Mobile dating applications and sexual and violent offending
Kamarah Pooley and Hayley Boxall

Introduction
Mobile dating applications (dating apps) are smartphone applications that use the internet to facilitate the development of social, sexual and romantic relationships between strangers (Albury & Byron 2016; Albury et al. 2019; Choi, Wong & Fong 2018). The rise in mobile dating app use reflects increasingly portable internet access and everyday use of the internet to communicate and form relationships (Choi, Wong & Fong 2018). Despite being an acceptable and ordinary means through which to meet new people (Gillett 2018; Rowse, Bolt & Gaya 2020), there is a paucity of literature on dating app use and associated health or safety outcomes (Choi, Wong & Fong 2018; Peskin et al. 2016), particularly sexual and violent victimisation.
The increased use of technology to develop and maintain social relationships has coincided with growth in the use of communication technologies to facilitate a range of sexual offences known as technology-facilitated sexual violence (TFSV; Henry & Powell 2018; Scannell 2019). TFSV may include online sexual harassment, cyberstalking, image-based sexual abuse and the use of a carriage service to coerce a victim (Henry & Powell 2018). Some forms of dating app sexual and violent offending fall within the scope of TFSV. Dating apps may be used to make repeated and unwanted requests for contact or sex; to send unwanted sexually explicit texts, pictures or videos; or to access and then distribute sexually explicit images of another without their consent. Henry and Powell’s (2018) review of research on adult perpetrated TFSV published between 1995 and 2018 found that TFSV appears to be increasing in prevalence, although very little is known about its nature, scope and impacts (Henry & Powell 2018). Existing literature has also been slow to recognise dating apps as a means through which TFSV may occur.

In addition to TFSV, dating apps may facilitate offline sexual and violent offending. Dating apps may be used to blackmail, bribe or threaten an individual into offline sex; to organise an offline meeting with a person with the intent to sexually or physically assault them; or to solicit or arrange a third party to sexually or physically assault a person (Henry & Powell 2018). There is also evidence to suggest that different expectations associated with meeting offline may contribute to the risk of offending even where premeditation does not exist. Research indicates that women are more likely to use dating apps to seek friendships and serious relationships, while men are more likely to seek casual sex (Albury et al. 2019; Scannell 2019; Sumter, Vandenbosch & Ligtenberg 2016). Despite these risks being associated with dating apps, there is only a small body of knowledge concerned with sexual and violent offending that is specifically related to, or facilitated by, dating app use.

The lack of research about dating app violence is notable considering emerging anecdotal evidence reflected in media reporting which suggests that sexual and violent offending facilitated by dating apps is relatively common, and can have major impacts on victims and the community (Rowse, Bolt & Gaya 2020). In recent years a small number of high-profile cases of dating app violence have occurred in Australia and New Zealand. For example, a New Zealand man was recently convicted of murdering a young woman he met on Tinder during their first offline date (Roy 2019). Further, in March 2020, a former police officer in Western Australia was charged with 108 offences including sexual penetration without consent, aggravated indecent assault, stupefying someone in order to commit an offence and sexual coercion. These offences were allegedly committed between 2010 and 2017 against women the offender met on dating apps (Kaur & Menagh 2020). Meanwhile, in February 2020, the body of a 56-year-old man was located in bushland on the New South Wales South Coast. Police alleged that the victim had used Grindr to plan a meeting with one of the offenders for sexual purposes (Partridge 2020).

In light of increasing interest and media reporting of cases involving dating app violence, there is benefit to consolidating what is known about this form of TFSV. In particular, there is a need to identify how prevalent dating app violence is, the design features of dating apps that may create opportunities for violence to occur (or prevent them), and the strategies used by app developers and individual users to prevent dating app violence.
Methodology

A narrative literature review was conducted to ascertain whether the growing body of anecdotal evidence reflects the prevalence and nature of dating app sexual and violent offending according to the available research evidence. Narrative reviews involve comprehensive and critical analyses of existing literature to obtain a broad perspective on a topic without requiring a predetermined research question or search protocol (Frey 2018). Narrative reviews are suitable for exploring new and under-researched areas that do not yet lend themselves to the development of hypotheses or systematic search strategies.

