supported by Anderson et al. (2019) who reported that dating app users and non-users in Sweden did not differ in terms of contraction of STIs such as chlamydia. In addition, dating app users and non-users did not differ in their levels of sexual self-esteem, sexual communication, assertiveness in refusing and initiating sex, and acceptance of sexual coercion (Tomaszewska & Schuster, 2020).

Sexual risk behaviours also differed by motivations for use. Female Tinder users, who were motivated to seek hook-ups, were more likely to engage in risky sexual behaviours and had lower sexual disgust sensitivity (e.g., disgust in hearing 2 strangers having sex) compared to non-users (Sevi, 2019); however, this relationship was not observed for male Tinder users.

At present, no research has examined the risky sexual behaviours of heterosexual Indian dating app users. As established in the previous sections, with the popularity of dating apps increasing among heterosexual individuals in India, it is essential to understand whether Indian heterosexual dating app users have the same sexual risks as their Western counterparts.

Body image and dating app use

There was some evidence that the use of dating apps is associated with body images issues (Shimokobe & Miranda, 2018), lower satisfaction with one's face and body, and higher

self-objectification, irrespective of the gender of their user (Strubel & Petrie, 2017). Body image is a multidimensional concept which comprises attitudes, beliefs, thoughts and perceptions about one's physical appearance, such as an overestimation of body size, excessive attention to specific body parts, or a distorted view of one's body, which leads to feelings of shame, anxiety, and disgust (Cash, 2012).

Discussion

Motivations for dating app use

The aim of this narrative review was to explore the various motivations for using dating apps. It was found that dating app users had a wide range of motivations including entertainment, socialisation, seeking relationships, and an ego-boost, with variations in motivations based on gender, self-esteem and duration of app usage. Contrary to popular assumptions, dating apps are not always used for hook ups. Instead, relationships and entertainment were identified as the most common motivations. Although there were some gender differences whereby men were more likely to use the dating apps for casual sex, this was one amongst other reasons for use. In India, apps tended not to be used for relationships or hook ups but were used for self-enhancement, fun and curiosity. It is notable that one study in India found that people used apps with a sense of playfulness (Chakraborty, 2019); suggesting that individuals may have viewed the swiping features of the dating app as an interface of a game, thus providing them with feelings of gratification (Garda & Karhulahti, 2019). In India, dating apps and matrimonial apps were used for different motivations. Dating apps may be used for their novelty and for self-enhancement, but this is balanced by using matrimonial apps in line with the prevalent cultural notions regarding marriage.

Within dating app users, those high in self-esteem were more likely to seek relationships (and were more likely to self-present authentically) and those low in self-esteem were more likely to use the dating apps for hook-ups. One possible explanation may be that individuals with low self-esteem may find the social rewards associated with hook-ups as a means to increase their self-esteem; and they are prepared to use self-presentation strategies to facilitate this. Although there weren't clear differences in self-esteem between dating app users and non-users, the primary motive for using dating apps was to boost self-confidence, suggesting that social rewards can be valuable regardless of self-esteem level (Shimokobe & Miranda, 2018).

Sexual behaviours in relation to dating app use

These findings suggest that although the motivations for using dating apps vary, many individuals who have sexual encounters with dating app partners are more likely to engage in some risky sex behaviours than their non-dating app counterparts. Unsurprisingly, the hook up motivation was particularly associated with risky sexual behaviours. This suggests that there is a need for intervention in the subset of users who do use dating apps for sex.

Body image and dating app use

There is some evidence that poor body image is associated with dating app use, although causation cannot be inferred due to the cross-sectional nature of the studies. The impact of dating app use is detrimental to both male and female users' body image; which is in contrast to social media's adverse effect on the body image of women in particular (Fardouly & Vartanian, 2016). The association between poor body image and dating app use for both genders may be due to the specific focus of dating apps, that is, to engender sexual intimacies and/or improve dating

opportunities where body appearance is likely to be a key focus for both genders. A positive body image impacts differently on the sexual behaviours of men and women. Men who had positive views about their appearance were more likely to have higher rates of unprotected sex and more lifetime sexual partners (Gillen, Lefkowitz, & Shearer, 2006). In contrast, women who assessed their appearance more positively were less likely to have unprotected sex (Gillen et al., 2006), instead having a greater likelihood of using condoms in addition to hormonal contraceptives (Winter & Ruhr, 2017). Interventions should be appropriately tailored to address differences in body image and sexual behaviours.