A literature search was conducted using the terms (mobile dating application or dating app) and (sex offen* or sex assault or violen* or offen*) in the following databases: SocINDEX, E-Journals, Criminal Justice Abstracts, Psychology and Behavioral Sciences Collection, Violence & Abuse Abstracts, Open Dissertations, ProQuest Criminal Justice Database, the Australian Institute of Criminology’s JV Barry Library and Google Scholar. Thirty-four peer-reviewed journal articles, grey literature items and media reports were included in the review.

The review of the literature was also supplemented with a brief analysis of the websites of 15 popular dating apps. These websites were reviewed to identify:

- key characteristics of the dating app (eg number of users, regions available);
- in-built mechanisms for reporting dating app sexual and violent offending; and
- policies and information provided by the dating app developers about sexual and violent offending (including prevention measures).

Mobile dating applications

Many smartphone users download dating apps in the hope that they will form social, sexual and/or romantic relationships with others (Albury & Byron 2016; Albury et al. 2019; Choi, Wong & Fong 2018). Users of dating apps create online profiles through which they share personal information with potential matches, such as a short blurb describing themselves and a series of photos (Choi, Wong & Fong 2018). Users scroll through profiles and select individuals based on characteristics such as their picture or geographical proximity (Choi, Wong & Fong 2018; Fansher & McCarns 2019). Once a profile is selected and/or pairs are matched (bilateral selection), users communicate by text in a private chat room. From here, they can agree to meet in person if desired (Choi, Wong & Fong 2018; Fansher & McCarns 2019; Murphy 2018).

Dating apps have become a convenient, accessible and affordable means through which people interact (Albury & Byron 2016; Albury et al. 2019; Choi, Wong & Fong 2018). As a result, their popularity has grown exponentially in recent years (Gillett 2018). Anderson, Vogels and Turner (2020) surveyed a random sample of 4,860 North American adults in October 2019 and found that, since 2013, the proportion of respondents who had ever used a dating website or app had increased from 11 to 30 percent. Similarly, the proportion of respondents who said they had ever been in a committed relationship with someone they had met online increased from three to 12 percent (Anderson, Vogels & Turner 2020).
Use of dating apps may be more common among young people and those who identify as LGBTQ+. A recent survey administered by the Australian radio station Triple J of 15,703 Australians aged 18 to 29 years revealed that 50 percent of all respondents had used a dating app or website (Triple J 2020). Similarly, Anderson, Vogels and Turner’s (2020) survey of North American adults found that 48 percent of respondents aged 18 to 29 years had used a dating app or website. Anderson and colleagues (2020) also found that 55 percent of LGBTQ+ respondents had used a dating app or website.

Dating app popularity has normalised its use; dating apps are now an acceptable and ordinary means through which to meet new people (Gillett 2018; Rowse, Bolt & Gaya 2020). Dating apps like Tinder have been described as ‘firmly rooted in popular culture’ (Pond & Farvid 2017) and have been credited with the transformation of the digital dating landscape (David & Cambre 2016). This shift in social norms towards the normalisation of dating app use is reflected in the significant increase in the number of dating apps available for download and the millions of users who subscribe (see Table 1).

<table>
<thead>
<tr>
<th>Name</th>
<th>Founded</th>
<th>Target population</th>
<th>Spread (worldwide)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badoo</td>
<td>2006</td>
<td>Russia Heterosexual</td>
<td>483 million registered users</td>
<td>Photo and profile blurb, Nearby users are visible, Search by demographics,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LGBTQ+ 190 countries</td>
<td>47 languages</td>
<td>location, interests</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bilateral matching</td>
</tr>
<tr>
<td>Bumble</td>
<td>2014</td>
<td>United States Heterosexual</td>
<td>100 million registered users</td>
<td>Photo and profile blurb, Voice/video chat, Female-initiated conversation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Homosexual women 6</td>
<td>1.4 billion first moves</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>continents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grindr</td>
<td>2009</td>
<td>United States Homosexual</td>
<td>6 million current users 234 countries</td>
<td>Photo and profile blurb, Nearby users are visible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>men</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growlr</td>
<td>2010</td>
<td>United States Homosexual</td>
<td>10 million usersa</td>
<td>Photo and profile blurb, Search by demographics, location, interests</td>
</tr>
<tr>
<td></td>
<td></td>
<td>men</td>
<td></td>
<td>Chat tool</td>
</tr>
<tr>
<td>Happn</td>
<td>2014</td>
<td>United States Heterosexual</td>
<td>60 million usersa</td>
<td>Photo and profile blurb, Sexual orientation, Nearby users are visible,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LGBTQ+</td>
<td></td>
<td>Timeline of number of times paths crossed</td>
</tr>
<tr>
<td>HER</td>
<td>2013</td>
<td>United Kingdom Homosexual</td>
<td>4 million usersa</td>
<td>Photo and profile blurb, Nearby users are visible, Communities feature</td>
</tr>
<tr>
<td></td>
<td></td>
<td>women Non-binary people</td>
<td>55 countries</td>
<td>to connect users with shared interests</td>
</tr>
<tr>
<td>Hinge</td>
<td>2012</td>
<td>United States Heterosexual</td>
<td>5.5 million usersa</td>
<td>Detailed user profiles, Algorithmic matches, Like and comment features</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LGBTQ+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hornet</td>
<td>2011</td>
<td>United States Homosexual</td>
<td>25 million usersa</td>
<td>Detailed user profiles, Community discussions, Nearby users are visible,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>men</td>
<td></td>
<td>Search by demographics, location, interests</td>
</tr>
</tbody>
</table>
### Table 1: Examples of mobile dating applications (cont.)