Self-affirmation theory: A potential intervention to promote safe sex

Although it is clear that young Indians need to be educated about the risks of unprotected sex, this education may not always lead to behaviour change. Even when individuals are aware of the risks associated with unprotected sex, many individuals continue to practise unsafe sex, which can lead to the contraction and transmission of STIs (De Visser, 2005). Healthcare professionals and researchers have been interested in implementing effective interventions that bring about behaviour change regarding sex behaviour e.g., increasing condom use. However, it has been noted that merely providing health information/education is ineffective in promoting behaviour change among those who are at risk (Sherman & Cohen, 2002). People use a range of defensive biases (i.e. individual tendencies to resist evidence that contradict long-held beliefs), such as seeing themselves as less at risk than similar others, to avoid changing their behaviour (Popova & Halpern-Felsher, 2016).

These defensive biases occur in order to protect individuals from the assumption that their beliefs and actions are maladaptive (Sherman & Cohen, 2002). For example, a smoker who is faced with the health risks that smoking causes can either choose to quit or deny the risks that

smoking poses on his/ her health (Steele, 1988). Self- affirmation theory can explain these maladaptive choices: (i) individuals have a fundamental need to maintain an overall positive image of themselves as a morally adequate and competent person (i.e., self-integrity) and (ii) a threat to a person's self-image (such as engaging in unsafe sex when aware of its risks) will lead them to attempt to reduce the discomfort associated with that threat (Steele, 1988); this could involve accepting they are at risk and changing their behaviour or using a range of defensive responses (e.g., denying the risk exists, accepting the risk exists but denying personal vulnerability, denying the efficacy of recommended behaviours in reducing the risk) in order to diminish the threat that it poses to their self-integrity (Steele, 1988). According to self-affirmation theory, when an individual reflects on core aspects of the self, such as their values or the success they have achieved, it creates an alternative means of affirming the self and maintaining their overall self-integrity (Sherman & Cohen, 2002). This, in turn, makes them less susceptible or defensive to the threat created by threatening health information (Sherman & Cohen, 2002), thus becoming able to read information without bias and subsequently being motivated to change their health behaviours.

Self-affirmation can be used in interventions to enable individuals to accept health risk messages, which can subsequently motivate behavioural change (Epton, Harris, Kane, van Koningsbruggen, & Sheeran, 2015; Harris & Napper, 2005). For instance, self-affirmed females who received persuasive health messages about health risks had stronger feelings of vulnerability (Klein, Harris, Ferrer, & Zajak, 2011), had stronger intentions to change (Harris, Mayle, Mabbot, & Napper, 2007) and were more likely to change their health behaviours (Epton & Harris, 2008; Fox, Harris, & Jessop, 2017) than a control group. Self-affirmation has also been used to promote safe sex; self-affirmed sexually active participants who wrote about an important value

prior to viewing an HIV education video were more likely to perceive themselves at risk and therefore purchase condoms compared to non-affirmed participants (Sherman, Nelson, & Steele, 2000).