<table>
<thead>
<tr>
<th>Name</th>
<th>Founded</th>
<th>Target population</th>
<th>Spread (worldwide)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jack’d</td>
<td>2010</td>
<td>Homosexual men</td>
<td>5 million users(^a)</td>
<td>Photo and profile blurb</td>
</tr>
<tr>
<td></td>
<td>United</td>
<td></td>
<td>180 countries</td>
<td>Nearby users are visible</td>
</tr>
<tr>
<td></td>
<td>States</td>
<td></td>
<td>11 languages</td>
<td>Swipe function</td>
</tr>
<tr>
<td>OKCupid</td>
<td>2014</td>
<td>Heterosexual LGBTQ+</td>
<td>50 million registered users</td>
<td>Detailed user profiles</td>
</tr>
<tr>
<td></td>
<td>United</td>
<td></td>
<td></td>
<td>Algorithmic matches</td>
</tr>
<tr>
<td></td>
<td>States</td>
<td></td>
<td></td>
<td>Search by demographics, location, interests</td>
</tr>
<tr>
<td>Plenty of Fish</td>
<td>2003</td>
<td>Heterosexual LGBTQ+</td>
<td>150 million registered users</td>
<td>Detailed user profiles</td>
</tr>
<tr>
<td></td>
<td>Canada</td>
<td></td>
<td>20 countries</td>
<td>Search by demographics, location, interests</td>
</tr>
<tr>
<td>Scruff</td>
<td>2010</td>
<td>Homosexual men</td>
<td>15 million users(^a)</td>
<td>Photo and profile blurb</td>
</tr>
<tr>
<td></td>
<td>United</td>
<td></td>
<td>180 countries</td>
<td>Nearby users are visible</td>
</tr>
<tr>
<td></td>
<td>States</td>
<td></td>
<td>10 languages</td>
<td></td>
</tr>
<tr>
<td>Tinder</td>
<td>2012</td>
<td>Heterosexual LGBTQ+</td>
<td>57 million current users</td>
<td>Photo and profile blurb</td>
</tr>
<tr>
<td></td>
<td>United</td>
<td></td>
<td>190 countries</td>
<td>Nearby users are visible</td>
</tr>
<tr>
<td></td>
<td>States</td>
<td></td>
<td>40 languages</td>
<td>Bilateral matching</td>
</tr>
<tr>
<td>Wapa</td>
<td>2014</td>
<td>Homosexual women Curious women</td>
<td>300,000 active users</td>
<td>Photo and profile blurb</td>
</tr>
<tr>
<td></td>
<td>New Zealand</td>
<td></td>
<td>160 countries</td>
<td>Nearby users are visible</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Built-in translator</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Search by demographics, location, interests</td>
</tr>
</tbody>
</table>

\(^a\): Unclear whether they are current or registered users

Note: Three categories of users are reported here: downloads—individuals who have downloaded the app but may not have registered or used the app; registered users—individuals who have downloaded and signed on to the app, but may not have ever used the app or be currently using it; and current users—individuals who have downloaded and signed up to the app and are currently using the app. This is not an exhaustive list of dating apps currently available for download.

## Results

### Dating app characteristics that enable or prevent sexual and violent offending

Mobile dating apps are designed to transcend the traditional, structural constraints associated with dating; the need to travel and manage busy schedules; and the cost of dating websites and the limited pool of potential partners (Choi, Wong & Fong 2018). The following characteristics differentiate dating apps from traditional face-to-face or website dating. While these functions have been designed to facilitate safe and effective dating app use, they paradoxically place users at risk of sexual and violent victimisation.

### Accessibility

Dating apps allow users to communicate directly with others at any time, from anywhere. Users are accessible via dating app chat rooms and messaging services and via social media accounts when these are linked to dating app accounts. Accessibility creates opportunities for relationships to develop and enhances user safety where individuals can gain access to personal information to authenticate a user’s identity or to learn more about them before progressing with a relationship (Murphy 2018; Scannell 2019).
Conversely, the ease with which individuals can gain access to others and their information places users at risk of TFSV. Accessibility may facilitate online sexual harassment, cyberstalking and image-based sexual exploitation through repeated requests for contact or sex, offensive sexual comments or the distribution of sexually explicit photos. Bye Felipe and Tinder Nightmares are two Instagram pages that crowdsource examples of online harassment, cyberstalking and image-based sexual exploitation committed through dating apps (Gillett 2018; Shaw 2016; Thompson 2018). Posts on these sites provide examples of verbal abuse and unwanted sexual solicitations sent by men when women do not respond to messages or decline further requests for interaction (Shaw 2016; Thompson 2018). Bye Felipe and Tinder Nightmares provide some insight into the ease with which individuals can harass, stalk and exploit others by using dating apps.

**Anonymity**

The anonymity provided by the internet can make communication between strangers easier. In particular, online dating is perceived as beneficial for introverted users who struggle to approach people in offline settings (Pond & Farvid 2017).

Nevertheless, anonymity also gives individuals the opportunity to portray certain characteristics in order to build trust or appeal to others, facilitating engagement under false pretences (Scannell 2019). Offenders may falsify their name, appearance, age, gender, occupation, residence or interests. Once a victim has formed an attachment to an offender, they may be more likely to meet the offender offline, increasing their risk of physical and sexual assault (Scannell 2019). After analysing the online activity of 31 men who had perpetrated or attempted to perpetrate sex offences against young people they communicated with over the internet, Malesky (2007) found that offenders spent significant amounts of time and energy identifying and pursuing potential victims online. Although this study analysed adult perpetrators of child sexual abuse, the findings suggest that these perpetrators may capitalise on the anonymity offered by online platforms to identify and target victims by adapting how they present online.

Further, a recent investigation of sexual violence on dating apps conducted by Australian media outlets Triple J and Four Corners found that some offenders were using Tinder’s ‘unmatch’ feature as a way of removing evidence of their contact with victims. When one Tinder user ‘unmatches’ another, all conversations and other information about contact between them is deleted. In light of this, Tinder’s administrators have been under pressure to remove this feature from the platform (Dias, McCormack & Russell 2020).
GPS technology

Many dating apps use Global Positioning System (GPS) technology to track and broadcast the geographical distance between one user and another. This helps users to identify others who are nearby, which could be a key consideration when deciding whether to pursue casual sex or a relationship. This function has transformed the way strangers are connected, from matches based on commonalities to those based on location (Murphy 2018). GPS technology facilitates the immediacy of mobile intimacy (Timmermans & Courtois 2018) and enables a quick and easy transition from online communications to offline meeting for those who are in close proximity (Fansher & McCarns 2019).

Nonetheless, GPS technology also enables an individual to track and monitor the movements of others to offend against them (Murphy 2018). For example, in 2014 Grindr was criticised for allegedly revealing the geolocation of its users (Avari 2014). Grindr collects ‘distance’ data (ie the distance between registered users) with a high degree of precision (Nguyen 2018). By accessing Grindr’s user database, individuals can pinpoint a user’s location (Nguyen 2018). Certain apps, such as Fuckr, have allegedly been used to gain unauthorised access to Grindr’s data for this purpose (Nguyen 2018). Further, by querying Grindr’s servers from three different locations, an individual can triangulate the information received (relative distances and profile information) to pinpoint the location of a user (Avari 2014). According to Avari (2014), anyone with knowledge of the JavaScript Object Notation programming language can query Grindr’s servers. When used in this manner, GPS technology places users at risk of victimisation by predatory offenders (Avari 2014).