As the relationship between body dissatisfaction and risky sexual behaviours is moderated by gender, self-affirmation interventions focusing on improving body image should be tailored to meet gender differences. As women who experience body dissatisfaction are more likely to engage in risky sexual behaviours (Gillen et al., 2006), self-affirmation interventions which simultaneously target body appreciation could be paired with health messages informing them of the risks of unprotected sex. Self-affirmation interventions have been used in body image research to promote greater body appreciation (Armitage, 2012). Consequently, a sense of greater body satisfaction may, in turn may reduce the propensity to engage in unsafe sex which would put their body at risk. Armitage (2012) found that adolescent girls who were given a self-affirmation manipulation task in which they wrote about previous acts of kindness reported greater body satisfaction and perceived less threat in having to rate their body shape and weight compared to a control group. Similarly, self-affirmation interventions were effective in creating a greater openness to the threatening health information of body dissatisfaction and a greater intention to reduce self-criticism of their bodies in a group of young women experiencing body dissatisfaction (Bucchianeri & Corning, 2012)

Recommendations for promoting safe sex behaviours among dating app users in India

This review highlights that while dating app users have several different motivations for using apps like Tinder, dating apps offer a platform providing easy access to engage in hook-ups/casual sex, which in turn, can lead to increased risky sexual behaviour. Despite a large user-

base for dating apps in India, there is no research to date that examines the risky sexual behaviour of heterosexual Indian dating app users. A lack of sex education and barriers to procuring condoms may lead to further escalation of unsafe sex among sexually active Indians who use dating apps. In this section we will share some recommendations to promote safe sex behaviours among dating app users in India which is based on the deliberations of the above sections and sub-sections.

With the rise in the number of dating app users in India, these individuals who choose to engage in sexual activity may be ill-equipped in decision making pertaining to safe sex, owing to their lack of sexual health knowledge (Brahme et al., 2020). As self-affirmation interventions in which individuals reflect on their strengths and values have shown promising results in promoting health behaviour change, interventions targeting body dissatisfaction and risky sexual behaviours could be administered before providing health information about the risks associated with unsafe sex and can be used on school teachers to reduce their anxiety during discussions on sexual health with students. However, as the link between body satisfaction and sexual risks behaviours is moderated by gender differences, it is essential to create targeted interventions for men and women. An affirmation intervention for men which focuses on building their self-esteem may be vital in creating the confidence to buy condoms without being embarrassed, as men are more likely to purchase condoms. Further, as body satisfaction is associated with engaging in less risky sexual behaviour, self-affirmation interventions targeted at improving body positivity will enable women to better negotiate condom use. By facilitating feelings of love and respect for the body beyond what it looks like (i.e., focusing more on its functionality), women will be more likely to behave in self-caring behaviour, such a condom use.

Mobile applications have been identified as a preferred source of sexual health information by young adults in India (Brahme et al., 2020), and in the USA (Richman, Webb, Brinkley, & Martin, 2014). As dating apps can be used as a platform to meet sexual partners, it would be beneficial for these apps to contain preventive information of STIs to dating app users, who are more likely to engage in risky sexual behaviour. As a large number of individuals own smartphones, sexual health researchers could work with app developers to create sexual health contents embedded into the apps to improve and manage sexual health. Mobile dating app developers should create a user interface that includes features such as sexual health information, STI symptom trackers, and locations of the nearest sexual health clinics. In addition, apps can include techniques to maintain a positive body image and self-esteem which could enable app users to maintain their sexual and psychological well-being.

Conclusions

This review has examined studies on dating app motivations and risky sexual behaviour. Although seeking sex was not a key motive for dating app use, it was found that dating app users engage in some riskier sexual behaviours than non-users. No studies were found on dating app use and risky sexual behaviour among heterosexual Indian dating app users, underscoring the need for future research among this demographic. As the lack of sex education and difficulties in procuring condoms were noted as the major barriers that hindered the practice of safe sex, self-affirmation interventions aimed at improving self-esteem and positive body image may be an effective means to promoting safe sex. Finally, disseminating safe sex messages via dating apps is recommended in order to enable individuals to practice safe sex behaviours.

Acknowledgements

The first author thanks the University Grants Commission (UGC), Government of India, India for funding their doctoral fellowship.