LGBTQ+ communities

Dating apps targeted at minority groups such as LGBTQ+ users (eg Grindr) can create safe and anonymous spaces within which users with similar backgrounds and sexual orientations can meet (Albury et al. 2019; Davis et al. 2016; Miller 2015; Pond & Farvid 2017). This is particularly important in societies where homosexuality and bisexuality are socially unacceptable or even criminalised. Certainly, research suggests that homosexual men value the sexual liberation and agency gained through dating apps, while maintaining their physical safety and online security (Davis et al. 2016; Miller 2015).

Despite bringing like-minded individuals together, dating apps may also be used to identify, target, exploit or harm users. In 2018, four men in Texas were arrested for using a dating app to identify, lure, then assault and rob homosexual male users (Associated Press 2018). In 2014, a man in India used a fake profile on Manjam (a dating app for homosexual men) to lure three homosexual men to their deaths. After being arrested for murder, the accused claimed that he intended to send a message about ‘spreading evil’ in India (Avari 2014). While LGBTQ+ users are at greater risk of victimisation than heterosexual users, Murphy (2018) suggested that closeted homosexual men are at greatest risk of victimisation by male users of LGBTQ+ dating apps because offenders know that victims, who often portray themselves offline as heterosexual, are unlikely to report crimes to the police.
Number of users
Traditional dating websites use algorithms to match users on characteristics such as level of education, interests, culture and religion (Choi, Wong & Fong 2018). In contrast, dating apps provide access to all users on their databases, allowing each user to select others based on profile, picture and proximity (Choi, Wong & Fong 2018; Fansher & McCarns 2019). Tinder’s novel swipe interface lets users search through hundreds of potential partners, selecting only those whose profile picture and blurb appeals to them (David & Cambre 2016). The app also facilitates simultaneous interactions, where individuals can develop online relationships with multiple users at once (Timmermans & Courtois 2018).

Exposing users to a large number of individuals increases the risk a potential offender will come into contact with someone vulnerable to victimisation (Fansher & McCarns 2019). Lehmiller and Ioerger (2014) surveyed 112 homosexual men to determine whether there was a significant difference between dating app users and non-users. They found that dating app users had more sexual encounters than non-users. This may be because of the ease and speed with which users could identify and meet sexual partners or because those who used dating apps were more sexually active in general. Regardless of causality, higher rates of sexual contact among people who use dating apps compared to those who do not places dating app users at a higher risk of sexual and violent victimisation by virtue of greater exposure (Lehmiller & Ioerger 2014).

Prevalence of dating app sexual and violent offending
Although there is only a small body of knowledge concerned with dating app sexual and violent offending, the existing literature does provide some insight into the prevalence of offline and online victimisation.

Prevalence of offline sexual and violent offending appears to be relatively low. Rowse, Bolt and Gaya (2020) analysed case files collected between 2018 and 2019 at an Australian metropolitan clinical forensic medicine service. Of the 76 case files for alleged sexual assault matters where the complainant underwent forensic examination, 15 percent involved an offender the victim had met on a dating app. Choi, Wong and Fong (2018) surveyed 666 college students with various sexual orientations from four universities in Hong Kong in 2015. They found users of dating apps were 2.13 times more likely to have been sexually abused and 2.09 times more likely to have been forced to have sex without a condom in the past year relative to non-users. Unfortunately, it is unclear from the analysis whether the sexual abuse reported was perpetrated by those met through dating apps, or indeed the direction of the relationship between these two phenomena. Nevertheless, these studies suggest that, although dating app users account for the minority of sexual assault victims, they are at a higher risk of sexual victimisation than non-users.
The prevalence of online TFSV appears to be much higher than that of offline sexual and violent offending. Albury et al. (2019) conducted a comprehensive study to compare the experiences and perceptions of Australian dating app users. The researchers found that 64 percent of LGBTQ+ users and 44 percent of non-LGBTQ+ users were harassed on dating apps. Harassment occurred most often when ‘chatting’ or sharing photos and often involved the creation and distribution of unsolicited explicit pictures. Anderson, Vogels and Turner’s (2020) survey of 1,458 North American online daters found that 37 percent experienced repeated unwanted contact, 35 percent were sent a sexually explicit message, 28 percent were called an offensive name and nine percent were threatened with physical harm. Overall, those aged 18 to 34 years, women and LGBTQ+ users were more likely to experience online dating victimisation than older people, men and heterosexual users. Although Anderson and colleagues’ (2020) study reported on dating app and website experiences, the findings do provide some insight into the scope of online TFSV associated with dating apps.