Declaration of conflicting interests statement

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

- Anandhi, S. (2007). Sex education conundrum. *Economic and Political Weekly*, 42(33), 3367-3369.
- Anderson, J. R., Holland, E., Koc, Y., & Haslam, N. (2018). iObjectify: Self- and other-objectification on Grindr, a geosocial networking application designed for men who have sex with men. *European Journal of Social Psychology*, 48(5), 600–613.
doi:10.1002/ejsp.2350
- Andersson, N., Preuss, I., Boman, J., & Nylander, E. (2019). Chlamydia Infection Among Digital Daters and Nondigital Daters. *Journal of lower genital tract disease*, 23(3), 230-234.
- Armitage, C. J. (2012). Evidence that self-affirmation reduces body dissatisfaction by basing self-esteem on domains other than body weight and shape. *Journal of Child Psychology and Psychiatry*, 53(1), 81-88.
- Bhasin, S. K., & Aggarwal, O. P. (1999). Perceptions of teachers regarding sex education in National Capital Territory of Delhi. *The Indian Journal of Pediatrics*, 66(4), 527-531.
- Brahme, R., Mamulwar, M., Rahane, G., Jadhav, S., Panchal, N., & Yadav, R. (2020). A Qualitative Exploration to Understand the Sexual Behavior and Needs of Young Adults: A Study Among College Students of Pune, India. *The Indian Journal of Pediatrics*, 87(4), 275–280.
- Bryant, K., & Sheldon, P. (2017). Cyber Dating in the Age of Mobile Apps: Understanding Motives, Attitudes, and Characteristics of Users. *American Communication Journal*, 19(2), 1-15.

- Bucchianeri, M. M., & Corning, A. F. (2012). An experimental test of women's body dissatisfaction reduction through self-affirmation. *Applied Psychology: Health and Well-Being, 4*(2), 188-201.
- Carpenter, C. J., & McEwan, B. (2016). The players of micro-dating: Individual and gender differences in goal orientations toward micro-dating apps. *First Monday, 21*(5). doi:10.5210/fm.v21i5.6187
- Cash, T. F. (2012). *Encyclopedia of body image and human appearance*. London: Academic Press.
- Chakraborty, D. (2019). Components Affecting Intention to Use Online Dating Apps in India: A Study Conducted on Smartphone Users. *Asia-Pacific Journal of Management Research and Innovation, 15*(3), 87–96. doi:10.1177/2319510x19872596
- Choi, E. P. H., Wong, J. Y. H., Lo, H. H. M., Wong, W., Chio, J. H. M., & Fong, D. Y. T. (2016). The association between smartphone dating applications and college students' casual sex encounters and condom use. *Sexual & Reproductive Healthcare, 9*, 38–41. doi:10.1016/j.srhc.2016.07.001
- Chugh, N. (2019). Looking for love: Dating apps cash in on 85 million young and single Indians. *CNBCTV18*. Retrieved from <https://www.cnbctv18.com/buzz/looking-for-love-dating-apps-cash-in-on-85-million-young-and-single-indians-3306141.htm>
- De Visser, R. (2005). One size fits all? Promoting condom use for sexually transmitted infection prevention among heterosexual young adults. *Health Education Research, 20*(5), 557–566. doi:10.1093/her/cyh015

- Dolezal, L. (2017). The phenomenology of self-presentation: describing the structures of intercorporeality with Erving Goffman. *Phenomenology and the Cognitive Sciences*, 16(2), 237–254. doi:10.1007/s11097-015-9447-6
- Ellison, N. B., Hancock, J. T., & Toma, C. L. (2012). Profile as promise: A framework for conceptualizing veracity in online dating self-presentations. *New Media & Society*, 14(1), 45–62. doi:10.1177/1461444811410395
- Epton, T., & Harris, P. R. (2008). Self-Affirmation Promotes Health Behavior Change. *Health Psychology*, 27(6), 746–752. <https://doi.org/10.1037/0278-6133.27.6.746>
- Epton, T., Harris, P. R., Kane, R., van Koningsbruggen, G. M., & Sheeran, P. (2015). The impact of self-affirmation on health-behavior change: A meta-analysis. *Health Psychology*, 34(3), 187–196. doi:10.1037/hea0000116
- Escobedo, J. (2017). This Tinder-Alternative Disrupts Dating in South Asian Communities. Retrieved from <https://www.forbes.com/sites/joeescobedo/2017/05/04/this-app-is-using-artificial-intelligence-social-media-to-help-south-asians-find-love/#4f4cee648e18>
- Fansher, A. K., & Eckinger, S. (2020). Tinder Tales: An Exploratory Study of Online Dating Users and Their Most Interesting Stories. *Deviant Behavior*, 1-15.
- Fardouly, J., & Vartanian, L. R. (2016). Social media and body image concerns: Current research and future directions. *Current Opinion in Psychology*, 9, 1–5.
- Ferrari, R. (2015). Writing narrative style literature reviews . *Medical Writing* , 24(4), 230–235. doi:10.1179/2047480615Z.000000000329
- Fields, E. L., Long, A., Dangerfield, D. T., Morgan, A., Uzzi, M., Arrington-Sanders, R., & Jennings, J. M. (2020). There’s an App for That: Using Geosocial Networking Apps to Access Young Black Gay, Bisexual, and other MSM at Risk for HIV. *American Journal*

of Health Promotion, 34(1), 42–51. doi:10.1177/0890117119865112

Fox, K. J., Harris, P. R., & Jessop, D. C. (2017). Experimentally manipulated self-affirmation promotes reduced alcohol consumption in response to narrative information. *Annals of Behavioral Medicine*, 51(6), 931-935

Garda, M. B., & Karhulahti, V. M. (2019). Let's Play Tinder! Aesthetics of a Dating App. *Games and Culture*, 1555412019891328. doi: 10.1177/1555412019891328

Gatter, K., & Hodkinson, K. (2016). On the differences between Tinder versus online dating agencies: Questioning a myth. An exploratory study. *Cogent Psychology*, 3(1), 1162414. doi:10.1080/23311908.2016.1162414

Gillen, M. M., Lefkowitz, E. S., & Shearer, C. L. (2006). Does body image play a role in risky sexual behaviour and attitudes?. *Journal of Youth and Adolescence*, 35(2), 230-242.

Green, B. N., Johnson, C. D., & Adams, A. (2006). Writing narrative literature reviews for peer-reviewed journals: secrets of the trade. *Journal of Chiropractic Medicine*, 5(3), 101–117. doi:10.1016/S0899-3467(07)60142-6

Griffin, M., Canevello, A., & McAnulty, R. D. (2018). Motives and Concerns Associated An Exploratory Study Among Heterosexual College Students in the United States. *Cyberpsychology, Behavior, and Social Networking*, 21(4), 268–275. doi:10.1089/cyber.2017.0309

Harris, P. R., Mayle, K., Mabbott, L., & Napper, L. (2007). Self-affirmation reduces smokers' defensiveness to graphic on-pack cigarette warning labels. *Health Psychology*, 26(4), 437.

Harris, P. R., & Napper, L. (2005). Self-affirmation and the biased processing of threatening health-risk information. *Personality and Social Psychology Bulletin*, 31(9), 1250-1263.

- Ismail, S., Shajahan, A., Rao, T. S., & Wylie, K. (2015). Adolescent sex education in India: Current perspectives. *Indian journal of psychiatry*, 57(4), 333.
- Kim, M., Kwon, K. N., & Lee, M. (2009). Psychological characteristics of Internet dating service users: The effect of self-esteem, involvement, and sociability on the use of Internet dating services. *CyberPsychology & Behavior*, 12(4), 445-449.
- Kohler, P. K., Manhart, L. E., & Lafferty, W. E. (2008). Abstinence-Only and Comprehensive Sex Education and the Initiation of Sexual Activity and Teen Pregnancy. *Journal of Adolescent Health*, 42(4), 344–351. doi:10.1016/j.jadohealth.2007.08.026
- LeFebvre, L. E. (2018). Swiping me off my feet: Explicating relationship initiation on Tinder. *Journal of Social and Personal Relationships*, 35(9), 1205–1229. doi:10.1177/0265407517706419
- Madan, L., & Jain, A. (2016). *A collective case study of relationships made on Tinder: A sociocultural approach towards online dating in India.*
- Majumdar, C. (2018). Attitudes Towards Premarital Sex in India: Traditionalism and Cultural Change. *Sexuality and Culture*, 22(2), 614–631. doi:10.1007/s12119-017-9486-y
- Miller, B., & Behm-Morawitz, E. (2020). Investigating the cultivation of masculinity and body self-attitudes for users of mobile dating apps for men who have sex with men. *Psychology of Men and Masculinity*, 21(2), 266–277. doi:10.1037/men0000221
- Munsey, C. (2006). Emerging adults: The in-between age. *Monitor on psychology*, 37(6), 68.
- National AIDS Control Organisation. (2017). STI / RTI Services. *NACO*. Retrieved from <http://naco.gov.in/sti-rti-services>
- Popova, L., & Halpern-Felsher, B. L. (2016). A longitudinal study of adolescents' optimistic bias about risks and benefits of cigarette smoking. *American journal of health*