The limited empirical evidence that exists suggests that, while a large proportion of dating app users experience online TFSV, a minority of sexual assaults are linked to dating apps. Regardless, dating apps appear to place users at greater risk of both TFSV and sexual and violent victimisation. This increased risk could potentially be explained by the very features that contribute to their overall popularity—anonymity, accessibility and the number of users. It is also important to note that dating app sexual and violent victimisation is almost certainly under-reported. The Australian Human Rights Commission (2017) conducted a national survey of over 30,000 university students from 39 universities in Australia focusing on experiences of sexual assault and harassment. The study found that the vast majority of university students who were sexually harassed and assaulted did not report the incident to the university or police. Dating app sexual and violent offending is likely to be more prevalent than existing literature suggests.

*The gendered nature of dating app sexual and violent offending*

Consistent with other forms of sexual and violent offending (Hulme, Morgan & Boxall 2019), experiences of dating app sexual and violent offending appear to be gendered. Various studies have shown that victims of dating app sexual and violent offending are predominantly female and offenders predominantly male (Albury et al. 2019; Anderson, Vogel & Turner 2020; Henry & Powell 2018). When men are victimised, victims predominantly identify as homosexual and offenders as heterosexual (Albury et al. 2019; Anderson, Vogel & Turner 2020; Henry & Powell 2018). The gendered nature of dating app sexual and violent offending may be a product of attitudes that persist in society more broadly. Certainly, analysis of the National Community Attitudes towards Violence Against Women Survey, which is administered in Australia every four years, has identified that a small but significant proportion of the population minimise violence against women and endorse traditional gender norms (VicHealth 2014).
Attitudes supportive of violence and gender inequality are evident in the interactions that take place on dating apps. Thompson (2018) analysed 526 posts uploaded to Bye Felipe and Tinder Nightmares between 2014 and 2016, finding that harassing messages sent by men reproduced gendered discourses and heteronormative scripts that position women as subordinate. When male users were ignored or rejected, they often responded by subjugating women through the use of sexual harassment and threats of sexual violence (Thompson 2018). After an analysis of comments made in response to screenshots uploaded to Bye Felipe, Shaw (2016) highlighted that the comments often sexually objectified women and encouraged violence against women who maintain sexual autonomy.

Although dating apps shift the balance of power towards vulnerable or minority users through bilateral matching (or, in the case of Bumble, female-initiated contact), interactions reveal that in some instances gender norms persist. Where underlying attitudes about gender roles, relationships and sex contribute to the perpetration of sexual harassment and assault (Australian Human Rights Commission 2017), dating apps may be another means through which women (and LGBTQ+ people) are subjected to sexual and violent victimisation.

**Preventing dating app sexual and violent offending**

*Individual approaches*

Existing literature sheds some light on which dating app users are more likely to engage in protective behaviours, and the activities undertaken by individuals to prevent dating app violence. Heterosexual women appear to be more concerned about dating app violence than LGBTQ+ participants and heterosexual males (Albury et al. 2019). Fansher and McCarns (2019) surveyed 1,310 North American undergraduate college students and revealed that female dating app users were more likely than male users to take some form of precaution when meeting offline. These precautions included ensuring their mobile phone battery was fully charged, or informing a family member or friend about their plans. Albury et al.’s (2019) study of Australian dating app users aged 15 to 35 years found that female participants preferred to meet their date in a public place to stay safe and to avoid the presumption that sex was guaranteed during the first offline meeting.