- behavior*, 40(3), 341-351. doi: 10.5993/AJHB.40.3.6
- Ranzini, G., & Lutz, C. (2017). Love at first swipe? Explaining Tinder self-presentation and motives. *Mobile Media & Communication*, 5(1), 80–101.
doi:10.1177/2050157916664559
- Richman, A. R., Webb, M. C., Brinkley, J., & Martin, R. J. (2014). Sexual behaviour and interest in using a sexual health mobile app to help improve and manage college students' sexual health. *Sex Education*, 14(3), 310-322.
- Rosenberg, M. (1965). Rosenberg self-esteem scale (RSE). *Acceptance and commitment therapy. Measures package*, 61(52), 18.
- Rosenfeld, M. J., Thomas, R. J., & Hausen, S. (2019). Disintermediating your friends: How online dating in the United States displaces other ways of meeting. *Proceedings of the National Academy of Sciences of the United States of America*, 116(36), 17753–17758.
doi:10.1073/pnas.1908630116
- Ryan, K. M. (2011). The relationship between rape myths and sexual scripts: The social construction of rape. *Sex roles*, 65(11-12), 774-782.
- Sahoo, S. (2017). Matrimonial. *South Asia: Journal of South Asia Studies*, 40(2), 354–357.
doi:10.1080/00856401.2017.1296657
- Santhya, K. G., Acharya, R., & Jejeebhoy, S. J. (2011). Condom use before marriage and its correlates: Evidence from India. *International Perspectives on Sexual and Reproductive Health*, 37(4), 170–180.
- Sawyer, A. N., Smith, E. R., & Benotsch, E. G. (2018). Dating application use and sexual risk behavior among young adults. *Sexuality Research and Social Policy*, 15(2), 183–191.
doi:10.1007/s13178-017-0297-6

- Sevi, B. (2019). Brief report: Tinder users are risk takers and have low sexual disgust sensitivity. *Evolutionary Psychological Science*, 5(1), 104–108. doi:10.1007/s40806-018-0170-8
- Shah, A. M. (2020). Honey, find me the moon: Exploring engagement on dating and matrimony platforms. *Young Consumers*, 21(2), 171–192. doi:10.1108/YC-01-2019-0948
- Shapiro, G. K., Tatar, O., Sutton, A., Fisher, W., Naz, A., Perez, S., & Rosberger, Z. (2017). Correlates of Tinder use and risky sexual behaviors in young adults. *Cyberpsychology, Behavior, and Social Networking*, 20(12), 727–734. doi:10.1089/cyber.2017.0279
- Sherman, D. K., & Cohen, G. L. (2002). Accepting threatening information: Self-affirmation and the reduction of defensive biases. *Current Directions in Psychological Science*, 11(4), 119–123. doi:10.1111/1467-8721.00182
- Sherman, D. A. K., Nelson, L. D., & Steele, C. M. (2000). Do messages about health risks threaten the self? Increasing the acceptance of threatening health messages via self-affirmation. *Personality and Social Psychology Bulletin*, 26(9), 1046–1058. doi:10.1177/01461672002611003
- Shimokobe, T., & Miranda, M. A. (2018). *I have clout. Swipe right: Dating apps and implications on self-esteem and body image.*
- Sohail, S. A., Mahmood, Q., Khan, M. H., & Gull, Z. (2019). Tinder use among Pakistani adults: A socio- psychological need perspective. *Jurnal Studi Komunikasi*, 3(3), 316–331. doi:10.25139/jsk.3i3.1954
- Solis, R. J. C., & Wong, K. Y. J. (2019). To meet or not to meet? Measuring motivations and risks as predictors of outcomes in the use of mobile dating applications in China. *Chinese Journal of Communication*, 12(2), 206–225. doi:10.1080/17544750.2018.1498006

- Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. *Advances in experimental social psychology*, 21(2), 261-302.
- Strubel, J., & Petrie, T. A. (2017). Love me Tinder: Body image and psychosocial functioning among men and women. *Body Image*, 21, 34–38. doi:10.1016/j.bodyim.2017.02.006
- Sumter, S. R., & Vandenbosch, L. (2019). Dating gone mobile: Demographic and personality-based correlates of using smartphone-based dating applications among emerging adults. *New Media & Society*, 21(3), 655–673. doi:10.1177/1461444818804773
- Sumter, S. R., Vandenbosch, L., & Ligtenberg, L. (2017). Love me Tinder: Untangling emerging adults' motivations for using the dating application Tinder. *Telematics and Informatics*, 34(1), 67–78. doi:10.1016/j.tele.2016.04.009
- The Economic Times. (2015). *India has 400 per cent more Tinder users, most of them are women*. Retrieved from <https://economictimes.indiatimes.com/magazines/panache/india-has-400-per-cent-more-tinder-users-most-of-them-are-women/articleshow/49998035.cms>
- Thompson, L. (2018). “I can be your Tinder nightmare”: Harassment and misogyny in the online sexual marketplace. *Feminism & Psychology*, 28(1), 69–89. doi:10.1177/0959353517720226
- Timmermans, E., & Courtois, C. (2018). From swiping to casual sex and/or committed relationships: Exploring the experiences of Tinder users. *The Information Society*, 34, 59–70. doi:10.1080/01972243.2017.1414093
- Timmermans, E., & De Caluwé, E. (2017). To Tinder or not to Tinder, that's the question : An individual differences perspective to Tinder use and motives. *Personality and Individual Differences*, 110, 74–79. doi:10.1016/j.paid.2017.01.026
- Tomaszewska, P., & Schuster, I. (2020). Comparing sexuality-related cognitions, sexual

- behaviour, and acceptance of sexual coercion in dating app users and non-users. *Sexuality Research and Social Policy*, 17(2), 188–198.
- Tripathi, N., & Sekher, T. V. (2013). Youth in India ready for sex education? Emerging evidence from national surveys. *PLoS One*, 8(8), e71584.
- Ward, J. (2017). What are you doing on Tinder? Impression management on a matchmaking mobile app. *Information, Communication & Society*, 20(11), 1644–1659.
doi:10.1080/1369118X.2016.1252412
- Winter, V. R., & Ruhr, L. R. (2017). Body appreciation and contraceptive use among college women: A brief report. *International Journal of Sexual Health*, 29(2), 168-172
- World Health Organisation. (2019). *Sexually transmitted infections (STIs)*. Retrieved from [https://www.who.int/news-room/fact-sheets/detail/sexually-transmitted-infections-\(stis\)](https://www.who.int/news-room/fact-sheets/detail/sexually-transmitted-infections-(stis))
- Wu, S., & Ward, J. (2020). Looking for “interesting people”: Chinese gay men’s exploration of relationship development on dating apps. *Mobile Media & Communication*, 8(3), 342-359.
- Zeanah, P. D., & Schwarz, J. C. (1996). Reliability and validity of the sexual self-esteem inventory for women. *Assessment*, 3(1), 1-15.