Regardless of gender, existing literature suggests that linking dating app and social media accounts and using formal identification verification technology enhances user perception of safety (Albury et al. 2019). Users also read profiles closely, negotiated in-app picture sharing and staged conversations both online and offline to enhance safety and reduce the likelihood of victimisation (Albury & Byron 2016; Albury et al. 2019).
Developer approaches

A review of dating app safety mechanisms revealed that most dating apps provide safety guidelines or community rules in an attempt to govern user behaviour. The apps warn against posting personal information, sharing location details and leaving drinks unattended, and recommend that users inform a third party of their whereabouts, meet in public and plan transportation, observe alcohol and drug limits, and make use of blocking and reporting features (Grindr 2020; Growlr 2020; Happn 2020; Hinge 2020; Jack'd 2020; OKCupid 2020; Only Women 2020; Plenty of Fish 2020; Tinder 2020). A number of dating apps also informed users about respecting others, being authentic and not using the site for soliciting or engaging in illegal activities (Bumble 2020; HER 2020; Hornet 2020; Scruff 2020). Critically, only a few apps informed users of the need to seek consent before engaging in sexual activity (Hinge 2020; OKCupid 2020; Plenty of Fish 2020; Tinder 2020). There was also a notable absence of other safety guidelines or rules that informed users about what constitutes an offence.

Only four of the dating apps reviewed contained substantial safety mechanisms that went beyond basic guidelines and rules for users:

- Bumble (2020) implemented artificial intelligence to blur explicit images that require consent to view.
- Hornet (2020) implemented blockchain technology to verify user identities through transaction histories.
- Tinder (2020) offers users:
  - the ability to share with others details about a date, including the identity of their date and the time and location;
  - an in-built function that triggers a discreet alarm to dispatch emergency services if required;
  - offensive message detection—machine learning algorithms detect potentially offensive or harassing messages which trigger a ‘pop-up’ that provides the recipient with the option of reporting the behaviour; and
  - information about support services that can be contacted after they have filed a report with the platform about the conduct of another user (Dias, McCormack & Russell 2020);
- Both Tinder (2020) and Badoo (2020) have also implemented photo verification, which compares photos taken in real time (selfies) with profile pictures to verify a person’s identity.

Although many dating apps have a reporting function where users can raise concerns about the behaviour of another user, dating app companies cannot be legally compelled to remove or block sexual offenders from their platforms (Macdonald 2020). Indeed, in Australia, a man accused of using dating apps to meet and sexually assault women continued to use dating apps while on bail (Gregory 2020). Public pressure and victim advocacy eventually led to the issuing of a court order to restrict the accused’s access to dating apps and social media (Gregory 2020). Further, dating apps do not screen the criminal histories of users. In the United States, House Democrats are currently investigating the use of dating apps by registered sex offenders. The House placed the onus on dating app platforms to cross-reference users with sex offender registries to mitigate the risk to other users (Cameron 2020). Although this may protect users from dating app victimisation by known sex offenders, such an approach is limited in scope.
Conclusion

Dating apps are considered ordinary technologies that have been integrated into the routine lives of young people. Dating apps provide users with an opportunity to interact, connect and form relationships. For LGBTQ+ people, they offer a unique opportunity to find and connect with individuals with similar sexual orientations, particularly when they are otherwise constrained from practising their sexuality. Despite the widespread use of dating apps to facilitate social relationships, there is anecdotal and empirical evidence to suggest that dating apps also facilitate the commission of sexual and violent offences. Given the significant under-reporting of sexual offences generally, it is likely that the existing literature does not convey the true extent of the problem.

Compounding the problem, the onus of preventing victimisation is currently on individual users. Although a few dating apps incorporate innovative safety mechanisms, most simply promote guidelines and rules that place the onus on users to protect themselves against victimisation. These individual preventive approaches risk making vulnerable users such as women and LGBTQ+ people responsible for the violence perpetrated against them.

Prevention and intervention efforts are also impeded by a lack of ownership over the jurisdiction in which dating app violence occurs; cross-jurisdictional problems caused by differences in legislation, policies and procedures; a lack of cooperation between internet service providers and dating app platforms; the time and cost associated with gaining access to and conducting forensic analysis of electronic evidence; and changes in technology that are difficult to predict and safeguard (Powell & Henry 2018).

A paucity of existing literature, coupled with continued growth in the number of dating apps and the number of people using them, has produced a concerning gap in knowledge. Future research should determine the prevalence, nature, motivations, risks and predictors of dating app sexual and violent offending in Australia to inform prevention and intervention efforts. Where gender norms persist within dating apps, prevention and intervention efforts may be informed by existing mechanisms targeted towards violence against women and LGBTQ+ users in general.
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